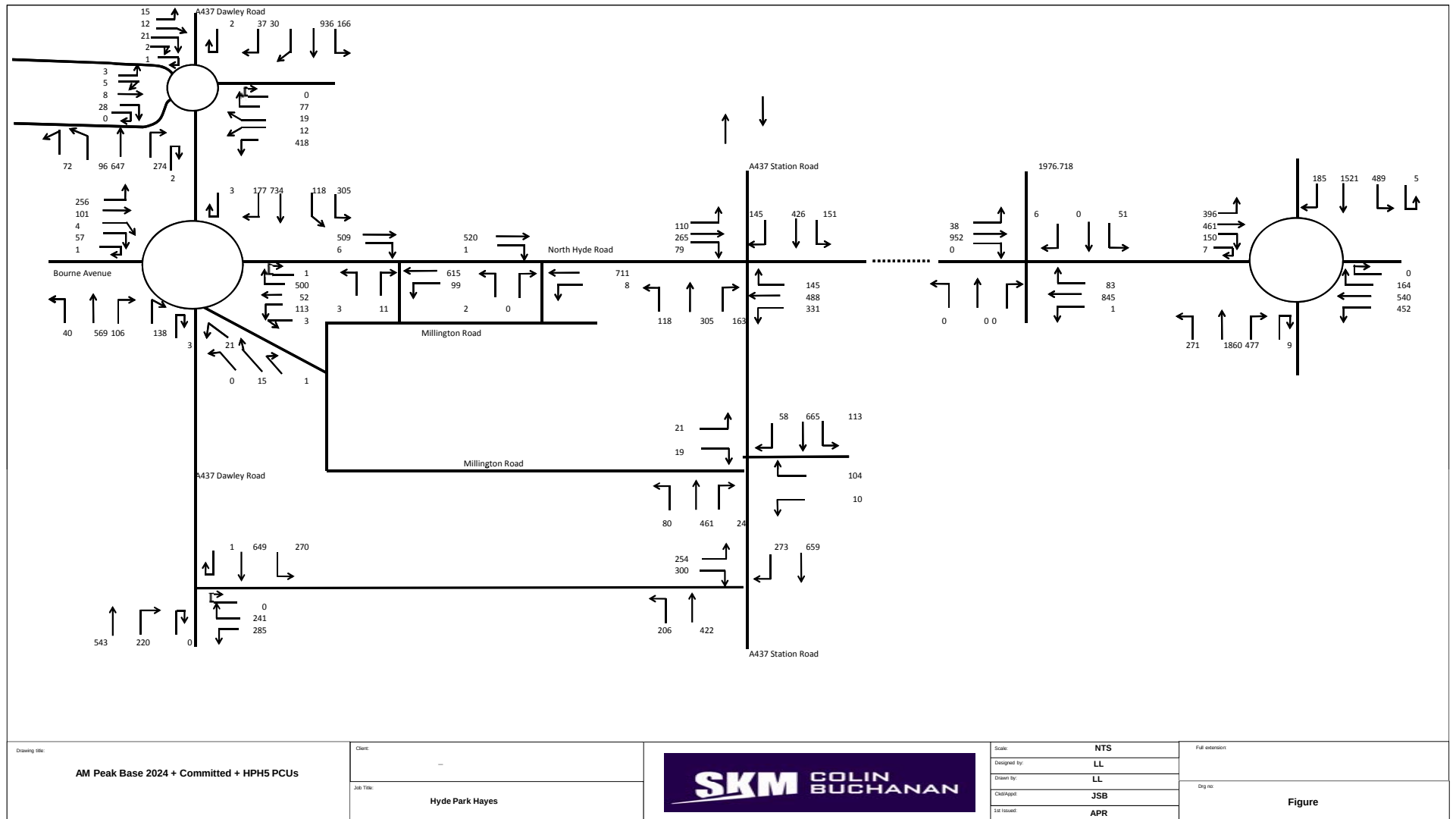
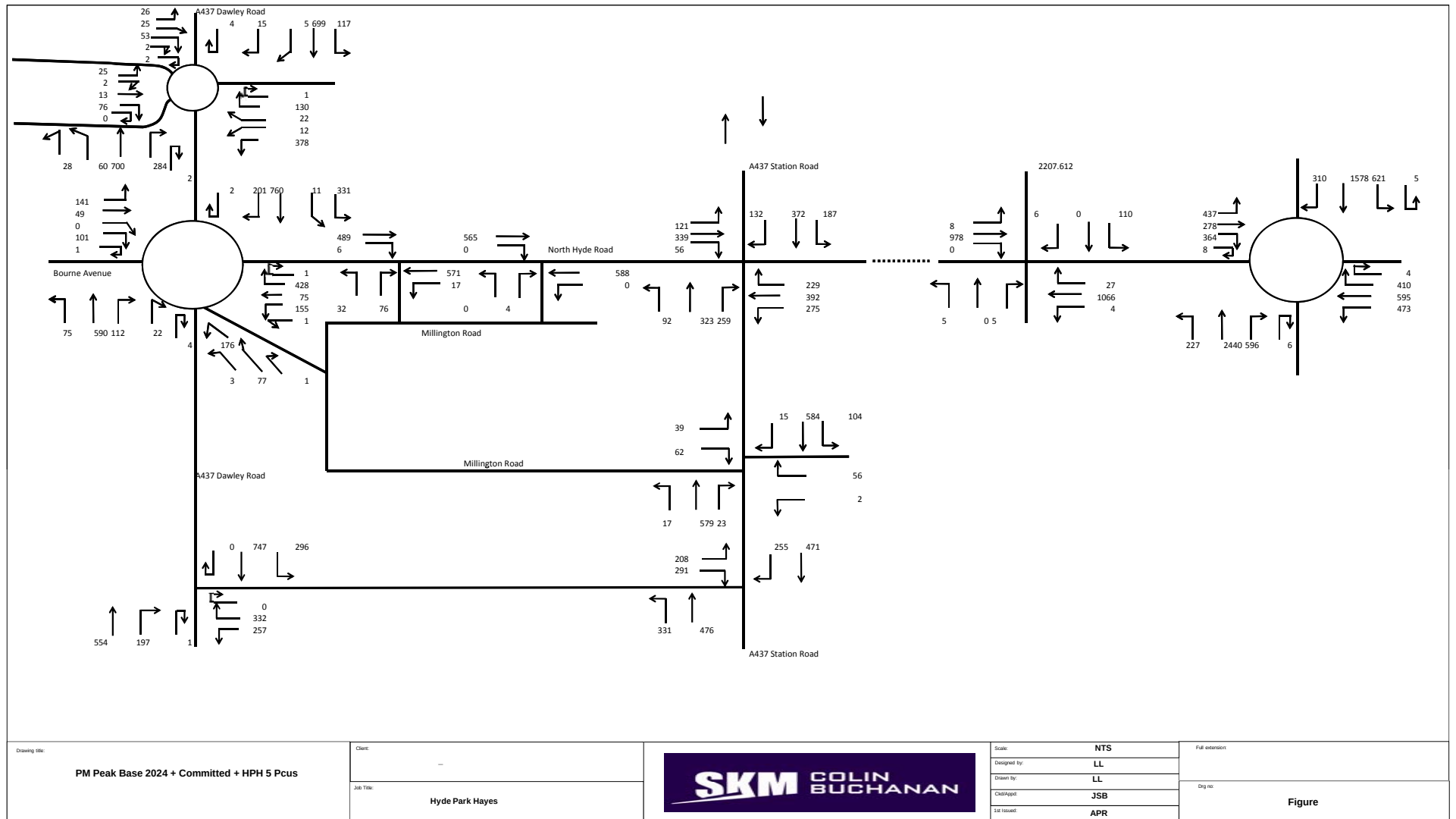
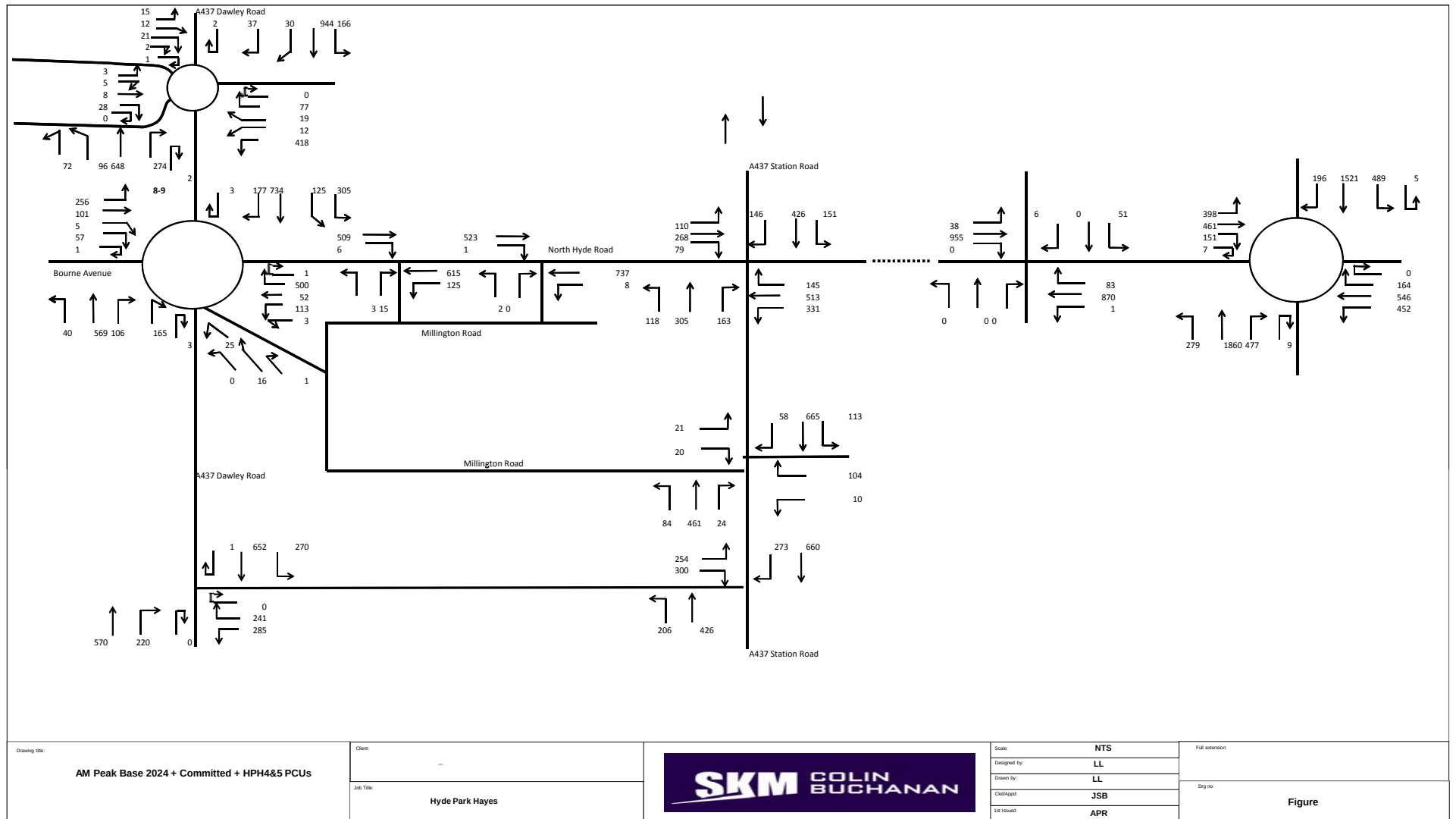
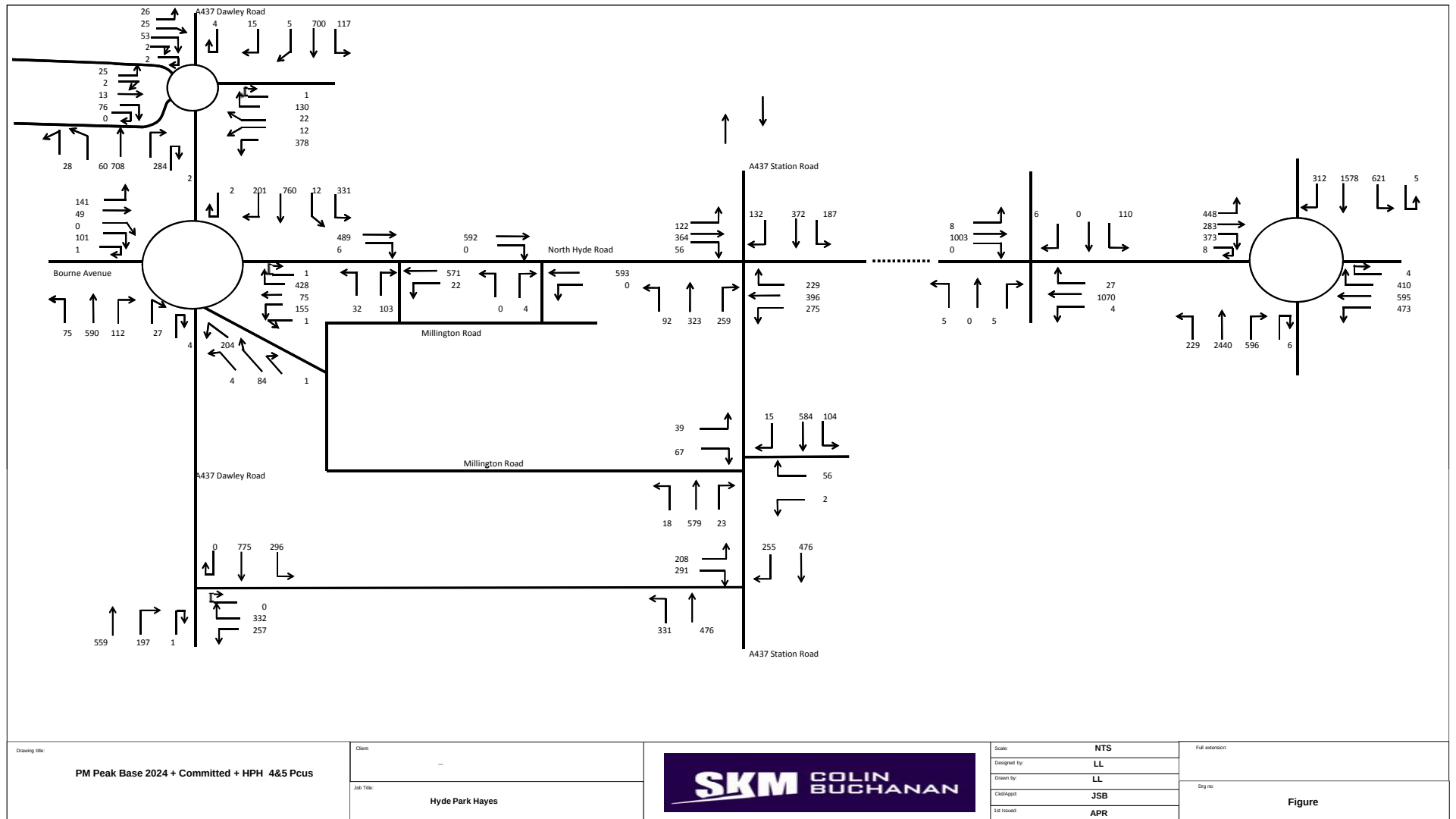


## APPENDIX O









# <Enter Report 1 Title Here>

## PRT File

## AM Base B24+Com+H4&5

1 T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 3 (March 2004)  
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THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS  
IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:- "BULLS BRIDGE RABOUT\_AM\_MC\_4.DAT" at 18:36 on 06/08/12

TRANSYT 12.0

### PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES = 8  
NUMBER OF LINKS = 70  
NUMBER OF OPTIMISED NODES = 8  
MAXIMUM NUMBER OF GRAPHIC PLOTS = 0  
NUMBER OF STEPS IN CYCLE = 65  
MAXIMUM NUMBER OF SHARED STOPLINES = 2  
MAXIMUM NUMBER OF TIMING POINTS = 3  
MAXIMUM LINKS AT ANY NODE = 12

CORE REQUESTED = 14800 WORDS  
CORE AVAILABLE = 72000 WORDS

### DATA INPUT :-

CARD NO. CARD TYPE  
( 1)= TITLE:-  
CARD NO. CARD TYPE CYCLE TIME NO. OF STEPS PERIOD DISPLACEMENTS SETTINGS CYCLE SCALE SCALE CARD32 0=NONE COPIES CLIMB VALUE VALUE  
(SEC) PER 1-1200 START END 0=NO 1=EQUAL 10-200 50-200 0=TIMES 1=0/SET FINAL OUTPUT P PER P PER  
CYCLE CYCLE MINS. (SEC) (SEC) 1=YES CYCLE % % 1=SPEEDS 2=FULL OUTPUT 1=FULL PCU-H 100  
2)= 1 65 65 60 2 3 0 1 100 100 0 0 0 0 1420 260 100  
CARD NO. CARD TYPE  
3)= 2 146 126 127 128 129 130 131 132 0 0 0 0 0 0 0

LINKS HAVING SHARED STOPLINES  
CARD NO. CARD TYPE FIRST SET..... SECOND SET..... THIRD SET.....  
4)= 7 29 12602 0 0 0 0 0 0 0 0 0 0 0 0 0  
5)= 7 31 58 0 0 0 0 0 0 0 0 0 0 0 0 0  
6)= 7 36 37 0 0 0 0 0 0 0 0 0 0 0 0 0  
7)= 7 38 39 0 0 0 0 0 0 0 0 0 0 0 0 0  
8)= 7 40 41 0 0 0 0 0 0 0 0 0 0 0 0 0  
9)= 7 42 62 0 0 0 0 0 0 0 0 0 0 0 0 0  
10)= 7 52 53 0 0 0 0 0 0 0 0 0 0 0 0 0  
11)= 7 54 56 0 0 0 0 0 0 0 0 0 0 0 0 0  
12)= 7 1262 1261 0 0 0 0 0 0 0 0 0 0 0 0 0  
13)= 7 1264 1263 0 0 0 0 0 0 0 0 0 0 0 0 0  
14)= 7 1267 1266 0 0 0 0 0 0 0 0 0 0 0 0 0  
15)= 7 1272 1271 0 0 0 0 0 0 0 0 0 0 0 0 0  
16)= 7 1274 1273 0 0 0 0 0 0 0 0 0 0 0 0 0  
17)= 7 1276 1275 0 0 0 0 0 0 0 0 0 0 0 0 0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
18)= 10 126 7 7  
19)= 10 127 7 7  
20)= 10 128 7 7  
21)= 10 129 7 7  
22)= 10 130 7 7  
23)= 10 131 7 7  
24)= 10 132 7 7  
25)= 10 146 7 7 7

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
26)= 11 126 6 6  
27)= 11 127 5 5  
28)= 11 128 6 6  
29)= 11 129 5 5  
30)= 11 130 6 6  
31)= 11 131 5 5  
32)= 11 132 5 6  
33)= 11 146 7 8 8

NODE CARDS: STAGE CHANGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. Sgl/Db1 Cycled S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
34)= 12 126 1 0 33  
35)= 12 127 1 62 31  
36)= 12 128 1 17 4  
37)= 12 129 1 34 54  
38)= 12 130 1 33 20

39)= 12 131 1 63 32  
40)= 12 132 1 34 21  
41)= 12 146 1 10 45 60

| LINK CARDS: GIVEWAY DATA                                             |           |          |           |           |           |           |           |           |           | LINK CARDS: GIVEWAY DATA |           |            |            |            |
|----------------------------------------------------------------------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------------------------|-----------|------------|------------|------------|
| PRIORITY LINKS LINK1 LINK2 LINK3 LINK4 LINK5 LINK6 LINK7 LINK8 LINK9 |           |          |           |           |           |           |           |           |           | LINK CARDS: GIVEWAY DATA |           |            |            |            |
| CARD NO.                                                             | CARD TYPE | LINK NO. | LINK1 NO. | LINK2 NO. | LINK3 NO. | LINK4 NO. | LINK5 NO. | LINK6 NO. | LINK7 NO. | LINK8 NO.                | LINK9 NO. | LINK10 NO. | LINK11 NO. | LINK12 NO. |
| 42)=                                                                 | 30        | 1462     | 1465      | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 43)=                                                                 | 30        | 1466     | 1462      | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |

| LINK CARDS: GIVEWAY DATA                                             |           |          |           |           |           |           |           |           |           | LINK CARDS: GIVEWAY DATA |           |            |            |            |
|----------------------------------------------------------------------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------------------------|-----------|------------|------------|------------|
| PRIORITY LINKS LINK1 LINK2 LINK3 LINK4 LINK5 LINK6 LINK7 LINK8 LINK9 |           |          |           |           |           |           |           |           |           | LINK CARDS: GIVEWAY DATA |           |            |            |            |
| CARD NO.                                                             | CARD TYPE | LINK NO. | LINK1 NO. | LINK2 NO. | LINK3 NO. | LINK4 NO. | LINK5 NO. | LINK6 NO. | LINK7 NO. | LINK8 NO.                | LINK9 NO. | LINK10 NO. | LINK11 NO. | LINK12 NO. |
| 44)=                                                                 | 31        | 29       | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 45)=                                                                 | 31        | 31       | 128       | 1         | 6         | 2         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 46)=                                                                 | 31        | 32       | 128       | 2         | 6         | 1         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 47)=                                                                 | 31        | 33       | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 48)=                                                                 | 31        | 34       | 129       | 2         | 5         | 1         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 49)=                                                                 | 31        | 36       | 129       | 2         | 5         | 1         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 50)=                                                                 | 31        | 37       | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 51)=                                                                 | 31        | 38       | 129       | 2         | 5         | 1         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 52)=                                                                 | 31        | 39       | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 53)=                                                                 | 31        | 40       | 129       | 2         | 5         | 1         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 54)=                                                                 | 31        | 41       | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 55)=                                                                 | 31        | 42       | 132       | 1         | 5         | 2         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 56)=                                                                 | 31        | 43       | 132       | 2         | 6         | 1         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 57)=                                                                 | 31        | 44       | 129       | 1         | 5         | 2         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 58)=                                                                 | 31        | 45       | 129       | 1         | 5         | 2         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 59)=                                                                 | 31        | 46       | 130       | 1         | 6         | 2         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 60)=                                                                 | 31        | 47       | 130       | 2         | 6         | 1         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 61)=                                                                 | 31        | 48       | 131       | 2         | 5         | 1         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 62)=                                                                 | 31        | 50       | 131       | 2         | 5         | 1         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 63)=                                                                 | 31        | 52       | 131       | 2         | 5         | 1         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 64)=                                                                 | 31        | 53       | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 65)=                                                                 | 31        | 54       | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 66)=                                                                 | 31        | 55       | 131       | 1         | 5         | 2         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 67)=                                                                 | 31        | 56       | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 68)=                                                                 | 31        | 57       | 131       | 1         | 5         | 2         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 69)=                                                                 | 31        | 58       | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 70)=                                                                 | 31        | 59       | 128       | 2         | 6         | 1         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 71)=                                                                 | 31        | 60       | 132       | 2         | 6         | 1         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 72)=                                                                 | 31        | 61       | 130       | 2         | 6         | 1         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 73)=                                                                 | 31        | 62       | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 74)=                                                                 | 31        | 63       | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 75)=                                                                 | 31        | 64       | 129       | 1         | 5         | 2         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 76)=                                                                 | 31        | 65       | 129       | 1         | 5         | 2         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 77)=                                                                 | 31        | 66       | 131       | 1         | 5         | 2         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 78)=                                                                 | 31        | 67       | 131       | 1         | 5         | 2         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 79)=                                                                 | 31        | 68       | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 80)=                                                                 | 31        | 1261     | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 81)=                                                                 | 31        | 1262     | 126       | 1         | 6         | 2         | 1         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 82)=                                                                 | 31        | 1263     | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 83)=                                                                 | 31        | 1264     | 126       | 1         | 6         | 2         | 1         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 84)=                                                                 | 31        | 1266     | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 85)=                                                                 | 31        | 1267     | 126       | 1         | 6         | 2         | 1         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 86)=                                                                 | 31        | 1269     | 126       | 1         | 6         | 2         | 1         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 87)=                                                                 | 31        | 1271     | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 88)=                                                                 | 31        | 1272     | 127       | 2         | 5         | 1         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 89)=                                                                 | 31        | 1273     | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 90)=                                                                 | 31        | 1274     | 127       | 2         | 5         | 1         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 91)=                                                                 | 31        | 1275     | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 92)=                                                                 | 31        | 1276     | 127       | 2         | 5         | 1         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 93)=                                                                 | 31        | 1278     | 127       | 2         | 5         | 1         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 94)=                                                                 | 31        | 1461     | 146       | 2         | 1         | 3         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 95)=                                                                 | 31        | 1462     | 146       | 1         | 0         | 3         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 96)=                                                                 | 31        | 1463     | 146       | 1         | 0         | 3         | 6         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 97)=                                                                 | 31        | 1464     | 146       | 3         | 8         | 1         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 98)=                                                                 | 31        | 1465     | 146       | 1         | 0         | 2         | 1         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 99)=                                                                 | 31        | 1467     | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 100)=                                                                | 31        | 1468     | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 101)=                                                                | 31        | 1469     | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 102)=                                                                | 31        | 12691    | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 103)=                                                                | 31        | 12692    | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 104)=                                                                | 31        | 12693    | 126       | 1         | 6         | 2         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 105)=                                                                | 31        | 12694    | 126       | 1         | 6         | 2         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 106)=                                                                | 31        | 12695    | 126       | 2         | 6         | 1         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 107)=                                                                | 31        | 12696    | 126       | 2         | 6         | 1         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 108)=                                                                | 31        | 12697    | 126       | 2         | 6         | 1         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 109)=                                                                | 31        | 12701    | 127       | 1         | 5         | 2         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 110)=                                                                | 31        | 12702    | 127       | 1         | 5         | 2         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 111)=                                                                | 31        | 12703    | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 112)=                                                                | 31        | 12704    | 127       | 1         | 5         | 2         | 0         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |

| LINK CARDS: GIVEWAY DATA                                             |           |          |           |           |           |           |           |           |           | LINK CARDS: GIVEWAY DATA |           |            |            |            |
|----------------------------------------------------------------------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------------------------|-----------|------------|------------|------------|
| PRIORITY LINKS LINK1 LINK2 LINK3 LINK4 LINK5 LINK6 LINK7 LINK8 LINK9 |           |          |           |           |           |           |           |           |           | LINK CARDS: GIVEWAY DATA |           |            |            |            |
| CARD NO.                                                             | CARD TYPE | LINK NO. | LINK1 NO. | LINK2 NO. | LINK3 NO. | LINK4 NO. | LINK5 NO. | LINK6 NO. | LINK7 NO. | LINK8 NO.                | LINK9 NO. | LINK10 NO. | LINK11 NO. | LINK12 NO. |
| 113)=                                                                | 32        | 29       | 2253      | 0         | 1262      | 690       | 18        | 1264      | 679       | 18                       | 1267      | 491        | 18         | 12607      |
| 114)=                                                                | 32        | 31       | 620       | 0         | 1272      | 163       | 9         | 1274      | 149       | 9                        | 1275      | 159        | 9          | 1276       |
| 115)=                                                                | 32        | 32       | 10        | 0         | 0         | 0         | 4         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 116)=                                                                | 32        | 33       | 1427      | 0         | 31        | 620       | 18        | 58        | 807       | 18                       | 0         | 0          | 0          | 0          |
| 117)=                                                                | 32        | 34       | 196       | 0         | 12702     | 196       | 5         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 118)=                                                                | 32        | 36       | 554       | 0         | 12701     | 20        | 5         | 12702     | 534       | 5                        | 0         | 0          | 0          | 0          |
| 119)=                                                                | 32        | 37       | 45        | 0         | 1278      | 45        | 7         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 120)=                                                                | 32        | 38       | 550       | 0         | 12701     | 550       | 5         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 121)=                                                                | 32        | 39       | 64        | 0         | 1276      | 18        | 7         | 1278      | 46        | 7                        | 0         | 0          | 0          | 0          |
| 122)=                                                                | 32        | 40       | 417       | 0         | 12701     | 136       | 5         | 12704     | 281       | 5                        | 0         | 0          | 0          | 0          |
| 123)=                                                                | 32        | 41       | 47        | 0         | 1276      | 47        | 7         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 124)=                                                                | 32        | 42       | 825       | 0         | 50        | 346       | 5         | 52        | 200       | 5                        | 55        | 279        | 5          | 0          |
| 125)=                                                                | 32        | 43       | 10        | 0         | 0         | 0         | 4         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 126)=                                                                | 32        | 44       | 310       | 0         | 63        | 310       | 4         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 127)=                                                                | 32        | 45       | 342       | 0         | 63        | 342       | 4         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 128)=                                                                | 32        | 46       | 1162      | 0         | 0         | 0         | 18        | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 129)=                                                                | 32        | 47       | 10        | 0         | 0         | 0         | 4         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 130)=                                                                | 32        | 48       | 154       | 0         | 65        | 154       | 6         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 131)=                                                                | 32        | 50       | 356       | 0         | 64        | 356       | 6         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 132)=                                                                | 32        | 52       | 200       | 0         | 45        | 200       | 6         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 133)=                                                                | 32        | 53       | 196       | 0         | 34        | 196       | 8         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 134)=                                                                | 32        | 54       | 1831      | 0         | 36        | 554       | 18        | 38        | 550       | 18                       | 40        | 417        | 18         | 44         |
| 135)=                                                                | 32        | 55       | 654       | 0         | 68        | 654       | 4         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 136)=                                                                | 32        | 56       | 298       | 0         | 37        | 45        | 18        | 39        | 64        | 18                       | 41        | 47         | 18         | 45         |
| 137)=                                                                | 32        | 57       | 654       | 0         | 68        | 654       | 4         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 138)=                                                                | 32        | 58       | 807       | 0         | 1271      | 159       | 9         | 1273      | 159       | 9                        | 12704     | 489        | 11         | 0          |
| 139)=                                                                | 32        | 59       | 10        | 0         | 0         | 0         | 4         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 140)=                                                                | 32        | 60       | 10        | 0         | 0         | 0         | 4         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 141)=                                                                | 32        | 61       | 10        | 0         | 0         | 0         | 4         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 142)=                                                                | 32        | 62       | 196       | 0         | 53        | 196       | 5         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 143)=                                                                | 32        | 63       | 1162      | 0         | 46        | 1162      | 1         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 144)=                                                                | 32        | 64       | 356       | 0         | 63        | 356       | 4         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 145)=                                                                | 32        | 65       | 154       | 0         | 63        | 154       | 4         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |
| 146)=                                                                | 32        | 66       | 654       | 0         | 68        | 654       | 4         | 0         | 0         | 0                        | 0         | 0          | 0          | 0          |

147)= 32 67 654 0 68 654 4 0 0 0 0 0 0 0 0 0 0 0 0 0  
148)= 32 68 2616 0 0 0 18 0 0 0 0 0 0 0 0 0 0 0 0  
149)= 32 1261 10 0 50 10 7 0 0 0 0 0 0 0 0 0 0 0 0  
150)= 32 1262 690 0 55 375 5 57 315 5 0 0 0 0 0 0 0 0 0  
151)= 32 1263 40 0 48 40 7 0 0 0 0 0 0 0 0 0 0 0 0  
152)= 32 1264 679 0 57 339 5 66 340 5 0 0 0 0 0 0 0 0 0  
153)= 32 1266 114 0 48 114 7 0 0 0 0 0 0 0 0 0 0 0 0  
154)= 32 1267 491 0 66 314 5 67 177 5 0 0 0 0 0 0 0 0 0  
155)= 32 1269 477 0 67 477 5 0 0 0 0 0 0 0 0 0 0 0 0  
156)= 32 1271 159 0 1269 159 8 0 0 0 0 0 0 0 0 0 0 0 0  
157)= 32 1272 163 0 12697 163 6 0 0 0 0 0 0 0 0 0 0 0 0  
158)= 32 1273 159 0 1269 159 8 0 0 0 0 0 0 0 0 0 0 0 0  
159)= 32 1274 149 0 12695 149 6 0 0 0 0 0 0 0 0 0 0 0 0  
160)= 32 1275 159 0 1269 159 8 0 0 0 0 0 0 0 0 0 0 0 0  
161)= 32 1276 214 0 12695 214 6 0 0 0 0 0 0 0 0 0 0 0 0  
162)= 32 1278 91 0 12696 91 6 0 0 0 0 0 0 0 0 0 0 0 0  
163)= 32 1461 51 0 0 0 18 0 0 0 0 0 0 0 0 0 0 0 0  
164)= 32 1462 83 0 42 83 13 0 0 0 0 0 0 0 0 0 0 0 0  
165)= 32 1463 938 0 42 742 13 62 196 13 0 0 0 0 0 0 0 0  
166)= 32 1464 20 0 0 0 18 0 0 0 0 0 0 0 0 0 0 0 0  
167)= 32 1465 993 0 0 0 18 0 0 0 0 0 0 0 0 0 0 0 0  
168)= 32 1466 38 0 1465 38 2 0 0 0 0 0 0 0 0 0 0 0 0  
169)= 32 1467 104 0 1462 83 18 1466 38 18 0 0 0 0 0 0 0 0  
170)= 32 1468 20 0 1463 10 18 1465 10 18 0 0 0 0 0 0 0 0  
171)= 32 1469 938 0 1463 928 18 1464 10 18 0 0 0 0 0 0 0 0  
172)= 32 12691 1010 0 1461 51 14 1464 10 17 1465 955 18 0 0 0 0  
173)= 32 12692 164 0 1261 10 18 1263 40 18 1266 114 18 0 0 0 0  
174)= 32 12693 10 0 0 0 4 0 0 0 0 0 0 0 0 0 0 0 0  
175)= 32 12694 10 0 0 0 4 0 0 0 0 0 0 0 0 0 0 0 0  
176)= 32 12695 363 0 12691 363 2 0 0 0 0 0 0 0 0 0 0 0  
177)= 32 12696 91 0 12691 91 2 0 0 0 0 0 0 0 0 0 0 0  
178)= 32 12697 556 0 12691 556 2 0 0 0 0 0 0 0 0 0 0 0  
179)= 32 12701 706 0 12703 706 2 0 0 0 0 0 0 0 0 0 0 0  
180)= 32 12702 730 0 12703 730 2 0 0 0 0 0 0 0 0 0 0 0  
181)= 32 12703 2206 0 0 0 18 0 0 0 0 0 0 0 0 0 0 0  
182)= 32 12704 770 0 12703 770 2 0 0 0 0 0 0 0 0 0 0 0

\*\*\*\*\*END OF SUBROUTINE TINPUT\*\*\*\*\*

65 SECOND CYCLE 65 STEPS

INITIAL SETTINGS  
- (SECONDS)

| LINK<br>NUMBER | FLOW<br>INTO<br>LINK | SAT<br>FLOW | DEGREE<br>OF<br>SAT | MEAN TIMES<br>PER<br>CRUISE | UNIFORM<br>DELAY | RANDOM+<br>OVERSAT<br>(U+R+O=MEAN Q) | COST<br>OF<br>DELAY | STOPS<br>OF<br>DELAY | MEAN<br>COST | STOPS<br>OF<br>MAX. | MEAN<br>AVERAGE<br>EXCESS | QUEUE<br>OF<br>VALUES | PERFORMANCE<br>INDEX.<br>WEIGHTED SUM<br>OF ( ) VALUES | EXIT<br>NODE | GREEN<br>START<br>1ST | GREEN<br>START<br>2ND | TIMES<br>END |
|----------------|----------------------|-------------|---------------------|-----------------------------|------------------|--------------------------------------|---------------------|----------------------|--------------|---------------------|---------------------------|-----------------------|--------------------------------------------------------|--------------|-----------------------|-----------------------|--------------|
| (PCU/H)        | (PCU/H)              | (%)         | (SEC)               | (SEC)                       | (PCU-H/H)        | (\$/H)                               | (\$/H)              | (%)                  | (\$/H)       | (PCU)               | (PCU)                     | (PCU)                 | (PCU)                                                  |              | (SECONDS)             | (SECONDS)             | (SECONDS)    |
| 29             | 2252                 | 4090S       | 60                  | 18.5                        | 3.2              | 1.0 + 0.7 ( 24.1)                    | 38                  | ( 18.0)              | 31           |                     |                           | 42.2                  |                                                        |              |                       |                       |              |
| 31             | 621                  | 5591S       | 35                  | 9.5                         | 2.1              | 0.2 + 0.1 ( 3.9)                     | 7                   | ( 0.8)               | 5            |                     |                           | 4.7                   | 128                                                    | 23           | 4                     |                       |              |
| 32             | 10                   | 10000       | 1                   | 4.5                         | 27.4             | 0.1 + 0.0 ( 1.1)                     | 89                  | ( 0.0)               | 0            |                     |                           | 1.1                   | 128                                                    | 10           | 17                    |                       |              |
| 33             | 1431                 | 6000        | 24                  | 18.5                        | 0.9              | 0.0 + 0.2 ( 2.2)                     | 1                   | ( 0.2)               | 0            |                     |                           | 2.4                   |                                                        |              |                       |                       |              |
| 34             | 195                  | 1806        | 17                  | 5.5                         | 3.3              | 0.0 + 0.1 ( 2.2)                     | 7                   | ( 0.3)               | 0            |                     |                           | 2.4                   | 129                                                    | 59           | 34                    |                       |              |
| 36             | 553                  | 2047S       | 46                  | 5.5                         | 4.0              | 0.1 + 0.4 ( 7.6)                     | 7                   | ( 0.9)               | 1            |                     |                           | 8.5                   | 129                                                    | 59           | 34                    |                       |              |
| 37             | 45                   | 36L         | 46                  | 7.5                         | 9.0              | 0.1 + 0.0 ( 1.5)                     | 60                  | ( 0.3)               | 1            |                     |                           | 1.8                   | 129                                                    | 59           | 34                    |                       |              |
| 38             | 551                  | 2028S       | 48                  | 5.5                         | 4.1              | 0.1 + 0.4 ( 7.7)                     | 8                   | ( 0.9)               | 2            |                     |                           | 8.6                   | 129                                                    | 59           | 34                    |                       |              |
| 39             | 64                   | 38L         | 48                  | 7.5                         | 9.0              | 0.1 + 0.0 ( 2.1)                     | 60                  | ( 0.4)               | 2            |                     |                           | 2.5                   | 129                                                    | 59           | 34                    |                       |              |
| 40             | 417                  | 1867S       | 39                  | 5.5                         | 3.9              | 0.1 + 0.3 ( 5.6)                     | 8                   | ( 0.6)               | 1            |                     |                           | 6.2                   | 129                                                    | 59           | 34                    |                       |              |
| 41             | 47                   | 40L         | 39                  | 7.5                         | 8.0              | 0.1 + 0.0 ( 1.4)                     | 53                  | ( 0.3)               | 1            |                     |                           | 1.6                   | 129                                                    | 59           | 34                    |                       |              |
| 42             | 824                  | 2028S       | 68                  | 5.5                         | 6.4              | 0.5 + 0.9 ( 19.1)                    | 34                  | ( 6.5)               | 9            |                     |                           | 25.7                  | 132                                                    | 39           | 21                    |                       |              |
| 43             | 10                   | 10000       | 1                   | 4.5                         | 27.4             | 0.1 + 0.0 ( 1.1)                     | 89                  | ( 0.0)               | 0            |                     |                           | 1.1                   | 132                                                    | 27           | 34                    |                       |              |
| 44             | 309                  | 1612        | 78                  | 4.5                         | 39.9             | 1.7 + 1.7 ( 48.0)                    | 93                  | ( 6.4)               | 6            |                     |                           | 54.4                  | 129                                                    | 39           | 54                    |                       |              |
| 45             | 342                  | 1613        | 86                  | 4.5                         | 50.1             | 1.9 + 2.8 ( 66.9)                    | 112                 | ( 8.6)               | 8            | +                   |                           | 75.4                  | 129                                                    | 39           | 54                    |                       |              |
| 46             | 1162                 | 4839        | 33                  | 18.5                        | 4.6              | 1.1 + 0.2 ( 18.6)                    | 31                  | ( 7.6)               | 8            |                     |                           | 26.2                  | 130                                                    | 39           | 20                    |                       |              |
| 47             | 10                   | 10000       | 1                   | 4.5                         | 27.4             | 0.1 + 0.0 ( 1.1)                     | 89                  | ( 0.0)               | 0            |                     |                           | 1.1                   | 130                                                    | 26           | 33                    |                       |              |
| 48             | 153                  | 1806        | 20                  | 6.5                         | 3.8              | 0.0 + 0.1 ( 2.0)                     | 5                   | ( 0.2)               | 0            |                     |                           | 2.2                   | 131                                                    | 37           | 63                    |                       |              |
| 50             | 356                  | 1922        | 45                  | 6.5                         | 4.9              | 0.0 + 0.4 ( 6.2)                     | 7                   | ( 0.5)               | 0            |                     |                           | 6.7                   | 131                                                    | 37           | 63                    |                       |              |
| 52             | 200                  | 1886S       | 50                  | 6.5                         | 5.5              | 0.0 + 0.3 ( 3.9)                     | 8                   | ( 0.3)               | 4            |                     |                           | 4.2                   | 131                                                    | 37           | 63                    |                       |              |
| 53             | 195                  | 52L         | 50                  | 8.5                         | 18.3             | 0.7 + 0.3 ( 13.7)                    | 96                  | ( 2.1)               | 4            |                     |                           | 15.8                  | 131                                                    | 37           | 63                    |                       |              |
| 54             | 1829                 | 6000S       | 35                  | 18.5                        | 1.0              | 0.0 + 0.2 ( 3.4)                     | 1                   | ( 0.3)               | 0            |                     |                           | 3.6                   |                                                        |              |                       |                       |              |
| 55             | 654                  | 1855        | 76                  | 4.5                         | 23.8             | 2.6 + 1.6 ( 60.2)                    | 88                  | ( 9.9)               | 11           | +                   |                           | 70.0                  | 131                                                    | 3            | 32                    |                       |              |
| 56             | 298                  | 54L         | 35                  | 18.5                        | 1.0              | 0.0 + 0.0 ( 0.5)                     | 1                   | ( 0.0)               | 0            |                     |                           | 0.6                   |                                                        |              |                       |                       |              |
| 57             | 654                  | 1800        | 79                  | 4.5                         | 25.3             | 2.7 + 1.8 ( 63.9)                    | 91                  | ( 10.2)              | 12           | +                   |                           | 74.1                  | 131                                                    | 3            | 32                    |                       |              |
| 58             | 810                  | 31L         | 35                  | 10.7                        | 2.6              | 0.3 + 0.2 ( 6.7)                     | 20                  | ( 3.1)               | 5            |                     |                           | 9.7                   | 128                                                    | 23           | 4                     |                       |              |
| 59             | 10                   | 10000       | 1                   | 4.5                         | 27.4             | 0.1 + 0.0 ( 1.1)                     | 89                  | ( 0.0)               | 0            |                     |                           | 1.1                   | 128                                                    | 10           | 17                    |                       |              |
| 60             | 10                   | 10000       | 1                   | 4.5                         | 27.4             | 0.1 + 0.0 ( 1.1)                     | 89                  | ( 0.0)               | 0            |                     |                           | 1.1                   | 132                                                    | 27           | 34                    |                       |              |
| 61             | 10                   | 10000       | 1                   | 4.5                         | 27.4             | 0.1 + 0.0 ( 1.1)                     | 89                  | ( 0.0)               | 0            |                     |                           | 1.1                   | 130                                                    | 26           | 33                    |                       |              |
| 62             | 195                  | 42L         | 68                  | 5.5                         | 4.6              | 0.0 + 0.2 ( 3.1)                     | 19                  | ( 0.9)               | 9            |                     |                           | 4.0                   | 132                                                    | 39           | 21                    |                       |              |
| 63             | 1162                 | 3600        | 32                  | 1.5                         | 1.5              | 0.1 + 0.2 ( 4.6)                     | 11                  | ( 2.2)               | 8            | +                   |                           | 6.8                   |                                                        |              |                       |                       |              |
| 64             | 356                  | 1613        | 90                  | 4.5                         | 57.7             | 2.0 + 3.6 ( 80.3)                    | 124                 | ( 9.9)               | 10           | +                   |                           | 99.2                  | 129                                                    | 39           | 54                    |                       |              |
| 65             | 153                  | 1613        | 39                  | 4.5                         | 26.3             | 0.8 + 0.3 ( 15.6)                    | 67                  | ( 2.3)               | 2            |                     |                           | 17.9                  | 129                                                    | 39           | 54                    |                       |              |
| 66             | 654                  | 1969        | 72                  | 4.5                         | 21.6             | 2.6 + 1.3 ( 54.5)                    | 84                  | ( 9.3)               | 11           | +                   |                           | 63.8                  | 131                                                    | 3            | 32                    |                       |              |
| 67             | 654                  | 1875        | 76                  | 4.5                         | 23.4             | 2.6 + 1.5 ( 59.0)                    | 88                  | ( 9.8)               | 11           | +                   |                           | 68.8                  | 131                                                    | 3            | 32                    |                       |              |
| 68             | 2616                 | 3600        | 73                  | 18.5                        | 2.3              | 0.0 + 1.3 ( 18.8)                    | 3                   | ( 1.5)               | 1            |                     |                           | 20.4                  |                                                        |              |                       |                       |              |
| 1261           | 10                   | 1262L       | 82                  | 7.5                         | 23.9             | 0.0 + 0.0 ( 0.9)                     | 107                 | ( 0.1)               | 6            |                     |                           | 1.0                   | 126                                                    | 6            | 34                    |                       |              |
| 1262           | 691                  | 1905S       | 82                  | 5.5                         | 14.0             | 0.4 + 2.2 ( 36.9)                    | 24                  | ( 3.5)               | 6            |                     |                           | 40.4                  | 126                                                    | 6            | 34                    |                       |              |
| 1263           | 40                   | 1264L       | 79                  | 7.5                         | 23.7             | 0.2 + 0.1 ( 3.7)                     | 108                 | ( 0.5)               | 5            |                     |                           | 4.1                   | 126                                                    | 6            | 34                    |                       |              |
| 1264           | 679                  | 2038S       | 79                  | 5.5                         | 11.6             | 0.4 + 1.7 ( 29.8)                    | 21                  | ( 3.0)               | 5            |                     |                           | 32.8                  | 126                                                    | 6            | 34                    |                       |              |

65 SECOND CYCLE 65 STEPS

| LINK<br>NUMBER | FLOW<br>INTO<br>LINK | SAT<br>FLOW | DEGREE<br>OF<br>SAT | MEAN TIMES<br>PER<br>CRUISE | -----DELAY-----             |                    |        |        | ---STOPS---  |       |         | ---QUEUE---  |       | PERFORMANCE<br>INDEX | EXIT<br>NODE | GREEN<br>START | GREEN<br>END |       |        |        |
|----------------|----------------------|-------------|---------------------|-----------------------------|-----------------------------|--------------------|--------|--------|--------------|-------|---------|--------------|-------|----------------------|--------------|----------------|--------------|-------|--------|--------|
|                |                      |             |                     |                             | UNIFORM                     | RANDOM+<br>OVERSAT | COST   | STOPS  | MEAN<br>COST | MAX.  | AVERAGE | WEIGHTED SUM |       |                      |              |                |              |       |        |        |
|                |                      |             |                     |                             |                             |                    |        |        |              |       |         |              | DELAY |                      |              |                |              | STOPS | EXCESS | VALUES |
|                |                      |             |                     |                             |                             |                    |        |        |              |       |         |              |       |                      |              |                |              |       |        |        |
| (PCU/H)        | (PCU/H)              | (%)         | (SEC)               | (SEC)                       | (U+R+O=MEAN Q)<br>(PCU-H/H) | (\$/H)             | \$/PCU | (%)    | (\$/H)       | (PCU) | (PCU)   | (PCU)        | (PCU) | (VALUES)             | 1ST<br>END   | 2ND<br>END     | (SECONDS)    |       |        |        |
| 1266           | 114                  | 1267L       | 67                  | 7.5                         | 21.3                        | 0.5 + 0.2 ( 9.3)   | 105    | ( 1.3) | 6            |       |         | 10.6         | 126   | 6                    | 34           |                |              |       |        |        |
| 1267           | 490                  | 2019S       | 67                  | 5.5                         | 8.8                         | 0.3 + 0.8 ( 15.9)  | 27     | ( 2.8) | 6            |       |         | 18.7         | 126   | 6                    | 34           |                |              |       |        |        |
| 1269           | 477                  | 1824        | 59                  | 5.5                         | 7.6                         | 0.2 + 0.7 ( 13.4)  | 13     | ( 1.3) | 1            |       |         | 14.8         | 126   | 6                    | 34           |                |              |       |        |        |
| 1271           | 159                  | 1272L       | 41                  | 8.5                         | 17.7                        | 0.6 + 0.2 ( 10.8)  | 97     | ( 1.9) | 4            |       |         | 12.7         | 127   | 36                   | 62           |                |              |       |        |        |
| 1272           | 163                  | 1876S       | 41                  | 6.5                         | 12.2                        | 0.4 + 0.2 ( 7.6)   | 29     | ( 1.1) | 4            |       |         | 8.6          | 127   | 36                   | 62           |                |              |       |        |        |
| 1273           | 159                  | 1274L       | 36                  | 8.5                         | 16.7                        | 0.6 + 0.1 ( 10.1)  | 94     | ( 1.9) | 4            |       |         | 12.0         | 127   | 36                   | 62           |                |              |       |        |        |
| 1274           | 149                  | 2046S       | 36                  | 6.5                         | 11.4                        | 0.3 + 0.1 ( 6.4)   | 28     | ( 0.9) | 4            |       |         | 7.3          | 127   | 36                   | 62           |                |              |       |        |        |
| 1275           | 159                  | 1276L       | 46                  | 8.5                         | 18.0                        | 0.6 + 0.2 ( 11.0)  | 97     | ( 1.9) | 4            |       |         | 12.9         | 127   | 36                   | 62           |                |              |       |        |        |
| 1276           | 215                  | 1973S       | 46                  | 6.5                         | 12.2                        | 0.5 + 0.2 ( 9.9)   | 29     | ( 1.4) | 4            |       |         | 11.3         | 127   | 36                   | 62           |                |              |       |        |        |
| 1278           | 91                   | 1770        | 12                  | 6.5                         | 10.9                        | 0.2 + 0.1 ( 3.7)   | 27     | ( 0.5) | 0            |       |         | 4.3          | 127   | 36                   | 62           |                |              |       |        |        |



|       |      |       |    |      |      |           |         |     |         |    |       |     |    |    |
|-------|------|-------|----|------|------|-----------|---------|-----|---------|----|-------|-----|----|----|
| 1461  | 51   | 1860  | 12 | 18.5 | 25.1 | 0.3 + 0.1 | ( 4.9)  | 81  | ( 0.9)  | 1  | 5.8   | 146 | 46 | 60 |
| 1462  | 82   | 1774  | 18 | 13.5 | 27.9 | 0.5 + 0.1 | ( 8.9)  | 91  | ( 1.3)  | 1  | 10.2  | 146 | 10 | 60 |
| 1463  | 936  | 1833  | 58 | 13.5 | 6.3  | 0.8 + 0.7 | ( 21.4) | 41  | ( 6.6)  | 8  | 28.0  | 146 | 10 | 1  |
| 1464  | 20   | 1833  | 9  | 18.5 | 34.7 | 0.1 + 0.0 | ( 2.7)  | 96  | ( 0.4)  | 0  | 3.1   | 146 | 3  | 10 |
| 1465  | 993  | 1926  | 91 | 18.5 | 29.0 | 3.4 + 4.4 | (111.6) | 102 | ( 21.4) | 20 | 133.0 | 146 | 10 | 46 |
| 1466  | 38   | 715   | 5  | 2.5  | 3.2  | 0.0 + 0.0 | ( 0.4)  | 0   | ( 0.0)  | 0  | 0.4   |     |    |    |
| 1467  | 103  | 2000  | 5  | 18.5 | 1.5  | 0.0 + 0.0 | ( 0.4)  | 1   | ( 0.0)  | 0  | 0.4   |     |    |    |
| 1468  | 19   | 2000  | 1  | 18.5 | 1.4  | 0.0 + 0.0 | ( 0.1)  | 1   | ( 0.0)  | 0  | 0.1   |     |    |    |
| 1469  | 937  | 2000  | 47 | 18.5 | 2.2  | 0.0 + 0.4 | ( 6.3)  | 3   | ( 0.5)  | 0  | 6.8   |     |    |    |
| 12601 | 1010 | 1800  | 56 | 18.3 | 2.8  | 0.0 + 0.6 | ( 9.1)  | 4   | ( 0.9)  | 3  | 10.0  |     |    |    |
| 12602 | 163  | 29L   | 60 | 18.5 | 2.1  | 0.0 + 0.1 | ( 1.0)  | 15  | ( 0.5)  | 31 | 1.5   |     |    |    |
| 12603 | 10   | 10000 | 0  | 4.5  | 11.7 | 0.0 + 0.0 | ( 0.4)  | 57  | ( 0.0)  | 0  | 0.4   | 126 | 6  | 33 |
| 12604 | 10   | 10000 | 0  | 4.5  | 11.7 | 0.0 + 0.0 | ( 0.4)  | 57  | ( 0.0)  | 0  | 0.4   | 126 | 6  | 33 |
| 12605 | 364  | 1522  | 58 | 2.5  | 12.2 | 0.5 + 0.7 | ( 16.8) | 49  | ( 3.1)  | 4  | 19.9  | 126 | 39 | 0  |
| 12606 | 91   | 1640  | 13 | 2.5  | 7.5  | 0.1 + 0.1 | ( 2.5)  | 31  | ( 0.5)  | 1  | 3.0   | 126 | 39 | 0  |
| 12607 | 555  | 1757  | 76 | 2.5  | 16.6 | 0.9 + 1.6 | ( 35.3) | 66  | ( 6.3)  | 8  | 41.6  | 126 | 39 | 0  |
| 12701 | 706  | 1802  | 85 | 2.5  | 29.7 | 3.0 + 2.7 | ( 81.4) | 100 | ( 16.6) | 14 | 98.0  | 127 | 2  | 31 |
| 12702 | 728  | 1775  | 89 | 2.5  | 34.7 | 3.2 + 3.7 | ( 98.3) | 109 | ( 18.6) | 16 | 116.9 | 127 | 2  | 31 |
| 12703 | 2206 | 3600  | 61 | 18.5 | 1.8  | 0.0 + 0.8 | ( 11.2) | 2   | ( 0.9)  | 1  | 12.1  |     |    |    |
| 12704 | 772  | 1907  | 88 | 2.5  | 32.0 | 3.4 + 3.4 | ( 96.0) | 105 | ( 19.0) | 16 | 114.9 | 127 | 2  | 31 |

| TOTAL<br>DISTANCE<br>TRAVELLED | TOTAL<br>TIME<br>SPENT | MEAN<br>JOURNEY<br>SPEED | TOTAL<br>UNIFORM<br>DELAY | TOTAL<br>RANDOM+<br>OVERSAT<br>DELAY | TOTAL<br>COST<br>OF<br>STOPS | TOTAL<br>COST<br>OF<br>STOPS | PENALTY<br>FOR<br>EXCESS<br>QUEUES | TOTAL<br>PERFORMANCE<br>INDEX |
|--------------------------------|------------------------|--------------------------|---------------------------|--------------------------------------|------------------------------|------------------------------|------------------------------------|-------------------------------|
| (PCU-KM/H)                     | (PCU-H/H)              | (KM/H)                   | (PCU-H/H)                 | (PCU-H/H)                            | (\$/H)                       | (\$/H)                       | (\$/H)                             | (\$/H)                        |

3910.3      191.7      20.4      43.3      47.7      (1292.5) + ( 233.8) + ( 0.0) = 1526.2      TOTALS

ROUTE

| CRUISE<br>LITRES PER HOUR | DELAY<br>LITRES PER HOUR | STOPS<br>LITRES PER HOUR | TOTALS<br>LITRES PER HOUR |
|---------------------------|--------------------------|--------------------------|---------------------------|
|---------------------------|--------------------------|--------------------------|---------------------------|

FUEL CONSUMPTION PREDICTIONS      218.0      +      104.7      +      106.5      =      429.2

NO. OF ENTRIES TO SUBPT = 1  
NO. OF LINKS RECALCULATED= 70

PROGRAM TRANSYT FINISHED

# <Enter Report 1 Title Here>

## PRT File

## PM Base B24+Com+H4&5

1 T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 3 (March 2004)  
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Old Wokingham road Fax: +44 (0) 1344 770864  
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THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS  
IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:- "BULLS BRIDGE RABOUT\_PM\_MC\_2.DAT" at 18:42 on 06/08/12

TRANSYT 12.0

### PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES = 8  
NUMBER OF LINKS = 70  
NUMBER OF OPTIMISED NODES = 8  
MAXIMUM NUMBER OF GRAPHIC PLOTS = 8  
NUMBER OF STEPS IN CYCLE = 66  
MAXIMUM NUMBER OF SHARED STOPLINES = 2  
MAXIMUM NUMBER OF TIMING POINTS = 3  
MAXIMUM LINKS AT ANY NODE = 12

CORE REQUESTED = 14914 WORDS  
CORE AVAILABLE = 72000 WORDS

### DATA INPUT :-

CARD NO. CARD TYPE  
( 1)= TITLE:-  
CARD NO. CARD TYPE CYCLE TIME NO. OF STEPS PERIOD DISPLACEMENTS SETTINGS CYCLE SCALE SCALE CARD32 0=NONE COPIES CLIMB VALUE VALUE  
(SEC) PER 1-1200 START END 0=NO 1=EQUAL 10-200 50-200 0=TIMES 1=0/SET FINAL OUTPUT P PER P PER  
CYCLE MINS. (SEC) (SEC) 1=YES CYCLE % % 1=SPEEDS 2=FULL OUTPUT 1=FULL PCU-H 100  
2)= 1 66 66 60 2 3 0 1 100 100 0 1 0 0 1420 260 100  
CARD NO. CARD TYPE  
3)= 2 146 126 127 128 129 130 131 132 0 0 0 0 0 0 0

LINKS HAVING SHARED STOPLINES  
CARD NO. CARD TYPE FIRST SET..... SECOND SET..... THIRD SET.....  
4)= 7 29 12602 0 0 0 0 0 0 0 0 0 0 0 0 0  
5)= 7 31 58 0 0 0 0 0 0 0 0 0 0 0 0 0  
6)= 7 36 37 0 0 0 0 0 0 0 0 0 0 0 0 0  
7)= 7 38 39 0 0 0 0 0 0 0 0 0 0 0 0 0  
8)= 7 40 41 0 0 0 0 0 0 0 0 0 0 0 0 0  
9)= 7 42 62 0 0 0 0 0 0 0 0 0 0 0 0 0  
10)= 7 52 53 0 0 0 0 0 0 0 0 0 0 0 0 0  
11)= 7 54 56 0 0 0 0 0 0 0 0 0 0 0 0 0  
12)= 7 1262 1261 0 0 0 0 0 0 0 0 0 0 0 0 0  
13)= 7 1264 1263 0 0 0 0 0 0 0 0 0 0 0 0 0  
14)= 7 1267 1266 0 0 0 0 0 0 0 0 0 0 0 0 0  
15)= 7 1272 1271 0 0 0 0 0 0 0 0 0 0 0 0 0  
16)= 7 1274 1273 0 0 0 0 0 0 0 0 0 0 0 0 0  
17)= 7 1276 1275 0 0 0 0 0 0 0 0 0 0 0 0 0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
18)= 10 126 7 7  
19)= 10 127 7 7  
20)= 10 128 7 7  
21)= 10 129 7 7  
22)= 10 130 7 7  
23)= 10 131 7 7  
24)= 10 132 7 7  
25)= 10 146 7 7 7

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
26)= 11 126 6 6  
27)= 11 127 5 5  
28)= 11 128 6 6  
29)= 11 129 5 5  
30)= 11 130 6 6  
31)= 11 131 5 5  
32)= 11 132 5 6  
33)= 11 146 7 8 8

NODE CARDS: STAGE CHANGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. Sgl/Db1 Cycled S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
34)= 12 126 1 32 8  
35)= 12 127 1 35 6  
36)= 12 128 1 55 42  
37)= 12 129 1 10 35  
38)= 12 130 1 4 57

| CARD NO. | CARD TYPE | LINK NO. | PRIORITY LINKS |           | LINK1 LINK2 |         | LINK1 ONLY |   | LINK1 GIVEWAY |   | COEFFS. |   | LINK LENGTH | STOP WT.X100 | MAX FLOW | DELAY WT.X100 | DISPSN X100 |
|----------|-----------|----------|----------------|-----------|-------------|---------|------------|---|---------------|---|---------|---|-------------|--------------|----------|---------------|-------------|
|          |           |          | LINK1 NO.      | LINK2 NO. | % FLOW      | A1 X100 | A2 X100    |   |               |   |         |   |             |              |          |               |             |
| 42)=     | 30        | 1462     | 1465           | 0         | 0           | 22      | 0          | 0 | 0             | 0 | 0       | 0 | 130         | 0            | 1000     | 0             | 0           |
| 43)=     | 30        | 1466     | 1462           | 0         | 0           | 50      | 0          | 0 | 0             | 0 | 0       | 0 | 31          | 0            | 715      | 0             | 0           |

[illegible][illegible]

[illegible]

| CARD NO. | CARD TYPE | ROUTE NUMBER | ROUTE DESCRIPTION |
|----------|-----------|--------------|-------------------|
| 184)=    | 41        | 1            | <Route Name>      |
| 185)=    | 41        | 2            | <Route Name>      |
| 186)=    | 41        | 3            | <Route Name>      |
| 187)=    | 41        | 4            | <Route Name>      |

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*****END OF SUBROUTINE TINPUT*****
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66 SECOND CYCLE 66 STEPS

| NO     | NUMBER | STAGE | STAGE | STAGE | STAGE | STAGE | STAGE | STAGE | STAGE | STAGE | STAGE |
|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| NO     | OF     | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
| STAGES |        |       |       |       |       |       |       |       |       |       |       |
| 126    | 2      | 32    | 8     |       |       |       |       |       |       |       |       |
| 127    | 2      | 35    | 6     |       |       |       |       |       |       |       |       |
| 128    | 2      | 55    | 42    |       |       |       |       |       |       |       |       |
| 129    | 2      | 10    | 35    |       |       |       |       |       |       |       |       |
| 130    | 2      | 4     | 57    |       |       |       |       |       |       |       |       |
| 131    | 2      | 35    | 5     |       |       |       |       |       |       |       |       |
| 132    | 2      | 57    | 44    |       |       |       |       |       |       |       |       |
| 146    | 3      | 49    | 18    | 34    |       |       |       |       |       |       |       |

| LINK<br>NUMBER | FLOW<br>INTO<br>LINK | SAT<br>FLOW<br>(PCU/H) | DEGREE<br>OF<br>SAT | MEAN<br>CRUISE<br>(SEC) | TIMES<br>PER<br>CRUISE<br>(SEC) | -----DELAY-----                  |                                             |                         |                      | -----STOPS-----                                       |                                       | -----QUEUE-----                                  |              | PERFORMANCE |    | EXIT<br>NODE | GREEN TIMES |  |  |
|----------------|----------------------|------------------------|---------------------|-------------------------|---------------------------------|----------------------------------|---------------------------------------------|-------------------------|----------------------|-------------------------------------------------------|---------------------------------------|--------------------------------------------------|--------------|-------------|----|--------------|-------------|--|--|
|                |                      |                        |                     |                         |                                 | UNIFORM<br>(U+R+O=MEAN<br>PCU/H) | RANDOM+<br>OVERSAT<br>(Q+R+O=MEAN<br>PCU/H) | COST<br>DELAY<br>(\$/H) | STOPS<br>/PCU<br>(%) | MEAN<br>COST<br>MAX.<br>AVERAGE<br>EXCESS OF<br>(PCU) | MEAN<br>AVERAGE<br>EXCESS OF<br>(PCU) | INDEX<br>WEIGHTED SUM<br>OF ( ) VALUES<br>(\$/H) | START<br>1ST | END<br>2ND  |    |              |             |  |  |
|                |                      |                        |                     |                         |                                 |                                  |                                             |                         |                      |                                                       |                                       |                                                  |              |             |    |              |             |  |  |
|                |                      |                        |                     |                         |                                 |                                  |                                             |                         |                      |                                                       |                                       |                                                  |              |             |    |              |             |  |  |
| 29             | 2420<                | 4000S                  | 82                  | 18.5                    | 5.7                             | 1.8                              | + 1.7                                       | ( 49.6)                 | 54                   | ( 28.0)                                               | 46                                    |                                                  | 77.6         |             |    |              |             |  |  |
| 31             | 483                  | 5591S                  | 35                  | 9.5                     | 2.4                             | 0.2                              | + 0.1                                       | ( 3.6)                  | 9                    | ( 0.8)                                                | 5                                     |                                                  | 4.4          | 128         | 61 | 42           |             |  |  |
| 32             | 10                   | 10000                  | 1                   | 4.5                     | 27.9                            | 0.1                              | + 0.0                                       | ( 1.1)                  | 89                   | ( 0.0)                                                | 0                                     |                                                  | 1.1          | 128         | 48 | 55           |             |  |  |
| 33             | 1410                 | 6000                   | 23                  | 18.5                    | 0.9                             | 0.0                              | + 0.2                                       | ( 2.2)                  | 1                    | ( 0.2)                                                | 0                                     |                                                  | 2.4          |             |    |              |             |  |  |
| 34             | 312                  | 1806                   | 31                  | 5.5                     | 3.7                             | 0.1                              | + 0.2                                       | ( 4.0)                  | 6                    | ( 0.4)                                                | 0                                     |                                                  | 4.4          | 129         | 40 | 10           |             |  |  |
| 36             | 517                  | 2047S                  | 57                  | 5.5                     | 4.8                             | 0.1                              | + 0.5                                       | ( 8.7)                  | 8                    | ( 0.8)                                                | 3                                     |                                                  | 9.6          | 129         | 40 | 10           |             |  |  |
| 37             | 135                  | 361                    | 57                  | 7.5                     | 14.3                            | 0.4                              | + 0.1                                       | ( 7.4)                  | 92                   | ( 1.3)                                                | 0                                     |                                                  | 8.6          | 129         | 40 | 10           |             |  |  |
| 38             | 601                  | 2028S                  | 64                  | 5.5                     | 5.5                             | 0.5                              | + 0.7                                       | ( 11.8)                 | 3                    |                                                       | 3                                     |                                                  | 12.129       |             | 40 | 10           |             |  |  |
| 39             | 123                  | 38L                    | 64                  | 7.5                     | 14.1                            | 0.3                              | + 0.1                                       | ( 6.6)                  | 89                   | ( 1.1)                                                | 3                                     |                                                  | 7.7          | 129         | 40 | 10           |             |  |  |
| 40             | 544                  | 1867S                  | 63                  | 5.5                     | 5.7                             | 0.1                              | + 0.7                                       | ( 11.3)                 | 9                    | ( 1.0)                                                | 3                                     |                                                  | 12.3         | 129         | 40 | 10           |             |  |  |
| 41             | 115                  | 40L                    | 63                  | 7.5                     | 13.5                            | 0.3                              | + 0.1                                       | ( 5.9)                  | 85                   | ( 1.0)                                                | 3                                     |                                                  | 6.9          | 129         | 40 | 10           |             |  |  |
| 42             | 824                  | 2028S                  | 75                  | 5.5                     | 8.3                             | 0.7                              | + 1.1                                       | ( 25.2)                 | 54                   | ( 10.5)                                               | 13                                    | +                                                | 35.7         | 132         | 62 | 44           |             |  |  |
| 43             | 10                   | 10000                  | 1                   | 4.5                     | 27.9                            | 0.1                              | + 0.0                                       | ( 1.1)                  | 89                   | ( 0.0)                                                | 0                                     |                                                  | 1.1          | 132         | 50 | 57           |             |  |  |
| 44             | 443                  | 1612                   | 86                  | 4.5                     | 41.6                            | 2.1                              | + 2.9                                       | ( 71.8)                 | 113                  | ( 11.2)                                               | 10                                    | +                                                | 82.9         | 129         | 15 | 35           |             |  |  |
| 45             | 420                  | 1613                   | 82                  | 4.5                     | 35.6                            | 2.0                              | + 2.1                                       | ( 58.2)                 | 103                  | ( 9.7)                                                | 9                                     | +                                                | 67.8         | 129         | 15 | 35           |             |  |  |
| 46             | 1478                 | 4839                   | 42                  | 18.5                    | 4.9                             | 1.5                              | + 0.4                                       | ( 25.7)                 | 33                   | ( 10.5)                                               | 11                                    |                                                  | 36.2         | 130         | 10 | 57           |             |  |  |
| 47             | 10                   | 10000                  | 1                   | 4.5                     | 27.9                            | 0.1                              | + 0.0                                       | ( 1.1)                  | 89                   | ( 0.0)                                                | 0                                     |                                                  | 1.1          | 130         | 63 | 4            |             |  |  |
| 48             | 272                  | 1806                   | 38                  | 6.5                     | 8.8                             | 0.3                              | + 0.3                                       | ( 8.9)                  | 18                   | ( 0.9)                                                | 1                                     |                                                  | 9.9          | 131         | 10 | 35           |             |  |  |
| 50             | 343                  | 1922                   | 45                  | 6.5                     | 9.4                             | 0.4                              | + 0.4                                       | ( 12.0)                 | 79                   | ( 1.2)                                                | 1                                     |                                                  | 13.3         | 131         | 10 | 35           |             |  |  |
| 52             | 390                  | 1886S                  | 94                  | 6.5                     | 40.4                            | 0.8                              | + 3.6                                       | ( 61.4)                 | 76                   | ( 5.6)                                                | 16                                    | +                                                | 67.0         | 131         | 10 | 35           |             |  |  |
| 53             | 311                  | 52L                    | 94                  | 8.5                     | 49.2                            | 1.4                              | + 2.8                                       | ( 59.8)                 | 139                  | ( 4.7)                                                | 16                                    | +                                                | 64.5         | 131         | 10 | 35           |             |  |  |
| 54             | 2106                 | 6000S                  | 42                  | 18.5                    | 1.0                             | 0.0                              | + 0.3                                       | ( 4.3)                  | 0                    | ( 0.3)                                                | 0                                     |                                                  | 4.6          |             |    |              |             |  |  |
| 55             | 875                  | 1855                   | 97                  | 4.5                     | 57.8                            | 4.0                              | + 9.9                                       | ( 197.8)                | 141                  | ( 21.1)                                               | 25                                    | +                                                | 218.9        | 131         | 40 | 5            |             |  |  |
| 56             | 403                  | 54L                    | 42                  | 18.5                    | 1.0                             | 0.0                              | + 0.1                                       | ( 0.8)                  | 1                    | ( 0.1)                                                | 0                                     |                                                  | 0.9          |             |    |              |             |  |  |
| 57             | 895                  | 1800                   | 103                 | 4.5                     | 105.4                           | 4.7                              | + 21.4                                      | ( 370.2)                | 188                  | ( 28.6)                                               | 38                                    | +                                                | 398.8        | 131         | 40 | 5            |             |  |  |
| 58             | 927                  | 31L                    | 35                  | 10.                     |                                 |                                  |                                             |                         |                      |                                                       |                                       |                                                  |              |             |    |              |             |  |  |

|      |      |       |    |     |      |                   |           |   |      |     |    |   |
|------|------|-------|----|-----|------|-------------------|-----------|---|------|-----|----|---|
| 1262 | 665  | 1905S | 71 | 5.5 | 7.0  | 0.2 + 1.0 ( 17.0) | 12 ( 1.6) | 4 | 18.7 | 126 | 38 | 9 |
| 1263 | 152  | 1264L | 86 | 7.5 | 19.3 | 0.4 + 0.4 ( 11.3) | 96 ( 1.6) | 6 | 12.9 | 126 | 38 | 9 |
| 1264 | 854< | 2038S | 86 | 5.5 | 12.0 | 0.3 + 2.5 ( 38.8) | 19 ( 3.5) | 6 | 42.4 | 126 | 38 | 9 |

66 SECOND CYCLE 66 STEPS

| LINK NUMBER | FLOW INTO LINK | SAT OF SAT | DEGREE OF CRUISE | MEAN TIMES PER PCU | PER PCU   | UNIFORM OVERSAT     | RANDOM+ OF  | COST   | STOPS OF | MEAN COST | STOPS OF | MAX. AVERAGE | QUEUE EXCESS | PERFORMANCE INDEX | EXIT NODE | GREEN TIMES START | GREEN TIMES END |
|-------------|----------------|------------|------------------|--------------------|-----------|---------------------|-------------|--------|----------|-----------|----------|--------------|--------------|-------------------|-----------|-------------------|-----------------|
| (PCU/H)     | (PCU/H)        | (%)        | (SEC)            | (SEC)              | (PCU-H/H) | (\$/H)              | (%)         | (\$/H) | (PCU)    | (PCU)     | (PCU)    | (PCU)        | (PCU)        | (PCU)             | (VALUES)  | 1ST               | 2ND             |
| 1266        | 142            | 1267L      | 90               | 7.5                | 22.6      | 0.3 + 0.6 ( 12.4)   | 99 ( 1.5)   | 7      | 13.9     | 126       | 38       | 9            |              |                   |           |                   |                 |
| 1267        | 901            | 2019S      | 90               | 5.5                | 15.3      | 0.2 + 3.5 ( 52.6)   | 23 ( 4.4)   | 7      | 57.0     | 126       | 38       | 9            |              |                   |           |                   |                 |
| 1269        | 594            | 1824       | 57               | 5.5                | 5.0       | 0.1 + 0.6 ( 10.7)   | 10 ( 1.2)   | 4      | 11.9     | 126       | 38       | 9            |              |                   |           |                   |                 |
| 1271        | 197            | 1272L      | 36               | 8.5                | 20.9      | 0.9 + 0.2 ( 15.9)   | 100 ( 2.5)  | 4      | 18.3     | 127       | 11       | 35           |              |                   |           |                   |                 |
| 1272        | 62             | 1876S      | 36               | 6.5                | 12.1      | 0.1 + 0.1 ( 2.8)    | 26 ( 0.4)   | 4      | 3.2      | 127       | 11       | 35           |              |                   |           |                   |                 |
| 1273        | 197            | 1274L      | 53               | 8.5                | 21.9      | 0.9 + 0.3 ( 16.6)   | 101 ( 2.5)  | 5      | 19.1     | 127       | 11       | 35           |              |                   |           |                   |                 |
| 1274        | 210            | 2046S      | 53               | 6.5                | 10.2      | 0.3 + 0.3 ( 8.0)    | 19 ( 0.9)   | 5      | 8.9      | 127       | 11       | 35           |              |                   |           |                   |                 |
| 1275        | 200            | 1276L      | 51               | 8.5                | 22.0      | 0.9 + 0.3 ( 17.0)   | 101 ( 2.5)  | 5      | 19.5     | 127       | 11       | 35           |              |                   |           |                   |                 |
| 1276        | 185            | 1973S      | 51               | 6.5                | 10.2      | 0.2 + 0.3 ( 7.1)    | 20 ( 0.8)   | 5      | 7.9      | 127       | 11       | 35           |              |                   |           |                   |                 |
| 1278        | 199            | 1770       | 30               | 6.5                | 7.4       | 0.2 + 0.2 ( 5.4)    | 14 ( 0.6)   | 1      | 6.1      | 127       | 11       | 35           |              |                   |           |                   |                 |
| 1461        | 110            | 1800       | 23               | 18.5               | 24.7      | 0.6 + 0.1 ( 10.5)   | 81 ( 1.9)   | 2      | 12.4     | 146       | 18       | 34           |              |                   |           |                   |                 |
| 1462        | 26             | 1774       | 5                | 13.5               | 13.4      | 0.1 + 0.0 ( 1.3)    | 72 ( 0.3)   | 0      | 1.7      | 146       | 49       | 36           |              |                   |           |                   |                 |
| 1463        | 1112           | 1833       | 67               | 13.5               | 6.5       | 0.8 + 1.0 ( 26.1)   | 40 ( 7.5)   | 9      | 33.6     | 146       | 49       | 42           |              |                   |           |                   |                 |
| 1464        | 20             | 1833       | 9                | 18.5               | 35.3      | 0.1 + 0.0 ( 2.7)    | 97 ( 0.4)   | 0      | 3.2      | 146       | 42       | 49           |              |                   |           |                   |                 |
| 1465        | 1011           | 1926       | 89               | 18.5               | 25.5      | 3.3 + 3.8 ( 99.7)   | 95 ( 20.4)  | 19     | 120.0    | 146       | 49       | 21           |              |                   |           |                   |                 |
| 1466        | 10             | 715        | 1                | 2.5                | 3.1       | 0.0 + 0.0 ( 0.1)    | 0 ( 0.0)    | 0      | 0.1      |           |          |              |              |                   |           |                   |                 |
| 1467        | 36             | 2000       | 2                | 18.5               | 1.4       | 0.0 + 0.0 ( 0.1)    | 1 ( 0.0)    | 0      | 0.1      |           |          |              |              |                   |           |                   |                 |
| 1468        | 19             | 2000       | 1                | 18.5               | 1.4       | 0.0 + 0.0 ( 0.1)    | 1 ( 0.0)    | 0      | 0.1      |           |          |              |              |                   |           |                   |                 |
| 1469        | 1113           | 2000       | 56               | 18.5               | 2.5       | 0.0 + 0.6 ( 8.9)    | 3 ( 0.7)    | 1      | 9.6      |           |          |              |              |                   |           |                   |                 |
| 12601       | 1105           | 1800       | 61               | 15.7               | 3.2       | 0.0 + 0.8 ( 11.7)   | 8 ( 1.4)    | 9      | 13.1     |           |          |              |              |                   |           |                   |                 |
| 12602       | 854            | 29L        | 82               | 18.5               | 3.3       | 0.1 + 0.6 ( 9.5)    | 13 ( 2.3)   | 46     | 11.9     |           |          |              |              |                   |           |                   |                 |
| 12603       | 10             | 10000      | 0                | 4.5                | 7.4       | 0.0 + 0.0 ( 0.3)    | 44 ( 0.0)   | 0      | 0.3      | 126       | 38       | 8            |              |                   |           |                   |                 |
| 12604       | 10             | 10000      | 0                | 4.5                | 7.4       | 0.0 + 0.0 ( 0.3)    | 44 ( 0.0)   | 0      | 0.3      | 126       | 38       | 8            |              |                   |           |                   |                 |
| 12605       | 396            | 1522       | 90               | 2.5                | 51.6      | 1.7 + 3.9 ( 79.9)   | 128 ( 8.6)  | 11     | 88.5     | 126       | 14       | 32           |              |                   |           |                   |                 |
| 12606       | 199            | 1640       | 42               | 2.5                | 19.7      | 0.7 + 0.4 ( 15.0)   | 68 ( 2.3)   | 3      | 17.3     | 126       | 14       | 32           |              |                   |           |                   |                 |
| 12607       | 510            | 1757       | 101              | 2.5                | 105.6     | 2.4 + 12.5 ( 211.4) | 185 ( 16.1) | 22     | 227.5    | 126       | 14       | 32           |              |                   |           |                   |                 |
| 12701       | 819            | 1802       | 91               | 2.5                | 35.3      | 3.4 + 4.5 ( 112.4)  | 110 ( 21.2) | 18     | 133.6    | 127       | 40       | 6            |              |                   |           |                   |                 |
| 12702       | 829            | 1775       | 93               | 2.5                | 41.4      | 3.6 + 5.9 ( 133.9)  | 119 ( 23.2) | 20     | 157.1    | 127       | 40       | 6            |              |                   |           |                   |                 |
| 12703       | 2511           | 3600       | 70               | 18.5               | 2.1       | 0.0 + 1.2 ( 16.3)   | 2 ( 1.3)    | 1      | 17.7     |           |          |              |              |                   |           |                   |                 |
| 12704       | 859            | 1907       | 90               | 2.5                | 33.0      | 3.6 + 4.2 ( 110.0)  | 107 ( 21.5) | 18     | 131.5    | 127       | 40       | 6            |              |                   |           |                   |                 |

| TOTAL DISTANCE TRAVELLED | TOTAL TIME SPENT | MEAN JOURNEY SPEED | TOTAL UNIFORM DELAY | TOTAL RANDOM+ DELAY | TOTAL COST OF       | TOTAL COST OF | PENALTY FOR EXCESS | TOTAL PERFORMANCE INDEX |
|--------------------------|------------------|--------------------|---------------------|---------------------|---------------------|---------------|--------------------|-------------------------|
| (PCU-KM/H)               | (PCU-H/H)        | (KM/H)             | (PCU-H/H)           | (PCU-H/H)           | (\$/H)              | (\$/H)        | (\$/H)             | (\$/H)                  |
| 4651.7                   | 290.2            | 16.0               | 56.4                | 114.7               | (2428.3) + ( 344.7) | + ( 0.0)      | =                  | 2773.1 TOTALS           |

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|                              | CRUISE<br>LITRES PER HOUR | DELAY<br>LITRES PER HOUR | STOPS<br>LITRES PER HOUR | TOTALS<br>LITRES PER HOUR |
|------------------------------|---------------------------|--------------------------|--------------------------|---------------------------|
| FUEL CONSUMPTION PREDICTIONS | 260.6                     | + 196.7                  | + 157.1                  | = 614.3                   |

NO. OF ENTRIES TO SUBPT = 1  
NO. OF LINKS RECALCULATED= 70

66 SECOND CYCLE 66 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9  
- (SECONDS)

|     |   |    |    |    |
|-----|---|----|----|----|
| 126 | 2 | 32 | 8  |    |
| 127 | 2 | 35 | 6  |    |
| 128 | 2 | 55 | 42 |    |
| 129 | 2 | 10 | 35 |    |
| 130 | 2 | 4  | 57 |    |
| 131 | 2 | 35 | 5  |    |
| 132 | 2 | 57 | 44 |    |
| 146 | 3 | 49 | 18 | 34 |

| TOTAL DISTANCE TRAVELLED | TOTAL TIME SPENT | MEAN JOURNEY SPEED | TOTAL UNIFORM DELAY | TOTAL RANDOM+ DELAY | TOTAL COST OF       | TOTAL COST OF | PENALTY FOR EXCESS | TOTAL PERFORMANCE INDEX |
|--------------------------|------------------|--------------------|---------------------|---------------------|---------------------|---------------|--------------------|-------------------------|
| (PCU-KM/H)               | (PCU-H/H)        | (KM/H)             | (PCU-H/H)           | (PCU-H/H)           | (\$/H)              | (\$/H)        | (\$/H)             | (\$/H)                  |
| 4651.7                   | 290.2            | 16.0               | 56.4                | 114.7               | (2428.3) + ( 344.7) | + ( 0.0)      | =                  | 2773.1 TOTALS           |

NO. OF ENTRIES TO SUBPT = 17  
NO. OF LINKS RECALCULATED= 471

66 SECOND CYCLE 66 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 26  
- (SECONDS)

|     |   |    |    |    |
|-----|---|----|----|----|
| 126 | 2 | 32 | 8  |    |
| 127 | 2 | 35 | 6  |    |
| 128 | 2 | 55 | 42 |    |
| 129 | 2 | 10 | 35 |    |
| 130 | 2 | 4  | 57 |    |
| 131 | 2 | 35 | 5  |    |
| 132 | 2 | 57 | 44 |    |
| 146 | 3 | 49 | 18 | 34 |

| TOTAL DISTANCE TRAVELLED | TOTAL TIME SPENT | MEAN JOURNEY SPEED | TOTAL UNIFORM DELAY | TOTAL RANDOM+ DELAY | TOTAL COST OF       | TOTAL COST OF | PENALTY FOR EXCESS | TOTAL PERFORMANCE INDEX |
|--------------------------|------------------|--------------------|---------------------|---------------------|---------------------|---------------|--------------------|-------------------------|
| (PCU-KM/H)               | (PCU-H/H)        | (KM/H)             | (PCU-H/H)           | (PCU-H/H)           | (\$/H)              | (\$/H)        | (\$/H)             | (\$/H)                  |
| 4651.7                   | 290.2            | 16.0               | 56.4                | 114.7               | (2428.3) + ( 344.7) | + ( 0.0)      | =                  | 2773.1 TOTALS           |

NO. OF ENTRIES TO SUBPT = 17  
NO. OF LINKS RECALCULATED= 458

66 SECOND CYCLE 66 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 26 9  
- (SECONDS)

|     |   |    |    |
|-----|---|----|----|
| 126 | 2 | 32 | 8  |
| 127 | 2 | 35 | 6  |
| 128 | 2 | 55 | 42 |
| 129 | 2 | 10 | 35 |

| LINK<br>NUMBER | FLOW<br>INTO<br>LINK | SAT<br>FLOW<br>(PCU/H) | DEGREE<br>OF<br>SAT | MEAN<br>PER<br>CRUISE<br>(SEC) | -----DELAY-----                       |                           |                            |                              | ----STOPS---- |                               |                   | -----QUEUE-----                  |             | PERFORMANCE |            | EXIT<br>NODE | GREEN<br>START | TIMES<br>END |            |
|----------------|----------------------|------------------------|---------------------|--------------------------------|---------------------------------------|---------------------------|----------------------------|------------------------------|---------------|-------------------------------|-------------------|----------------------------------|-------------|-------------|------------|--------------|----------------|--------------|------------|
|                |                      |                        |                     |                                | UNIFORM<br>OVERSAT<br>OF<br>(PCU-H/H) | RANDOM+<br>DELAY<br>(S/H) | COST<br>OF<br>STOPS<br>(%) | MEAN<br>OF<br>STOPS<br>(S/H) | COST<br>MAX.  | AVERAGE<br>EXCESS OF<br>(PCU) | WEIGHTED<br>(PCU) | INDEX.<br>SUM<br>VALUES<br>(S/H) |             |             |            |              |                |              |            |
|                |                      |                        |                     |                                |                                       |                           |                            |                              |               |                               |                   |                                  | PERFORMANCE |             | EXIT       |              |                |              |            |
|                |                      |                        |                     |                                |                                       |                           |                            |                              |               |                               |                   |                                  | 1ST<br>END  | 2ND<br>END  | 1ST<br>END |              |                |              | 2ND<br>END |
| 29             | 2420                 | 4000S                  | 82                  | 18.5                           | 5.7                                   | 1.8 + 1.7                 | ( 49.6 )                   | 54                           | ( 28.0 )      | 46                            |                   | 77.6                             |             |             |            |              |                |              |            |
| 31             | 483                  | 5591S                  | 35                  | 9.5                            | 2.4                                   | 0.2 + 0.1                 | ( 3.0 )                    | 9                            | ( 0.8 )       | 5                             |                   | 4.4                              | 128         | 61          | 42         |              |                |              |            |
| 32             | 10                   | 10000                  | 1                   | 4.5                            | 27.9                                  | 0.1 + 0.0                 | ( 1.1 )                    | 89                           | ( 0.0 )       | 0                             |                   | 1.1                              | 128         | 48          | 55         |              |                |              |            |
| 33             | 1410                 | 6000                   | 23                  | 18.5                           | 0.9                                   | 0.0 + 0.2                 | ( 2.2 )                    | 1                            | ( 0.2 )       | 0                             |                   | 2.4                              |             |             |            |              |                |              |            |
| 34             | 312                  | 1806                   | 31                  | 5.5                            | 3.7                                   | 0.1 + 0.2                 | ( 4.0 )                    | 6                            | ( 0.4 )       | 0                             |                   | 4.4                              | 129         | 40          | 10         |              |                |              |            |

|       |     |    |    |
|-------|-----|----|----|
| 8.6   | 129 | 40 | 10 |
| 8.6   | 129 | 40 | 10 |
| 7.8   | 129 | 40 | 10 |
| 7.7   | 129 | 40 | 10 |
| 6.3   | 129 | 40 | 10 |
| 12.9  | 129 | 40 | 10 |
| 35.7  | 132 | 62 | 44 |
| 1.1   | 132 | 50 | 57 |
| 82.9  | 129 | 15 | 35 |
| 67.8  | 129 | 15 | 35 |
| 36.2  | 130 | 10 | 57 |
| 1.1   | 130 | 63 | 4  |
| 9.9   | 131 | 10 | 35 |
| 13.3  | 131 | 10 | 35 |
| 67.0  | 131 | 10 | 35 |
| 64.5  | 131 | 10 | 35 |
| 4.6   |     |    |    |
| 218.9 | 131 | 40 | 5  |
| 0.9   |     |    |    |
| 398.8 | 131 | 40 | 5  |
| 9.7   | 128 | 61 | 42 |
| 1.1   | 128 | 50 | 57 |
| 1.1   | 132 | 40 | 55 |
| 1.1   | 130 | 63 | 4  |
| 7.0   | 132 | 62 | 44 |
| 11.9  |     |    |    |
| 41.4  | 129 | 15 | 35 |
| 27.8  | 129 | 15 | 35 |
| 171.8 | 131 | 40 | 5  |
| 51.1  | 131 | 40 | 5  |
| 72.7  |     |    |    |
| 6.8   | 126 | 38 | 9  |
| 18.7  | 126 | 38 | 9  |
| 12.9  | 126 | 38 | 9  |
| 42.4  | 126 | 38 | 9  |

| NO  | FLOW<br>INTO<br>LINK | SAT<br>FLOW | DEGREE<br>OF<br>SAT | MEAN<br>PER<br>PCU | TIMES<br>PER<br>PCU | UNIFORM<br>OVERSAT | RANDOM+<br>SAT | COST   | STOPS<br>OF<br>STOPS | MEAN<br>COST | STOPS<br>OF<br>STOPS | QUEUE<br>AVERAGE | PERFORMANCE<br>INDEX | EXIT<br>NODE | GREEN<br>START | TIMES<br>END |
|-----|----------------------|-------------|---------------------|--------------------|---------------------|--------------------|----------------|--------|----------------------|--------------|----------------------|------------------|----------------------|--------------|----------------|--------------|
| BER |                      |             |                     | DELAY<br>(SEC)     | (U+R=0=MEAN Q)      | Q                  | Q              | (\$/H) | PERCU                | (\$/H)       | PERCU                | EXCESS<br>OF ( ) | VALUES               |              | 1ST            | 2ND          |
|     | (PCU/H)              | (PCU/H)     | (%)                 | (SEC)              | (SEC)               | (PCU-H/H)          | (PCU-H/H)      | (\$/H) | (%)                  | (\$/H)       | (PCU)                | (PCU)            | (\$/H)               |              | (SECONDS)      | (SECONDS)    |

|       |     |    |    |
|-------|-----|----|----|
| 13.9  | 126 | 38 | 9  |
| 57.0  | 126 | 38 | 9  |
| 11.9  | 126 | 38 | 9  |
| 18.3  | 127 | 11 | 35 |
| 3.2   | 126 | 11 | 35 |
| 19.1  | 127 | 11 | 35 |
| 8.9   | 127 | 11 | 35 |
| 19.5  | 127 | 11 | 35 |
| 7.9   | 127 | 11 | 35 |
| 6.1   | 127 | 11 | 35 |
| 12.4  | 146 | 18 | 34 |
| 1.7   | 146 | 49 | 36 |
| 33.6  | 146 | 49 | 42 |
| 120.0 | 146 | 49 | 21 |
| 0.1   |     |    |    |
| 0.1   |     |    |    |
| 0.1   |     |    |    |
| 9.6   |     |    |    |
| 13.1  |     |    |    |
| 11.9  |     |    |    |
| 0.3   | 126 | 38 | 8  |
| 0.3   | 126 | 38 | 8  |
| 88.5  | 126 | 14 | 32 |
| 17.3  | 126 | 14 | 32 |
| 25.5  | 126 | 14 | 32 |
| 133.6 | 127 | 40 | 6  |
| 157.1 | 127 | 40 | 6  |
| 17.7  |     |    |    |
| 131.5 | 127 | 40 | 6  |

|                               |        |
|-------------------------------|--------|
| TOTAL<br>PERFORMANCE<br>INDEX |        |
| (\$/H)                        |        |
| 2773.1                        | TOTALS |
| -----                         |        |
| ROUTE                         |        |
| 518.8                         | 1      |
| 75.9                          | 2      |
| 170.5                         | 3      |
| 48.9                          | 4      |

|                              | CRUISE<br>LITRES PER HOUR | DELAY<br>LITRES PER HOUR | STOPS<br>LITRES PER HOUR | TOTALS<br>LITRES PER HOUR |
|------------------------------|---------------------------|--------------------------|--------------------------|---------------------------|
| FUEL CONSUMPTION PREDICTIONS | 260.6                     | + 196.7                  | + 157.1                  | = 614.3                   |

### CYCLIC FLOW PROFILE GRAPHS

LINK 1271 FED BY 1269 0 0 0 M.M.E. 0.94

1111111

LINK 42 FED BY 50 52 55 0 M.M.E. 0.77

|      |    |     |    |    |   |   |   |        |      |
|------|----|-----|----|----|---|---|---|--------|------|
| LINK | 52 | FED | BY | 45 | 0 | 0 | 0 | M.M.E. | 1.29 |
|------|----|-----|----|----|---|---|---|--------|------|

|      |    |        |    |   |   |   |        |      |
|------|----|--------|----|---|---|---|--------|------|
| LINK | 53 | FED BY | 34 | 0 | 0 | 0 | M.M.E. | 0.90 |
|------|----|--------|----|---|---|---|--------|------|

PROGRAM TRANSYT FINISHED



# <Enter Report 1 Title Here>

## PRT File

## AM Base B24+Com +H5

1 T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 3 (March 2004)  
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program advice and maintenance, contact:

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RG45 6AU, UK. Web: www.trlsoftware.co.uk

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

Run with file:- "BULLS BRIDGE RABOUT\_AM\_MC\_4.DAT" at 18:36 on 06/08/12

TRANSYT 12.0

### PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES = 8  
NUMBER OF LINKS = 70  
NUMBER OF OPTIMISED NODES = 8  
MAXIMUM NUMBER OF GRAPHIC PLOTS = 0  
NUMBER OF STEPS IN CYCLE = 65  
MAXIMUM NUMBER OF SHARED STOPLINES = 2  
MAXIMUM NUMBER OF TIMING POINTS = 3  
MAXIMUM LINKS AT ANY NODE = 12

CORE REQUESTED = 14800 WORDS  
CORE AVAILABLE = 72000 WORDS

### DATA INPUT :-

CARD NO. CARD TYPE  
( 1)= TITLE:-  
CARD NO. CARD TYPE CYCLE TIME NO. OF STEPS PERIOD DISPLACEMENTS SETTINGS CYCLE SCALE SCALE CARD32 0=NONE COPIES CLIMB VALUE VALUE  
(SEC) PER 1-1200 START END 0=NO 1=EQUAL 10-200 50-200 0=TIMES 1=0/SET FINAL OUTPUT P PER P PER  
CYCLE CYCLE MINS. (SEC) (SEC) 1=YES CYCLE % % 1=SPEEDS 2=FULL OUTPUT 1=FULL PCU-H 100  
2)= 1 65 65 60 2 3 0 1 100 100 0 0 0 0 1420 260 100  
CARD NO. CARD TYPE  
3)= 2 146 126 127 128 129 130 131 132 0 0 0 0 0 0 0

LINKS HAVING SHARED STOPLINES  
CARD NO. CARD TYPE FIRST SET..... SECOND SET..... THIRD SET.....  
4)= 7 29 12602 0 0 0 0 0 0 0 0 0 0 0 0 0  
5)= 7 31 58 0 0 0 0 0 0 0 0 0 0 0 0 0  
6)= 7 36 37 0 0 0 0 0 0 0 0 0 0 0 0 0  
7)= 7 38 39 0 0 0 0 0 0 0 0 0 0 0 0 0  
8)= 7 40 41 0 0 0 0 0 0 0 0 0 0 0 0 0  
9)= 7 42 62 0 0 0 0 0 0 0 0 0 0 0 0 0  
10)= 7 52 53 0 0 0 0 0 0 0 0 0 0 0 0 0  
11)= 7 54 56 0 0 0 0 0 0 0 0 0 0 0 0 0  
12)= 7 1262 1261 0 0 0 0 0 0 0 0 0 0 0 0 0  
13)= 7 1264 1263 0 0 0 0 0 0 0 0 0 0 0 0 0  
14)= 7 1267 1266 0 0 0 0 0 0 0 0 0 0 0 0 0  
15)= 7 1272 1271 0 0 0 0 0 0 0 0 0 0 0 0 0  
16)= 7 1274 1273 0 0 0 0 0 0 0 0 0 0 0 0 0  
17)= 7 1276 1275 0 0 0 0 0 0 0 0 0 0 0 0 0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
18)= 10 126 7 7  
19)= 10 127 7 7  
20)= 10 128 7 7  
21)= 10 129 7 7  
22)= 10 130 7 7  
23)= 10 131 7 7  
24)= 10 132 7 7  
25)= 10 146 7 7 7

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
26)= 11 126 6 6  
27)= 11 127 5 5  
28)= 11 128 6 6  
29)= 11 129 5 5  
30)= 11 130 6 6  
31)= 11 131 5 5  
32)= 11 132 5 6  
33)= 11 146 7 8 8

NODE CARDS: STAGE CHANGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. Sgl/Db1 Cycled S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
34)= 12 126 1 0 33  
35)= 12 127 1 0 34  
36)= 12 128 1 20 7  
37)= 12 129 1 39 59  
38)= 12 130 1 37 24

|          |           | PRIORITY LINKS |           |           |             | LINK CARDS: LINK1 GIVEWAY COEFFS. |         | GIVEWAY DATA |   |
|----------|-----------|----------------|-----------|-----------|-------------|-----------------------------------|---------|--------------|---|
| CARD NO. | CARD TYPE | LINK NO.       | LINK1 NO. | LINK2 NO. | ONLY % FLOW | A1 X100                           | A2 X100 |              |   |
| 42)=     | 30        | 1462           | 1465      | 0         | 0           | 50                                | 0       | 0            | 0 |
| 43)=     | 30        | 1466           | 1462      | 0         | 0           | 22                                | 0       | 0            | 0 |

|          |           | LINK CARDS: |            |              |          |      |             |          |      |             |          |      |             |          |      |             |  |
|----------|-----------|-------------|------------|--------------|----------|------|-------------|----------|------|-------------|----------|------|-------------|----------|------|-------------|--|
|          |           | FLOW DATA   |            |              |          |      |             |          |      |             |          |      |             |          |      |             |  |
| CARD NO. | CARD TYPE | LINK NO.    | TOTAL FLOW | ENTRY 1      |          |      | ENTRY 2     |          |      | ENTRY 3     |          |      | ENTRY 4     |          |      |             |  |
|          |           |             |            | UNIFORM FLOW | LINK NO. | FLOW | CRUISE TIME | LINK NO. | FLOW | CRUISE TIME | LINK NO. | FLOW | CRUISE TIME | LINK NO. | FLOW | CRUISE TIME |  |
| 113)     | 32        | 29          | 2249       | 0            | 1262     | 683  | 18          | 1264     | 707  | 18          | 1267     | 470  | 18          | 12607    | 392  | 18          |  |
| 114)     | 32        | 31          | 618        | 0            | 1272     | 161  | 9           | 1274     | 138  | 9           | 1275     | 157  | 9           | 1276     | 162  | 9           |  |
| 115)     | 32        | 32          | 10         | 0            | 0        | 0    | 4           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 116)     | 32        | 33          | 1427       | 0            | 31       | 618  | 18          | 58       | 809  | 18          | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 117)     | 32        | 34          | 185        | 0            | 12702    | 185  | 5           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 118)     | 32        | 36          | 562        | 0            | 12701    | 20   | 5           | 12702    | 542  | 5           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 119)     | 32        | 37          | 40         | 0            | 1278     | 40   | 7           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 120)     | 32        | 38          | 550        | 0            | 12701    | 550  | 5           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 121)     | 32        | 39          | 57         | 0            | 1276     | 10   | 7           | 1278     | 47   | 7           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 122)     | 32        | 40          | 409        | 0            | 12701    | 125  | 5           | 12704    | 284  | 5           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 123)     | 32        | 41          | 58         | 0            | 1276     | 58   | 7           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 124)     | 32        | 42          | 811        | 0            | 50       | 340  | 5           | 52       | 200  | 5           | 55       | 271  | 5           | 0        | 0    | 0           |  |
| 125)     | 32        | 43          | 10         | 0            | 0        | 0    | 4           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 126)     | 32        | 44          | 310        | 0            | 63       | 310  | 4           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 127)     | 32        | 45          | 342        | 0            | 63       | 342  | 4           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 128)     | 32        | 46          | 1156       | 0            | 0        | 0    | 18          | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 129)     | 32        | 47          | 10         | 0            | 0        | 0    | 4           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 130)     | 32        | 48          | 154        | 0            | 65       | 154  | 6           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 131)     | 32        | 50          | 350        | 0            | 64       | 350  | 6           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 132)     | 32        | 52          | 200        | 0            | 45       | 200  | 6           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 133)     | 32        | 53          | 185        | 0            | 34       | 185  | 8           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 134)     | 32        | 54          | 1831       | 0            | 36       | 562  | 18          | 38       | 550  | 18          | 40       | 409  | 18          | 44       | 310  | 18          |  |
| 135)     | 32        | 55          | 664        | 0            | 68       | 664  | 4           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 136)     | 32        | 56          | 297        | 0            | 37       | 40   | 18          | 39       | 57   | 18          | 41       | 58   | 18          | 45       | 142  | 18          |  |
| 137)     | 32        | 57          | 647        | 0            | 68       | 647  | 4           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 138)     | 32        | 58          | 809        | 0            | 1271     | 160  | 9           | 1273     | 160  | 9           | 12704    | 489  | 11          | 0        | 0    | 0           |  |
| 139)     | 32        | 59          | 10         | 0            | 0        | 0    | 4           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 140)     | 32        | 60          | 10         | 0            | 0        | 0    | 4           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 141)     | 32        | 61          | 10         | 0            | 0        | 0    | 4           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 142)     | 32        | 62          | 185        | 0            | 53       | 185  | 5           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 143)     | 32        | 63          | 1156       | 0            | 46       | 1156 | 1           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 144)     | 32        | 64          | 350        | 0            | 63       | 350  | 4           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |  |
| 145)     | 32        | 65          | 154        | 0            | 63       | 154  | 4           | 0        | 0    | 0           |          |      |             |          |      |             |  |

| LINK<br>NUMBER | FLOW<br>INTO<br>LINK | SAT<br>FLOW | DEGREE<br>OF<br>SAT | MEAN<br>PER<br>CRUISE | -----DELAY----- |                    |             |               | ---STOPS---   |                     | ----QUEUE---- |                   | PERFORMANCE                              |            | EXIT<br>NODE | GREEN TIMES |                |
|----------------|----------------------|-------------|---------------------|-----------------------|-----------------|--------------------|-------------|---------------|---------------|---------------------|---------------|-------------------|------------------------------------------|------------|--------------|-------------|----------------|
|                |                      |             |                     |                       | PER<br>SEC      | UNIFORM<br>OVERSAT | RANDOM<br>Q | COST<br>DELAY | STOPS<br>/PCU | MEAN<br>OF<br>STOPS | COST<br>MAX.  | AVERAGE<br>EXCESS | INDEX<br>WEIGHTED<br>SUM<br>OF<br>VALUES | 1ST<br>END |              | 2ND<br>END  |                |
|                |                      |             |                     |                       |                 |                    |             |               |               |                     |               |                   |                                          |            |              |             | (U+R+O=MEAN Q) |
|                | (PCU/H)              | (PCU/H)     | (%)                 | (SEC)                 | (SEC)           |                    |             |               |               |                     |               |                   |                                          |            |              |             | (SECONDS)      |
| 1266           | 117                  | 1267L       | 65                  | 7.5                   | 17.7            | 0.4                | + 0.2       | ( 7.9)        | 101           | ( 1.3)              | 6             |                   | 9.2                                      | 126        | 6            | 34          |                |
| 1267           | 471                  | 2019S       | 65                  | 5.5                   | 9.3             | 0.4                | + 0.7       | ( 16.3)       | 25            | ( 2.5)              | 6             |                   | 18.9                                     | 126        | 6            | 34          |                |
| 1269           | 479                  | 1824        | 59                  | 5.5                   | 8.7             | 0.4                | + 0.7       | ( 15.4)       | 16            | ( 1.7)              | 1             |                   | 17.1                                     | 126        | 6            | 34          |                |
| 1271           | 161                  | 1272L       | 41                  | 8.5                   | 19.6            | 0.7                | + 0.2       | ( 12.2)       | 101           | ( 2.0)              | 4             |                   | 14.2                                     | 127        | 39           | 0           |                |
| 1272           | 161                  | 1876S       | 41                  | 6.5                   | 7.5             | 0.1                | + 0.2       | ( 4.4)        | 15            | ( 0.5)              | 4             |                   | 5.0                                      | 127        | 39           | 0           |                |
| 1273           | 161                  | 1274L       | 35                  | 8.5                   | 18.6            | 0.7                | + 0.1       | ( 11.5)       | 99            | ( 2.0)              | 3             |                   | 13.5                                     | 127        | 39           | 0           |                |
| 1274           | 139                  | 2046S       | 35                  | 6.5                   | 6.6             | 0.1                | + 0.1       | ( 3.3)        | 13            | ( 0.4)              | 3             |                   | 3.7                                      | 127        | 39           | 0           |                |
| 1275           | 158                  | 1276L       | 47                  | 8.5                   | 19.8            | 0.7                | + 0.2       | ( 12.1)       | 101           | ( 2.0)              | 4             |                   | 14.0                                     | 127        | 39           | 0           |                |
| 1276           | 231                  | 1973S       | 47                  | 6.5                   | 7.5             | 0.2                | + 0.3       | ( 6.4)        | 14            | ( 0.7)              | 4             |                   | 7.1                                      | 127        | 39           | 0           |                |
| 1278           | 87                   | 1770        | 12                  | 6.5                   | 6.0             | 0.1                | + 0.1       | ( 1.9)        | 12            | ( 0.2)              | 0             |                   | 2.1                                      | 127        | 39           | 0           |                |

|       |      |       |    |      |      |                   |             |    |       |     |    |    |
|-------|------|-------|----|------|------|-------------------|-------------|----|-------|-----|----|----|
| 1461  | 51   | 1860  | 12 | 18.5 | 25.1 | 0.3 + 0.1 ( 4.9)  | 81 ( 0.9)   | 1  | 5.8   | 146 | 41 | 55 |
| 1462  | 83   | 1774  | 18 | 13.5 | 21.7 | 0.4 + 0.1 ( 6.9)  | 87 ( 1.2)   | 1  | 8.2   | 146 | 5  | 55 |
| 1463  | 912  | 1833  | 57 | 13.5 | 5.8  | 0.7 + 0.7 ( 19.0) | 47 ( 7.3)   | 11 | 26.4  | 146 | 5  | 61 |
| 1464  | 20   | 1833  | 9  | 18.5 | 34.7 | 0.1 + 0.0 ( 2.7)  | 96 ( 0.4)   | 0  | 3.1   | 146 | 63 | 5  |
| 1465  | 990  | 1926  | 90 | 18.5 | 28.6 | 3.4 + 4.3 (109.6) | 101 ( 21.2) | 20 | 130.8 | 146 | 5  | 41 |
| 1466  | 38   | 715   | 5  | 2.5  | 3.2  | 0.0 + 0.0 ( 0.4)  | 0 ( 0.0)    | 0  | 0.4   |     |    |    |
| 1467  | 120  | 2000  | 6  | 18.5 | 1.5  | 0.0 + 0.0 ( 0.5)  | 1 ( 0.0)    | 0  | 0.5   |     |    |    |
| 1468  | 19   | 2000  | 1  | 18.5 | 1.4  | 0.0 + 0.0 ( 0.1)  | 1 ( 0.0)    | 0  | 0.1   |     |    |    |
| 1469  | 913  | 2000  | 46 | 18.5 | 2.2  | 0.0 + 0.4 ( 6.0)  | 3 ( 0.5)    | 0  | 6.4   |     |    |    |
| 12601 | 1007 | 1800  | 56 | 18.3 | 2.8  | 0.0 + 0.6 ( 9.1)  | 4 ( 0.9)    | 3  | 10.0  |     |    |    |
| 12602 | 165  | 29L   | 60 | 18.5 | 2.1  | 0.0 + 0.1 ( 1.0)  | 15 ( 0.5)   | 31 | 1.5   |     |    |    |
| 12603 | 10   | 10000 | 0  | 4.5  | 11.7 | 0.0 + 0.0 ( 0.4)  | 57 ( 0.0)   | 0  | 0.4   | 126 | 6  | 33 |
| 12604 | 10   | 10000 | 0  | 4.5  | 11.7 | 0.0 + 0.0 ( 0.4)  | 57 ( 0.0)   | 0  | 0.4   | 126 | 6  | 33 |
| 12605 | 369  | 1522  | 58 | 2.5  | 13.2 | 0.6 + 0.7 ( 18.5) | 65 ( 4.1)   | 5  | 22.6  | 126 | 39 | 0  |
| 12606 | 87   | 1640  | 13 | 2.5  | 7.6  | 0.1 + 0.1 ( 2.4)  | 39 ( 0.6)   | 1  | 3.0   | 126 | 39 | 0  |
| 12607 | 552  | 1757  | 76 | 2.5  | 17.8 | 1.1 + 1.5 ( 37.8) | 84 ( 7.9)   | 10 | 45.6  | 126 | 39 | 0  |
| 12701 | 694  | 1802  | 83 | 2.5  | 28.4 | 3.0 + 2.4 ( 76.4) | 98 ( 15.9)  | 13 | 92.3  | 127 | 5  | 34 |
| 12702 | 729  | 1775  | 89 | 2.5  | 34.9 | 3.2 + 3.7 ( 98.8) | 110 ( 18.6) | 16 | 117.4 | 127 | 5  | 34 |
| 12703 | 2195 | 3600  | 61 | 18.5 | 1.8  | 0.0 + 0.8 ( 11.1) | 2 ( 0.9)    | 1  | 12.0  |     |    |    |
| 12704 | 773  | 1907  | 88 | 2.5  | 32.1 | 3.4 + 3.4 ( 96.3) | 105 ( 19.0) | 16 | 115.3 | 127 | 5  | 34 |

| TOTAL<br>DISTANCE<br>TRAVELLED | TOTAL<br>TIME<br>SPENT | MEAN<br>JOURNEY<br>SPEED | TOTAL<br>UNIFORM<br>DELAY | TOTAL<br>RANDOM+<br>OVERSAT<br>DELAY | TOTAL<br>COST<br>OF<br>STOPS | TOTAL<br>COST<br>OF<br>STOPS | PENALTY<br>FOR<br>EXCESS<br>QUEUES | TOTAL<br>PERFORMANCE<br>INDEX |
|--------------------------------|------------------------|--------------------------|---------------------------|--------------------------------------|------------------------------|------------------------------|------------------------------------|-------------------------------|
| (PCU-KM/H)                     | (PCU-H/H)              | (KM/H)                   | (PCU-H/H)                 | (PCU-H/H)                            | (\$/H)                       | (\$/H)                       | (\$/H)                             | (\$/H)                        |

3894.4 188.9 20.6 42.4 46.1 (1257.7) + ( 232.2) + ( 0.0) = 1489.9 TOTALS

ROUTE

| CRUISE<br>LITRES PER HOUR | DELAY<br>LITRES PER HOUR | STOPS<br>LITRES PER HOUR | TOTALS<br>LITRES PER HOUR |
|---------------------------|--------------------------|--------------------------|---------------------------|
|---------------------------|--------------------------|--------------------------|---------------------------|

FUEL CONSUMPTION PREDICTIONS 217.1 + 101.9 + 105.8 = 424.7

NO. OF ENTRIES TO SUBPT = 1  
NO. OF LINKS RECALCULATED= 70

PROGRAM TRANSYT FINISHED

# <Enter Report 1 Title Here>

## PRT File

## PM Base B24+Com +H5

1 T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 3 (March 2004)  
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THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS  
IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:- "BULLS BRIDGE RABOUT\_PM\_MC\_2.DAT" at 18:42 on 06/08/12

TRANSYT 12.0

### PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES = 8  
NUMBER OF LINKS = 70  
NUMBER OF OPTIMISED NODES = 8  
MAXIMUM NUMBER OF GRAPHIC PLOTS = 8  
NUMBER OF STEPS IN CYCLE = 66  
MAXIMUM NUMBER OF SHARED STOPLINES = 2  
MAXIMUM NUMBER OF TIMING POINTS = 3  
MAXIMUM LINKS AT ANY NODE = 12

CORE REQUESTED = 14914 WORDS  
CORE AVAILABLE = 72000 WORDS

### DATA INPUT :-

CARD NO. CARD TYPE  
( 1)= TITLE:-  
CARD NO. CARD TYPE CYCLE NO. OF TIME EFFECTIVE-GREEN EQUISAT 0=UNEQUAL FLOW CRUISE-SPEEDS OPTIMISE EXTRA HILL- DELAY STOP  
NO. TYPE TIME STEPS PERIOD DISPLACEMENTS SETTINGS CYCLE SCALE SCALE CARD32 0=NONE COPIES CLIMB VALUE VALUE  
(SEC) PER 1-1200 START END 0=NO 1=EQUAL 10-200 50-200 0=TIMES 1=0/SET FINAL OUTPUT P PER P PER  
CYCLE CYCLE MINS. (SEC) (SEC) 1=YES CYCLE % % 1=SPEEDS 2=FULL OUTPUT 1=FULL PCU-H 100  
2)= 1 66 66 60 2 3 0 1 100 100 0 1 0 0 1420 260 100  
CARD NO. CARD TYPE  
3)= 2 146 126 127 128 129 130 131 132 0 0 0 0 0 0 0

LINKS HAVING SHARED STOPLINES  
CARD NO. CARD TYPE FIRST SET..... SECOND SET..... THIRD SET.....  
4)= 7 29 12602 0 0 0 0 0 0 0 0 0 0 0 0 0  
5)= 7 31 58 0 0 0 0 0 0 0 0 0 0 0 0 0  
6)= 7 36 37 0 0 0 0 0 0 0 0 0 0 0 0 0  
7)= 7 38 39 0 0 0 0 0 0 0 0 0 0 0 0 0  
8)= 7 40 41 0 0 0 0 0 0 0 0 0 0 0 0 0  
9)= 7 42 62 0 0 0 0 0 0 0 0 0 0 0 0 0  
10)= 7 52 53 0 0 0 0 0 0 0 0 0 0 0 0 0  
11)= 7 54 56 0 0 0 0 0 0 0 0 0 0 0 0 0  
12)= 7 1262 1261 0 0 0 0 0 0 0 0 0 0 0 0 0  
13)= 7 1264 1263 0 0 0 0 0 0 0 0 0 0 0 0 0  
14)= 7 1267 1266 0 0 0 0 0 0 0 0 0 0 0 0 0  
15)= 7 1272 1271 0 0 0 0 0 0 0 0 0 0 0 0 0  
16)= 7 1274 1273 0 0 0 0 0 0 0 0 0 0 0 0 0  
17)= 7 1276 1275 0 0 0 0 0 0 0 0 0 0 0 0 0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
18)= 10 126 7 7  
19)= 10 127 7 7  
20)= 10 128 7 7  
21)= 10 129 7 7  
22)= 10 130 7 7  
23)= 10 131 7 7  
24)= 10 132 7 7  
25)= 10 146 7 7 7

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
26)= 11 126 6 6  
27)= 11 127 5 5  
28)= 11 128 6 6  
29)= 11 129 5 5  
30)= 11 130 6 6  
31)= 11 131 5 5  
32)= 11 132 5 6  
33)= 11 146 7 8 8

NODE CARDS: STAGE CHANGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. Sgl/Db1 Cycled S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
34)= 12 126 1 30 7  
35)= 12 127 1 35 6  
36)= 12 128 1 55 42  
37)= 12 129 1 10 36  
38)= 12 130 1 4 57

| CARD NO. | CARD TYPE | LINK NO. | PRIORITY LINKS |           | LINK1 LINK2 |         | LINK1 ONLY |   | LINK1 GIVEWAY |   | COEFFS. |   | LINK LENGTH | STOP WT.X100 | MAX FLOW | DELAY WT.X100 | DISPSN X100 |
|----------|-----------|----------|----------------|-----------|-------------|---------|------------|---|---------------|---|---------|---|-------------|--------------|----------|---------------|-------------|
|          |           |          | LINK1 NO.      | LINK2 NO. | % FLOW      | A1 X100 | A2 X100    |   |               |   |         |   |             |              |          |               |             |
| 42)=     | 30        | 1462     | 1465           | 0         | 0           | 22      | 0          | 0 | 0             | 0 | 0       | 0 | 130         | 0            | 1000     | 0             | 0           |
| 43)=     | 30        | 1466     | 1462           | 0         | 0           | 22      | 0          | 0 | 0             | 0 | 0       | 0 | 31          | 0            | 715      | 0             | 0           |

| CARD NO. |    | CARD TYPE | LINK NO. | EXIT NODE | LINK CARDS: |     |              |     | FIXED DATA  |     |       |     | LINK |       |   |   | STOP WT.X100 | SAT FLOW | DELAY WT.X100 | DISPSN X100 |
|----------|----|-----------|----------|-----------|-------------|-----|--------------|-----|-------------|-----|-------|-----|------|-------|---|---|--------------|----------|---------------|-------------|
|          |    |           |          |           | FIRST GREEN |     | SECOND GREEN |     | LINK LENGTH | END | START | LAG |      |       |   |   |              |          |               |             |
|          |    |           |          |           | STAGE       | LAG | STAGE        | LAG |             |     |       |     |      |       |   |   |              |          |               |             |
| 44)      | 31 | 29        | 0        | 0         | 0           | 0   | 0            | 0   | 0           | 0   | 0     | 200 | 0    | 4000  | 0 | 0 | 0            |          |               |             |
| 45)      | 31 | 31        | 128      | 1         | 6           | 2   | 0            | 0   | 0           | 0   | 0     | 95  | 0    | 5591  | 0 | 0 | 0            |          |               |             |
| 46)      | 31 | 32        | 128      | 2         | 6           | 1   | 0            | 0   | 0           | 0   | 0     | 10  | 0    | 10000 | 0 | 0 | 0            |          |               |             |
| 47)      | 31 | 33        | 0        | 0         | 0           | 0   | 0            | 0   | 0           | 0   | 0     | 200 | 0    | 6000  | 0 | 0 | 0            |          |               |             |
| 48)      | 31 | 34        | 129      | 2         | 5           | 1   | 0            | 0   | 0           | 0   | 0     | 53  | 0    | 1806  | 0 | 0 | 0            |          |               |             |
| 49)      | 31 | 36        | 129      | 2         | 5           | 1   | 36           | 0   | 0           | 0   | 0     | 53  | 0    | 2047  | 0 | 0 | 0            |          |               |             |
| 50)      | 31 | 37        | 0        | 0         | 0           | 0   | 0            | 0   | 0           | 0   | 0     | 53  | 0    | 0     | 0 | 0 | 0            |          |               |             |
| 51)      | 31 | 38        | 129      | 2         | 5           | 1   | 0            | 0   | 0           | 0   | 0     | 53  | 0    | 2028  | 0 | 0 | 0            |          |               |             |
| 52)      | 31 | 39        | 0        | 0         | 0           | 0   | 0            | 0   | 0           | 0   | 0     | 53  | 0    | 0     | 0 | 0 | 0            |          |               |             |
| 53)      | 31 | 40        | 129      | 2         | 5           | 1   | 0            | 0   | 0           | 0   | 0     | 53  | 0    | 1867  | 0 | 0 | 0            |          |               |             |
| 54)      | 31 | 41        | 0        | 0         | 0           | 0   | 0            | 0   | 0           | 0   | 0     | 53  | 0    | 0     | 0 | 0 | 0            |          |               |             |
| 55)      | 31 | 42        | 132      | 1         | 5           | 2   | 0            | 0   | 0           | 0   | 0     | 58  | 0    | 2028  | 0 | 0 | 0            |          |               |             |
| 56)      | 31 | 43        | 132      | 2         | 6           | 1   | 0            | 0   | 0           | 0   | 0     | 10  | 0    | 10000 | 0 | 0 | 0            |          |               |             |
| 57)      | 31 | 44        | 129      | 1         | 5           | 2   | 0            | 0   | 0           | 0   | 0     | 45  | 0    | 1612  | 0 | 0 | 0            |          |               |             |
| 58)      | 31 | 45        | 129      | 1         | 5           | 2   | 0            | 0   | 0           | 0   | 0     | 45  | 0    | 1613  | 0 | 0 | 0            |          |               |             |
| 59)      | 31 | 46        | 130      | 1         | 6           | 2   | 0            | 0   | 0           | 0   | 0     | 200 | 0    | 4839  | 0 | 0 | 0            |          |               |             |
| 60)      | 31 | 47        | 130      | 2         | 6           | 1   | 0            | 0   | 0           | 0   | 0     | 10  | 0    | 10000 | 0 | 0 | 0            |          |               |             |
| 61)      | 31 | 48        | 131      | 2         | 5           | 1   | 0            | 0   | 0           | 0   | 0     | 63  | 0    | 1806  | 0 | 0 | 0            |          |               |             |
| 62)      | 31 | 50        | 131      | 2         | 5           | 1   | 0            | 0   | 0           | 0   | 0     | 63  | 0    | 1922  | 0 | 0 | 0            |          |               |             |
| 63)      | 31 | 52        | 131      | 2         | 1           | 52  | 0            | 0   | 0           | 0   | 0     | 63  | 0    | 1885  | 0 | 0 | 0            |          |               |             |
| 64)      | 31 | 53        | 0        | 0         | 0           | 0   | 0            | 0   | 0           | 0   | 0     | 63  | 0    | 0     | 0 | 0 | 0            |          |               |             |
| 65)      | 31 | 54        | 0        | 0         | 0           | 0   | 0            | 0   | 0           | 0   | 0     | 200 | 0    | 6000  | 0 | 0 | 0            |          |               |             |
| 66)      | 31 | 55        | 131      | 1         | 5           | 2   | 0            | 0   | 0           | 0   | 0     | 40  | 0    | 1855  | 0 | 0 | 0            |          |               |             |
| 67)      | 31 | 56        | 0        | 0         | 0           | 0   | 0            | 0   | 0           | 0   | 0     | 200 | 0    | 0     | 0 | 0 | 0            |          |               |             |
| 68)      | 31 | 57        | 131      | 1         | 5           | 2   | 0            | 0   | 0           | 0   | 0     | 40  | 0    | 1800  | 0 | 0 | 0            |          |               |             |
| 69)      | 31 | 58        | 0        | 0         | 0           | 0   | 0            | 0   | 0           | 0   | 0     | 95  | 0    | 0     | 0 | 0 | 0            |          |               |             |
| 70)      | 31 | 59        | 128      | 2         | 6           | 1   | 0            | 0   | 0           | 0   | 0     | 10  | 0    | 10000 | 0 | 0 | 0            |          |               |             |
| 71)      | 31 | 60        | 132      | 2         | 6           | 1   | 0            | 0   | 0           | 0   | 0     | 10  | 0    | 10000 | 0 | 0 | 0            |          |               |             |
| 72)      | 31 | 61        | 130      | 2         | 6           | 1   | 0            | 0   | 0           | 0   | 0     | 10  | 0    | 10000 | 0 | 0 | 0            |          |               |             |
| 73)      | 31 | 62        | 0        | 0         | 0           | 0   | 0            | 0   | 0           | 0   | 0     | 58  | 0    | 0     | 0 | 0 | 0            |          |               |             |
| 74)      | 31 | 63        | 0        | 0         | 0           | 0   | 0            | 0   | 0           | 0   | 0     | 10  | 0    | 3600  | 0 | 0 | 0            |          |               |             |
| 75)      | 31 | 64        | 129      | 1         | 5           | 2   | 0            | 0   | 0           | 0   | 0     | 45  | 0    | 1613  | 0 | 0 | 0            |          |               |             |
| 76)      | 31 | 65        | 129      |           |             |     |              |     |             |     |       |     |      |       |   |   |              |          |               |             |

[illegible]

[illegible]

| CARD NO. | CARD TYPE | ROUTE NUMBER | ROUTE DESCRIPTION |
|----------|-----------|--------------|-------------------|
| 184)=    | 41        | 1            | <Route Name>      |
| 185)=    | 41        | 2            | <Route Name>      |
| 186)=    | 41        | 3            | <Route Name>      |
| 187)=    | 41        | 4            | <Route Name>      |

\*\*\*\*\*END OF SUBROUTINE TINPUT\*\*\*\*\*

INITIAL SETTINGS  
- (SECONDS)

| L<br>I<br>N<br>K<br><br>N<br>U<br>M<br>B<br>E<br>R | F<br>L<br>O<br>W<br><br>I<br>N<br>T<br>O<br><br>L<br>I<br>N<br>K | S<br>A<br>T<br><br>F<br>L<br>O<br>W<br><br>(P<br>C<br>U<br>/H) | D<br>E<br>G<br>R<br>E<br>E<br><br>O<br>F<br><br>S<br>A<br>T | M<br>E<br>A<br>N<br><br>T<br>I<br>M<br>E<br>S |                                 | -----D<br>E<br>L<br>A<br>Y----- |                  |                  |                  | -----S<br>T<br>O<br>P<br>S----- |                       |             | -----Q<br>U<br>E<br>U<br>E----- |                       |             | P<br>E<br>R<br>F<br>O<br>R<br>M<br>A<br>N<br>C<br>E |        | E<br>X<br>I<br>T<br><br>N<br>O<br>D<br>E | G<br>R<br>E<br>E<br>N<br><br>T<br>I<br>M<br>E<br>S |                                 |                                      |                       |
|----------------------------------------------------|------------------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------------|-----------------------------------------------|---------------------------------|---------------------------------|------------------|------------------|------------------|---------------------------------|-----------------------|-------------|---------------------------------|-----------------------|-------------|-----------------------------------------------------|--------|------------------------------------------|----------------------------------------------------|---------------------------------|--------------------------------------|-----------------------|
|                                                    |                                                                  |                                                                |                                                             | P<br>E<br>R<br><br>C<br>R<br>U<br>I<br>S<br>E | O<br>V<br>E<br>R<br>S<br>A<br>T | R<br>A<br>N<br>D<br>O<br>M      | C<br>O<br>S<br>T | M<br>E<br>A<br>N | C<br>O<br>S<br>T | M<br>E<br>A<br>N                | I<br>N<br>D<br>E<br>X | S<br>U<br>M | N<br>O<br>D<br>E                | S<br>T<br>A<br>R<br>T | E<br>N<br>D |                                                     |        |                                          |                                                    |                                 |                                      |                       |
|                                                    |                                                                  |                                                                |                                                             |                                               |                                 |                                 |                  |                  |                  |                                 |                       |             |                                 |                       |             | D<br>E<br>L<br>A<br>Y                               | O<br>F |                                          | O<br>F                                             | A<br>V<br>E<br>R<br>A<br>G<br>E | W<br>E<br>I<br>G<br>H<br>T<br>E<br>D | I<br>N<br>D<br>E<br>X |
|                                                    |                                                                  |                                                                |                                                             |                                               |                                 |                                 |                  |                  |                  |                                 |                       |             |                                 |                       |             |                                                     |        |                                          |                                                    |                                 |                                      |                       |
| 29                                                 | 2435                                                             | 4000S                                                          | 82                                                          | 18.5                                          | 5.6                             | 1.8                             | +                | 1.7              | ( 49.3 )         | 53                              | ( 27.6 )              | 46          |                                 | 77.0                  |             |                                                     |        |                                          |                                                    |                                 |                                      |                       |
| 31                                                 | 468                                                              | 5591S                                                          | 37                                                          | 9.5                                           | 2.4                             | 0.2                             | +                | 0.1              | ( 3.6 )          | 9                               | ( 0.8 )               | 6           |                                 | 4.3                   | 128         | 61                                                  | 42     |                                          |                                                    |                                 |                                      |                       |
| 32                                                 | 10                                                               | 10000                                                          | 1                                                           | 4.5                                           | 27.9                            | 0.1                             | +                | 0.0              | ( 1.1 )          | 89                              | ( 0.0 )               | 0           |                                 | 1.1                   | 128         | 48                                                  | 55     |                                          |                                                    |                                 |                                      |                       |
| 33                                                 | 1485                                                             | 6090                                                           | 25                                                          | 18.5                                          | 0.9                             | 0.0                             | +                | 0.2              | ( 2.3 )          | 1                               | ( 0.2 )               | 0           |                                 | 2.5                   |             |                                                     |        |                                          |                                                    |                                 |                                      |                       |
| 34                                                 | 310                                                              | 1806                                                           | 31                                                          | 5.5                                           | 3.9                             | 0.1                             | +                | 0.2              | ( 4.1 )          | 6                               | ( 0.4 )               | 0           |                                 | 4.5                   | 129         | 41                                                  | 10     |                                          |                                                    |                                 |                                      |                       |
| 52                                                 | 523                                                              | 2047S                                                          | 57                                                          | 5.5                                           | 5.0                             | 0.1                             | +                | 0.2              | ( 9.9 )          | 9                               | ( 0.2 )               | 1           |                                 | 16.3                  | 129         | 41                                                  | 10     |                                          |                                                    |                                 |                                      |                       |
| 37                                                 | 118                                                              | 36L                                                            | 57                                                          | 7.5                                           | 15.6                            | 0.4                             | +                | 0.1              | ( 7.8 )          | 96                              | ( 1.1 )               | 3           |                                 | 8.2                   | 129         | 41                                                  | 10     |                                          |                                                    |                                 |                                      |                       |
| 38                                                 | 600                                                              | 2028S                                                          | 66                                                          | 5.5                                           | 5.9                             | 0.1                             | +                | 0.8              | ( 12.8 )         | 10                              | ( 1.3 )               | 4           |                                 | 14.1                  | 129         | 41                                                  | 10     |                                          |                                                    |                                 |                                      |                       |
| 39                                                 | 129                                                              | 38L                                                            | 66                                                          | 7.5                                           | 15.4                            | 0.4                             | +                | 0.2              | ( 7.6 )          | 92                              | ( 1.2 )               | 4           |                                 | 8.8                   | 129         | 41                                                  | 10     |                                          |                                                    |                                 |                                      |                       |
| 40                                                 | 450                                                              | 1867S                                                          | 55                                                          | 5.5                                           | 5.1                             | 0.1                             | +                | 0.5              | ( 8.1 )          | 9                               | ( 0.8 )               | 3           |                                 | 8.9                   | 129         | 41                                                  | 10     |                                          |                                                    |                                 |                                      |                       |
| 41                                                 | 111                                                              | 40L                                                            | 55                                                          | 7.5                                           | 13.6                            | 0.3                             | +                | 0.1              | ( 5.7 )          | 85                              | ( 1.0 )               | 3           |                                 | 6.7                   | 129         | 41                                                  | 10     |                                          |                                                    |                                 |                                      |                       |
| 42                                                 | 822                                                              | 2028S                                                          | 75                                                          | 5.5                                           | 8.0                             | 0.6                             | +                | 1.1              | ( 24.2 )         | 51                              | ( 9.7 )               | 12          | +                               | 33.9                  | 132         | 61                                                  | 43     |                                          |                                                    |                                 |                                      |                       |
| 43                                                 | 10                                                               | 10000                                                          | 1                                                           | 4.5                                           | 27.9                            | 0.1                             | +                | 0.0              | ( 1.1 )          | 89                              | ( 0.0 )               | 0           |                                 | 1.1                   | 132         | 49                                                  | 56     |                                          |                                                    |                                 |                                      |                       |
| 44                                                 | 464                                                              | 1612                                                           | 86                                                          | 4.5                                           | 39.9                            | 2.1                             | +                | 2.9              | ( 72.0 )         | 112                             | ( 11.5 )              | 11          | +                               | 83.5                  | 129         | 15                                                  | 36     |                                          |                                                    |                                 |                                      |                       |
| 45                                                 | 399                                                              | 1613                                                           | 74                                                          | 4.5                                           | 28.7                            | 1.7                             | +                | 1.4              | ( 44.4 )         | 90                              | ( 8.1 )               | 8           | +                               | 52.5                  | 129         | 15                                                  | 36     |                                          |                                                    |                                 |                                      |                       |
| 46                                                 | 1478                                                             | 4839                                                           | 42                                                          | 18.5                                          | 4.9                             | 1.5                             | +                | 0.4              | ( 25.7 )         | 33                              | ( 10.5 )              | 11          |                                 | 36.2                  | 130         | 10                                                  | 57     |                                          |                                                    |                                 |                                      |                       |
| 47                                                 | 10                                                               | 10000                                                          | 1                                                           | 4.5                                           | 27.9                            | 0.1                             | +                | 0.0              | ( 1.1 )          | 89                              | ( 0.0 )               | 0           |                                 | 1.1                   | 130         | 63                                                  | 4      |                                          |                                                    |                                 |                                      |                       |
| 48                                                 | 278                                                              | 1806                                                           | 39                                                          | 6.5                                           | 10.6                            | 0.4                             | +                | 0.3              | ( 10.6 )         | 21                              | ( 1.1 )               | 1           |                                 | 11.7                  | 131         | 9                                                   | 34     |                                          |                                                    |                                 |                                      |                       |
| 50                                                 | 337                                                              | 1922                                                           | 45                                                          | 6.5                                           | 19.6                            | 0.5                             | +                | 0.4              | ( 13.4 )         | 22                              | ( 1.4 )               | 1           |                                 | 14.9                  | 131         | 9                                                   | 34     |                                          |                                                    |                                 |                                      |                       |
| 52                                                 | 389                                                              | 1806S                                                          | 94                                                          | 6.5                                           | 40.3                            | 0.8                             | +                | 0.5              | ( 61.1 )         | 71                              | ( 5.3 )               | 15          | +                               | 66.4                  | 131         | 9                                                   | 34     |                                          |                                                    |                                 |                                      |                       |
| 53                                                 | 310                                                              | 52L                                                            | 94                                                          | 8.5                                           | 47.5                            | 1.3                             | +                | 2.8              | ( 57.5 )         | 137                             | ( 4.7 )               | 15          | +                               | 62.2                  | 131         | 9                                                   | 34     |                                          |                                                    |                                 |                                      |                       |
| 54                                                 | 2037                                                             | 6000S                                                          | 40                                                          | 18.5                                          | 1.0                             | 0.0                             | +                | 0.3              | ( 4.0 )          | 1                               | ( 0.3 )               | 0           |                                 | 4.4                   |             |                                                     |        |                                          |                                                    |                                 |                                      |                       |
| 55                                                 | 894                                                              | 1855                                                           | 99                                                          | 4.5                                           | 72.                             |                                 |                  |                  |                  |                                 |                       |             |                                 |                       |             |                                                     |        |                                          |                                                    |                                 |                                      |                       |

|      |     |       |    |     |      |           |         |    |        |   |      |     |    |   |
|------|-----|-------|----|-----|------|-----------|---------|----|--------|---|------|-----|----|---|
| 1262 | 686 | 1905S | 67 | 5.5 | 6.4  | 0.2 + 0.9 | ( 16.0) | 11 | ( 1.6) | 3 | 17.6 | 126 | 36 | 8 |
| 1263 | 193 | 1264L | 86 | 7.5 | 19.0 | 0.4 + 0.6 | ( 14.1) | 94 | ( 2.0) | 7 | 16.1 | 126 | 36 | 8 |
| 1264 | 849 | 2038S | 86 | 5.5 | 12.2 | 0.2 + 2.5 | ( 39.2) | 20 | ( 3.5) | 7 | 42.7 | 126 | 36 | 8 |

66 SECOND CYCLE 66 STEPS

| LINK<br>NUMBER | FLOW<br>INTO<br>LINK | SAT<br>OF<br>SAT | DEGREE<br>OF<br>SAT | MEAN<br>PER<br>CRUISE | MEAN<br>TIMES<br>PER<br>PCU | -----DELAY-----<br>UNIFORM RANDOM+<br>OVERSAT OF | COST<br>OF<br>STOPS | -----STOPS-----<br>MEAN<br>COST<br>OF<br>MAX. | -----QUEUE-----<br>AVERAGE<br>EXCESS OF ( ) | PERFORMANCE<br>INDEX<br>VALUES | EXIT<br>NODE | GREEN<br>START<br>END | START<br>END | START<br>END |
|----------------|----------------------|------------------|---------------------|-----------------------|-----------------------------|--------------------------------------------------|---------------------|-----------------------------------------------|---------------------------------------------|--------------------------------|--------------|-----------------------|--------------|--------------|
| (PCU/H)        | (PCU/H)              | (%)              | (SEC)               | (SEC)                 | (PCU-H/H)                   | (\$/H)                                           | (%)                 | (\$/H)                                        | (PCU)                                       | (PCU)                          | (\$/H)       | 1ST                   | 2ND          | (SECONDS)    |
| 1266           | 144                  | 1267L            | 88                  | 7.5                   | 19.2                        | 0.3 + 0.5                                        | ( 10.6)             | 88                                            | ( 1.4)                                      | 6                              | 12.0         | 126                   | 36           | 8            |
| 1267           | 901                  | 2019S            | 88                  | 5.5                   | 12.8                        | 0.2 + 2.9                                        | ( 43.7)             | 19                                            | ( 3.7)                                      | 6                              | 47.4         | 126                   | 36           | 8            |
| 1269           | 594                  | 1824             | 55                  | 5.5                   | 4.8                         | 0.1 + 0.6                                        | ( 10.1)             | 9                                             | ( 1.2)                                      | 4                              | 11.3         | 126                   | 36           | 8            |
| 1271           | 200                  | 1272L            | 34                  | 8.5                   | 21.5                        | 1.0 + 0.2                                        | ( 16.6)             | 100                                           | ( 2.5)                                      | 4                              | 19.1         | 127                   | 11           | 35           |
| 1272           | 45                   | 1876S            | 34                  | 6.5                   | 8.2                         | 0.0 + 0.0                                        | ( 1.4)              | 16                                            | ( 0.2)                                      | 4                              | 1.5          | 127                   | 11           | 35           |
| 1273           | 197                  | 1274L            | 53                  | 8.5                   | 22.8                        | 1.0 + 0.3                                        | ( 17.4)             | 102                                           | ( 2.5)                                      | 5                              | 19.9         | 127                   | 11           | 35           |
| 1274           | 216                  | 2046S            | 53                  | 6.5                   | 9.3                         | 0.2 + 0.3                                        | ( 7.5)              | 17                                            | ( 0.8)                                      | 5                              | 8.3          | 127                   | 11           | 35           |
| 1275           | 197                  | 1276L            | 53                  | 8.5                   | 23.1                        | 1.0 + 0.3                                        | ( 17.5)             | 102                                           | ( 2.5)                                      | 4                              | 20.1         | 127                   | 11           | 35           |
| 1276           | 199                  | 1973S            | 53                  | 6.5                   | 9.4                         | 0.2 + 0.3                                        | ( 7.0)              | 17                                            | ( 0.8)                                      | 4                              | 7.8          | 127                   | 11           | 35           |
| 1278           | 168                  | 1770             | 25                  | 6.5                   | 5.7                         | 0.1 + 0.2                                        | ( 3.4)              | 9                                             | ( 0.4)                                      | 0                              | 3.8          | 127                   | 11           | 35           |
| 1461           | 110                  | 1800             | 24                  | 18.5                  | 25.9                        | 0.6 + 0.2                                        | ( 11.0)             | 83                                            | ( 1.9)                                      | 2                              | 13.0         | 146                   | 21           | 36           |
| 1462           | 26                   | 1774             | 5                   | 13.5                  | 13.5                        | 0.1 + 0.0                                        | ( 1.3)              | 69                                            | ( 0.3)                                      | 0                              | 1.7          | 146                   | 51           | 38           |
| 1463           | 1106                 | 1833             | 66                  | 13.5                  | 5.9                         | 0.7 + 1.0                                        | ( 23.5)             | 34                                            | ( 6.4)                                      | 8                              | 30.0         | 146                   | 51           | 44           |
| 1464           | 20                   | 1833             | 9                   | 18.5                  | 35.3                        | 0.1 + 0.0                                        | ( 2.7)              | 97                                            | ( 0.4)                                      | 0                              | 3.2          | 146                   | 44           | 51           |
| 1465           | 986                  | 1926             | 84                  | 18.5                  | 20.6                        | 2.9 + 2.6                                        | ( 78.3)             | 85                                            | ( 17.7)                                     | 17                             | 96.0         | 146                   | 51           | 24           |
| 1466           | 10                   | 715              | 1                   | 2.5                   | 3.0                         | 0.0 + 0.0                                        | ( 0.1)              | 0                                             | ( 0.0)                                      | 0                              | 0.1          |                       |              |              |
| 1467           | 36                   | 2000             | 2                   | 18.5                  | 1.4                         | 0.0 + 0.0                                        | ( 0.1)              | 1                                             | ( 0.0)                                      | 0                              | 0.1          |                       |              |              |
| 1468           | 21                   | 2000             | 1                   | 18.5                  | 1.4                         | 0.0 + 0.0                                        | ( 0.1)              | 1                                             | ( 0.0)                                      | 0                              | 0.1          |                       |              |              |
| 1469           | 1104                 | 2000             | 55                  | 18.5                  | 2.5                         | 0.0 + 0.6                                        | ( 8.7)              | 3                                             | ( 0.7)                                      | 1                              | 9.5          |                       |              |              |
| 12601          | 1078                 | 1800             | 60                  | 15.7                  | 3.1                         | 0.0 + 0.7                                        | ( 10.9)             | 6                                             | ( 1.0)                                      | 6                              | 11.9         |                       |              |              |
| 12602          | 843                  | 29L              | 82                  | 18.5                  | 3.4                         | 0.1 + 0.6                                        | ( 9.5)              | 13                                            | ( 2.3)                                      | 46                             | 11.8         |                       |              |              |
| 12603          | 10                   | 10000            | 0                   | 4.5                   | 7.0                         | 0.0 + 0.0                                        | ( 0.3)              | 42                                            | ( 0.0)                                      | 0                              | 0.3          | 126                   | 36           | 7            |
| 12604          | 10                   | 10000            | 0                   | 4.5                   | 7.0                         | 0.0 + 0.0                                        | ( 0.3)              | 42                                            | ( 0.0)                                      | 0                              | 0.3          | 126                   | 36           | 7            |
| 12605          | 429                  | 1522             | 103                 | 2.5                   | 141.1                       | 2.3 + 14.4                                       | ( 237.9)            | 207                                           | ( 15.2)                                     | 22                             | 253.1        | 126                   | 13           | 30           |
| 12606          | 168                  | 1640             | 38                  | 2.5                   | 21.2                        | 0.7 + 0.3                                        | ( 13.7)             | 67                                            | ( 1.9)                                      | 2                              | 15.6         | 126                   | 13           | 30           |
| 12607          | 481                  | 1757             | 100                 | 2.5                   | 103.9                       | 2.4 + 11.4                                       | ( 196.3)            | 181                                           | ( 14.9)                                     | 20                             | 211.2        | 126                   | 13           | 30           |
| 12701          | 818                  | 1802             | 91                  | 2.5                   | 35.2                        | 3.4 + 4.4                                        | ( 111.9)            | 110                                           | ( 21.1)                                     | 18                             | 133.0        | 127                   | 40           | 6            |
| 12702          | 833                  | 1775             | 94                  | 2.5                   | 42.9                        | 3.6 + 6.2                                        | ( 139.4)            | 121                                           | ( 23.8)                                     | 21                             | 163.2        | 127                   | 40           | 6            |
| 12703          | 2509                 | 3600             | 70                  | 18.5                  | 2.1                         | 0.0 + 1.1                                        | ( 16.3)             | 2                                             | ( 1.3)                                      | 1                              | 17.6         |                       |              |              |
| 12704          | 853                  | 1907             | 89                  | 2.5                   | 32.0                        | 3.5 + 3.9                                        | ( 106.1)            | 105                                           | ( 21.0)                                     | 18                             | 127.2        | 127                   | 40           | 6            |

| TOTAL<br>DISTANCE<br>TRAVELLED | TOTAL<br>TIME<br>SPENT | MEAN<br>JOURNEY<br>SPEED | TOTAL<br>UNIFORM<br>DELAY | TOTAL<br>RANDOM+<br>OVERSAT<br>DELAY | TOTAL<br>COST<br>OF | TOTAL<br>COST<br>OF | PENALTY<br>FOR<br>EXCESS<br>QUEUES | TOTAL<br>PERFORMANCE<br>INDEX |
|--------------------------------|------------------------|--------------------------|---------------------------|--------------------------------------|---------------------|---------------------|------------------------------------|-------------------------------|
| (PCU-KM/H)                     | (PCU-H/H)              | (KM/H)                   | (PCU-H/H)                 | (PCU-H/H)                            | (\$/H)              | (\$/H)              | (\$/H)                             | (\$/H)                        |
| 4635.0                         | 291.3                  | 15.9                     | 55.7                      | 116.8                                | (2448.9) + (        | 339.8) + (          | 0.0) =                             | 2788.7 TOTALS                 |

\*\*\*\*\*

|                              | CRUISE<br>LITRES PER HOUR | DELAY<br>LITRES PER HOUR | STOPS<br>LITRES PER HOUR | TOTALS<br>LITRES PER HOUR |
|------------------------------|---------------------------|--------------------------|--------------------------|---------------------------|
| FUEL CONSUMPTION PREDICTIONS | 259.6                     | + 198.3                  | + 154.8                  | = 612.8                   |

NO. OF ENTRIES TO SUBPT = 1  
NO. OF LINKS RECALCULATED= 70

66 SECOND CYCLE 66 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9  
- (SECONDS)

|     |   |    |    |    |
|-----|---|----|----|----|
| 126 | 2 | 30 | 7  |    |
| 127 | 2 | 35 | 6  |    |
| 128 | 2 | 55 | 42 |    |
| 129 | 2 | 10 | 36 |    |
| 130 | 2 | 4  | 57 |    |
| 131 | 2 | 34 | 4  |    |
| 132 | 2 | 56 | 43 |    |
| 146 | 3 | 51 | 21 | 36 |

| TOTAL<br>DISTANCE<br>TRAVELLED | TOTAL<br>TIME<br>SPENT | MEAN<br>JOURNEY<br>SPEED | TOTAL<br>UNIFORM<br>DELAY | TOTAL<br>RANDOM+<br>OVERSAT<br>DELAY | TOTAL<br>COST<br>OF | TOTAL<br>COST<br>OF | PENALTY<br>FOR<br>EXCESS<br>QUEUES | TOTAL<br>PERFORMANCE<br>INDEX |
|--------------------------------|------------------------|--------------------------|---------------------------|--------------------------------------|---------------------|---------------------|------------------------------------|-------------------------------|
| (PCU-KM/H)                     | (PCU-H/H)              | (KM/H)                   | (PCU-H/H)                 | (PCU-H/H)                            | (\$/H)              | (\$/H)              | (\$/H)                             | (\$/H)                        |
| 4635.0                         | 291.3                  | 15.9                     | 55.7                      | 116.8                                | (2448.9) + (        | 339.8) + (          | 0.0) =                             | 2788.7 TOTALS                 |

NO. OF ENTRIES TO SUBPT = 17  
NO. OF LINKS RECALCULATED= 467

66 SECOND CYCLE 66 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 26  
- (SECONDS)

|     |   |    |    |
|-----|---|----|----|
| 126 | 2 | 30 | 7  |
| 127 | 2 | 35 | 6  |
| 128 | 2 | 55 | 42 |
| 129 | 2 | 10 | 36 |
| 130 | 2 | 4  | 57 |
| 131 | 2 | 34 | 4  |
| 132 | 2 | 56 | 43 |
| 146 | 3 | 51 | 21 |

| TOTAL<br>DISTANCE<br>TRAVELLED | TOTAL<br>TIME<br>SPENT | MEAN<br>JOURNEY<br>SPEED | TOTAL<br>UNIFORM<br>DELAY | TOTAL<br>RANDOM+<br>OVERSAT<br>DELAY | TOTAL<br>COST<br>OF | TOTAL<br>COST<br>OF | PENALTY<br>FOR<br>EXCESS<br>QUEUES | TOTAL<br>PERFORMANCE<br>INDEX |
|--------------------------------|------------------------|--------------------------|---------------------------|--------------------------------------|---------------------|---------------------|------------------------------------|-------------------------------|
| (PCU-KM/H)                     | (PCU-H/H)              | (KM/H)                   | (PCU-H/H)                 | (PCU-H/H)                            | (\$/H)              | (\$/H)              | (\$/H)                             | (\$/H)                        |
| 4635.0                         | 291.3                  | 15.9                     | 55.7                      | 116.8                                | (2448.9) + (        | 339.8) + (          | 0.0) =                             | 2788.7 TOTALS                 |

NO. OF ENTRIES TO SUBPT = 17  
NO. OF LINKS RECALCULATED= 460

66 SECOND CYCLE 66 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 26 9  
- (SECONDS)

|     |   |    |    |
|-----|---|----|----|
| 126 | 2 | 30 | 7  |
| 127 | 2 | 35 | 6  |
| 128 | 2 | 55 | 42 |
| 129 | 2 | 10 | 36 |



| TOTAL<br>DISTANCE<br>TRAVELLED | TOTAL<br>TIME<br>SPENT | MEAN<br>JOURNEY<br>SPEED | TOTAL<br>UNIFORM<br>DELAY | TOTAL<br>RANDOM+<br>OVERSAT | TOTAL<br>COST<br>OF | TOTAL<br>COST<br>OF | PENALTY<br>FOR<br>EXCESS<br>QUEUES | TOTAL<br>PERFORMANCE<br>INDEX |
|--------------------------------|------------------------|--------------------------|---------------------------|-----------------------------|---------------------|---------------------|------------------------------------|-------------------------------|
| (PCU-KM/H)                     | (PCU-H/H)              | (KM/H)                   | DELAY<br>(PCU-H/H)        | DELAY<br>(PCU-H/H)          | (\$/H)              | STOPS<br>(\$/H)     | (\$/H)                             | (\$/H)                        |
| 4635.0                         | 291.3                  | 15.9                     | 55.7                      | 116.8                       | (2448.9) + (        | 339.8)              | + ( 0.0)                           | = 2788.7                      |
|                                |                        |                          |                           |                             |                     |                     |                                    | TOTALS                        |

```
NO. OF ENTRIES TO SUBPT = 17
NO. OF LINKS RECALCULATED= 520
```

66 SECOND CYCLE 66 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 26 9 26  
- (SECONDS)

|     |   |    |    |    |
|-----|---|----|----|----|
| 126 | 2 | 30 | 7  |    |
| 127 | 2 | 35 | 6  |    |
| 128 | 2 | 55 | 42 |    |
| 129 | 2 | 10 | 36 |    |
| 130 | 2 | 4  | 57 |    |
| 131 | 2 | 34 | 4  |    |
| 132 | 2 | 56 | 43 |    |
| 146 | 3 | 51 | 21 | 36 |

| TOTAL<br>DISTANCE<br>TRAVELLED | TOTAL<br>TIME<br>SPENT | MEAN<br>JOURNEY<br>SPEED | TOTAL<br>UNIFORM<br>DELAY | TOTAL<br>RANDOM+<br>OVERSATS<br>DELAY | TOTAL<br>COST<br>OF<br>STOPS | TOTAL<br>COST<br>OF<br>QUEUES | PENALTY<br>FOR<br>EXCESS | TOTAL<br>PERFORMANCE<br>INDEX |
|--------------------------------|------------------------|--------------------------|---------------------------|---------------------------------------|------------------------------|-------------------------------|--------------------------|-------------------------------|
| (PCU-KM/H)                     | (PCU-H/H)              | (KM/H)                   | (PCU-H/H)                 | (PCU-H/H)                             | (\$/H)                       | (\$/H)                        | (\$/H)                   | (\$/H)                        |
| 4635.0                         | 291.3                  | 15.9                     | 55.7                      | 116.8                                 | (2448.9) + ( 339.8)          | + ( 0.0)                      | =                        | 2788.7                        |
|                                |                        |                          |                           |                                       |                              |                               |                          | TOTALS                        |

NO. OF ENTRIES TO SUBPT = 17  
NO. OF LINKS RECALCULATED= 515

66 SECOND CYCLE 66 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 26 9 26 9  
- (SECONDS)

|     |   |    |    |    |
|-----|---|----|----|----|
| 126 | 2 | 30 | 7  |    |
| 127 | 2 | 35 | 6  |    |
| 128 | 2 | 55 | 42 |    |
| 129 | 2 | 10 | 36 |    |
| 130 | 2 | 4  | 57 |    |
| 131 | 2 | 34 | 4  |    |
| 132 | 2 | 56 | 43 |    |
| 146 | 3 | 51 | 21 | 36 |

| TOTAL<br>DISTANCE<br>TRAVELLED | TOTAL<br>TIME<br>SPENT | MEAN<br>JOURNEY<br>SPEED | TOTAL<br>UNIFORM<br>DELAY | TOTAL<br>RANDOM+<br>OVERSAT<br>DELAY | TOTAL<br>COST<br>OF<br>STOPS | TOTAL<br>COST<br>OF<br>QUEUES | PENALTY<br>FOR<br>EXCESS | TOTAL<br>PERFORMANCE<br>INDEX |
|--------------------------------|------------------------|--------------------------|---------------------------|--------------------------------------|------------------------------|-------------------------------|--------------------------|-------------------------------|
| (PCU-KM/H)                     | (PCU-H/H)              | (KM/H)                   | (PCU-H/H)                 | (PCU-H/H)                            | (\$/H)                       | (\$/H)                        | (\$/H)                   | (\$/H)                        |
| 4635.0                         | 291.3                  | 15.9                     | 55.7                      | 116.8                                | (2448.9) + (                 | 339.8)                        | + ( 0.0)                 | = 2788.7                      |
| TOTALS                         |                        |                          |                           |                                      |                              |                               |                          |                               |

```
NO. OF ENTRIES TO SUBPT = 17
NO. OF LINKS RECALCULATED= 550
```

66 SECOND CYCLE 66 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 9 26 9 26 9 1  
- (SECONDS)

|     |   |    |    |    |
|-----|---|----|----|----|
| 126 | 2 | 30 | 7  |    |
| 127 | 2 | 35 | 6  |    |
| 128 | 2 | 55 | 42 |    |
| 129 | 2 | 10 | 36 |    |
| 130 | 2 | 4  | 57 |    |
| 131 | 2 | 34 | 4  |    |
| 132 | 2 | 56 | 43 |    |
| 146 | 3 | 51 | 21 | 36 |

| TOTAL<br>DISTANCE<br>TRAVELLED | TOTAL<br>TIME<br>SPENT | MEAN<br>JOURNEY<br>SPEED | TOTAL<br>UNIFORM<br>DELAY | TOTAL<br>RANDOM+<br>OVERSAT<br>DELAY | TOTAL<br>COST<br>OF<br>STOPS | TOTAL<br>COST<br>OF<br>QUEUES | PENALTY<br>FOR<br>EXCESS | TOTAL<br>PERFORMANCE<br>INDEX |
|--------------------------------|------------------------|--------------------------|---------------------------|--------------------------------------|------------------------------|-------------------------------|--------------------------|-------------------------------|
| (PCU-KM/H)                     | (PCU-H/H)              | (KM/H)                   | (PCU-H/H)                 | (PCU-H/H)                            | (\$/H)                       | (\$/H)                        | (\$/H)                   | (\$/H)                        |
| 4635.0                         | 291.3                  | 15.9                     | 55.7                      | 116.8                                | (2448.9) + (                 | 339.8)                        | + ( 0.0)                 | = 2788.7                      |
| TOTALS                         |                        |                          |                           |                                      |                              |                               |                          |                               |

```
NO. OF ENTRIES TO SUBPT = 17
NO. OF LINKS RECALCULATED= 542
```

66 SECOND CYCLE 66 STEPS

```
FINAL SETTINGS OBTAINED WITH INCREMENTS :-  9 26  9 26  9  1  1
- (SECONDS)
```

| NO  | NUMBER | STAGE | STAGE | STAGE | STAGE | STAGE | STAGE | STAGE | STAGE | STAGE | STAGE |
|-----|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 126 | 127    | 128   | 129   | 130   | 131   | 132   | 146   |       |       |       |       |
| 2   | 30     | 7     |       |       |       |       |       |       |       |       |       |
| 2   | 35     | 6     |       |       |       |       |       |       |       |       |       |
| 2   | 55     | 42    |       |       |       |       |       |       |       |       |       |
| 2   | 10     | 36    |       |       |       |       |       |       |       |       |       |
| 2   | 4      | 57    |       |       |       |       |       |       |       |       |       |
| 2   | 34     | 4     |       |       |       |       |       |       |       |       |       |
| 2   | 56     | 43    |       |       |       |       |       |       |       |       |       |
| 3   | 51     | 21    | 36    |       |       |       |       |       |       |       |       |

| LINK<br>NUMBER | FLOW<br>INTO<br>LNK | SAT<br>FLOW<br>(PCU/H) | DEGREE<br>OF<br>SAT | MEAN<br>PER<br>CRUISE<br>DELAY<br>(SEC) | TIMES<br>PER<br>(SEC) | -----DELAY-----      |                                                                  |                |               | -----STOPS-----     |                | -----QUEUE-----          |                         |                                               | PERFORMANCE |     | EXIT<br>NODE | GREEN TIMES |            |  |  |  |  |  |  |
|----------------|---------------------|------------------------|---------------------|-----------------------------------------|-----------------------|----------------------|------------------------------------------------------------------|----------------|---------------|---------------------|----------------|--------------------------|-------------------------|-----------------------------------------------|-------------|-----|--------------|-------------|------------|--|--|--|--|--|--|
|                |                     |                        |                     |                                         |                       | UNIFORM<br>(PCU-H/H) | RANDOM+<br>OVERSAT<br>OF<br>DELAY<br>(U+R+O=MEAN Q)<br>(PCU-H/H) | COST<br>(\$/H) | STOPS<br>/PCU | MEAN<br>STOP<br>(%) | COST<br>(\$/H) | MEAN<br>AVERAGE<br>(PCU) | MAX.<br>EXCESS<br>(PCU) | WEIGHTED<br>SUM<br>OF ( )<br>VALUES<br>(\$/H) | INDEX.      | SUM |              |             |            |  |  |  |  |  |  |
|                |                     |                        |                     |                                         |                       |                      |                                                                  |                |               |                     |                |                          |                         |                                               |             |     |              |             |            |  |  |  |  |  |  |
|                |                     |                        |                     |                                         |                       |                      |                                                                  |                |               |                     |                |                          |                         |                                               |             |     |              |             |            |  |  |  |  |  |  |
|                |                     |                        |                     |                                         |                       |                      |                                                                  |                |               |                     |                |                          |                         |                                               |             |     |              | 1ST<br>END  | 2ND<br>END |  |  |  |  |  |  |
|                |                     |                        |                     |                                         |                       |                      |                                                                  |                |               |                     |                |                          |                         |                                               |             |     |              |             | (SECONDS)  |  |  |  |  |  |  |
| 29             | 2435                | 4900S                  | 82                  | 18.5                                    | 5.6                   | 1.8                  | +                                                                | 1.7            | ( 49.3 )      | 53                  | ( 27.6 )       | 46                       |                         | 77.0                                          |             |     |              |             |            |  |  |  |  |  |  |
| 31             | 468                 | 5591S                  | 37                  | 9.5                                     | 2.4                   | 0.2                  | +                                                                | 0.8            | ( 0.6 )       | 9                   | ( 0.8 )        | 3                        | 4.3                     | 128                                           | 61          | 42  |              |             |            |  |  |  |  |  |  |
| 32             | 10                  | 10000                  | 1                   | 4.5                                     | 27.9                  | 0.1                  | +                                                                | 0.0            | ( 1.1 )       | 89                  | ( 0.0 )        | 0                        | 1.1                     | 128                                           | 48          | 55  |              |             |            |  |  |  |  |  |  |
| 33             | 1485                | 6090                   | 25                  | 18.5                                    | 0.9                   | 0.0                  | +                                                                | 0.2            | ( 2.3 )       | 1                   | ( 0.2 )        | 0                        | 2.5                     |                                               |             |     |              |             |            |  |  |  |  |  |  |
| 34             | 310                 | 1806                   | 31                  | 5.5                                     | 3.9                   | 0.1                  | +                                                                | 0.2            | ( 4.1 )       | 6                   | ( 0.4 )        | 0                        | 4.5                     | 129                                           | 41          | 10  |              |             |            |  |  |  |  |  |  |

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1000+
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```

LINK 42 FED BY 50 52 55 0 M.M.E. 0.78

|      |    |        |    |   |   |   |        |      |
|------|----|--------|----|---|---|---|--------|------|
| LINK | 52 | FED BY | 45 | 0 | 0 | 0 | M.M.E. | 1.27 |
|------|----|--------|----|---|---|---|--------|------|

|      |    |        |    |   |   |   |        |      |
|------|----|--------|----|---|---|---|--------|------|
| LINK | 53 | FED BY | 34 | 0 | 0 | 0 | M.M.E. | 0.90 |
|------|----|--------|----|---|---|---|--------|------|

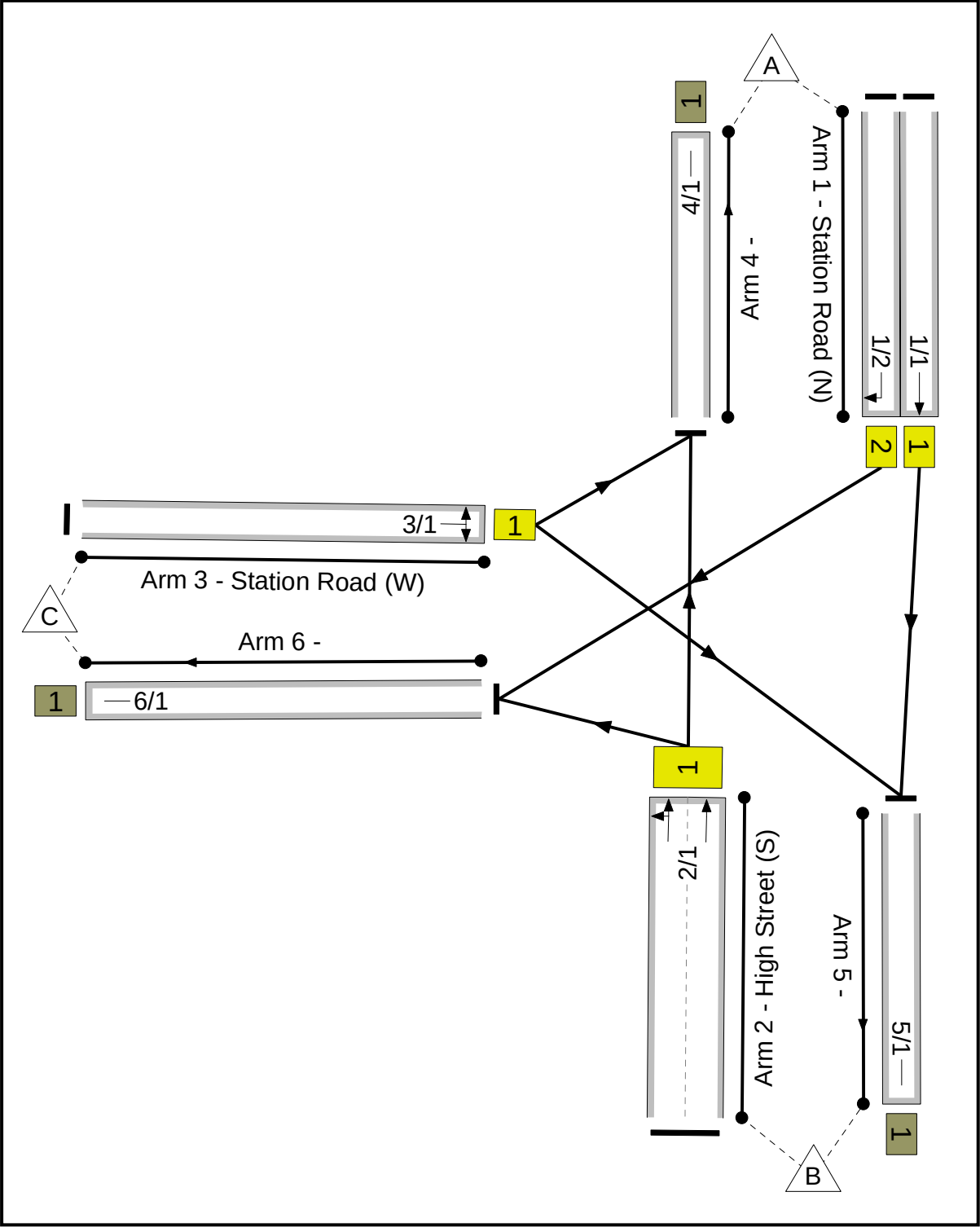
PROGRAM TRANSYT FINISHED

## Full Input Data And Results

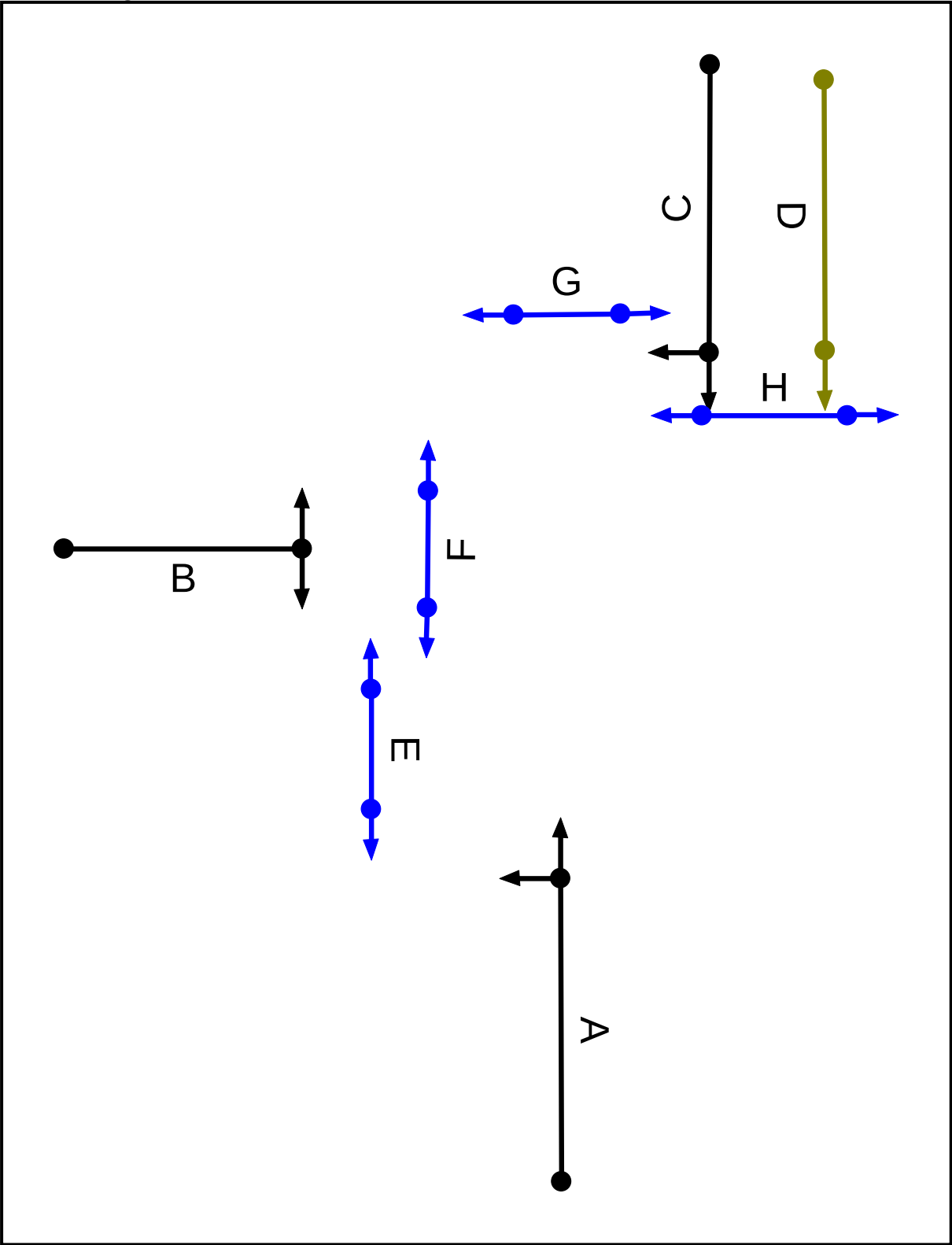
### User and Project Details

|                    |                             |
|--------------------|-----------------------------|
| <b>Project:</b>    |                             |
| <b>Title:</b>      |                             |
| <b>Location:</b>   |                             |
| <b>File name:</b>  |                             |
| <b>Author:</b>     | Station Rd_High Street.lsgx |
| <b>Company:</b>    |                             |
| <b>Address:</b>    | Generic                     |
| <b>Controller:</b> |                             |
| <b>SCN:</b>        |                             |
| <b>Notes:</b>      |                             |

Junction Layout Diagram



Phase Diagram



**Phase Input Data**

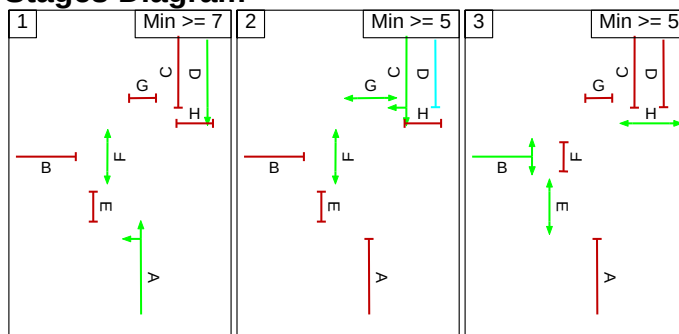
| Phase Name | Phase type | Assoc Phase | Street Min | Cont Min |
|------------|------------|-------------|------------|----------|
| A          | Traffic    |             | 7          | 7        |
| B          | Traffic    |             | 7          | 7        |
| C          | Traffic    |             | 7          | 7        |
| D          | Filter     | C           | 4          | 0        |
| E          | Pedestrian |             | 5          | 5        |
| F          | Pedestrian |             | 5          | 5        |
| G          | Pedestrian |             | 5          | 5        |
| H          | Pedestrian |             | 5          | 5        |

**Phase Intergreens Matrix**

| Terminating Phase | Starting Phase |   |   |   |   |    |   |   |   |
|-------------------|----------------|---|---|---|---|----|---|---|---|
|                   |                | A | B | C | D | E  | F | G | H |
|                   | A              |   | 5 | 5 | - | 7  | - | 8 | - |
|                   | B              | 5 |   | 5 | 5 | -  | 5 | 8 | - |
|                   | C              | 8 | 5 |   | - | 10 | - | - | 5 |
|                   | D              | - | 5 | - |   | -  | - | - | 5 |
|                   | E              | 8 | - | 8 | - |    | - | - | - |
|                   | F              | - | 8 | - | - | -  |   | - | - |
|                   | G              | 8 | 8 | - | - | -  | - |   | - |
|                   | H              | - | - | 8 | 8 | -  | - | - |   |

**Phases in Stage**

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

**Stages Diagram**

Phase Delays

| Term. Stage | Start Stage | Phase | Type   | Value | Cont value |
|-------------|-------------|-------|--------|-------|------------|
| 2           | 3           | C     | Losing | 3     | 3          |
| 3           | 1           | B     | Losing | 3     | 3          |

Prohibited Stage Changes

| From Stage | To Stage |   |   |
|------------|----------|---|---|
|            | 1        | 2 | 3 |
|            | 1        |   | 8 |
|            | 2        | 8 |   |
|            | 3        | 8 | 8 |

Link Input Data

| Arm/ Link | Link Name                   | Link Type | Num Lanes | Phases | Start Disp. | End Disp. |
|-----------|-----------------------------|-----------|-----------|--------|-------------|-----------|
| 1/1       | Station Road (N) Ahead      | U         | 1         | C D    | 2           | 3         |
| 1/2       | Station Road (N) Right      | U         | 1         | C      | 2           | 3         |
| 2/1       | High Street (S) Ahead Left  | U         | 2         | A      | 2           | 3         |
| 3/1       | Station Road (W) Left Right | U         | 1         | B      | 2           | 3         |
| 4/1       |                             | U         | 1         |        | 2           | 3         |
| 5/1       |                             | U         | 1         |        | 2           | 3         |
| 6/1       |                             | U         | 1         |        | 2           | 3         |



Lane Input Data

| Arm/<br>Lane                                     | Link<br>Num                                             | Physic<br>al<br>Length<br>(PCU) | Expecte<br>d<br>Usage<br>(PCU) | Sat<br>Flo<br>w<br>Typ<br>e | User<br>Saturatio<br>n<br>Flow<br>(PCU/Hr) | Lane<br>Widt<br>h<br>(m) | Gradi<br>ent | Nearsid<br>e<br>Lane | Allowe<br>d<br>Turns                | Turnin<br>g<br>Radius<br>(m) |
|--------------------------------------------------|---------------------------------------------------------|---------------------------------|--------------------------------|-----------------------------|--------------------------------------------|--------------------------|--------------|----------------------|-------------------------------------|------------------------------|
| 1/1<br>(Statio<br>n<br>Road<br>(N)<br>Lane<br>1) | Link 1<br>(Statio<br>n<br>Road<br>(N)<br>Ahead<br>)     | Inf                             | Inf                            | User                        | 1766                                       | 3.25                     | 0.00         | Y                    | Arm 5<br>Ahead                      | Inf                          |
| 1/2<br>(Statio<br>n<br>Road<br>(N)<br>Lane<br>2) | Link 2<br>(Statio<br>n<br>Road<br>(N)<br>Right)         | Inf                             | Inf                            | User                        | 1929                                       | 3.25                     | 0.00         | Y                    | Arm 6<br>Right                      | Inf                          |
| 2/1<br>(High<br>Street<br>(S)<br>Lane<br>1)      | Link 1<br>(High<br>Street<br>(S)<br>Ahead<br>Left)      | Inf                             | Inf                            | User                        | 1763                                       | 3.25                     | 0.00         | Y                    | Arm 4<br>Ahead<br><br>Arm 6<br>Left | Inf<br><br>Inf               |
| 2/2<br>(High<br>Street<br>(S)<br>Lane<br>2)      | Link 1<br>(High<br>Street<br>(S)<br>Ahead<br>Left)      | Inf                             | Inf                            | User                        | 1877                                       | 3.25                     | 0.00         | Y                    | Arm 4<br>Ahead                      | Inf                          |
| 3/1<br>(Statio<br>n<br>Road<br>(W)<br>Lane<br>1) | Link 1<br>(Statio<br>n<br>Road<br>(W)<br>Left<br>Right) | Inf                             | Inf                            | User                        | 1691                                       | 3.25                     | 0.00         | Y                    | Arm 4<br>Left<br><br>Arm 5<br>Right | Inf<br><br>Inf               |
| 4/1                                              | Link 1                                                  | Inf                             | Inf                            | User                        | 1800                                       | 3.25                     | 0.00         | Y                    |                                     |                              |
| 5/1                                              | Link 1                                                  | Inf                             | Inf                            | User                        | 1800                                       | 3.25                     | 0.00         | Y                    |                                     |                              |
| 6/1                                              | Link 1                                                  | Inf                             | Inf                            | User                        | 1800                                       | 3.25                     | 0.00         | Y                    |                                     |                              |

Traffic Flow Groups

| Flow Group                      | Start Time | End Time | Duration | Formula |
|---------------------------------|------------|----------|----------|---------|
| 13: 'Base + Com + H4 2024 AM'   | 08:00      | 09:00    | 01:00    |         |
| 14: 'Base + Com + H4 2024 PM'   | 17:00      | 18:00    | 01:00    |         |
| 15: 'Base + Com + H5 2024 AM'   | 08:00      | 09:00    | 01:00    |         |
| 16: 'Base + Com + H5 2024 PM'   | 17:00      | 18:00    | 01:00    |         |
| 17: 'Base + Com + H4 5 2024 AM' | 08:00      | 09:00    | 01:00    |         |
| 18: 'Base + Com + H4 5 2024 PM' | 17:00      | 18:00    | 01:00    |         |

Scenario 13: 'Base + Com + H4 2024 AM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 13: 'Base + Com + H4 2024 AM'

Traffic Flow Matrix

Desired Flow :

| Origin | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
|        | A           | 0   | 659 | 273 | 932  |
|        | B           | 418 | 0   | 206 | 624  |
|        | C           | 254 | 300 | 0   | 554  |
|        | Tot.        | 672 | 959 | 479 | 2110 |

Link Traffic Flows

| Arm/Link | Flow Group 13: Base + Com + H4 2024 AM |
|----------|----------------------------------------|
| 1/1      | 659                                    |
| 1/2      | 273                                    |
| 2/1      | 624                                    |
| 3/1      | 554                                    |
| 4/1      | 672                                    |
| 5/1      | 959                                    |
| 6/1      | 479                                    |

**Lane Saturation Flows**

| Arm/<br>Lane                     | Lane<br>Width<br>(m) | Gradient                                          | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|----------------------------------|----------------------|---------------------------------------------------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Road (N) Lane 1) |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1766                 |
| 1/2<br>(Station Road (N) Lane 2) |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1929                 |
| 2/1<br>(High Street (S) Lane 1)  |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1763                 |
| 2/2<br>(High Street (S) Lane 2)  |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1877                 |
| 3/1<br>(Station Road (W) Lane 1) |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1691                 |
| 4/1                              |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1800                 |
| 5/1                              |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1800                 |
| 6/1                              |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1800                 |

**Scenario 14: 'Base + Com + H4 2024 PM'**

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 14: 'Base + Com + H4 2024 PM'

**Traffic Flow Matrix****Desired Flow :**

|        | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
| Origin | A           | 0   | 467 | 255 | 722  |
|        | B           | 475 | 0   | 331 | 806  |
|        | C           | 208 | 291 | 0   | 499  |
|        | Tot.        | 683 | 758 | 586 | 2027 |

**Link Traffic Flows**

| Arm/Link | Flow<br>Group 14:<br>Base +<br>Com + H4<br>2024 PM |
|----------|----------------------------------------------------|
| 1/1      | 467                                                |
| 1/2      | 255                                                |
| 2/1      | 806                                                |
| 3/1      | 499                                                |
| 4/1      | 683                                                |
| 5/1      | 758                                                |
| 6/1      | 586                                                |

Lane Saturation Flows

| Arm/<br>Lane                     | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|----------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Road (N) Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1766                 |
| 1/2<br>(Station Road (N) Lane 2) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1929                 |
| 2/1<br>(High Street (S) Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1763                 |
| 2/2<br>(High Street (S) Lane 2)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1877                 |
| 3/1<br>(Station Road (W) Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1691                 |
| 4/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 5/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

Scenario 15: ' Base + Com + H5 2024 AM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 15: 'Base + Com + H5 2024 AM'

Traffic Flow Matrix

Desired Flow :

|        | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
| Origin | A           | 0   | 659 | 273 | 932  |
|        | B           | 422 | 0   | 206 | 628  |
|        | C           | 254 | 300 | 0   | 554  |
|        | Tot.        | 676 | 959 | 479 | 2114 |

Link Traffic Flows

| Arm/Link | Flow<br>Group 15:<br>Base +<br>Com + H5<br>2024 AM |
|----------|----------------------------------------------------|
| 1/1      | 659                                                |
| 1/2      | 273                                                |
| 2/1      | 628                                                |
| 3/1      | 554                                                |
| 4/1      | 676                                                |
| 5/1      | 959                                                |
| 6/1      | 479                                                |

**Lane Saturation Flows**

| Arm/<br>Lane                     | Lane<br>Width<br>(m) | Gradient                                          | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|----------------------------------|----------------------|---------------------------------------------------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Road (N) Lane 1) |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1766                 |
| 1/2<br>(Station Road (N) Lane 2) |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1929                 |
| 2/1<br>(High Street (S) Lane 1)  |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1763                 |
| 2/2<br>(High Street (S) Lane 2)  |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1877                 |
| 3/1<br>(Station Road (W) Lane 1) |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1691                 |
| 4/1                              |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1800                 |
| 5/1                              |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1800                 |
| 6/1                              |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1800                 |

**Scenario 16: ' Base + Com + H5 2024 PM'**

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 16: 'Base + Com + H5 2024 PM'

**Traffic Flow Matrix****Desired Flow :**

|        | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
| Origin | A           | 0   | 471 | 255 | 726  |
|        | B           | 476 | 0   | 331 | 807  |
|        | C           | 208 | 291 | 0   | 499  |
|        | Tot.        | 684 | 762 | 586 | 2032 |

**Link Traffic Flows**

| Arm/Link | Flow<br>Group 16:<br>Base +<br>Com + H5<br>2024 PM |
|----------|----------------------------------------------------|
| 1/1      | 471                                                |
| 1/2      | 255                                                |
| 2/1      | 807                                                |
| 3/1      | 499                                                |
| 4/1      | 684                                                |
| 5/1      | 762                                                |
| 6/1      | 586                                                |

Lane Saturation Flows

| Arm/<br>Lane                     | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|----------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Road (N) Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1766                 |
| 1/2<br>(Station Road (N) Lane 2) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1929                 |
| 2/1<br>(High Street (S) Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1763                 |
| 2/2<br>(High Street (S) Lane 2)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1877                 |
| 3/1<br>(Station Road (W) Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1691                 |
| 4/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 5/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

Scenario 17: 'Base + Com + H4 5 2024 AM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 17: 'Base + Com + H4 5 2024 AM'

Traffic Flow Matrix

Desired Flow :

|        | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
| Origin | A           | 0   | 660 | 273 | 933  |
|        | B           | 426 | 0   | 206 | 632  |
|        | C           | 254 | 300 | 0   | 554  |
|        | Tot.        | 680 | 960 | 479 | 2119 |

Link Traffic Flows

| Arm/Link | Flow<br>Group 17:<br>Base +<br>Com + H4<br>5 2024 AM |
|----------|------------------------------------------------------|
| 1/1      | 660                                                  |
| 1/2      | 273                                                  |
| 2/1      | 632                                                  |
| 3/1      | 554                                                  |
| 4/1      | 680                                                  |
| 5/1      | 960                                                  |
| 6/1      | 479                                                  |

Lane Saturation Flows

| Arm/<br>Lane                     | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|----------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Road (N) Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1766                 |
| 1/2<br>(Station Road (N) Lane 2) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1929                 |
| 2/1<br>(High Street (S) Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1763                 |
| 2/2<br>(High Street (S) Lane 2)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1877                 |
| 3/1<br>(Station Road (W) Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1691                 |
| 4/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 5/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

Scenario 18: 'Base + Com + H4 5 2024 PM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 18: 'Base + Com + H4 5 2024 PM'

Traffic Flow Matrix

Desired Flow :

|        | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
| Origin | A           | 0   | 476 | 255 | 731  |
|        | B           | 476 | 0   | 331 | 807  |
|        | C           | 208 | 291 | 0   | 499  |
|        | Tot.        | 684 | 767 | 586 | 2037 |

Link Traffic Flows

| Arm/Link | Flow<br>Group 18:<br>Base +<br>Com + H4<br>5 2024 PM |
|----------|------------------------------------------------------|
| 1/1      | 476                                                  |
| 1/2      | 255                                                  |
| 2/1      | 807                                                  |
| 3/1      | 499                                                  |
| 4/1      | 684                                                  |
| 5/1      | 767                                                  |
| 6/1      | 586                                                  |

Lane Saturation Flows

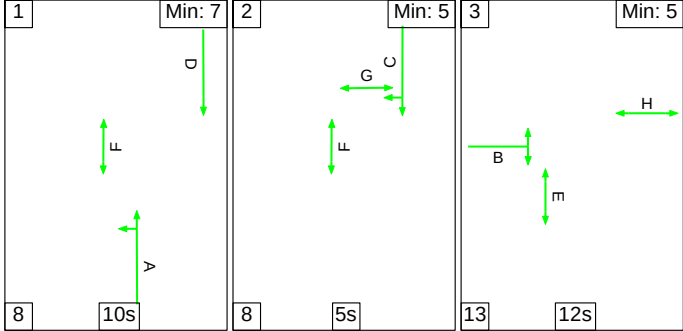
| Arm/<br>Lane                     | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|----------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Road (N) Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1766                 |
| 1/2<br>(Station Road (N) Lane 2) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1929                 |
| 2/1<br>(High Street (S) Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1763                 |
| 2/2<br>(High Street (S) Lane 2)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1877                 |
| 3/1<br>(Station Road (W) Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1691                 |
| 4/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 5/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

Scenario 13: 'Base + Com + H4 2024 AM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 13: 'Base + Com + H4 2024 AM'

Staging Plan Diagram

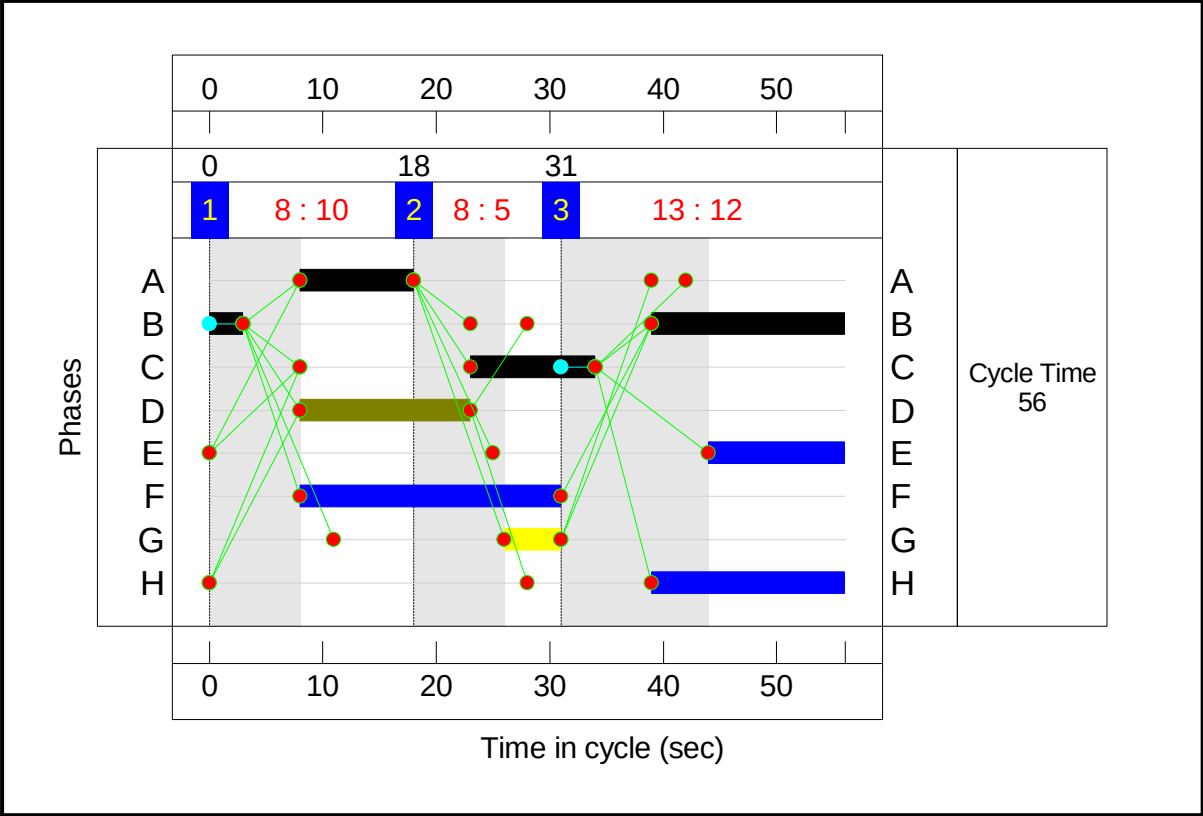


Stage Timings

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 10 | 5  | 12 |
| Change Point | 0  | 18 | 31 |

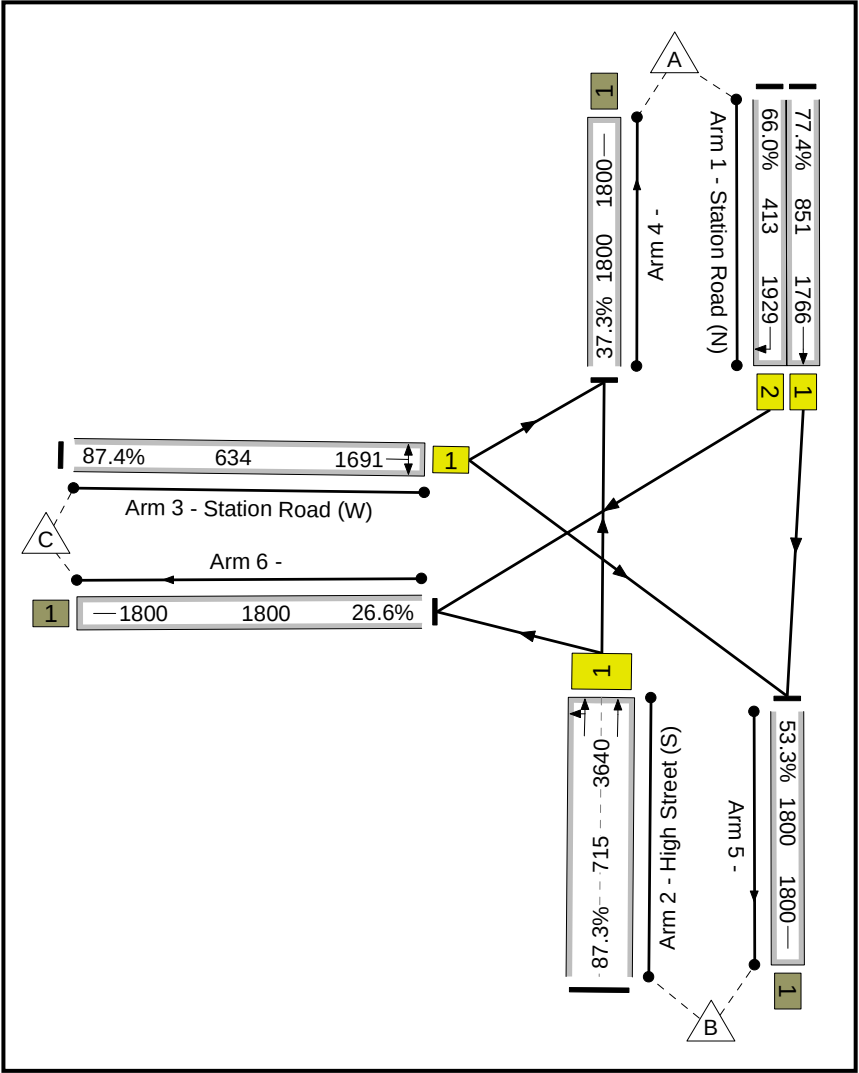


Signal Timings Diagram



Full Input Data And Results

**Junction Layout Diagram**



# Full Input Data And Results

## Link Results

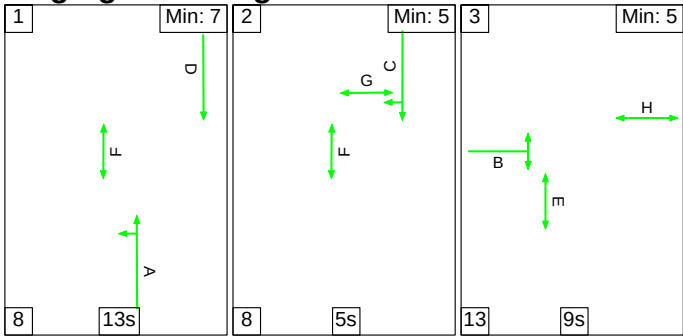
| Link Num                     | Link Desc                   | Link Type     | Stage Stream          | Position In Filtered Route   | Full Phase                               | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Max Sat Flow (pcu/Hr)            | Ave Sat Flow (pcu/Hr)      | Capacity (pcu)       | Deg Sat (%) |
|------------------------------|-----------------------------|---------------|-----------------------|------------------------------|------------------------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|-------------|
| 1/1                          | Station Road (N) Ahead      | U             | N/A                   | N/A                          | C                                        | D                     | 1                            | 26                                 | 15                  | 659                       | 1766                             | 1766                       | 851                  | 77.4        |
| 1/2                          | Station Road (N) Right      | U             | N/A                   | N/A                          | C                                        |                       | 1                            | 11                                 | -                   | 273                       | 1929                             | 1929                       | 413                  | 66.0        |
| 2/1                          | High Street (S) Ahead Left  | U             | N/A                   | N/A                          | A                                        |                       | 1                            | 10                                 | -                   | 624                       | 3640                             | 3640                       | 715                  | 87.3        |
| 3/1                          | Station Road (W) Left Right | U             | N/A                   | N/A                          | B                                        |                       | 1                            | 20                                 | -                   | 554                       | 1691                             | 1691                       | 634                  | 87.4        |
| 4/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 672                       | 1800                             | 1800                       | 1800                 | 37.3        |
| 5/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 959                       | 1800                             | 1800                       | 1800                 | 53.3        |
| 6/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 479                       | 1800                             | 1800                       | 1800                 | 26.6        |
| Link Num                     | Entering (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 Veh (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |             |
| 1/1                          | 659                         | 659           | -                     | -                            | -                                        | 2.2                   | 1.7                          | -                                  | 3.9                 | 21.2                      | 8.4                              | 1.7                        | 10.1                 |             |
| 1/2                          | 273                         | 273           | -                     | -                            | -                                        | 1.5                   | 1.0                          | -                                  | 2.5                 | 32.8                      | 3.9                              | 1.0                        | 4.8                  |             |
| 2/1                          | 624                         | 624           | -                     | -                            | -                                        | 3.8                   | 3.2                          | -                                  | 7.0                 | 40.3                      | 9.4                              | 3.2                        | 12.6                 |             |
| 3/1                          | 554                         | 554           | -                     | -                            | -                                        | 2.5                   | 3.2                          | -                                  | 5.7                 | 37.1                      | 8.0                              | 3.2                        | 11.2                 |             |
| 4/1                          | 672                         | 672           | -                     | -                            | -                                        | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.8                       | 4.5                              | 0.3                        | 4.8                  |             |
| 5/1                          | 959                         | 959           | -                     | -                            | -                                        | 0.0                   | 0.6                          | -                                  | 0.6                 | 2.1                       | 0.0                              | 0.6                        | 0.6                  |             |
| 6/1                          | 479                         | 479           | -                     | -                            | -                                        | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 0.0                              | 0.2                        | 0.2                  |             |
| PRC for Signalled Links (%): |                             |               |                       | 3.0                          | Total Delay for Signalled Links (pcuHr): |                       |                              | 19.05                              |                     |                           |                                  |                            |                      |             |
| PRC Over All Links (%):      |                             |               |                       | 3.0                          | Total Delay Over All Links (pcuHr):      |                       |                              | 20.15                              | Cycle Time (s):     |                           | 56                               |                            |                      |             |

Scenario 14: 'Base + Com + H4 2024 PM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 14: 'Base + Com + H4 2024 PM'

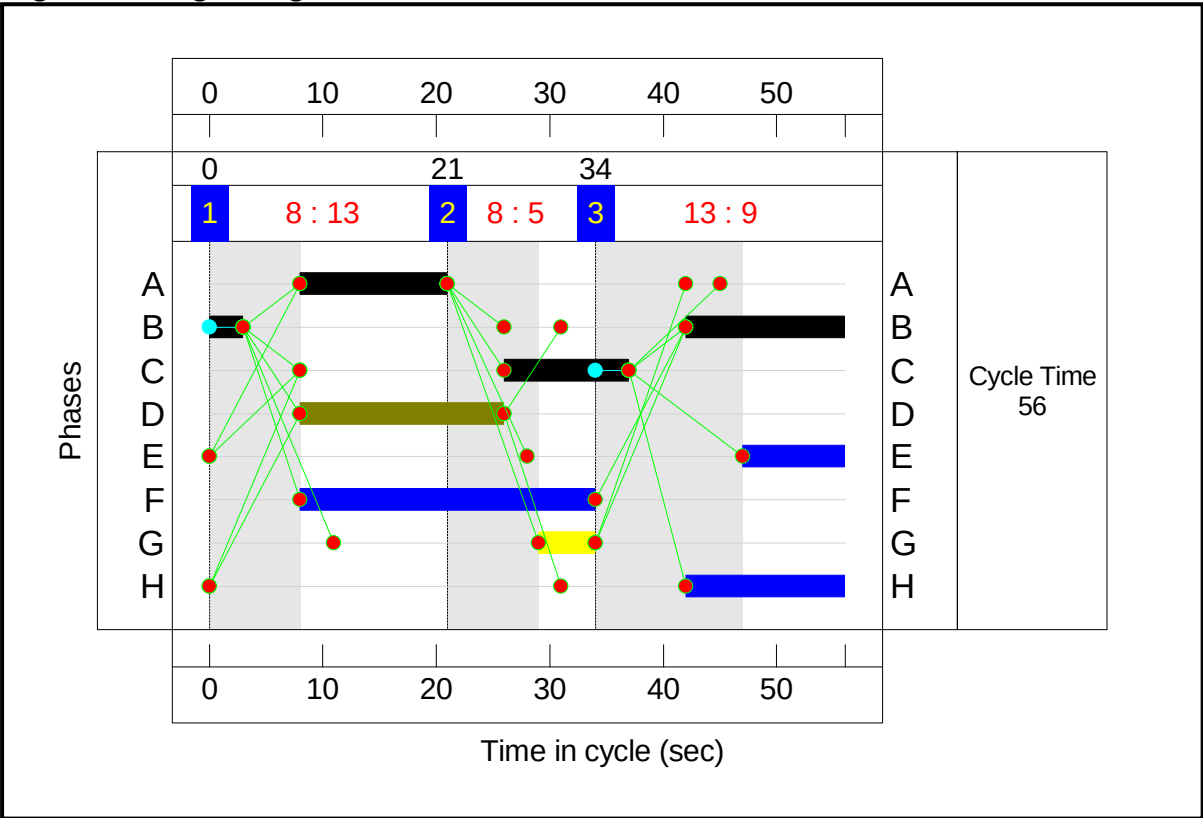
Staging Plan Diagram



Stage Timings

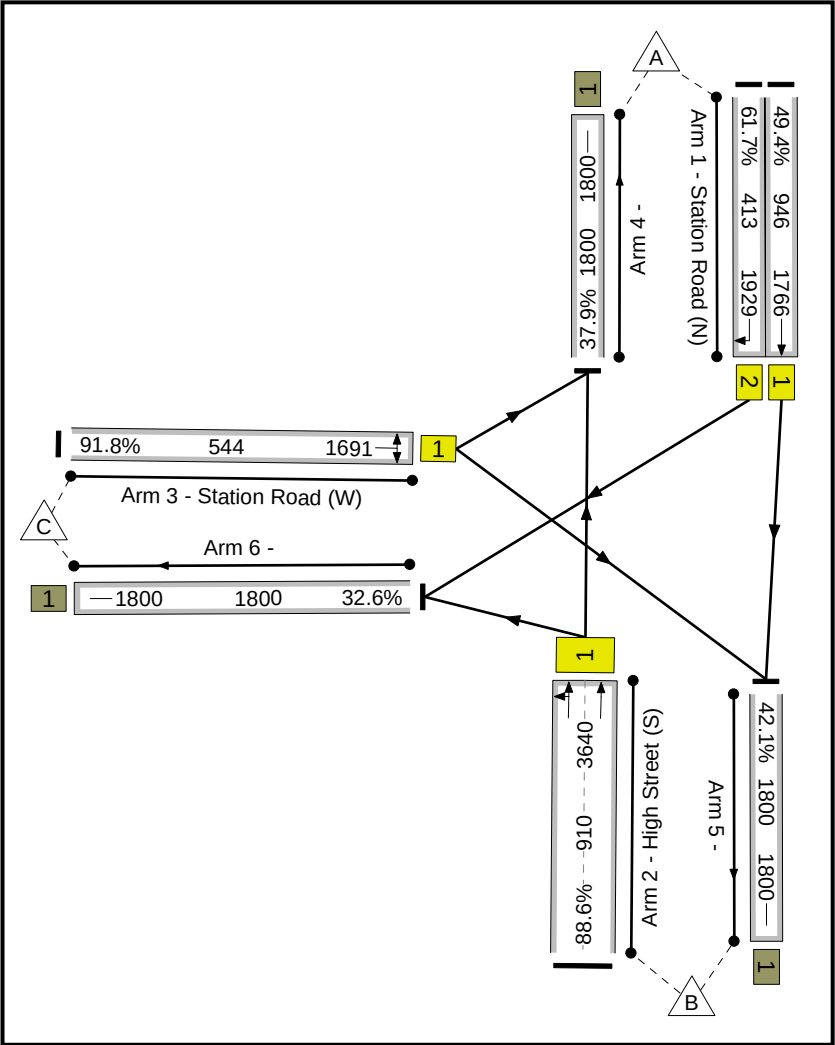
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 13 | 5  | 9  |
| Change Point | 0  | 21 | 34 |

Signal Timings Diagram



Full Input Data And Results

**Junction Layout Diagram**



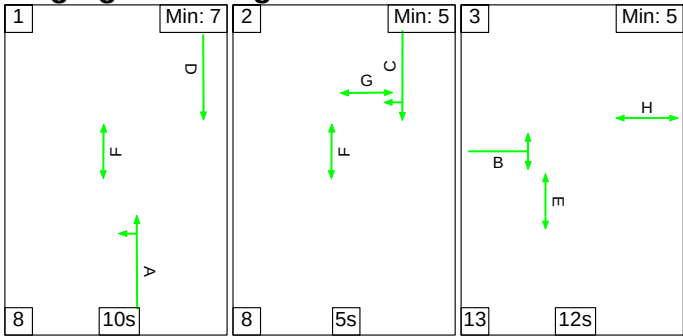
## Link Results

Scenario 15: ' Base + Com + H5 2024 AM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 15: 'Base + Com + H5 2024 AM'

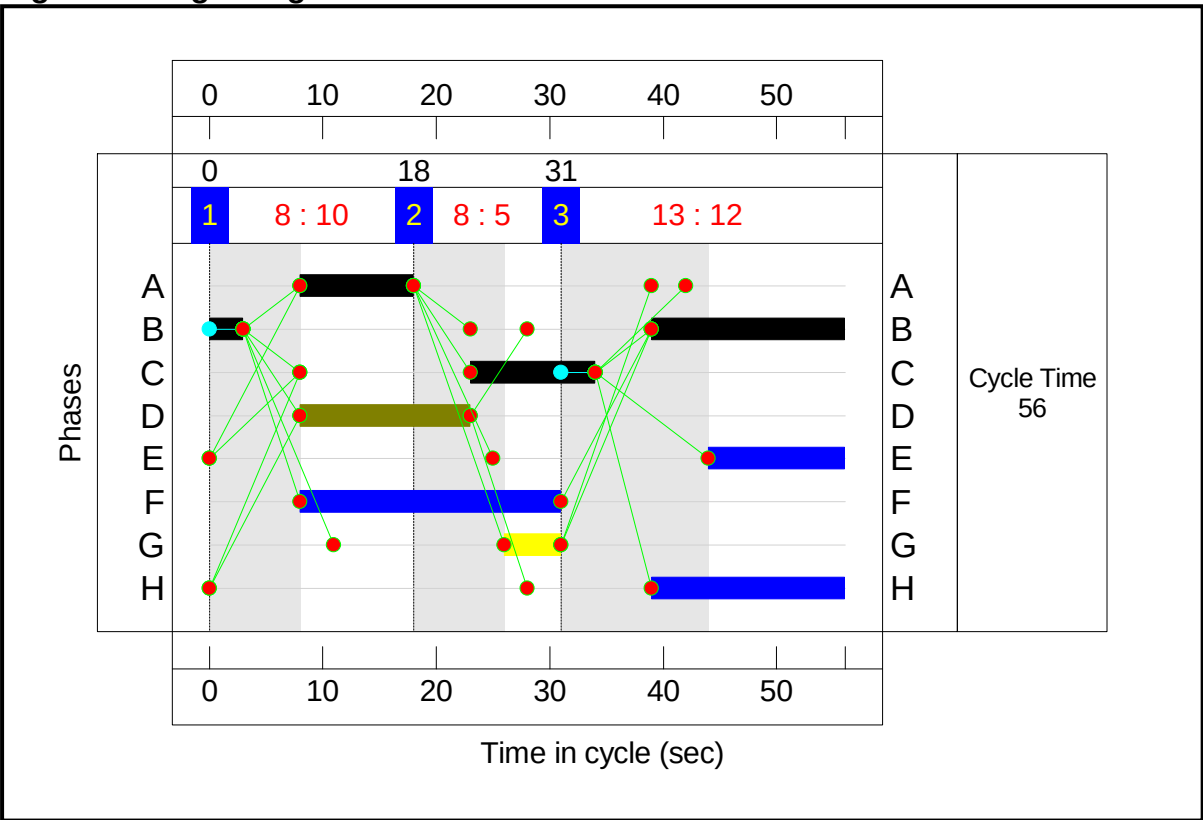
Staging Plan Diagram



Stage Timings

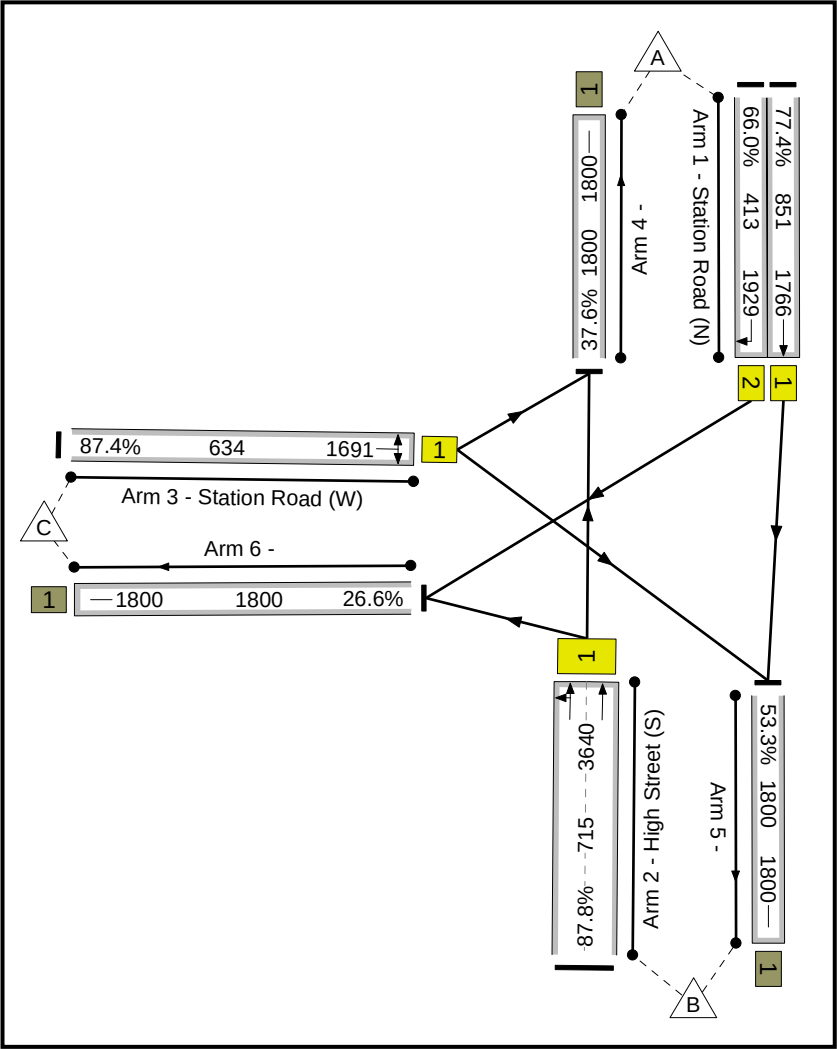
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 10 | 5  | 12 |
| Change Point | 0  | 18 | 31 |

Signal Timings Diagram



Full Input Data And Results

**Junction Layout Diagram**





# Full Input Data And Results

## Link Results

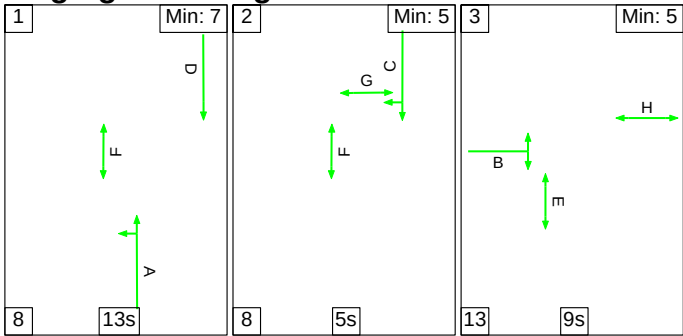
| Link Num                     | Link Desc                   | Link Type     | Stage Stream          | Position In Filtered Route   | Full Phase                               | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Max Sat Flow (pcu/Hr)            | Ave Sat Flow (pcu/Hr)      | Capacity (pcu)       | Deg Sat (%) |
|------------------------------|-----------------------------|---------------|-----------------------|------------------------------|------------------------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|-------------|
| 1/1                          | Station Road (N) Ahead      | U             | N/A                   | N/A                          | C                                        | D                     | 1                            | 26                                 | 15                  | 659                       | 1766                             | 1766                       | 851                  | 77.4        |
| 1/2                          | Station Road (N) Right      | U             | N/A                   | N/A                          | C                                        |                       | 1                            | 11                                 | -                   | 273                       | 1929                             | 1929                       | 413                  | 66.0        |
| 2/1                          | High Street (S) Ahead Left  | U             | N/A                   | N/A                          | A                                        |                       | 1                            | 10                                 | -                   | 628                       | 3640                             | 3640                       | 715                  | 87.8        |
| 3/1                          | Station Road (W) Left Right | U             | N/A                   | N/A                          | B                                        |                       | 1                            | 20                                 | -                   | 554                       | 1691                             | 1691                       | 634                  | 87.4        |
| 4/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 676                       | 1800                             | 1800                       | 1800                 | 37.6        |
| 5/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 959                       | 1800                             | 1800                       | 1800                 | 53.3        |
| 6/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 479                       | 1800                             | 1800                       | 1800                 | 26.6        |
| Link Num                     | Entering (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 Veh (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |             |
| 1/1                          | 659                         | 659           | -                     | -                            | -                                        | 2.2                   | 1.7                          | -                                  | 3.9                 | 21.2                      | 8.4                              | 1.7                        | 10.1                 |             |
| 1/2                          | 273                         | 273           | -                     | -                            | -                                        | 1.5                   | 1.0                          | -                                  | 2.5                 | 32.8                      | 3.9                              | 1.0                        | 4.8                  |             |
| 2/1                          | 628                         | 628           | -                     | -                            | -                                        | 3.8                   | 3.4                          | -                                  | 7.2                 | 41.1                      | 9.4                              | 3.4                        | 12.8                 |             |
| 3/1                          | 554                         | 554           | -                     | -                            | -                                        | 2.5                   | 3.2                          | -                                  | 5.7                 | 37.1                      | 8.0                              | 3.2                        | 11.2                 |             |
| 4/1                          | 676                         | 676           | -                     | -                            | -                                        | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.8                       | 4.5                              | 0.3                        | 4.8                  |             |
| 5/1                          | 959                         | 959           | -                     | -                            | -                                        | 0.0                   | 0.6                          | -                                  | 0.6                 | 2.1                       | 0.0                              | 0.6                        | 0.6                  |             |
| 6/1                          | 479                         | 479           | -                     | -                            | -                                        | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 0.0                              | 0.2                        | 0.2                  |             |
| PRC for Signalled Links (%): |                             |               |                       | 2.5                          | Total Delay for Signalled Links (pcuHr): |                       |                              | 19.23                              |                     |                           |                                  |                            |                      |             |
| PRC Over All Links (%):      |                             |               |                       | 2.5                          | Total Delay Over All Links (pcuHr):      |                       |                              | 20.33                              | Cycle Time (s): 56  |                           |                                  |                            |                      |             |

Scenario 16: ' Base + Com + H5 2024 PM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 16: 'Base + Com + H5 2024 PM'

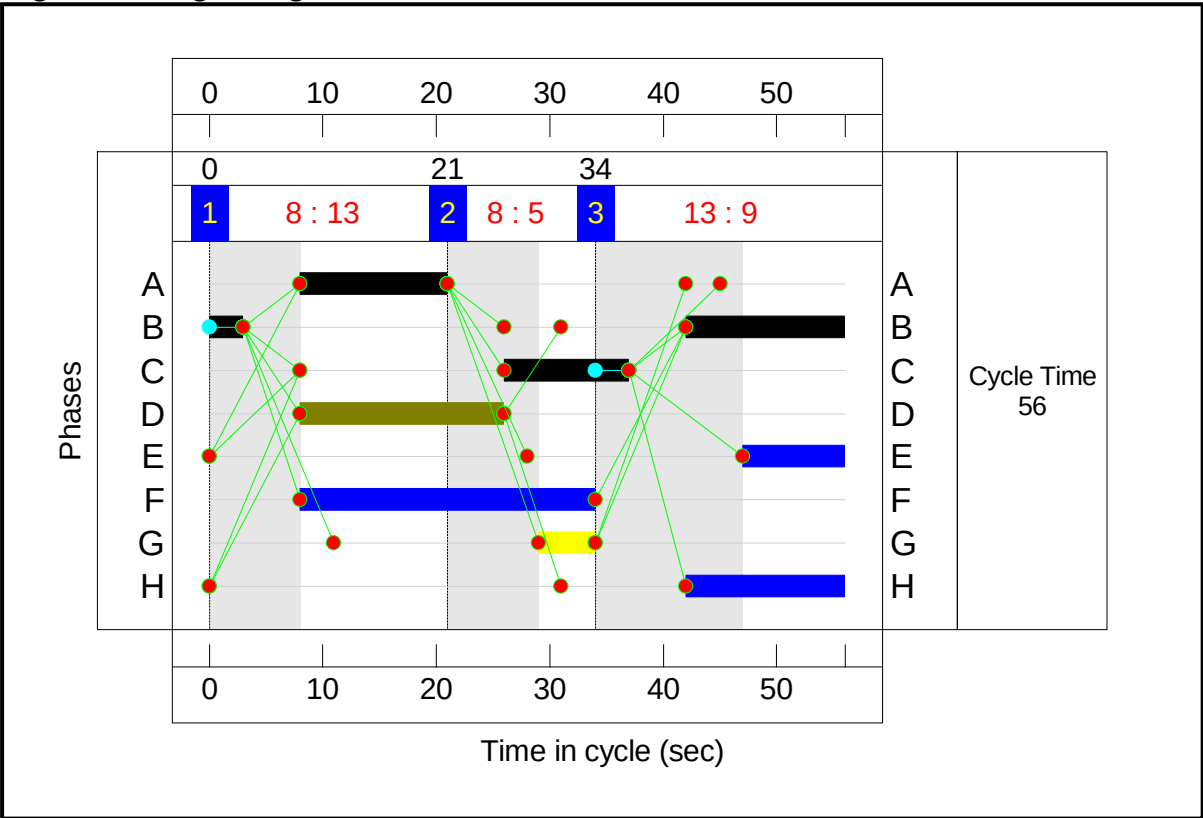
Staging Plan Diagram



Stage Timings

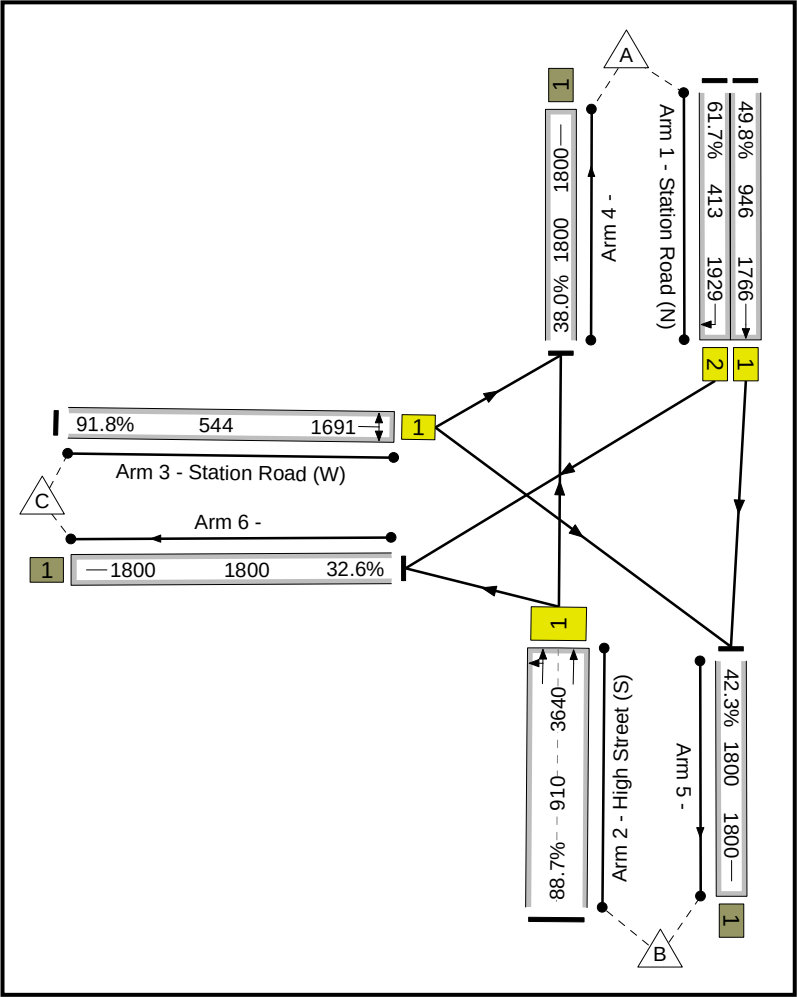
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 13 | 5  | 9  |
| Change Point | 0  | 21 | 34 |

Signal Timings Diagram



Full Input Data And Results

**Junction Layout Diagram**



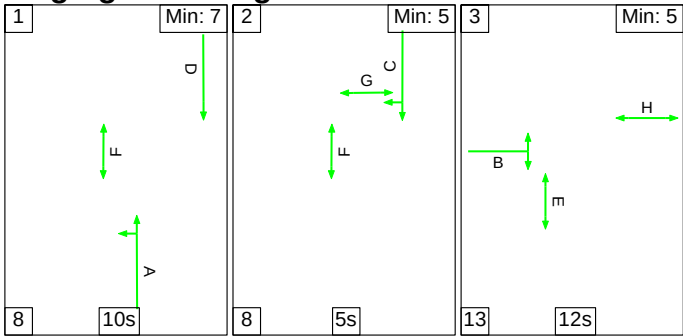
## Link Results

Scenario 17: 'Base + Com + H4 5 2024 AM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 17: 'Base + Com + H4 5 2024 AM'

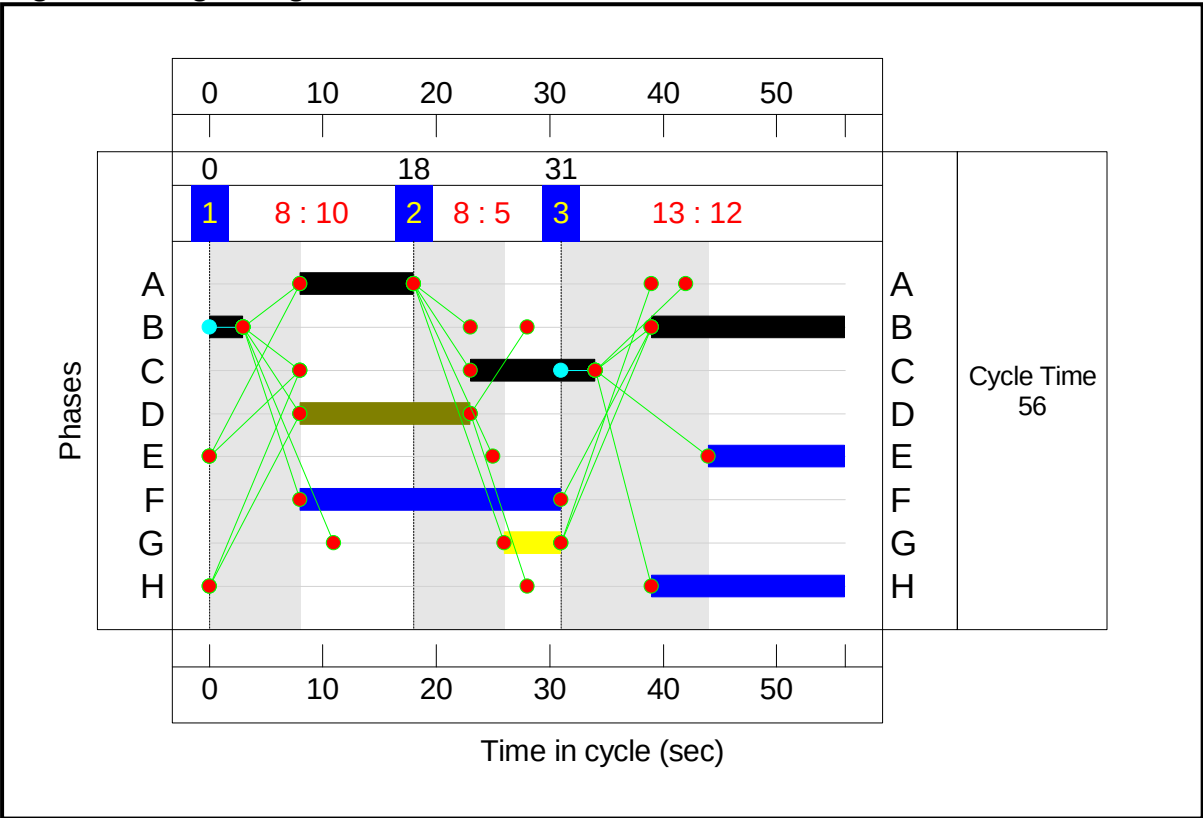
Staging Plan Diagram



Stage Timings

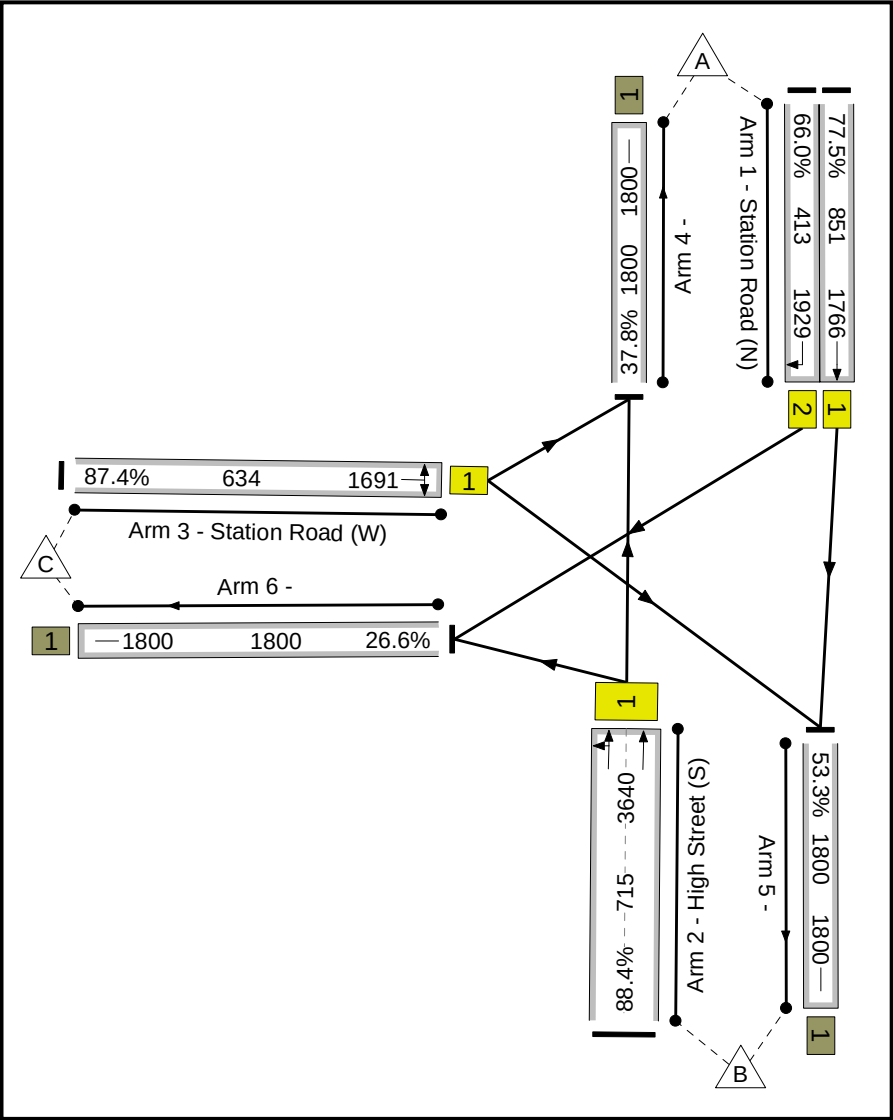
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 10 | 5  | 12 |
| Change Point | 0  | 18 | 31 |

Signal Timings Diagram



Full Input Data And Results

**Junction Layout Diagram**



## Full Input Data And Results

## Link Results

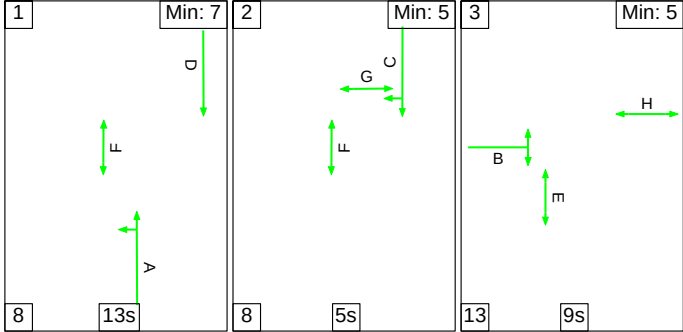
| Link Num                     | Link Desc                   | Link Type     | Stage Stream          | Position In Filtered Route   | Full Phase                               | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Max Sat Flow (pcu/Hr)            | Ave Sat Flow (pcu/Hr)      | Capacity (pcu)       | Deg Sat (%) |
|------------------------------|-----------------------------|---------------|-----------------------|------------------------------|------------------------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|-------------|
| 1/1                          | Station Road (N) Ahead      | U             | N/A                   | N/A                          | C                                        | D                     | 1                            | 26                                 | 15                  | 660                       | 1766                             | 1766                       | 851                  | 77.5        |
| 1/2                          | Station Road (N) Right      | U             | N/A                   | N/A                          | C                                        |                       | 1                            | 11                                 | -                   | 273                       | 1929                             | 1929                       | 413                  | 66.0        |
| 2/1                          | High Street (S) Ahead Left  | U             | N/A                   | N/A                          | A                                        |                       | 1                            | 10                                 | -                   | 632                       | 3640                             | 3640                       | 715                  | 88.4        |
| 3/1                          | Station Road (W) Left Right | U             | N/A                   | N/A                          | B                                        |                       | 1                            | 20                                 | -                   | 554                       | 1691                             | 1691                       | 634                  | 87.4        |
| 4/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 680                       | 1800                             | 1800                       | 1800                 | 37.8        |
| 5/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 960                       | 1800                             | 1800                       | 1800                 | 53.3        |
| 6/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 479                       | 1800                             | 1800                       | 1800                 | 26.6        |
| Link Num                     | Entering (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 Veh (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |             |
| 1/1                          | 660                         | 660           | -                     | -                            | -                                        | 2.2                   | 1.7                          | -                                  | 3.9                 | 21.2                      | 8.4                              | 1.7                        | 10.1                 |             |
| 1/2                          | 273                         | 273           | -                     | -                            | -                                        | 1.5                   | 1.0                          | -                                  | 2.5                 | 32.8                      | 3.9                              | 1.0                        | 4.8                  |             |
| 2/1                          | 632                         | 632           | -                     | -                            | -                                        | 3.8                   | 3.5                          | -                                  | 7.4                 | 41.9                      | 9.5                              | 3.5                        | 13.0                 |             |
| 3/1                          | 554                         | 554           | -                     | -                            | -                                        | 2.5                   | 3.2                          | -                                  | 5.7                 | 37.1                      | 8.0                              | 3.2                        | 11.2                 |             |
| 4/1                          | 680                         | 680           | -                     | -                            | -                                        | 0.0                   | 0.3                          | -                                  | 0.4                 | 1.9                       | 4.6                              | 0.3                        | 4.9                  |             |
| 5/1                          | 960                         | 960           | -                     | -                            | -                                        | 0.0                   | 0.6                          | -                                  | 0.6                 | 2.1                       | 0.0                              | 0.6                        | 0.6                  |             |
| 6/1                          | 479                         | 479           | -                     | -                            | -                                        | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 0.0                              | 0.2                        | 0.2                  |             |
| PRC for Signalled Links (%): |                             |               |                       | 1.8                          | Total Delay for Signalled Links (pcuHr): |                       |                              |                                    | 19.44               |                           |                                  |                            |                      |             |
| PRC Over All Links (%):      |                             |               |                       | 1.8                          | Total Delay Over All Links (pcuHr):      |                       |                              |                                    | 20.54               | Cycle Time (s): 56        |                                  |                            |                      |             |

Scenario 18: 'Base + Com + H4 5 2024 PM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 18: 'Base + Com + H4 5 2024 PM'

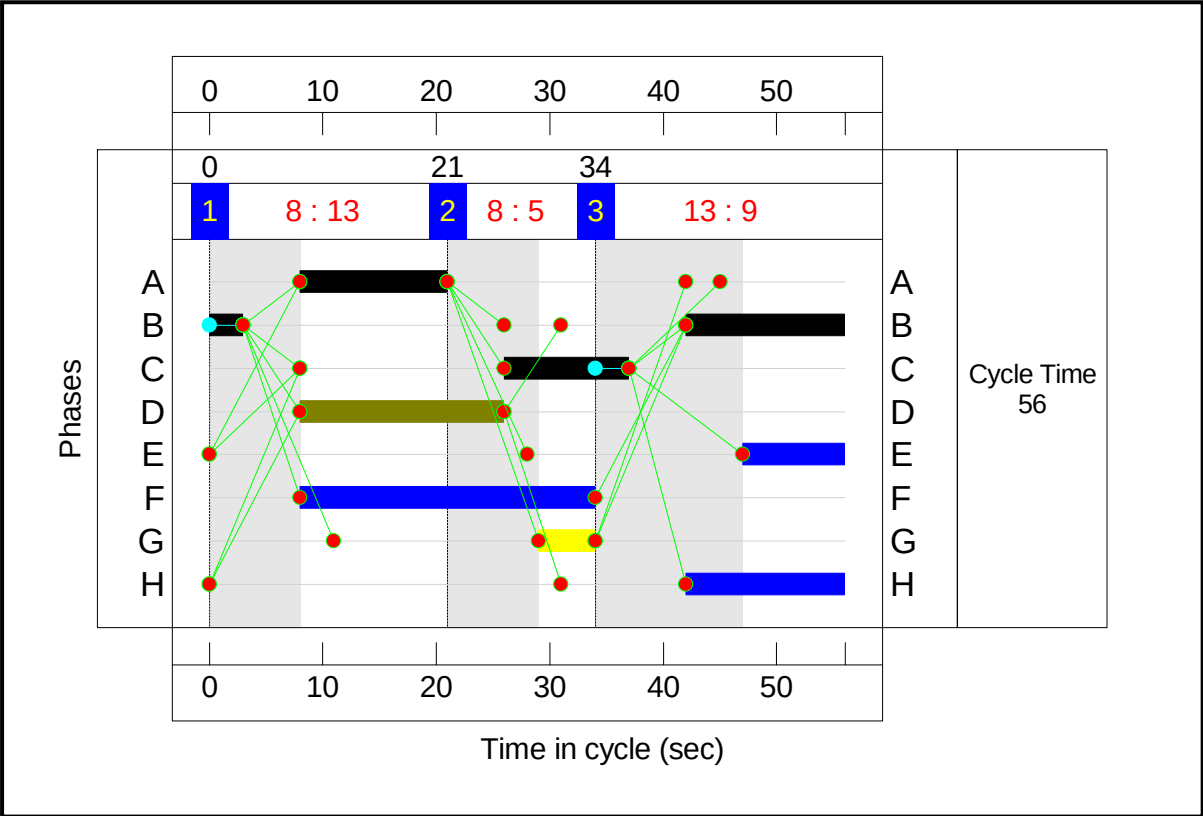
Staging Plan Diagram



Stage Timings

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 13 | 5  | 9  |
| Change Point | 0  | 21 | 34 |

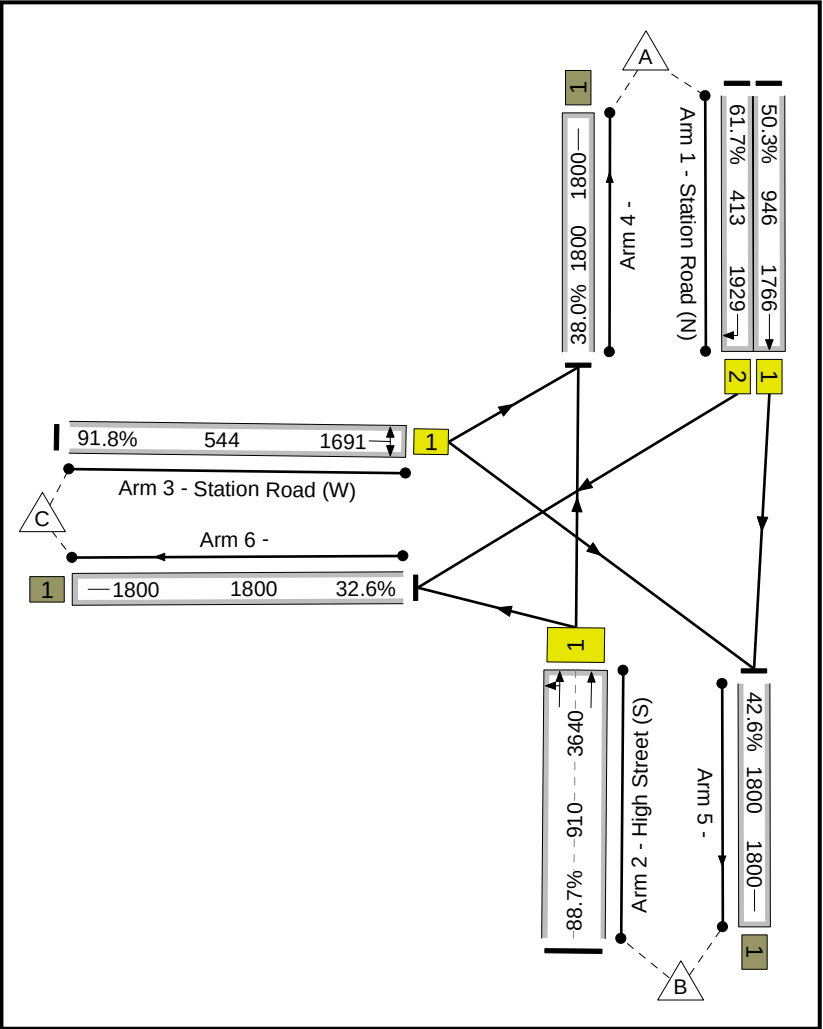
Signal Timings Diagram





Full Input Data And Results

**Junction Layout Diagram**



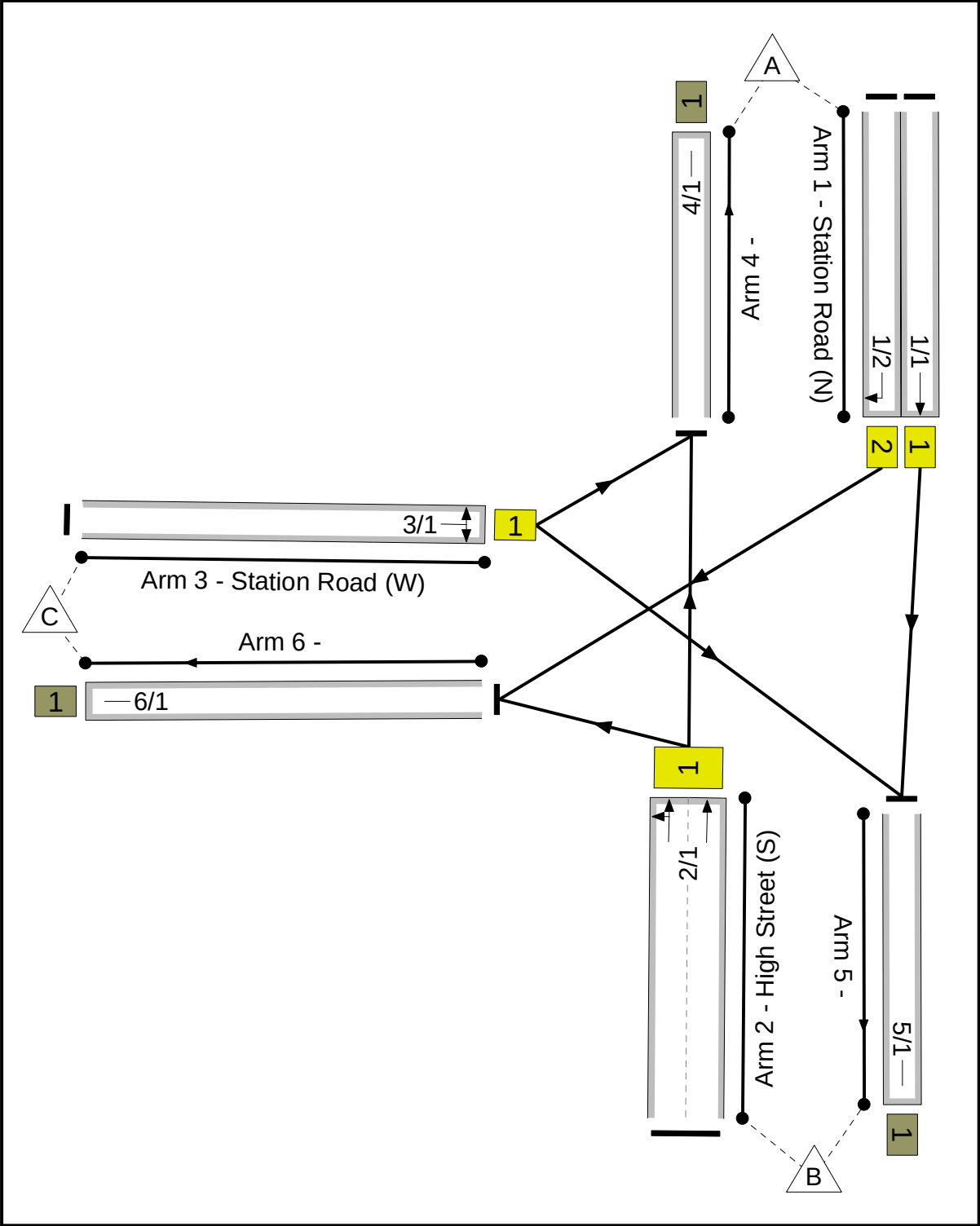
## Link Results

## Full Input Data And Results

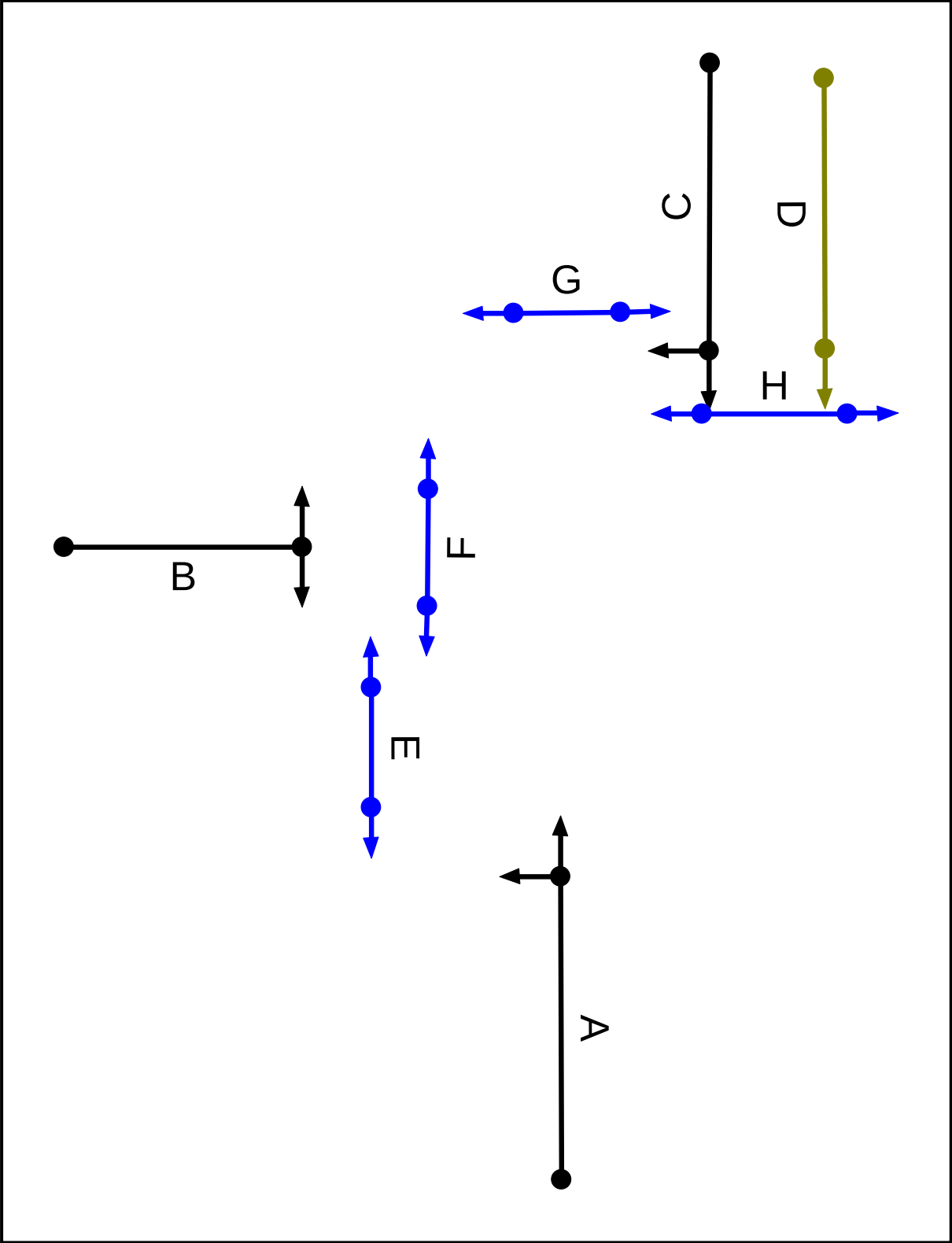
### User and Project Details

|                    |                             |
|--------------------|-----------------------------|
| <b>Project:</b>    |                             |
| <b>Title:</b>      |                             |
| <b>Location:</b>   |                             |
| <b>File name:</b>  |                             |
| <b>Author:</b>     | Station Rd_High Street.lsgx |
| <b>Company:</b>    |                             |
| <b>Address:</b>    | Generic                     |
| <b>Controller:</b> |                             |
| <b>SCN:</b>        |                             |
| <b>Notes:</b>      |                             |

Junction Layout Diagram



Phase Diagram



**Phase Input Data**

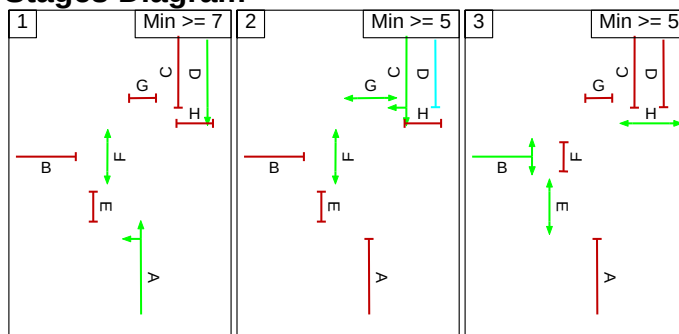
| Phase Name | Phase type | Assoc Phase | Street Min | Cont Min |
|------------|------------|-------------|------------|----------|
| A          | Traffic    |             | 7          | 7        |
| B          | Traffic    |             | 7          | 7        |
| C          | Traffic    |             | 7          | 7        |
| D          | Filter     | C           | 4          | 0        |
| E          | Pedestrian |             | 5          | 5        |
| F          | Pedestrian |             | 5          | 5        |
| G          | Pedestrian |             | 5          | 5        |
| H          | Pedestrian |             | 5          | 5        |

**Phase Intergreens Matrix**

| Terminating Phase | Starting Phase |   |   |   |   |    |   |   |   |
|-------------------|----------------|---|---|---|---|----|---|---|---|
|                   |                | A | B | C | D | E  | F | G | H |
|                   | A              |   | 5 | 5 | - | 7  | - | 8 | - |
|                   | B              | 5 |   | 5 | 5 | -  | 5 | 8 | - |
|                   | C              | 8 | 5 |   | - | 10 | - | - | 5 |
|                   | D              | - | 5 | - |   | -  | - | - | 5 |
|                   | E              | 8 | - | 8 | - |    | - | - | - |
|                   | F              | - | 8 | - | - | -  |   | - | - |
|                   | G              | 8 | 8 | - | - | -  | - |   | - |
|                   | H              | - | - | 8 | 8 | -  | - | - |   |

**Phases in Stage**

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

**Stages Diagram**

**Phase Delays**

| Term. Stage | Start Stage | Phase | Type   | Value | Cont value |
|-------------|-------------|-------|--------|-------|------------|
| 2           | 3           | C     | Losing | 3     | 3          |
| 3           | 1           | B     | Losing | 3     | 3          |

**Prohibited Stage Changes**

| From Stage | To Stage |   |   |
|------------|----------|---|---|
|            | 1        | 2 | 3 |
|            | 1        |   | 8 |
|            | 2        | 8 |   |
|            | 3        | 8 | 8 |

**Link Input Data**

| Arm/ Link | Link Name                   | Link Type | Num Lanes | Phases | Start Disp. | End Disp. |
|-----------|-----------------------------|-----------|-----------|--------|-------------|-----------|
| 1/1       | Station Road (N) Ahead      | U         | 1         | C D    | 2           | 3         |
| 1/2       | Station Road (N) Right      | U         | 1         | C      | 2           | 3         |
| 2/1       | High Street (S) Ahead Left  | U         | 2         | A      | 2           | 3         |
| 3/1       | Station Road (W) Left Right | U         | 1         | B      | 2           | 3         |
| 4/1       |                             | U         | 1         |        | 2           | 3         |
| 5/1       |                             | U         | 1         |        | 2           | 3         |
| 6/1       |                             | U         | 1         |        | 2           | 3         |

Lane Input Data

| Arm/<br>Lane                                     | Link<br>Num                                             | Physic<br>al<br>Length<br>(PCU) | Expecte<br>d<br>Usage<br>(PCU) | Sat<br>Flo<br>w<br>Typ<br>e | User<br>Saturatio<br>n<br>Flow<br>(PCU/Hr) | Lane<br>Widt<br>h<br>(m) | Gradie<br>nt | Nearsid<br>e<br>Lane | Allowe<br>d<br>Turns                | Turnin<br>g<br>Radius<br>(m) |
|--------------------------------------------------|---------------------------------------------------------|---------------------------------|--------------------------------|-----------------------------|--------------------------------------------|--------------------------|--------------|----------------------|-------------------------------------|------------------------------|
| 1/1<br>(Statio<br>n<br>Road<br>(N)<br>Lane<br>1) | Link 1<br>(Statio<br>n<br>Road<br>(N)<br>Ahead<br>)     | Inf                             | Inf                            | User                        | 1766                                       | 3.25                     | 0.00         | Y                    | Arm 5<br>Ahead                      | Inf                          |
| 1/2<br>(Statio<br>n<br>Road<br>(N)<br>Lane<br>2) | Link 2<br>(Statio<br>n<br>Road<br>(N)<br>Right)         | Inf                             | Inf                            | User                        | 1929                                       | 3.25                     | 0.00         | Y                    | Arm 6<br>Right                      | Inf                          |
| 2/1<br>(High<br>Street<br>(S)<br>Lane<br>1)      | Link 1<br>(High<br>Street<br>(S)<br>Ahead<br>Left)      | Inf                             | Inf                            | User                        | 1763                                       | 3.25                     | 0.00         | Y                    | Arm 4<br>Ahead<br><br>Arm 6<br>Left | Inf<br><br>Inf               |
| 2/2<br>(High<br>Street<br>(S)<br>Lane<br>2)      | Link 1<br>(High<br>Street<br>(S)<br>Ahead<br>Left)      | Inf                             | Inf                            | User                        | 1877                                       | 3.25                     | 0.00         | Y                    | Arm 4<br>Ahead                      | Inf                          |
| 3/1<br>(Statio<br>n<br>Road<br>(W)<br>Lane<br>1) | Link 1<br>(Statio<br>n<br>Road<br>(W)<br>Left<br>Right) | Inf                             | Inf                            | User                        | 1691                                       | 3.25                     | 0.00         | Y                    | Arm 4<br>Left<br><br>Arm 5<br>Right | Inf<br><br>Inf               |
| 4/1                                              | Link 1                                                  | Inf                             | Inf                            | User                        | 1800                                       | 3.25                     | 0.00         | Y                    |                                     |                              |
| 5/1                                              | Link 1                                                  | Inf                             | Inf                            | User                        | 1800                                       | 3.25                     | 0.00         | Y                    |                                     |                              |
| 6/1                                              | Link 1                                                  | Inf                             | Inf                            | User                        | 1800                                       | 3.25                     | 0.00         | Y                    |                                     |                              |

Traffic Flow Groups

| Flow Group                      | Start Time | End Time | Duration | Formula |
|---------------------------------|------------|----------|----------|---------|
| 13: 'Base + Com + H4 2024 AM'   | 08:00      | 09:00    | 01:00    |         |
| 14: 'Base + Com + H4 2024 PM'   | 17:00      | 18:00    | 01:00    |         |
| 15: 'Base + Com + H5 2024 AM'   | 08:00      | 09:00    | 01:00    |         |
| 16: 'Base + Com + H5 2024 PM'   | 17:00      | 18:00    | 01:00    |         |
| 17: 'Base + Com + H4 5 2024 AM' | 08:00      | 09:00    | 01:00    |         |
| 18: 'Base + Com + H4 5 2024 PM' | 17:00      | 18:00    | 01:00    |         |



Scenario 13: 'Base + Com + H4 2024 AM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 13: 'Base + Com + H4 2024 AM'

Traffic Flow Matrix

Desired Flow :

| Origin | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
|        | A           | 0   | 659 | 273 | 932  |
|        | B           | 418 | 0   | 206 | 624  |
|        | C           | 254 | 300 | 0   | 554  |
|        | Tot.        | 672 | 959 | 479 | 2110 |

Link Traffic Flows

| Arm/Link | Flow Group 13: Base + Com + H4 2024 AM |
|----------|----------------------------------------|
| 1/1      | 659                                    |
| 1/2      | 273                                    |
| 2/1      | 624                                    |
| 3/1      | 554                                    |
| 4/1      | 672                                    |
| 5/1      | 959                                    |
| 6/1      | 479                                    |

**Lane Saturation Flows**

| Arm/<br>Lane                     | Lane<br>Width<br>(m) | Gradient                                          | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|----------------------------------|----------------------|---------------------------------------------------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Road (N) Lane 1) |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1766                 |
| 1/2<br>(Station Road (N) Lane 2) |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1929                 |
| 2/1<br>(High Street (S) Lane 1)  |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1763                 |
| 2/2<br>(High Street (S) Lane 2)  |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1877                 |
| 3/1<br>(Station Road (W) Lane 1) |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1691                 |
| 4/1                              |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1800                 |
| 5/1                              |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1800                 |
| 6/1                              |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1800                 |

**Scenario 14: 'Base + Com + H4 2024 PM'**

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 14: 'Base + Com + H4 2024 PM'

**Traffic Flow Matrix****Desired Flow :**

|        | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
| Origin | A           | 0   | 467 | 255 | 722  |
|        | B           | 475 | 0   | 331 | 806  |
|        | C           | 208 | 291 | 0   | 499  |
|        | Tot.        | 683 | 758 | 586 | 2027 |

**Link Traffic Flows**

| Arm/Link | Flow<br>Group 14:<br>Base +<br>Com + H4<br>2024 PM |
|----------|----------------------------------------------------|
| 1/1      | 467                                                |
| 1/2      | 255                                                |
| 2/1      | 806                                                |
| 3/1      | 499                                                |
| 4/1      | 683                                                |
| 5/1      | 758                                                |
| 6/1      | 586                                                |

Lane Saturation Flows

| Arm/<br>Lane                     | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|----------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Road (N) Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1766                 |
| 1/2<br>(Station Road (N) Lane 2) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1929                 |
| 2/1<br>(High Street (S) Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1763                 |
| 2/2<br>(High Street (S) Lane 2)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1877                 |
| 3/1<br>(Station Road (W) Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1691                 |
| 4/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 5/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

Scenario 15: ' Base + Com + H5 2024 AM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 15: 'Base + Com + H5 2024 AM'

Traffic Flow Matrix

Desired Flow :

|        | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
| Origin | A           | 0   | 659 | 273 | 932  |
|        | B           | 422 | 0   | 206 | 628  |
|        | C           | 254 | 300 | 0   | 554  |
|        | Tot.        | 676 | 959 | 479 | 2114 |

Link Traffic Flows

| Arm/Link | Flow<br>Group 15:<br>Base +<br>Com + H5<br>2024 AM |
|----------|----------------------------------------------------|
| 1/1      | 659                                                |
| 1/2      | 273                                                |
| 2/1      | 628                                                |
| 3/1      | 554                                                |
| 4/1      | 676                                                |
| 5/1      | 959                                                |
| 6/1      | 479                                                |

**Lane Saturation Flows**

| Arm/<br>Lane                     | Lane<br>Width<br>(m) | Gradient                                          | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|----------------------------------|----------------------|---------------------------------------------------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Road (N) Lane 1) |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1766                 |
| 1/2<br>(Station Road (N) Lane 2) |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1929                 |
| 2/1<br>(High Street (S) Lane 1)  |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1763                 |
| 2/2<br>(High Street (S) Lane 2)  |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1877                 |
| 3/1<br>(Station Road (W) Lane 1) |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1691                 |
| 4/1                              |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1800                 |
| 5/1                              |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1800                 |
| 6/1                              |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1800                 |

**Scenario 16: ' Base + Com + H5 2024 PM'**

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 16: 'Base + Com + H5 2024 PM'

**Traffic Flow Matrix****Desired Flow :**

|        | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
| Origin | A           | 0   | 471 | 255 | 726  |
|        | B           | 476 | 0   | 331 | 807  |
|        | C           | 208 | 291 | 0   | 499  |
|        | Tot.        | 684 | 762 | 586 | 2032 |

**Link Traffic Flows**

| Arm/Link | Flow<br>Group 16:<br>Base +<br>Com + H5<br>2024 PM |
|----------|----------------------------------------------------|
| 1/1      | 471                                                |
| 1/2      | 255                                                |
| 2/1      | 807                                                |
| 3/1      | 499                                                |
| 4/1      | 684                                                |
| 5/1      | 762                                                |
| 6/1      | 586                                                |

Lane Saturation Flows

| Arm/<br>Lane                     | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|----------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Road (N) Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1766                 |
| 1/2<br>(Station Road (N) Lane 2) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1929                 |
| 2/1<br>(High Street (S) Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1763                 |
| 2/2<br>(High Street (S) Lane 2)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1877                 |
| 3/1<br>(Station Road (W) Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1691                 |
| 4/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 5/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

Scenario 17: 'Base + Com + H4 5 2024 AM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 17: 'Base + Com + H4 5 2024 AM'

Traffic Flow Matrix

Desired Flow :

|        | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
| Origin | A           | 0   | 660 | 273 | 933  |
|        | B           | 426 | 0   | 206 | 632  |
|        | C           | 254 | 300 | 0   | 554  |
|        | Tot.        | 680 | 960 | 479 | 2119 |

Link Traffic Flows

| Arm/Link | Flow<br>Group 17:<br>Base +<br>Com + H4<br>5 2024 AM |
|----------|------------------------------------------------------|
| 1/1      | 660                                                  |
| 1/2      | 273                                                  |
| 2/1      | 632                                                  |
| 3/1      | 554                                                  |
| 4/1      | 680                                                  |
| 5/1      | 960                                                  |
| 6/1      | 479                                                  |

Lane Saturation Flows

| Arm/<br>Lane                     | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|----------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Road (N) Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1766                 |
| 1/2<br>(Station Road (N) Lane 2) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1929                 |
| 2/1<br>(High Street (S) Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1763                 |
| 2/2<br>(High Street (S) Lane 2)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1877                 |
| 3/1<br>(Station Road (W) Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1691                 |
| 4/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 5/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

Scenario 18: 'Base + Com + H4 5 2024 PM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 18: 'Base + Com + H4 5 2024 PM'

Traffic Flow Matrix

Desired Flow :

|        | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
| Origin | A           | 0   | 476 | 255 | 731  |
|        | B           | 476 | 0   | 331 | 807  |
|        | C           | 208 | 291 | 0   | 499  |
|        | Tot.        | 684 | 767 | 586 | 2037 |

Link Traffic Flows

| Arm/Link | Flow<br>Group 18:<br>Base +<br>Com + H4<br>5 2024 PM |
|----------|------------------------------------------------------|
| 1/1      | 476                                                  |
| 1/2      | 255                                                  |
| 2/1      | 807                                                  |
| 3/1      | 499                                                  |
| 4/1      | 684                                                  |
| 5/1      | 767                                                  |
| 6/1      | 586                                                  |

Lane Saturation Flows

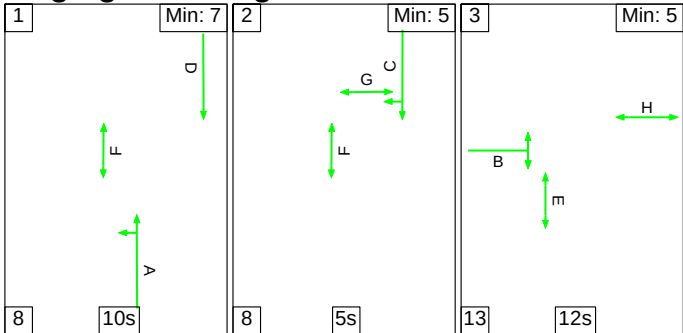
| Arm/<br>Lane                     | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|----------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Road (N) Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1766                 |
| 1/2<br>(Station Road (N) Lane 2) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1929                 |
| 2/1<br>(High Street (S) Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1763                 |
| 2/2<br>(High Street (S) Lane 2)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1877                 |
| 3/1<br>(Station Road (W) Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1691                 |
| 4/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 5/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

Scenario 13: 'Base + Com + H4 2024 AM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 13: 'Base + Com + H4 2024 AM'

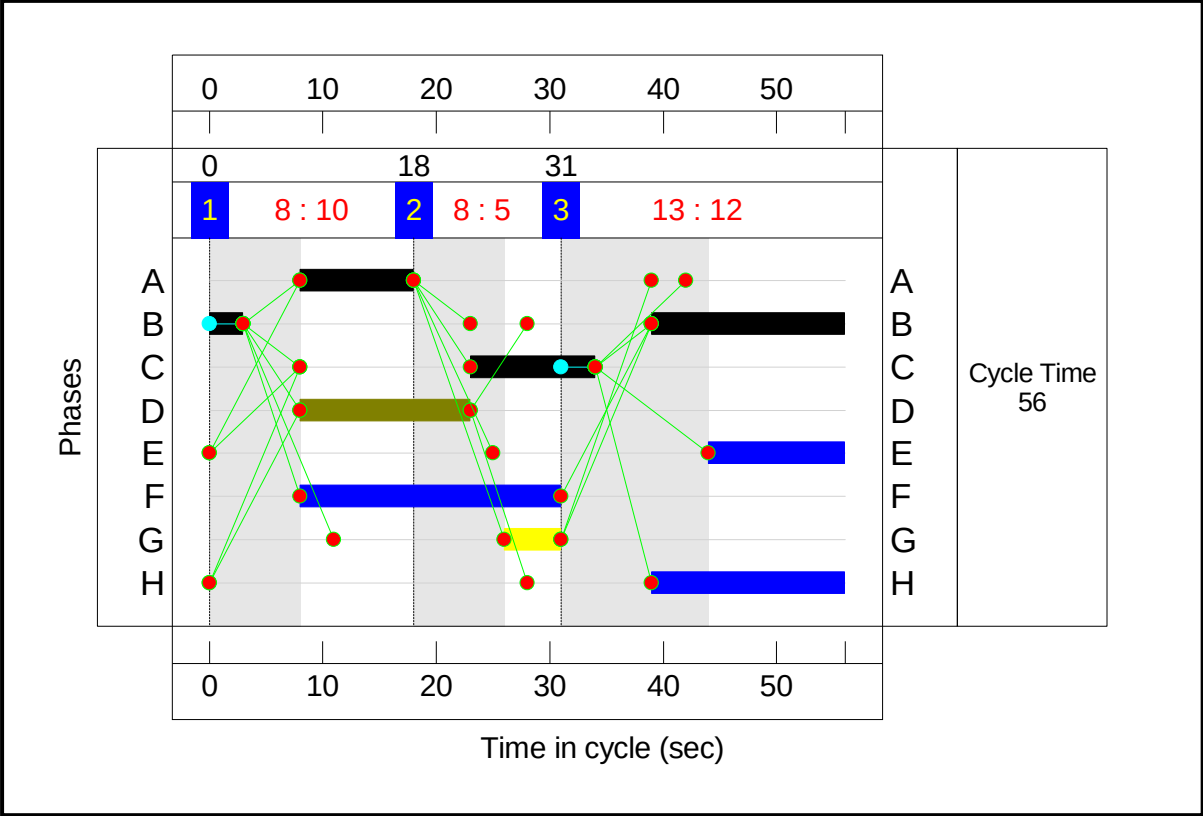
Staging Plan Diagram



Stage Timings

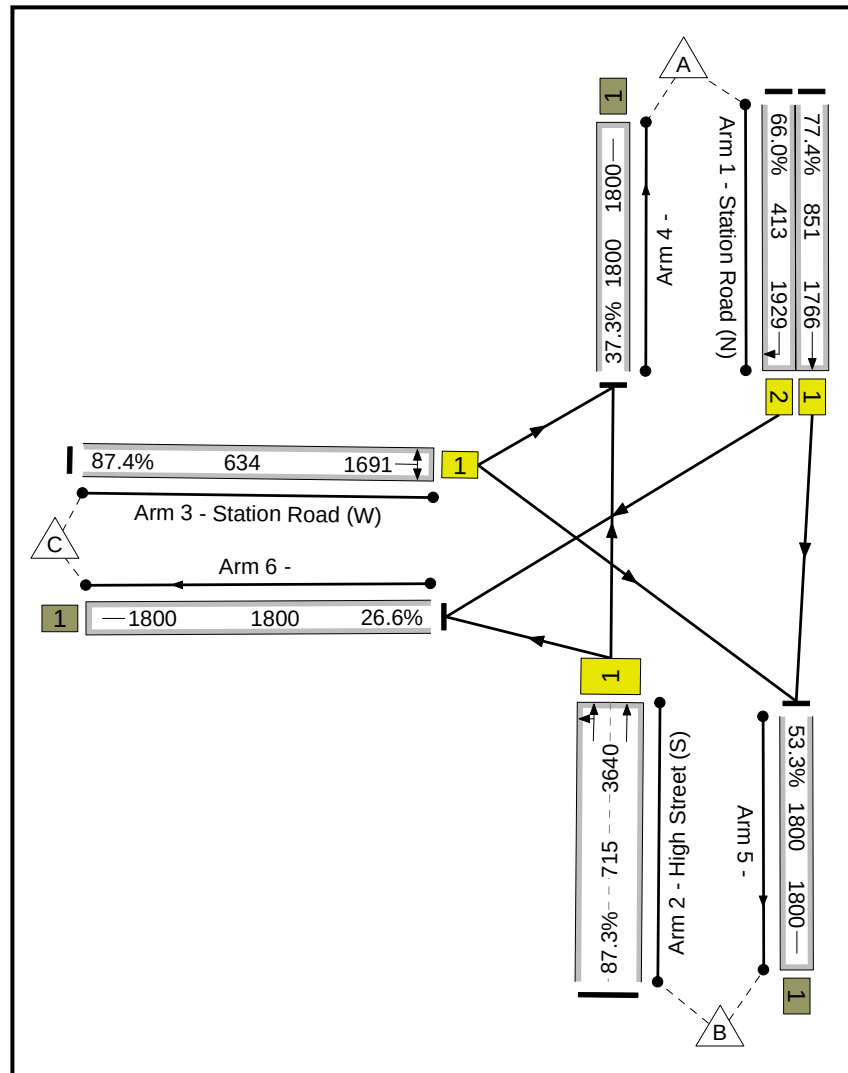
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 10 | 5  | 12 |
| Change Point | 0  | 18 | 31 |

Signal Timings Diagram





### Junction Layout Diagram



# Full Input Data And Results

## Link Results

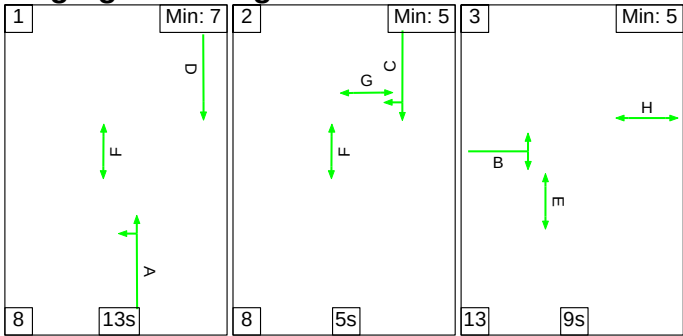
| Link Num                     | Link Desc                   | Link Type     | Stage Stream          | Position In Filtered Route   | Full Phase                               | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Max Sat Flow (pcu/Hr)            | Ave Sat Flow (pcu/Hr)      | Capacity (pcu)       | Deg Sat (%) |
|------------------------------|-----------------------------|---------------|-----------------------|------------------------------|------------------------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|-------------|
| 1/1                          | Station Road (N) Ahead      | U             | N/A                   | N/A                          | C                                        | D                     | 1                            | 26                                 | 15                  | 659                       | 1766                             | 1766                       | 851                  | 77.4        |
| 1/2                          | Station Road (N) Right      | U             | N/A                   | N/A                          | C                                        |                       | 1                            | 11                                 | -                   | 273                       | 1929                             | 1929                       | 413                  | 66.0        |
| 2/1                          | High Street (S) Ahead Left  | U             | N/A                   | N/A                          | A                                        |                       | 1                            | 10                                 | -                   | 624                       | 3640                             | 3640                       | 715                  | 87.3        |
| 3/1                          | Station Road (W) Left Right | U             | N/A                   | N/A                          | B                                        |                       | 1                            | 20                                 | -                   | 554                       | 1691                             | 1691                       | 634                  | 87.4        |
| 4/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 672                       | 1800                             | 1800                       | 1800                 | 37.3        |
| 5/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 959                       | 1800                             | 1800                       | 1800                 | 53.3        |
| 6/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 479                       | 1800                             | 1800                       | 1800                 | 26.6        |
| Link Num                     | Entering (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 Veh (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |             |
| 1/1                          | 659                         | 659           | -                     | -                            | -                                        | 2.2                   | 1.7                          | -                                  | 3.9                 | 21.2                      | 8.4                              | 1.7                        | 10.1                 |             |
| 1/2                          | 273                         | 273           | -                     | -                            | -                                        | 1.5                   | 1.0                          | -                                  | 2.5                 | 32.8                      | 3.9                              | 1.0                        | 4.8                  |             |
| 2/1                          | 624                         | 624           | -                     | -                            | -                                        | 3.8                   | 3.2                          | -                                  | 7.0                 | 40.3                      | 9.4                              | 3.2                        | 12.6                 |             |
| 3/1                          | 554                         | 554           | -                     | -                            | -                                        | 2.5                   | 3.2                          | -                                  | 5.7                 | 37.1                      | 8.0                              | 3.2                        | 11.2                 |             |
| 4/1                          | 672                         | 672           | -                     | -                            | -                                        | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.8                       | 4.5                              | 0.3                        | 4.8                  |             |
| 5/1                          | 959                         | 959           | -                     | -                            | -                                        | 0.0                   | 0.6                          | -                                  | 0.6                 | 2.1                       | 0.0                              | 0.6                        | 0.6                  |             |
| 6/1                          | 479                         | 479           | -                     | -                            | -                                        | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 0.0                              | 0.2                        | 0.2                  |             |
| PRC for Signalled Links (%): |                             |               |                       | 3.0                          | Total Delay for Signalled Links (pcuHr): |                       |                              | 19.05                              |                     |                           |                                  |                            |                      |             |
| PRC Over All Links (%):      |                             |               |                       | 3.0                          | Total Delay Over All Links (pcuHr):      |                       |                              | 20.15                              | Cycle Time (s): 56  |                           |                                  |                            |                      |             |

Scenario 14: 'Base + Com + H4 2024 PM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 14: 'Base + Com + H4 2024 PM'

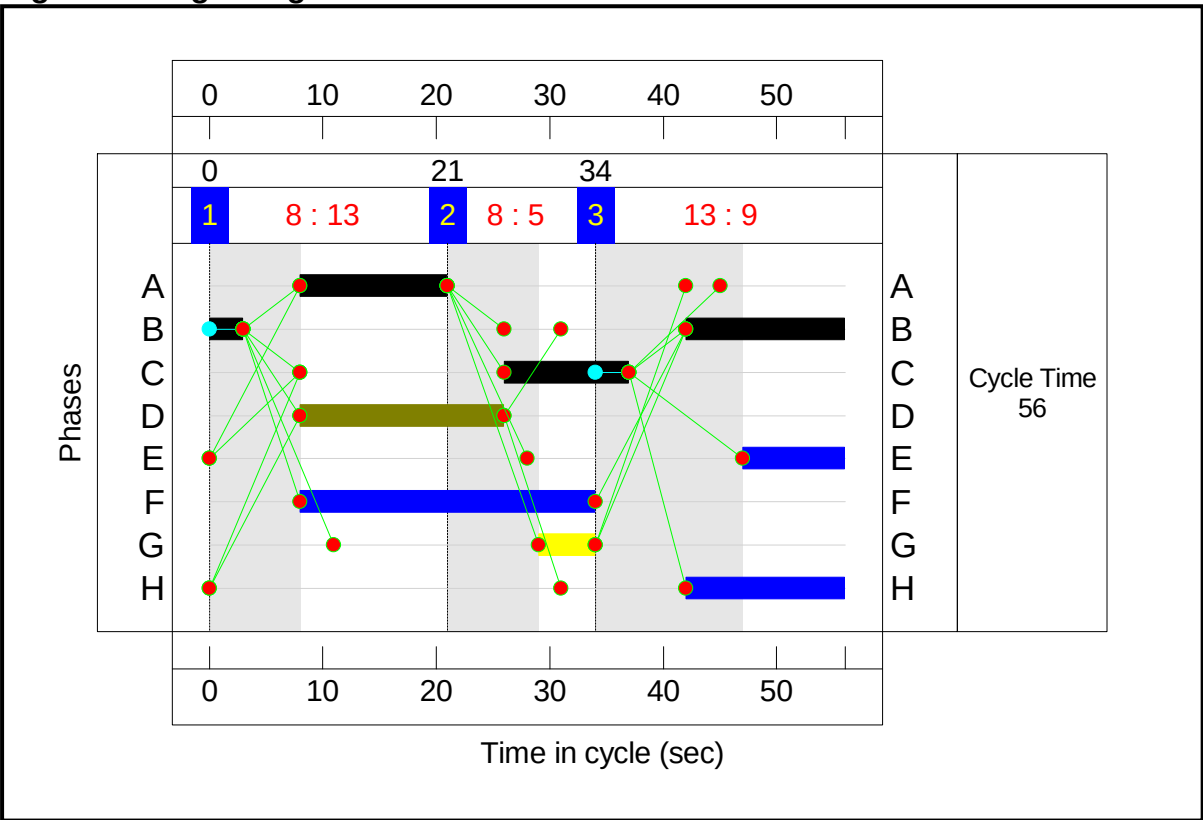
Staging Plan Diagram



Stage Timings

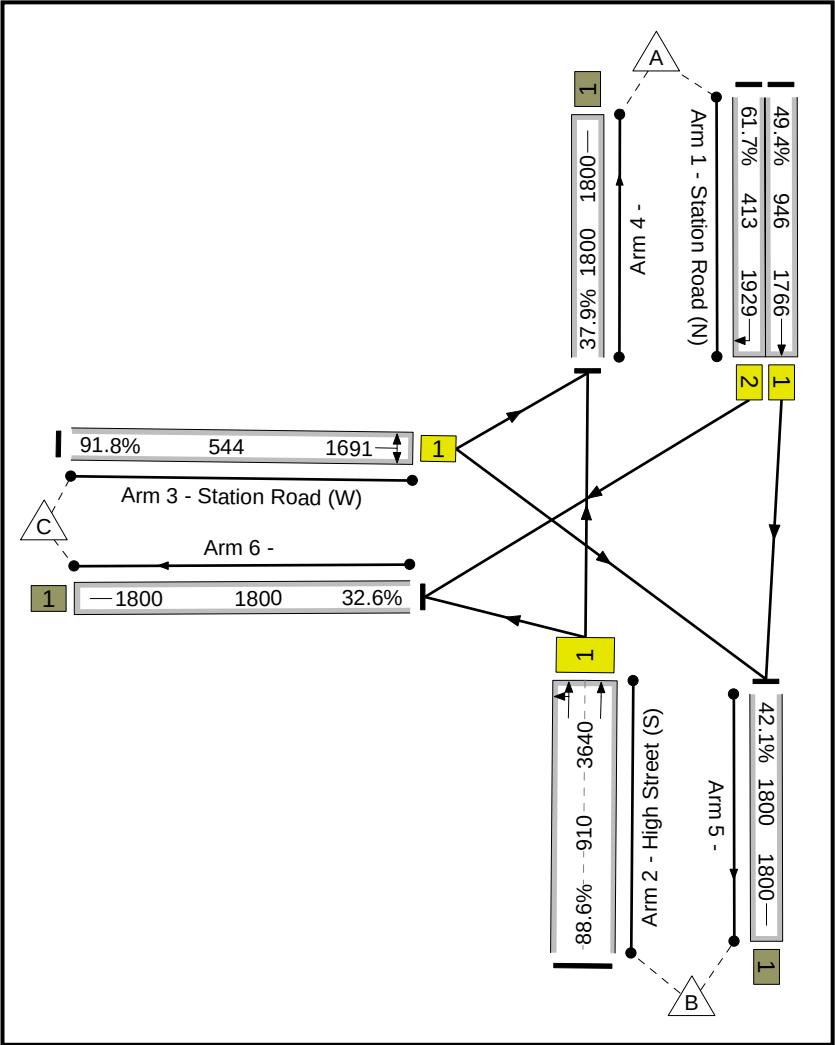
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 13 | 5  | 9  |
| Change Point | 0  | 21 | 34 |

Signal Timings Diagram



Full Input Data And Results

**Junction Layout Diagram**



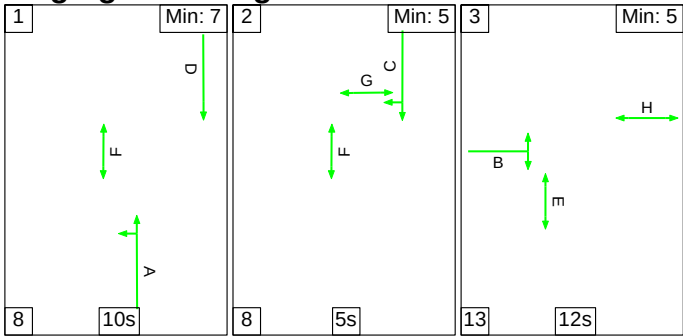
## Link Results

Scenario 15: ' Base + Com + H5 2024 AM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 15: 'Base + Com + H5 2024 AM'

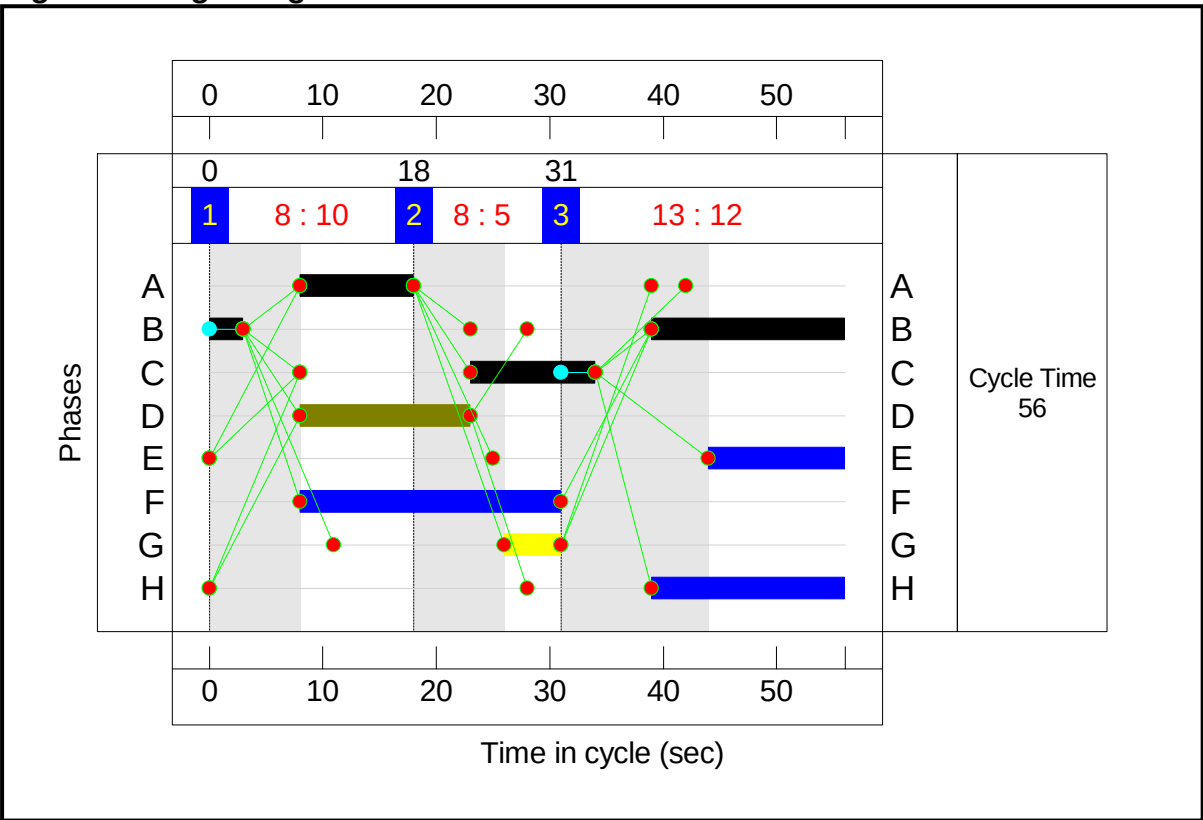
Staging Plan Diagram



Stage Timings

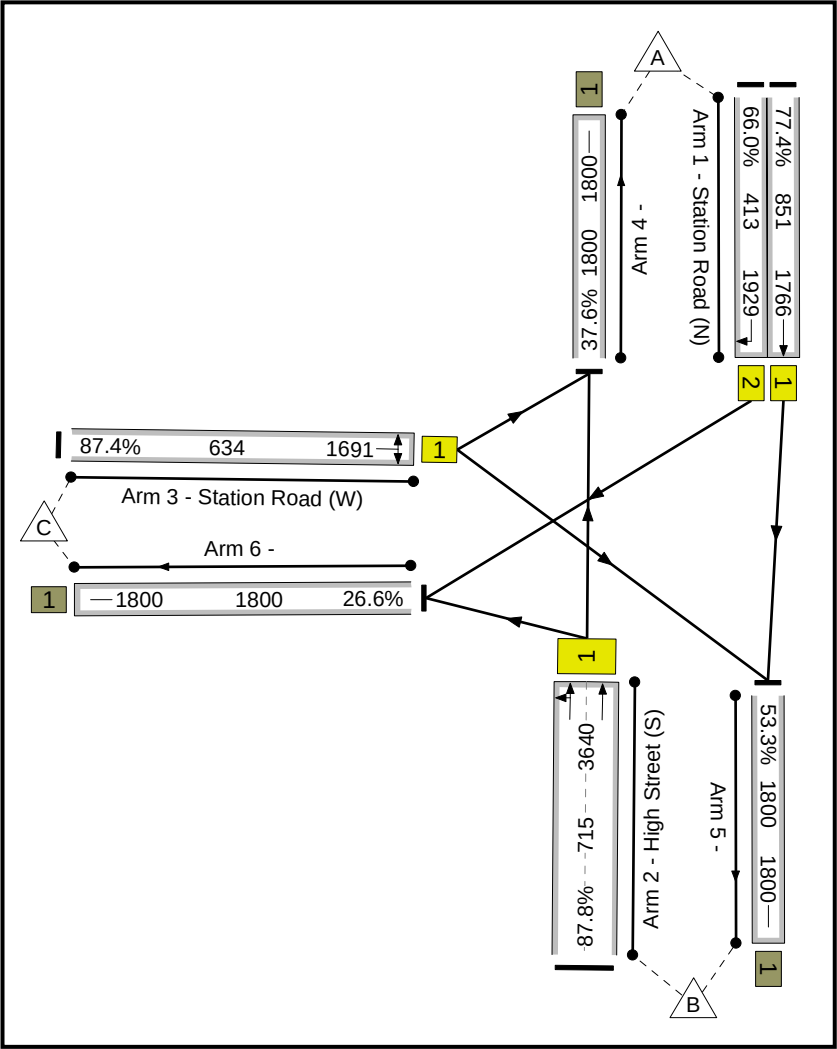
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 10 | 5  | 12 |
| Change Point | 0  | 18 | 31 |

Signal Timings Diagram



Full Input Data And Results

**Junction Layout Diagram**



# Full Input Data And Results

## Link Results

| Link Num                     | Link Desc                   | Link Type     | Stage Stream          | Position In Filtered Route   | Full Phase                               | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Max Sat Flow (pcu/Hr)            | Ave Sat Flow (pcu/Hr)      | Capacity (pcu)       | Deg Sat (%) |
|------------------------------|-----------------------------|---------------|-----------------------|------------------------------|------------------------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|-------------|
| 1/1                          | Station Road (N) Ahead      | U             | N/A                   | N/A                          | C                                        | D                     | 1                            | 26                                 | 15                  | 659                       | 1766                             | 1766                       | 851                  | 77.4        |
| 1/2                          | Station Road (N) Right      | U             | N/A                   | N/A                          | C                                        |                       | 1                            | 11                                 | -                   | 273                       | 1929                             | 1929                       | 413                  | 66.0        |
| 2/1                          | High Street (S) Ahead Left  | U             | N/A                   | N/A                          | A                                        |                       | 1                            | 10                                 | -                   | 628                       | 3640                             | 3640                       | 715                  | 87.8        |
| 3/1                          | Station Road (W) Left Right | U             | N/A                   | N/A                          | B                                        |                       | 1                            | 20                                 | -                   | 554                       | 1691                             | 1691                       | 634                  | 87.4        |
| 4/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 676                       | 1800                             | 1800                       | 1800                 | 37.6        |
| 5/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 959                       | 1800                             | 1800                       | 1800                 | 53.3        |
| 6/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 479                       | 1800                             | 1800                       | 1800                 | 26.6        |
| Link Num                     | Entering (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 Veh (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |             |
| 1/1                          | 659                         | 659           | -                     | -                            | -                                        | 2.2                   | 1.7                          | -                                  | 3.9                 | 21.2                      | 8.4                              | 1.7                        | 10.1                 |             |
| 1/2                          | 273                         | 273           | -                     | -                            | -                                        | 1.5                   | 1.0                          | -                                  | 2.5                 | 32.8                      | 3.9                              | 1.0                        | 4.8                  |             |
| 2/1                          | 628                         | 628           | -                     | -                            | -                                        | 3.8                   | 3.4                          | -                                  | 7.2                 | 41.1                      | 9.4                              | 3.4                        | 12.8                 |             |
| 3/1                          | 554                         | 554           | -                     | -                            | -                                        | 2.5                   | 3.2                          | -                                  | 5.7                 | 37.1                      | 8.0                              | 3.2                        | 11.2                 |             |
| 4/1                          | 676                         | 676           | -                     | -                            | -                                        | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.8                       | 4.5                              | 0.3                        | 4.8                  |             |
| 5/1                          | 959                         | 959           | -                     | -                            | -                                        | 0.0                   | 0.6                          | -                                  | 0.6                 | 2.1                       | 0.0                              | 0.6                        | 0.6                  |             |
| 6/1                          | 479                         | 479           | -                     | -                            | -                                        | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 0.0                              | 0.2                        | 0.2                  |             |
| PRC for Signalled Links (%): |                             |               |                       | 2.5                          | Total Delay for Signalled Links (pcuHr): |                       |                              | 19.23                              |                     |                           |                                  |                            |                      |             |
| PRC Over All Links (%):      |                             |               |                       | 2.5                          | Total Delay Over All Links (pcuHr):      |                       |                              | 20.33                              | Cycle Time (s): 56  |                           |                                  |                            |                      |             |

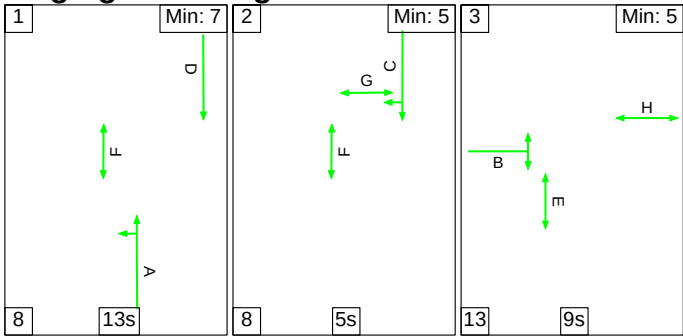


Scenario 16: ' Base + Com + H5 2024 PM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 16: 'Base + Com + H5 2024 PM'

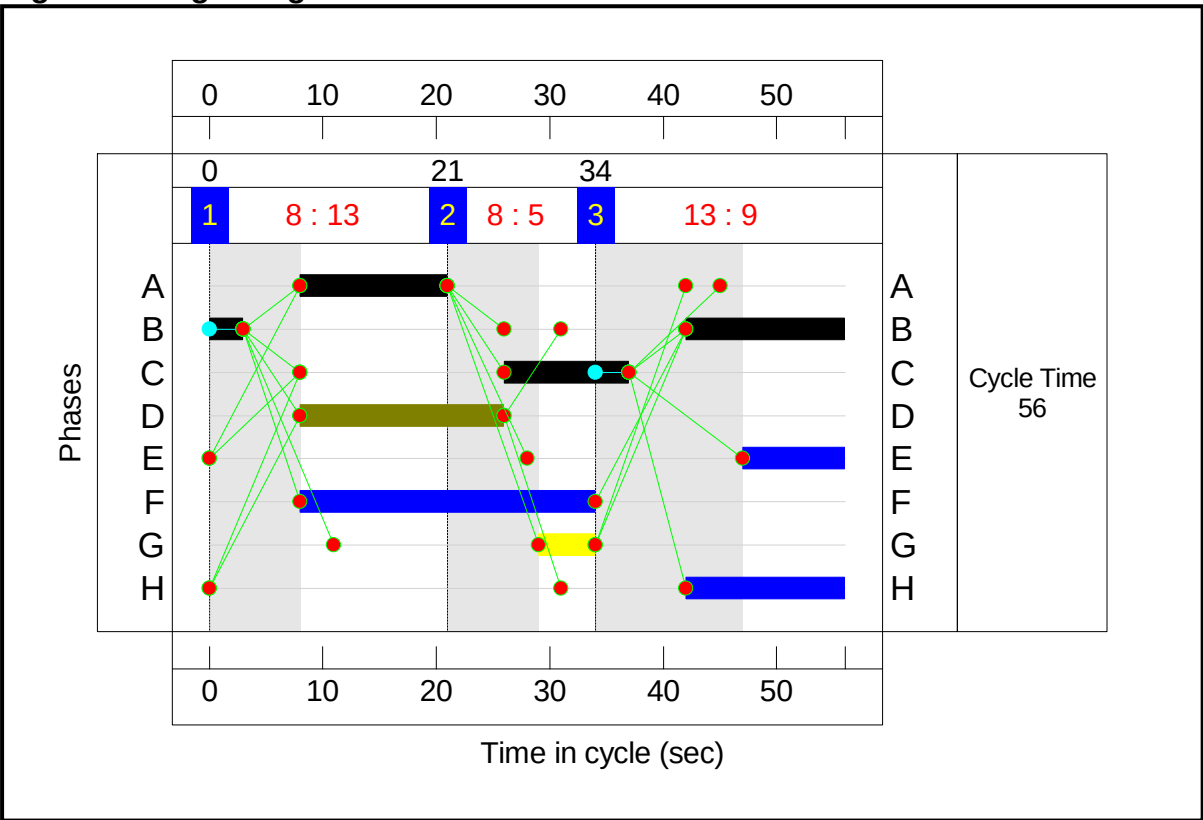
Staging Plan Diagram



Stage Timings

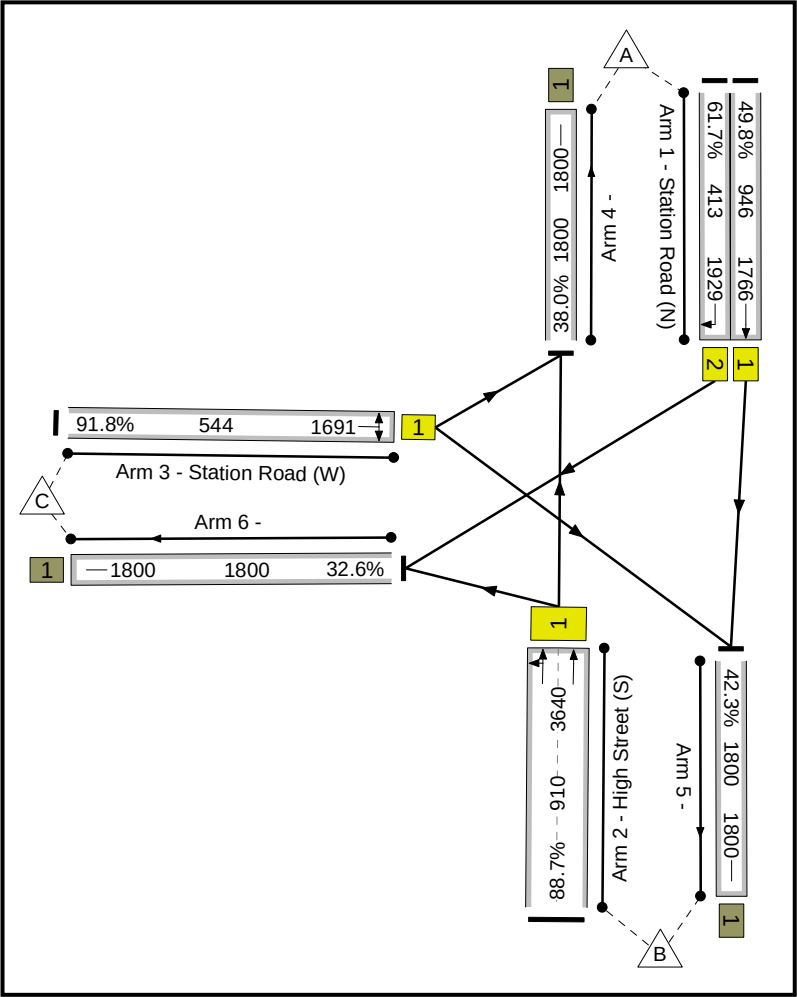
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 13 | 5  | 9  |
| Change Point | 0  | 21 | 34 |

Signal Timings Diagram



Full Input Data And Results

**Junction Layout Diagram**



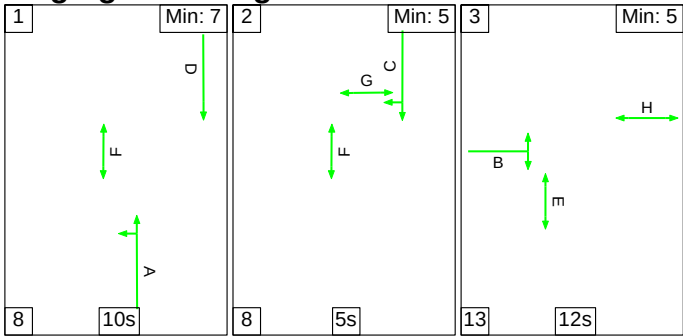
## Link Results

Scenario 17: 'Base + Com + H4 5 2024 AM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 17: 'Base + Com + H4 5 2024 AM'

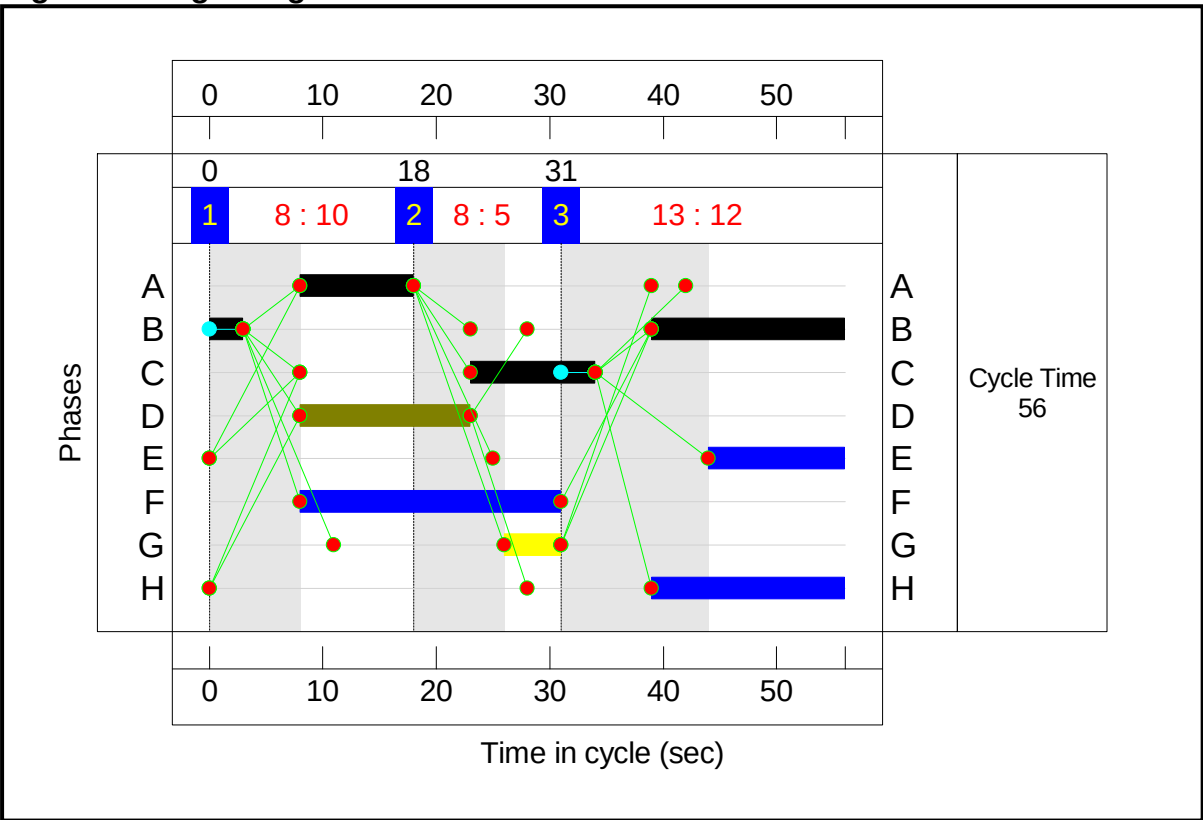
Staging Plan Diagram



Stage Timings

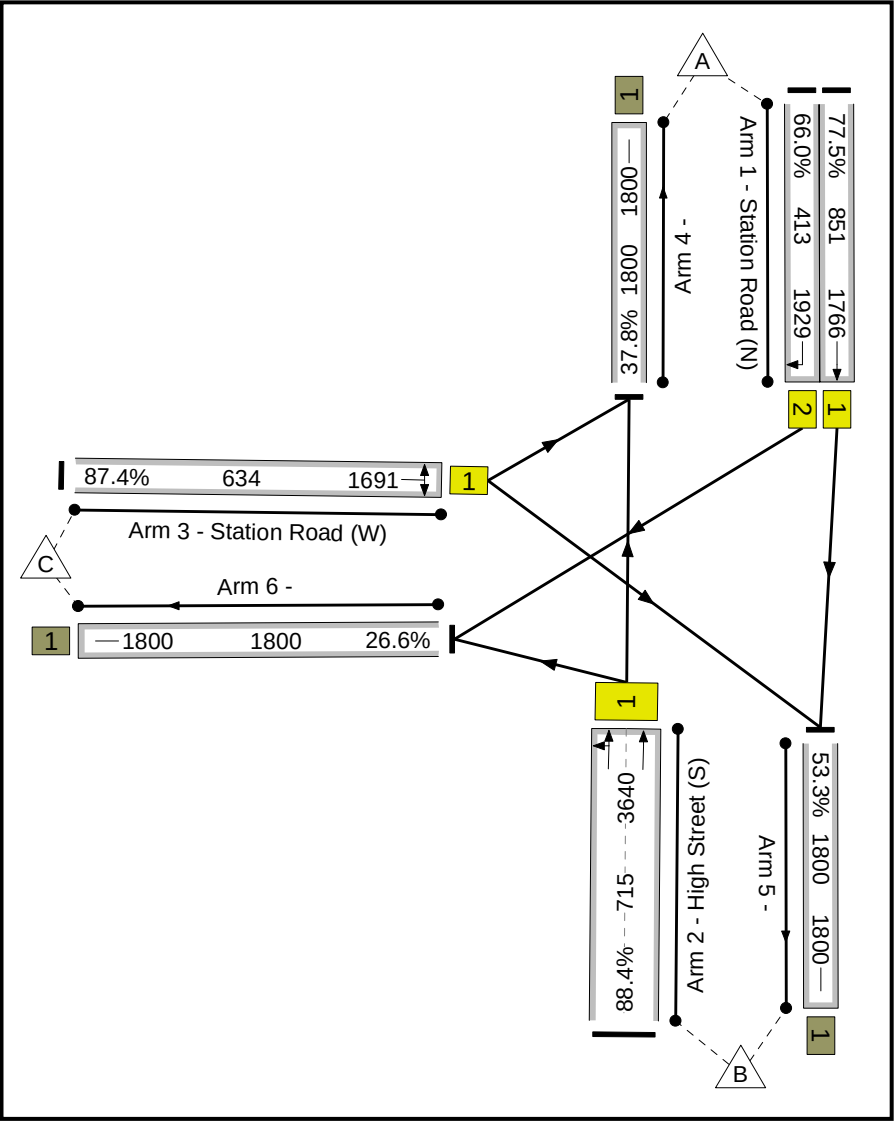
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 10 | 5  | 12 |
| Change Point | 0  | 18 | 31 |

Signal Timings Diagram



Full Input Data And Results

**Junction Layout Diagram**



# Full Input Data And Results

## Link Results

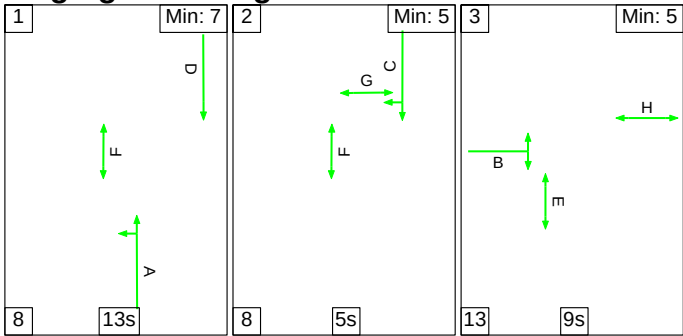
| Link Num                     | Link Desc                   | Link Type     | Stage Stream          | Position In Filtered Route   | Full Phase                               | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Max Sat Flow (pcu/Hr)            | Ave Sat Flow (pcu/Hr)      | Capacity (pcu)       | Deg Sat (%) |
|------------------------------|-----------------------------|---------------|-----------------------|------------------------------|------------------------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|-------------|
| 1/1                          | Station Road (N) Ahead      | U             | N/A                   | N/A                          | C                                        | D                     | 1                            | 26                                 | 15                  | 660                       | 1766                             | 1766                       | 851                  | 77.5        |
| 1/2                          | Station Road (N) Right      | U             | N/A                   | N/A                          | C                                        |                       | 1                            | 11                                 | -                   | 273                       | 1929                             | 1929                       | 413                  | 66.0        |
| 2/1                          | High Street (S) Ahead Left  | U             | N/A                   | N/A                          | A                                        |                       | 1                            | 10                                 | -                   | 632                       | 3640                             | 3640                       | 715                  | 88.4        |
| 3/1                          | Station Road (W) Left Right | U             | N/A                   | N/A                          | B                                        |                       | 1                            | 20                                 | -                   | 554                       | 1691                             | 1691                       | 634                  | 87.4        |
| 4/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 680                       | 1800                             | 1800                       | 1800                 | 37.8        |
| 5/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 960                       | 1800                             | 1800                       | 1800                 | 53.3        |
| 6/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 479                       | 1800                             | 1800                       | 1800                 | 26.6        |
| Link Num                     | Entering (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 Veh (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |             |
| 1/1                          | 660                         | 660           | -                     | -                            | -                                        | 2.2                   | 1.7                          | -                                  | 3.9                 | 21.2                      | 8.4                              | 1.7                        | 10.1                 |             |
| 1/2                          | 273                         | 273           | -                     | -                            | -                                        | 1.5                   | 1.0                          | -                                  | 2.5                 | 32.8                      | 3.9                              | 1.0                        | 4.8                  |             |
| 2/1                          | 632                         | 632           | -                     | -                            | -                                        | 3.8                   | 3.5                          | -                                  | 7.4                 | 41.9                      | 9.5                              | 3.5                        | 13.0                 |             |
| 3/1                          | 554                         | 554           | -                     | -                            | -                                        | 2.5                   | 3.2                          | -                                  | 5.7                 | 37.1                      | 8.0                              | 3.2                        | 11.2                 |             |
| 4/1                          | 680                         | 680           | -                     | -                            | -                                        | 0.0                   | 0.3                          | -                                  | 0.4                 | 1.9                       | 4.6                              | 0.3                        | 4.9                  |             |
| 5/1                          | 960                         | 960           | -                     | -                            | -                                        | 0.0                   | 0.6                          | -                                  | 0.6                 | 2.1                       | 0.0                              | 0.6                        | 0.6                  |             |
| 6/1                          | 479                         | 479           | -                     | -                            | -                                        | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 0.0                              | 0.2                        | 0.2                  |             |
| PRC for Signalled Links (%): |                             |               |                       | 1.8                          | Total Delay for Signalled Links (pcuHr): |                       |                              |                                    | 19.44               |                           |                                  |                            |                      |             |
| PRC Over All Links (%):      |                             |               |                       | 1.8                          | Total Delay Over All Links (pcuHr):      |                       |                              |                                    | 20.54               | Cycle Time (s): 56        |                                  |                            |                      |             |

Scenario 18: 'Base + Com + H4 5 2024 PM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 18: 'Base + Com + H4 5 2024 PM'

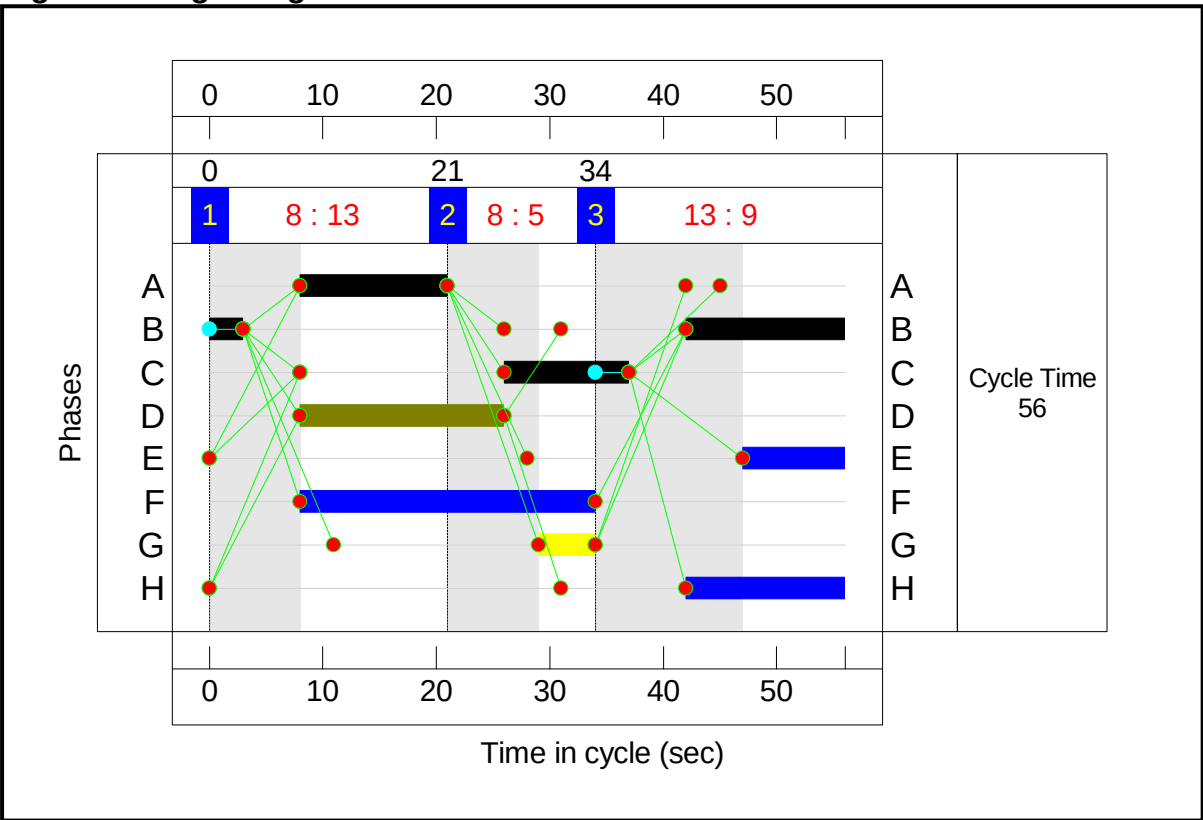
Staging Plan Diagram



Stage Timings

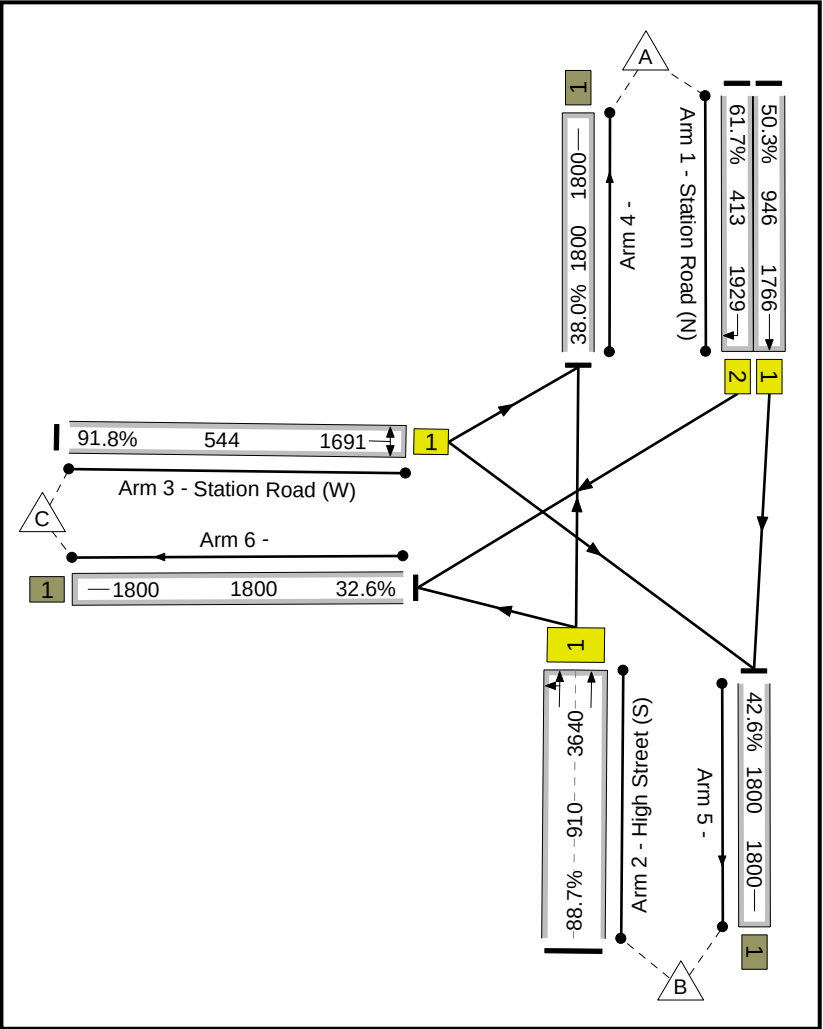
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 13 | 5  | 9  |
| Change Point | 0  | 21 | 34 |

Signal Timings Diagram



Full Input Data And Results

**Junction Layout Diagram**





## Link Results

# A R C A D Y 6

## ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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| Nine Mile Ride    | Email: software@trl.co.uk  |
| Wokingham, Berks. | Web: www.trlsoftware.co.uk |
| RG40 3GA,UK       |                            |

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_BlythRd AM.vai"  
(drive-on-the-left ) at 10:28:00 on Sunday, 5 August 2012

## FILE PROPERTIES

RUN TITLE: Site 4 Base Model  
LOCATION: Hayes and Harlington  
DATE: 17/07/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

## INPUT DATA

ARM A - Dawley Road (N)  
ARM B - Blyth Road (E)  
ARM C - Dawley Road (S)  
ARM D - Kestral Way (SW)  
ARM E - Betam Road (NW)

## GEOMETRIC DATA

| T5 |     |   |       |      |       |      |       |       |       |       |       |       |           |      |       |       |                     |        |   |
|----|-----|---|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-----------|------|-------|-------|---------------------|--------|---|
| I  | ARM | I | V (M) | I    | E (M) | I    | L (M) | I     | R (M) | I     | D (M) | I     | PHI (DEG) | I    | SLOPE | I     | INTERCEPT (PCU/MIN) | I      |   |
| I  | ARM | A | I     | 3.90 | I     | 7.86 | I     | 19.00 | I     | 13.60 | I     | 34.70 | I         | 17.0 | I     | 0.708 | I                   | 32.392 | I |
| I  | ARM | B | I     | 3.29 | I     | 5.65 | I     | 3.60  | I     | 7.00  | I     | 35.00 | I         | 16.5 | I     | 0.531 | I                   | 19.562 | I |
| I  | ARM | C | I     | 4.97 | I     | 9.46 | I     | 13.00 | I     | 3.00  | I     | 34.70 | I         | 36.0 | I     | 0.522 | I                   | 25.183 | I |
| I  | ARM | D | I     | 3.90 | I     | 4.66 | I     | 3.20  | I     | 3.00  | I     | 34.00 | I         | 28.0 | I     | 0.419 | I                   | 15.966 | I |
| I  | ARM | E | I     | 3.60 | I     | 7.70 | I     | 8.00  | I     | 8.20  | I     | 35.00 | I         | 16.5 | I     | 0.609 | I                   | 25.411 | I |

V = approach half-width      L = effective flare length      D = inscribed circle diameter  
E = entry width      R = entry radius      PHI = entry angle

## TRAFFIC DEMAND DATA

Only sets included in the current run are shown

## SCALING FACTORS

LENGTH OF TIME PERIOD - ( 90 ) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

## DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com+H4&amp;5 2024

| T15 |     |   |                                   |            |         |                        |         |         |   |
|-----|-----|---|-----------------------------------|------------|---------|------------------------|---------|---------|---|
| I   | ARM | I | NUMBER OF MINUTES FROM START WHEN |            |         | RATE OF FLOW (VEH/MIN) |         |         | I |
|     |     |   | I                                 | I          | I       | I                      | I       | I       |   |
|     |     |   |                                   |            |         |                        |         |         |   |
| I   | I   | I | I                                 | I          | I       | I                      | I       | I       | I |
| I   | I   | I | TO RISE                           | IS REACHED | FALLING | PEAK                   | OF PEAK | PEAK    | I |
| I   | ARM | A | I 15.00                           | I 45.00    | I 75.00 | I 14.74                | I 22.11 | I 14.74 | I |
| I   | ARM | B | I 15.00                           | I 45.00    | I 75.00 | I 6.57                 | I 9.86  | I 6.57  | I |
| I   | ARM | C | I 15.00                           | I 45.00    | I 75.00 | I 13.65                | I 20.47 | I 13.65 | I |
| I   | ARM | D | I 15.00                           | I 45.00    | I 75.00 | I 0.55                 | I 0.83  | I 0.55  | I |
| I   | ARM | E | I 15.00                           | I 45.00    | I 75.00 | I 0.64                 | I 0.96  | I 0.64  | I |

DEMAND SET TITLE: Base+Com+H4&amp;5 2024

| TURNING PROPORTIONS   |        |        |        |        |        |        |  |  |  | T33 |
|-----------------------|--------|--------|--------|--------|--------|--------|--|--|--|-----|
| TURNING COUNTS        |        |        |        |        |        |        |  |  |  |     |
| (PERCENTAGE OF H.V.S) |        |        |        |        |        |        |  |  |  |     |
| TIME                  | FROM/T | ARM A  | ARM B  | ARM C  | ARM D  | ARM E  |  |  |  |     |
| 07.30 - 09.00         | ARM A  | 0.002  | 0.141  | 0.801  | 0.025  | 0.031  |  |  |  |     |
|                       |        | 2.0    | 166.0  | 944.0  | 30.0   | 37.0   |  |  |  |     |
|                       |        | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |  |  |  |     |
|                       |        |        |        |        |        |        |  |  |  |     |
|                       | ARM B  | 0.146  | 0.000  | 0.795  | 0.023  | 0.036  |  |  |  |     |
|                       |        | 77.0   | 0.0    | 418.0  | 12.0   | 19.0   |  |  |  |     |
|                       |        | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |  |  |  |     |
|                       |        |        |        |        |        |        |  |  |  |     |
|                       | ARM C  | 0.593  | 0.251  | 0.002  | 0.066  | 0.088  |  |  |  |     |
|                       |        | 648.0  | 274.0  | 2.0    | 72.0   | 96.0   |  |  |  |     |
|                       |        | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |  |  |  |     |
|                       |        |        |        |        |        |        |  |  |  |     |
|                       | ARM D  | 0.068  | 0.182  | 0.636  | 0.000  | 0.114  |  |  |  |     |
|                       |        | 3.0    | 8.0    | 28.0   | 0.0    | 5.0    |  |  |  |     |
|                       |        | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |  |  |  |     |
|                       |        |        |        |        |        |        |  |  |  |     |
|                       | ARM E  | 0.294  | 0.235  | 0.412  | 0.039  | 0.020  |  |  |  |     |
|                       |        | 15.0   | 12.0   | 21.0   | 2.0    | 1.0    |  |  |  |     |
|                       |        | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |  |  |  |     |
|                       |        |        |        |        |        |        |  |  |  |     |

## QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT



QUEUE AT ARM A

-----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |     |
|------------------------|--------------------------------|-----|
| 07.45                  | 1.0                            | *   |
| 08.00                  | 1.6                            | **  |
| 08.15                  | 3.3                            | *** |
| 08.30                  | 3.4                            | *** |
| 08.45                  | 1.6                            | **  |
| 09.00                  | 1.0                            | *   |

QUEUE AT ARM B

-----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 07.45                  | 1.1                            | *     |
| 08.00                  | 2.3                            | **    |
| 08.15                  | 15.6                           | ***** |
| 08.30                  | 25.2                           | ***** |
| 08.45                  | 2.8                            | ***   |
| 09.00                  | 1.2                            | *     |

QUEUE AT ARM C

-----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 07.45                  | 1.3                            | *     |
| 08.00                  | 2.1                            | **    |
| 08.15                  | 5.1                            | ***** |
| 08.30                  | 5.4                            | ***** |
| 08.45                  | 2.3                            | **    |
| 09.00                  | 1.4                            | *     |

QUEUE AT ARM D

-----

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

QUEUE AT ARM E

-----

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| T75 |     |   |              |          |   |              |           |                        |        |           |
|-----|-----|---|--------------|----------|---|--------------|-----------|------------------------|--------|-----------|
| I   | ARM | I | TOTAL DEMAND |          | I | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I      |           |
| I   |     | I |              |          | I | * DELAY *    | I         | * DELAY *              | I      |           |
| I   |     | I |              |          | I |              |           |                        | I      |           |
| I   |     | I | (VEH)        | (VEH/H)  | I | (MIN)        | (MIN/VEH) | I                      | (MIN)  | (MIN/VEH) |
| I   | A   | I | 1622.8       | I 1081.9 | I | 175.1        | I 0.11    | I                      | 175.1  | I 0.11    |
| I   | B   | I | 724.0        | I 482.7  | I | 659.6        | I 0.91    | I                      | 659.7  | I 0.91    |
| I   | C   | I | 1503.1       | I 1002.0 | I | 255.0        | I 0.17    | I                      | 255.0  | I 0.17    |
| I   | D   | I | 60.6         | I 40.4   | I | 8.0          | I 0.13    | I                      | 8.0    | I 0.13    |
| I   | E   | I | 70.2         | I 46.8   | I | 4.8          | I 0.07    | I                      | 4.8    | I 0.07    |
| I   | ALL | I | 3980.6       | I 2653.7 | I | 1102.5       | I 0.28    | I                      | 1102.6 | I 0.28    |

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

END OF JOB

===== end of file =====

# A R C A D Y 6

## ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_BlythRd PM.vai"  
(drive-on-the-left ) at 10:28:34 on Sunday, 5 August 2012

## FILE PROPERTIES

RUN TITLE: Site 4 Base Model  
LOCATION: Hayes and Harlington  
DATE: 17/07/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

## INPUT DATA

ARM A - Dawley Road (N)  
ARM B - Blyth Road (E)  
ARM C - Dawley Road (S)  
ARM D - Kestral Way (SW)  
ARM E - Betam Road (NW)

## GEOMETRIC DATA

| T5 |     |   |       |      |       |      |       |       |       |       |       |       |           |      |       |       |                     |        |   |
|----|-----|---|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-----------|------|-------|-------|---------------------|--------|---|
| I  | ARM | I | V (M) | I    | E (M) | I    | L (M) | I     | R (M) | I     | D (M) | I     | PHI (DEG) | I    | SLOPE | I     | INTERCEPT (PCU/MIN) | I      |   |
| I  | ARM | A | I     | 3.90 | I     | 7.86 | I     | 19.00 | I     | 13.60 | I     | 34.70 | I         | 17.0 | I     | 0.708 | I                   | 32.392 | I |
| I  | ARM | B | I     | 3.29 | I     | 5.65 | I     | 3.60  | I     | 7.00  | I     | 35.00 | I         | 16.5 | I     | 0.531 | I                   | 19.562 | I |
| I  | ARM | C | I     | 4.97 | I     | 9.46 | I     | 13.00 | I     | 3.00  | I     | 34.70 | I         | 36.0 | I     | 0.522 | I                   | 25.183 | I |
| I  | ARM | D | I     | 3.90 | I     | 4.66 | I     | 3.20  | I     | 3.00  | I     | 34.00 | I         | 28.0 | I     | 0.419 | I                   | 15.966 | I |
| I  | ARM | E | I     | 3.60 | I     | 7.70 | I     | 8.00  | I     | 8.20  | I     | 35.00 | I         | 16.5 | I     | 0.609 | I                   | 25.411 | I |

V = approach half-width      L = effective flare length      D = inscribed circle diameter  
E = entry width      R = entry radius      PHI = entry angle

## TRAFFIC DEMAND DATA

Only sets included in the current run are shown

## SCALING FACTORS

|           |        |          |   |
|-----------|--------|----------|---|
| ----- T13 |        |          |   |
| I ARM     | I FLOW | SCALE(%) | I |
| -----     |        |          |   |
| I A       | I      | 100      | I |
| I B       | I      | 100      | I |
| I C       | I      | 100      | I |
| I D       | I      | 100      | I |
| I E       | I      | 100      | I |
| -----     |        |          |   |

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com+H4&5 2024

|           |       |                                   |               |              |          |                        |         |   |
|-----------|-------|-----------------------------------|---------------|--------------|----------|------------------------|---------|---|
| ----- T15 |       |                                   |               |              |          |                        |         |   |
| I         | I     | NUMBER OF MINUTES FROM START WHEN |               |              | I        | RATE OF FLOW (VEH/MIN) |         |   |
| I         | I ARM | I FLOW STARTS                     | I TOP OF PEAK | I FLOW STOPS | I BEFORE | I AT TOP               | I AFTER | I |
| I         | I     | I                                 | I             | I            | I        | I                      | I       | I |
| I         | I     | I TO RISE                         | I IS REACHED  | I FALLING    | I PEAK   | I OF PEAK              | I PEAK  | I |
| -----     |       |                                   |               |              |          |                        |         |   |
| I         | ARM A | I 15.00                           | I 45.00       | I 75.00      | I 10.51  | I 15.77                | I 10.51 | I |
| I         | ARM B | I 15.00                           | I 45.00       | I 75.00      | I 6.79   | I 10.18                | I 6.79  | I |
| I         | ARM C | I 15.00                           | I 45.00       | I 75.00      | I 13.52  | I 20.29                | I 13.52 | I |
| I         | ARM D | I 15.00                           | I 45.00       | I 75.00      | I 1.45   | I 2.18                 | I 1.45  | I |
| I         | ARM E | I 15.00                           | I 45.00       | I 75.00      | I 1.35   | I 2.03                 | I 1.35  | I |
| -----     |       |                                   |               |              |          |                        |         |   |

DEMAND SET TITLE: Base+Com+H4&5 2024

|           |                       |          |          |          |          |          |          |   |   |
|-----------|-----------------------|----------|----------|----------|----------|----------|----------|---|---|
| ----- T33 |                       |          |          |          |          |          |          |   |   |
| I         | TURNING PROPORTIONS   |          |          |          | I        |          |          |   |   |
| I         | TURNING COUNTS        |          |          |          | I        |          |          |   |   |
| I         | (PERCENTAGE OF H.V.S) |          |          |          | I        |          |          |   |   |
| I         | -----                 |          |          |          | I        |          |          |   |   |
| I         | TIME                  | I FROM/T | I ARM A  | I ARM B  | I ARM C  | I ARM D  | I ARM E  | I | I |
| -----     |                       |          |          |          |          |          |          |   |   |
| I         | 16.15 - 17.45         | I        | I        | I        | I        | I        | I        | I | I |
| I         | I                     | I ARM A  | I 0.005  | I 0.139  | I 0.832  | I 0.006  | I 0.018  | I | I |
| I         | I                     | I        | I 4.0    | I 117.0  | I 700.0  | I 5.0    | I 15.0   | I | I |
| I         | I                     | I        | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I | I |
| I         | I                     | I        | I        | I        | I        | I        | I        | I | I |
| I         | I                     | I ARM B  | I 0.239  | I 0.002  | I 0.696  | I 0.022  | I 0.041  | I | I |
| I         | I                     | I        | I 130.0  | I 1.0    | I 378.0  | I 12.0   | I 22.0   | I | I |
| I         | I                     | I        | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I | I |
| I         | I                     | I        | I        | I        | I        | I        | I        | I | I |
| I         | I                     | I ARM C  | I 0.654  | I 0.262  | I 0.002  | I 0.026  | I 0.055  | I | I |
| I         | I                     | I        | I 708.0  | I 284.0  | I 2.0    | I 28.0   | I 60.0   | I | I |
| I         | I                     | I        | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I | I |
| I         | I                     | I        | I        | I        | I        | I        | I        | I | I |
| I         | I                     | I ARM D  | I 0.216  | I 0.112  | I 0.655  | I 0.000  | I 0.017  | I | I |
| I         | I                     | I        | I 25.0   | I 13.0   | I 76.0   | I 0.0    | I 2.0    | I | I |
| I         | I                     | I        | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I | I |
| I         | I                     | I        | I        | I        | I        | I        | I        | I | I |
| I         | I                     | I ARM E  | I 0.241  | I 0.231  | I 0.491  | I 0.019  | I 0.019  | I | I |
| I         | I                     | I        | I 26.0   | I 25.0   | I 53.0   | I 2.0    | I 2.0    | I | I |
| I         | I                     | I        | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I | I |
| I         | I                     | I        | I        | I        | I        | I        | I        | I | I |
| -----     |                       |          |          |          |          |          |          |   |   |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT





QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|------------------------|--------------------------------|---|
| 16.30                  | 0.6                            | * |
| 16.45                  | 0.8                            | * |
| 17.00                  | 1.4                            | * |
| 17.15                  | 1.4                            | * |
| 17.30                  | 0.9                            | * |
| 17.45                  | 0.6                            | * |

QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 16.30                  | 0.9                            | *     |
| 16.45                  | 1.7                            | **    |
| 17.00                  | 5.9                            | ***** |
| 17.15                  | 6.7                            | ***** |
| 17.30                  | 1.9                            | **    |
| 17.45                  | 1.0                            | *     |

QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 16.30                  | 1.3                            | *     |
| 16.45                  | 2.1                            | **    |
| 17.00                  | 5.1                            | ***** |
| 17.15                  | 5.4                            | ***** |
| 17.30                  | 2.2                            | **    |
| 17.45                  | 1.3                            | *     |

QUEUE AT ARM D

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |  |
|------------------------|--------------------------------|--|
| 16.30                  | 0.2                            |  |
| 16.45                  | 0.3                            |  |
| 17.00                  | 0.5                            |  |
| 17.15                  | 0.5                            |  |
| 17.30                  | 0.3                            |  |
| 17.45                  | 0.2                            |  |

QUEUE AT ARM E

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |  |
|------------------------|--------------------------------|--|
| 16.30                  | 0.1                            |  |
| 16.45                  | 0.1                            |  |
| 17.00                  | 0.2                            |  |
| 17.15                  | 0.2                            |  |
| 17.30                  | 0.1                            |  |
| 17.45                  | 0.1                            |  |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| T75 |     |   |              |          |   |              |           |                        |       |           |
|-----|-----|---|--------------|----------|---|--------------|-----------|------------------------|-------|-----------|
| I   | ARM | I | TOTAL DEMAND |          | I | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I     |           |
| I   |     | I |              |          | I | * DELAY *    | I         | * DELAY *              | I     |           |
| I   |     | I | (VEH)        | (VEH/H)  | I | (MIN)        | (MIN/VEH) | I                      | (MIN) | (MIN/VEH) |
| I   | A   | I | 1157.6       | I 771.7  | I | 83.9         | I 0.07    | I                      | 83.9  | I 0.07    |
| I   | B   | I | 747.4        | I 498.3  | I | 252.8        | I 0.34    | I                      | 252.8 | I 0.34    |
| I   | C   | I | 1489.3       | I 992.9  | I | 251.4        | I 0.17    | I                      | 251.4 | I 0.17    |
| I   | D   | I | 159.7        | I 106.4  | I | 27.2         | I 0.17    | I                      | 27.2  | I 0.17    |
| I   | E   | I | 148.7        | I 99.1   | I | 12.8         | I 0.09    | I                      | 12.8  | I 0.09    |
| I   | ALL | I | 3702.6       | I 2468.4 | I | 628.1        | I 0.17    | I                      | 628.1 | I 0.17    |

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

END OF JOB

===== end of file =====

# A R C A D Y 6

## ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_BlythRd AM.vai"  
(drive-on-the-left ) at 10:25:56 on Sunday, 5 August 2012

## FILE PROPERTIES

RUN TITLE: Site 4 Base Model  
LOCATION: Hayes and Harlington  
DATE: 17/07/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

## INPUT DATA

ARM A - Dawley Road (N)  
ARM B - Blyth Road (E)  
ARM C - Dawley Road (S)  
ARM D - Kestral Way (SW)  
ARM E - Betam Road (NW)

## GEOMETRIC DATA

| T5 |     |   |       |      |       |      |       |       |       |       |       |       |           |      |       |       |                     |        |   |
|----|-----|---|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-----------|------|-------|-------|---------------------|--------|---|
| I  | ARM | I | V (M) | I    | E (M) | I    | L (M) | I     | R (M) | I     | D (M) | I     | PHI (DEG) | I    | SLOPE | I     | INTERCEPT (PCU/MIN) | I      |   |
| I  | ARM | A | I     | 3.90 | I     | 7.86 | I     | 19.00 | I     | 13.60 | I     | 34.70 | I         | 17.0 | I     | 0.708 | I                   | 32.392 | I |
| I  | ARM | B | I     | 3.29 | I     | 5.65 | I     | 3.60  | I     | 7.00  | I     | 35.00 | I         | 16.5 | I     | 0.531 | I                   | 19.562 | I |
| I  | ARM | C | I     | 4.97 | I     | 9.46 | I     | 13.00 | I     | 3.00  | I     | 34.70 | I         | 36.0 | I     | 0.522 | I                   | 25.183 | I |
| I  | ARM | D | I     | 3.90 | I     | 4.66 | I     | 3.20  | I     | 3.00  | I     | 34.00 | I         | 28.0 | I     | 0.419 | I                   | 15.966 | I |
| I  | ARM | E | I     | 3.60 | I     | 7.70 | I     | 8.00  | I     | 8.20  | I     | 35.00 | I         | 16.5 | I     | 0.609 | I                   | 25.411 | I |

V = approach half-width      L = effective flare length      D = inscribed circle diameter  
E = entry width      R = entry radius      PHI = entry angle

## TRAFFIC DEMAND DATA

Only sets included in the current run are shown

## SCALING FACTORS

|           |   |               |   |
|-----------|---|---------------|---|
| ----- T13 |   |               |   |
| I ARM     | I | FLOW SCALE(%) | I |
| -----     |   |               |   |
| I A       | I | 100           | I |
| I B       | I | 100           | I |
| I C       | I | 100           | I |
| I D       | I | 100           | I |
| I E       | I | 100           | I |
| -----     |   |               |   |

TIME PERIOD BEGINS(07.30)AND ENDS(09.00)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com+H5 2024

| ----- T15 |     |   |                                   |       |             |       |                        |       |        |       |         |       |       |       |   |
|-----------|-----|---|-----------------------------------|-------|-------------|-------|------------------------|-------|--------|-------|---------|-------|-------|-------|---|
| I         |     | I | NUMBER OF MINUTES FROM START WHEN |       |             | I     | RATE OF FLOW (VEH/MIN) |       |        | I     |         |       |       |       |   |
| I         | ARM | I | FLOW STARTS                       | I     | TOP OF PEAK | I     | FLOW STOPS             | I     | BEFORE | I     | AT TOP  | I     | AFTER | I     |   |
| I         |     | I |                                   | I     |             | I     |                        | I     |        | I     |         | I     |       | I     |   |
| I         |     | I | TO RISE                           | I     | IS REACHED  | I     | FALLING                | I     | PEAK   | I     | OF PEAK | I     | PEAK  | I     |   |
| -----     |     |   |                                   |       |             |       |                        |       |        |       |         |       |       |       |   |
| I         | ARM | A | I                                 | 15.00 | I           | 45.00 | I                      | 75.00 | I      | 14.64 | I       | 21.96 | I     | 14.64 | I |
| I         | ARM | B | I                                 | 15.00 | I           | 45.00 | I                      | 75.00 | I      | 6.57  | I       | 9.86  | I     | 6.57  | I |
| I         | ARM | C | I                                 | 15.00 | I           | 45.00 | I                      | 75.00 | I      | 13.64 | I       | 20.46 | I     | 13.64 | I |
| I         | ARM | D | I                                 | 15.00 | I           | 45.00 | I                      | 75.00 | I      | 0.55  | I       | 0.83  | I     | 0.55  | I |
| I         | ARM | E | I                                 | 15.00 | I           | 45.00 | I                      | 75.00 | I      | 0.64  | I       | 0.96  | I     | 0.64  | I |
| -----     |     |   |                                   |       |             |       |                        |       |        |       |         |       |       |       |   |

DEMAND SET TITLE: Base+Com+H5 2024

|   |               |  |   |                       |   |       |        |       |        |       |        |       |        |       |        |   |
|---|---------------|--|---|-----------------------|---|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|---|
|   |               |  |   |                       |   |       |        |       |        | T33   |        |       |        |       |        |   |
| I |               |  | I | TURNING PROPORTIONS   |   |       |        |       | I      |       |        |       |        |       |        |   |
| I |               |  | I | TURNING COUNTS        |   |       |        |       | I      |       |        |       |        |       |        |   |
| I |               |  | I | (PERCENTAGE OF H.V.S) |   |       |        |       | I      |       |        |       |        |       |        |   |
| I |               |  |   |                       |   |       |        |       |        |       |        |       |        |       |        |   |
| I | TIME          |  | I | FROM/T                | I | ARM A | I      | ARM B | I      | ARM C | I      | ARM D | I      | ARM E | I      |   |
| I | 07.30 - 09.00 |  | I |                       | I |       | I      |       | I      |       | I      |       | I      |       | I      |   |
| I |               |  | I | ARM                   | A | I     | 0.002  | I     | 0.142  | I     | 0.799  | I     | 0.026  | I     | 0.032  | I |
| I |               |  | I |                       |   | I     | 2.0    | I     | 166.0  | I     | 936.0  | I     | 30.0   | I     | 37.0   | I |
| I |               |  | I |                       |   | I     | ( 0.0) | I     | ( 0.0) | I     | ( 0.0) | I     | ( 0.0) | I     | ( 0.0) | I |
| I |               |  | I |                       |   | I     |        | I     |        | I     |        | I     |        | I     |        | I |
| I |               |  | I | ARM                   | B | I     | 0.146  | I     | 0.000  | I     | 0.795  | I     | 0.023  | I     | 0.036  | I |
| I |               |  | I |                       |   | I     | 77.0   | I     | 0.0    | I     | 418.0  | I     | 12.0   | I     | 19.0   | I |
| I |               |  | I |                       |   | I     | ( 0.0) | I     | ( 0.0) | I     | ( 0.0) | I     | ( 0.0) | I     | ( 0.0) | I |
| I |               |  | I |                       |   | I     |        | I     |        | I     |        | I     |        | I     |        | I |
| I |               |  | I | ARM                   | C | I     | 0.593  | I     | 0.251  | I     | 0.002  | I     | 0.066  | I     | 0.088  | I |
| I |               |  | I |                       |   | I     | 647.0  | I     | 274.0  | I     | 2.0    | I     | 72.0   | I     | 96.0   | I |
| I |               |  | I |                       |   | I     | ( 0.0) | I     | ( 0.0) | I     | ( 0.0) | I     | ( 0.0) | I     | ( 0.0) | I |
| I |               |  | I |                       |   | I     |        | I     |        | I     |        | I     |        | I     |        | I |
| I |               |  | I | ARM                   | D | I     | 0.068  | I     | 0.182  | I     | 0.636  | I     | 0.000  | I     | 0.114  | I |
| I |               |  | I |                       |   | I     | 3.0    | I     | 8.0    | I     | 28.0   | I     | 0.0    | I     | 5.0    | I |
| I |               |  | I |                       |   | I     | ( 0.0) | I     | ( 0.0) | I     | ( 0.0) | I     | ( 0.0) | I     | ( 0.0) | I |
| I |               |  | I |                       |   | I     |        | I     |        | I     |        | I     |        | I     |        | I |
| I |               |  | I | ARM                   | E | I     | 0.294  | I     | 0.235  | I     | 0.412  | I     | 0.039  | I     | 0.020  | I |
| I |               |  | I |                       |   | I     | 15.0   | I     | 12.0   | I     | 21.0   | I     | 2.0    | I     | 1.0    | I |
| I |               |  | I |                       |   | I     | ( 0.0) | I     | ( 0.0) | I     | ( 0.0) | I     | ( 0.0) | I     | ( 0.0) | I |
| I |               |  | I |                       |   | I     |        | I     |        | I     |        | I     |        | I     |        | I |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT



QUEUE AT ARM A

-----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |     |
|------------------------|--------------------------------|-----|
| 07.45                  | 1.0                            | *   |
| 08.00                  | 1.5                            | **  |
| 08.15                  | 3.2                            | *** |
| 08.30                  | 3.3                            | *** |
| 08.45                  | 1.6                            | **  |
| 09.00                  | 1.0                            | *   |

QUEUE AT ARM B

-----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 07.45                  | 1.1                            | *     |
| 08.00                  | 2.3                            | **    |
| 08.15                  | 14.9                           | ***** |
| 08.30                  | 23.6                           | ***** |
| 08.45                  | 2.7                            | ***   |
| 09.00                  | 1.1                            | *     |

QUEUE AT ARM C

-----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 07.45                  | 1.3                            | *     |
| 08.00                  | 2.1                            | **    |
| 08.15                  | 5.1                            | ***** |
| 08.30                  | 5.4                            | ***** |
| 08.45                  | 2.3                            | **    |
| 09.00                  | 1.3                            | *     |

QUEUE AT ARM D

-----

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

QUEUE AT ARM E

-----

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| T75 |     |   |              |          |   |              |           |   |                        |           |   |
|-----|-----|---|--------------|----------|---|--------------|-----------|---|------------------------|-----------|---|
| I   | ARM | I | TOTAL DEMAND |          | I | * QUEUEING * |           | I | * INCLUSIVE QUEUEING * |           | I |
| I   |     | I |              |          | I | * DELAY *    |           | I | * DELAY *              |           | I |
| I   |     | I | (VEH)        | (VEH/H)  | I | (MIN)        | (MIN/VEH) | I | (MIN)                  | (MIN/VEH) | I |
| I   | A   | I | 1611.8       | I 1074.5 | I | 171.2        | I 0.11    | I | 171.2                  | I 0.11    | I |
| I   | B   | I | 724.0        | I 482.7  | I | 621.9        | I 0.86    | I | 622.0                  | I 0.86    | I |
| I   | C   | I | 1501.7       | I 1001.1 | I | 254.1        | I 0.17    | I | 254.1                  | I 0.17    | I |
| I   | D   | I | 60.6         | I 40.4   | I | 8.0          | I 0.13    | I | 8.0                    | I 0.13    | I |
| I   | E   | I | 70.2         | I 46.8   | I | 4.8          | I 0.07    | I | 4.8                    | I 0.07    | I |
| I   | ALL | I | 3968.2       | I 2645.5 | I | 1060.0       | I 0.27    | I | 1060.1                 | I 0.27    | I |

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

END OF JOB

===== end of file =====

Printed at 10:26:17 on 05/08/2012]



## A R C A D Y 6

## ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_BlythRd PM.vai"  
(drive-on-the-left ) at 10:26:26 on Sunday, 5 August 2012

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Site 4 Base Model  
LOCATION: Hayes and Harlington  
DATE: 17/07/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - Dawley Road (N)  
ARM B - Blyth Road (E)  
ARM C - Dawley Road (S)  
ARM D - Kestral Way (SW)  
ARM E - Betam Road (NW)

GEOMETRIC DATA  
-----

| T5 |     |   |       |      |       |      |       |       |       |       |       |       |           |      |       |       |                     |        |   |
|----|-----|---|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-----------|------|-------|-------|---------------------|--------|---|
| I  | ARM | I | V (M) | I    | E (M) | I    | L (M) | I     | R (M) | I     | D (M) | I     | PHI (DEG) | I    | SLOPE | I     | INTERCEPT (PCU/MIN) | I      |   |
| I  | ARM | A | I     | 3.90 | I     | 7.86 | I     | 19.00 | I     | 13.60 | I     | 34.70 | I         | 17.0 | I     | 0.708 | I                   | 32.392 | I |
| I  | ARM | B | I     | 3.29 | I     | 5.65 | I     | 3.60  | I     | 7.00  | I     | 35.00 | I         | 16.5 | I     | 0.531 | I                   | 19.562 | I |
| I  | ARM | C | I     | 4.97 | I     | 9.46 | I     | 13.00 | I     | 3.00  | I     | 34.70 | I         | 36.0 | I     | 0.522 | I                   | 25.183 | I |
| I  | ARM | D | I     | 3.90 | I     | 4.66 | I     | 3.20  | I     | 3.00  | I     | 34.00 | I         | 28.0 | I     | 0.419 | I                   | 15.966 | I |
| I  | ARM | E | I     | 3.60 | I     | 7.70 | I     | 8.00  | I     | 8.20  | I     | 35.00 | I         | 16.5 | I     | 0.609 | I                   | 25.411 | I |

V = approach half-width      L = effective flare length      D = inscribed circle diameter  
E = entry width                R = entry radius                PHI = entry angle

TRAFFIC DEMAND DATA  
-----

Only sets included in the current run are shown

## SCALING FACTORS

|           |   |               |   |
|-----------|---|---------------|---|
| ----- T13 |   |               |   |
| I ARM     | I | FLOW SCALE(%) | I |
| -----     |   |               |   |
| I A       | I | 100           | I |
| I B       | I | 100           | I |
| I C       | I | 100           | I |
| I D       | I | 100           | I |
| I E       | I | 100           | I |
| -----     |   |               |   |

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com+H5 2024

| ----- T15 |     |   |                                   |       |             |       |                        |       |         |       |
|-----------|-----|---|-----------------------------------|-------|-------------|-------|------------------------|-------|---------|-------|
| I         |     | I | NUMBER OF MINUTES FROM START WHEN |       |             | I     | RATE OF FLOW (VEH/MIN) |       |         | I     |
| I         | ARM | I | FLOW STARTS                       | I     | TOP OF PEAK | I     | FLOW STOPS             | I     | BEFORE  | I     |
| I         |     | I |                                   | I     |             | I     |                        | I     | AT TOP  | I     |
| I         |     | I | TO RISE                           | I     | IS REACHED  | I     | FALLING                | I     | OF PEAK | I     |
|           |     |   |                                   |       |             |       |                        |       | PEAK    |       |
| -----     |     |   |                                   |       |             |       |                        |       |         |       |
| I         | ARM | A | I                                 | 15.00 | I           | 45.00 | I                      | 75.00 | I       | 10.50 |
| I         | ARM | B | I                                 | 15.00 | I           | 45.00 | I                      | 75.00 | I       | 6.79  |
| I         | ARM | C | I                                 | 15.00 | I           | 45.00 | I                      | 75.00 | I       | 13.43 |
| I         | ARM | D | I                                 | 15.00 | I           | 45.00 | I                      | 75.00 | I       | 1.45  |
| I         | ARM | E | I                                 | 15.00 | I           | 45.00 | I                      | 75.00 | I       | 1.35  |
| -----     |     |   |                                   |       |             |       |                        |       |         |       |

DEMAND SET TITLE: Base+Com+H5 2024

|   |               |   |                       |   |        |   |        |   |        |     |        |   |        |   |
|---|---------------|---|-----------------------|---|--------|---|--------|---|--------|-----|--------|---|--------|---|
|   |               |   |                       |   |        |   |        |   |        | T33 |        |   |        |   |
| I |               | I | TURNING PROPORTIONS   |   |        |   |        |   | I      |     |        |   |        |   |
| I |               | I | TURNING COUNTS        |   |        |   |        |   | I      |     |        |   |        |   |
| I |               | I | (PERCENTAGE OF H.V.S) |   |        |   |        |   | I      |     |        |   |        |   |
| I |               |   |                       |   |        |   |        |   |        |     |        |   |        |   |
| I | TIME          | I | FROM/T                | I | ARM A  | I | ARM B  | I | ARM C  | I   | ARM D  | I | ARM E  | I |
| I | 16.15 - 17.45 | I |                       | I |        | I |        | I |        | I   |        | I |        | I |
| I |               | I | ARM A                 | I | 0.005  | I | 0.139  | I | 0.832  | I   | 0.006  | I | 0.018  | I |
| I |               | I |                       | I | 4.0    | I | 117.0  | I | 699.0  | I   | 5.0    | I | 15.0   | I |
| I |               | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |
| I |               | I |                       | I |        | I |        | I |        | I   |        | I |        | I |
| I |               | I | ARM B                 | I | 0.239  | I | 0.002  | I | 0.696  | I   | 0.022  | I | 0.041  | I |
| I |               | I |                       | I | 130.0  | I | 1.0    | I | 378.0  | I   | 12.0   | I | 22.0   | I |
| I |               | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |
| I |               | I |                       | I |        | I |        | I |        | I   |        | I |        | I |
| I |               | I | ARM C                 | I | 0.652  | I | 0.264  | I | 0.002  | I   | 0.026  | I | 0.056  | I |
| I |               | I |                       | I | 700.0  | I | 284.0  | I | 2.0    | I   | 28.0   | I | 60.0   | I |
| I |               | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |
| I |               | I |                       | I |        | I |        | I |        | I   |        | I |        | I |
| I |               | I | ARM D                 | I | 0.216  | I | 0.112  | I | 0.655  | I   | 0.000  | I | 0.017  | I |
| I |               | I |                       | I | 25.0   | I | 13.0   | I | 76.0   | I   | 0.0    | I | 2.0    | I |
| I |               | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |
| I |               | I |                       | I |        | I |        | I |        | I   |        | I |        | I |
| I |               | I | ARM E                 | I | 0.241  | I | 0.231  | I | 0.491  | I   | 0.019  | I | 0.019  | I |
| I |               | I |                       | I | 26.0   | I | 25.0   | I | 53.0   | I   | 2.0    | I | 2.0    | I |
| I |               | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |
| I |               | I |                       | I |        | I |        | I |        | I   |        | I |        | I |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT



QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|------------------------|--------------------------------|---|
| 16.30                  | 0.6                            | * |
| 16.45                  | 0.8                            | * |
| 17.00                  | 1.4                            | * |
| 17.15                  | 1.4                            | * |
| 17.30                  | 0.9                            | * |
| 17.45                  | 0.6                            | * |

QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 16.30                  | 0.9                            | *     |
| 16.45                  | 1.7                            | **    |
| 17.00                  | 5.9                            | ***** |
| 17.15                  | 6.7                            | ***** |
| 17.30                  | 1.9                            | **    |
| 17.45                  | 1.0                            | *     |

QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 16.30                  | 1.3                            | *     |
| 16.45                  | 2.1                            | **    |
| 17.00                  | 4.9                            | ***** |
| 17.15                  | 5.1                            | ***** |
| 17.30                  | 2.2                            | **    |
| 17.45                  | 1.3                            | *     |

QUEUE AT ARM D

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |  |
|------------------------|--------------------------------|--|
| 16.30                  | 0.2                            |  |
| 16.45                  | 0.3                            |  |
| 17.00                  | 0.5                            |  |
| 17.15                  | 0.5                            |  |
| 17.30                  | 0.3                            |  |
| 17.45                  | 0.2                            |  |

QUEUE AT ARM E

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |  |
|------------------------|--------------------------------|--|
| 16.30                  | 0.1                            |  |
| 16.45                  | 0.1                            |  |
| 17.00                  | 0.2                            |  |
| 17.15                  | 0.2                            |  |
| 17.30                  | 0.1                            |  |
| 17.45                  | 0.1                            |  |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| T75 |     |   |              |          |   |              |           |   |                        |           |   |
|-----|-----|---|--------------|----------|---|--------------|-----------|---|------------------------|-----------|---|
| I   | ARM | I | TOTAL DEMAND |          | I | * QUEUEING * |           | I | * INCLUSIVE QUEUEING * |           | I |
| I   |     | I |              |          | I | * DELAY *    |           | I | * DELAY *              |           | I |
| I   |     | I | (VEH)        | (VEH/H)  | I | (MIN)        | (MIN/VEH) | I | (MIN)                  | (MIN/VEH) | I |
| I   | A   | I | 1156.2       | I 770.8  | I | 83.7         | I 0.07    | I | 83.7                   | I 0.07    | I |
| I   | B   | I | 747.4        | I 498.3  | I | 251.9        | I 0.34    | I | 251.9                  | I 0.34    | I |
| I   | C   | I | 1478.3       | I 985.5  | I | 243.4        | I 0.16    | I | 243.4                  | I 0.16    | I |
| I   | D   | I | 159.7        | I 106.4  | I | 26.9         | I 0.17    | I | 26.9                   | I 0.17    | I |
| I   | E   | I | 148.7        | I 99.1   | I | 12.7         | I 0.09    | I | 12.7                   | I 0.09    | I |
| I   | ALL | I | 3690.2       | I 2460.1 | I | 618.6        | I 0.17    | I | 618.7                  | I 0.17    | I |

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

END OF JOB

===== end of file =====

Printed at 10:26:43 on 05/08/2012]

# A R C A D Y 6

## ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_NorthHydeRd AM.vai"  
(drive-on-the-left ) at 11:19:05 on Sunday, 5 August 2012

## FILE PROPERTIES

RUN TITLE: Base Model - Roundabout 1  
LOCATION: North Hyde Road/Dawley Road  
DATE: 23/04/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

## INPUT DATA

ARM A - Dawley Road (N)  
ARM B - North Hyde Road  
ARM C - Millington Road  
ARM D - Daweley Road (S)  
ARM E - Bourne Avenue

## GEOMETRIC DATA

| T5 |     |   |       |      |       |      |       |       |       |       |       |       |           |      |       |       |                     |        |   |
|----|-----|---|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-----------|------|-------|-------|---------------------|--------|---|
| I  | ARM | I | V (M) | I    | E (M) | I    | L (M) | I     | R (M) | I     | D (M) | I     | PHI (DEG) | I    | SLOPE | I     | INTERCEPT (PCU/MIN) | I      |   |
| I  | ARM | A | I     | 3.65 | I     | 9.50 | I     | 13.00 | I     | 22.00 | I     | 75.00 | I         | 20.0 | I     | 0.526 | I                   | 31.736 | I |
| I  | ARM | B | I     | 3.50 | I     | 8.00 | I     | 16.00 | I     | 10.00 | I     | 72.00 | I         | 40.0 | I     | 0.467 | I                   | 27.158 | I |
| I  | ARM | C | I     | 4.00 | I     | 6.00 | I     | 8.00  | I     | 22.00 | I     | 54.00 | I         | 36.0 | I     | 0.553 | I                   | 25.388 | I |
| I  | ARM | D | I     | 3.50 | I     | 5.50 | I     | 12.00 | I     | 20.00 | I     | 76.00 | I         | 46.0 | I     | 0.422 | I                   | 22.915 | I |
| I  | ARM | E | I     | 3.65 | I     | 4.50 | I     | 3.00  | I     | 32.00 | I     | 56.00 | I         | 35.0 | I     | 0.497 | I                   | 20.704 | I |

V = approach half-width L = effective flare length D = inscribed circle diameter  
E = entry width R = entry radius PHI = entry angle

## TRAFFIC DEMAND DATA

Only sets included in the current run are shown

## SCALING FACTORS

| T13  |   |               |   |
|------|---|---------------|---|
| IARM | I | FLOW SCALE(%) | I |
| I A  | I | 100           | I |
| I B  | I | 100           | I |
| I C  | I | 100           | I |
| I D  | I | 100           | I |
| I E  | I | 100           | I |

TIME PERIOD BEGINS(07.45)AND ENDS(09.15)

LENGTH OF TIME PERIOD -( 90 ) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com+H4&amp;5 2024

| T15 |     |   |                                               |       |             |       |                   |       |                               |       |         |       |      |       |   |
|-----|-----|---|-----------------------------------------------|-------|-------------|-------|-------------------|-------|-------------------------------|-------|---------|-------|------|-------|---|
| I   | ARM | I | NUMBER OF MINUTES FROM START WHEN FLOW STARTS | I     | TOP OF PEAK | I     | FLOW STOPS BEFORE | I     | RATE OF FLOW (VEH/MIN) AT TOP | I     | AFTER I |       |      |       |   |
| I   |     | I |                                               | I     |             | I     |                   | I     |                               | I     |         |       |      |       |   |
| I   |     | I | TO RISE                                       | I     | IS REACHED  | I     | FALLING           | I     | PEAK                          | I     | OF PEAK | I     | PEAK | I     |   |
| I   | ARM | A | I                                             | 15.00 | I           | 45.00 | I                 | 75.00 | I                             | 16.80 | I       | 25.20 | I    | 16.80 | I |
| I   | ARM | B | I                                             | 15.00 | I           | 45.00 | I                 | 75.00 | I                             | 8.36  | I       | 12.54 | I    | 8.36  | I |
| I   | ARM | C | I                                             | 15.00 | I           | 45.00 | I                 | 75.00 | I                             | 0.52  | I       | 0.79  | I    | 0.52  | I |
| I   | ARM | D | I                                             | 15.00 | I           | 45.00 | I                 | 75.00 | I                             | 11.04 | I       | 16.56 | I    | 11.04 | I |
| I   | ARM | E | I                                             | 15.00 | I           | 45.00 | I                 | 75.00 | I                             | 5.25  | I       | 7.88  | I    | 5.25  | I |

DEMAND SET TITLE: Base+Com+H4&amp;5 2024

|   |               |   |                       |   |         |         |         |         |         | T33 |
|---|---------------|---|-----------------------|---|---------|---------|---------|---------|---------|-----|
| I |               | I | TURNING PROPORTIONS   |   |         |         |         |         | I       |     |
| I |               | I | TURNING COUNTS        |   |         |         |         |         | I       |     |
| I |               | I | (PERCENTAGE OF H.V.S) |   |         |         |         |         | I       |     |
| I |               | I |                       |   |         |         |         |         | I       |     |
| I | TIME          | I | FROM/T                | I | ARM A I | ARM B I | ARM C I | ARM D I | ARM E I |     |
| I | 07.45 - 09.15 | I |                       | I |         |         |         |         |         |     |
| I |               | I | ARM A                 | I | 0.002 I | 0.227 I | 0.093 I | 0.546 I | 0.132 I |     |
| I |               | I |                       | I | 3.0 I   | 305.0 I | 125.0 I | 734.0 I | 177.0 I |     |
| I |               | I |                       | I | ( 0.0)I | ( 0.0)I | ( 0.0)I | ( 0.0)I | ( 0.0)I |     |
| I |               | I |                       | I |         |         |         |         |         |     |
| I |               | I | ARM B                 | I | 0.747 I | 0.001 I | 0.004 I | 0.169 I | 0.078 I |     |
| I |               | I |                       | I | 500.0 I | 1.0 I   | 3.0 I   | 113.0 I | 52.0 I  |     |
| I |               | I |                       | I | ( 0.0)I | ( 0.0)I | ( 0.0)I | ( 0.0)I | ( 0.0)I |     |
| I |               | I |                       | I |         |         |         |         |         |     |
| I |               | I | ARM C                 | I | 0.381 I | 0.024 I | 0.000 I | 0.595 I | 0.000 I |     |
| I |               | I |                       | I | 16.0 I  | 1.0 I   | 0.0 I   | 25.0 I  | 0.0 I   |     |
| I |               | I |                       | I | ( 0.0)I | ( 0.0)I | ( 0.0)I | ( 0.0)I | ( 0.0)I |     |
| I |               | I |                       | I |         |         |         |         |         |     |
| I |               | I | ARM D                 | I | 0.644 I | 0.120 I | 0.187 I | 0.003 I | 0.045 I |     |
| I |               | I |                       | I | 569.0 I | 106.0 I | 165.0 I | 3.0 I   | 40.0 I  |     |
| I |               | I |                       | I | ( 0.0)I | ( 0.0)I | ( 0.0)I | ( 0.0)I | ( 0.0)I |     |
| I |               | I |                       | I |         |         |         |         |         |     |
| I |               | I | ARM E                 | I | 0.610 I | 0.240 I | 0.012 I | 0.136 I | 0.002 I |     |
| I |               | I |                       | I | 256.0 I | 101.0 I | 5.0 I   | 57.0 I  | 1.0 I   |     |
| I |               | I |                       | I | ( 0.0)I | ( 0.0)I | ( 0.0)I | ( 0.0)I | ( 0.0)I |     |
| I |               | I |                       | I |         |         |         |         |         |     |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT





## QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 08.00                  | 1.4                            | *     |
| 08.15                  | 2.4                            | **    |
| 08.30                  | 7.1                            | ***** |
| 08.45                  | 7.7                            | ***** |
| 09.00                  | 2.6                            | ***   |
| 09.15                  | 1.4                            | *     |

## QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |     |
|------------------------|--------------------------------|-----|
| 08.00                  | 0.7                            | *   |
| 08.15                  | 1.2                            | *   |
| 08.30                  | 2.8                            | *** |
| 08.45                  | 2.9                            | *** |
| 09.00                  | 1.3                            | *   |
| 09.15                  | 0.8                            | *   |

## QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |  |
|------------------------|--------------------------------|--|
| 08.00                  | 0.0                            |  |
| 08.15                  | 0.1                            |  |
| 08.30                  | 0.1                            |  |
| 08.45                  | 0.1                            |  |
| 09.00                  | 0.1                            |  |
| 09.15                  | 0.0                            |  |

## QUEUE AT ARM D

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 08.00                  | 1.4                            | *     |
| 08.15                  | 2.6                            | ***   |
| 08.30                  | 9.8                            | ***** |
| 08.45                  | 12.0                           | ***** |
| 09.00                  | 2.9                            | ***   |
| 09.15                  | 1.4                            | *     |

## QUEUE AT ARM E

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 08.00                  | 0.7                            | *     |
| 08.15                  | 1.4                            | *     |
| 08.30                  | 6.0                            | ***** |
| 08.45                  | 7.9                            | ***** |
| 09.00                  | 1.7                            | **    |
| 09.15                  | 0.8                            | *     |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| T75 |     |   |              |          |   |              |           |                        |        |           |
|-----|-----|---|--------------|----------|---|--------------|-----------|------------------------|--------|-----------|
| I   | ARM | I | TOTAL DEMAND |          | I | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I      |           |
| I   |     | I |              |          | I | * DELAY *    | I         | * DELAY *              | I      |           |
| I   |     | I |              |          | I |              |           |                        | I      |           |
| I   |     | I | (VEH)        | (VEH/H)  | I | (MIN)        | (MIN/VEH) | I                      | (MIN)  | (MIN/VEH) |
| I   | A   | I | 1849.9       | I 1233.3 | I | 322.0        | I 0.17    | I                      | 322.1  | I 0.17    |
| I   | B   | I | 920.8        | I 613.9  | I | 140.4        | I 0.15    | I                      | 140.4  | I 0.15    |
| I   | C   | I | 57.8         | I 38.5   | I | 5.7          | I 0.10    | I                      | 5.7    | I 0.10    |
| I   | D   | I | 1215.4       | I 810.3  | I | 413.0        | I 0.34    | I                      | 413.0  | I 0.34    |
| I   | E   | I | 578.1        | I 385.4  | I | 251.7        | I 0.44    | I                      | 251.8  | I 0.44    |
| I   | ALL | I | 4622.0       | I 3081.4 | I | 1132.8       | I 0.25    | I                      | 1132.9 | I 0.25    |

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

END OF JOB

===== end of file =====

Printed at 11:19:41 on 05/08/2012]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_NorthHydeRd PM.vai"  
(drive-on-the-left ) at 11:19:57 on Sunday, 5 August 2012

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Base Model - Roundabout 1  
LOCATION: North Hyde Road/Dawley Road  
DATE: 23/04/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - Dawley Road (N)  
ARM B - North Hyde Road  
ARM C - Millington Road  
ARM D - Daweley Road (S)  
ARM E - Bourne Avenue

GEOMETRIC DATA  
-----

| I | ARM   | I | V (M) | I | E (M) | I | L (M) | I | R (M) | I | D (M) | I | PHI (DEG) | I | SLOPE | I | INTERCEPT (PCU/MIN) | I | T5 |
|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-----------|---|-------|---|---------------------|---|----|
| I | ARM A | I | 3.65  | I | 9.50  | I | 13.00 | I | 22.00 | I | 75.00 | I | 20.0      | I | 0.526 | I | 31.736              | I |    |
| I | ARM B | I | 3.50  | I | 8.00  | I | 16.00 | I | 10.00 | I | 72.00 | I | 40.0      | I | 0.467 | I | 27.158              | I |    |
| I | ARM C | I | 4.00  | I | 6.00  | I | 8.00  | I | 22.00 | I | 54.00 | I | 36.0      | I | 0.553 | I | 25.388              | I |    |
| I | ARM D | I | 3.50  | I | 5.50  | I | 12.00 | I | 20.00 | I | 76.00 | I | 46.0      | I | 0.422 | I | 22.915              | I |    |
| I | ARM E | I | 3.65  | I | 4.50  | I | 3.00  | I | 32.00 | I | 56.00 | I | 35.0      | I | 0.497 | I | 20.704              | I |    |

V = approach half-width L = effective flare length D = inscribed circle diameter  
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA  
-----

Only sets included in the current run are shown

SCALING FACTORS

| T13  |   |               |   |
|------|---|---------------|---|
| IARM | I | FLOW SCALE(%) | I |
| I A  | I | 100           | I |
| I B  | I | 100           | I |
| I C  | I | 100           | I |
| I D  | I | 100           | I |
| I E  | I | 100           | I |

TIME PERIOD BEGINS(17.00)AND ENDS(18.30)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com+H4&5 2024

| DEMAND SET TYPE: Basic Comm-High 2024 |       |   |                                   |   |             |   |                        |   |        |   | T15     |   |       |
|---------------------------------------|-------|---|-----------------------------------|---|-------------|---|------------------------|---|--------|---|---------|---|-------|
| I                                     |       | I | NUMBER OF MINUTES FROM START WHEN |   |             | I | RATE OF FLOW (VEH/MIN) |   |        | I |         |   |       |
| I                                     | ARM   | I | FLOW STARTS                       | I | TOP OF PEAK | I | FLOW STOPS             | I | BEFORE | I | AT TOP  | I | AFTER |
| I                                     |       | I |                                   | I |             | I |                        | I |        | I |         | I |       |
| I                                     |       | I | TO RISE                           | I | IS REACHED  | I | FALLING                | I | PEAK   | I | OF PEAK | I | PEAK  |
| I                                     | ARM A | I | 15.00                             | I | 45.00       | I | 75.00                  | I | 16.33  | I | 24.49   | I | 16.33 |
| I                                     | ARM B | I | 15.00                             | I | 45.00       | I | 75.00                  | I | 8.25   | I | 12.38   | I | 8.25  |
| I                                     | ARM C | I | 15.00                             | I | 45.00       | I | 75.00                  | I | 3.66   | I | 5.49    | I | 3.66  |
| I                                     | ARM D | I | 15.00                             | I | 45.00       | I | 75.00                  | I | 10.10  | I | 15.15   | I | 10.10 |
| I                                     | ARM E | I | 15.00                             | I | 45.00       | I | 75.00                  | I | 3.65   | I | 5.48    | I | 3.65  |

DEMAND SET TITLE: Base+Com+H4&5 2024

|   |                       |   |        |   |        |   |        |   |        |   |        |   | T33    |
|---|-----------------------|---|--------|---|--------|---|--------|---|--------|---|--------|---|--------|
| I |                       |   |        |   |        |   |        |   |        |   |        |   |        |
| I | TURNING PROPORTIONS   |   |        |   |        |   |        |   |        |   |        |   |        |
| I | TURNING COUNTS        |   |        |   |        |   |        |   |        |   |        |   |        |
| I | (PERCENTAGE OF H.V.S) |   |        |   |        |   |        |   |        |   |        |   |        |
| I |                       |   |        |   |        |   |        |   |        |   |        |   |        |
| I | TIME                  | I | FROM/T | I | ARM A  | I | ARM B  | I | ARM C  | I | ARM D  | I | ARM E  |
| I | 17.00 - 18.30         | I |        | I |        | I |        | I |        | I |        | I |        |
| I |                       | I | ARM A  | I | 0.002  | I | 0.253  | I | 0.009  | I | 0.582  | I | 0.154  |
| I |                       | I |        | I | 2.0    | I | 331.0  | I | 12.0   | I | 760.0  | I | 201.0  |
| I |                       | I |        | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) |
| I |                       | I |        | I |        | I |        | I |        | I |        | I |        |
| I |                       | I | ARM B  | I | 0.648  | I | 0.002  | I | 0.002  | I | 0.235  | I | 0.114  |
| I |                       | I |        | I | 428.0  | I | 1.0    | I | 1.0    | I | 155.0  | I | 75.0   |
| I |                       | I |        | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) |
| I |                       | I |        | I |        | I |        | I |        | I |        | I |        |
| I |                       | I | ARM C  | I | 0.287  | I | 0.003  | I | 0.000  | I | 0.696  | I | 0.014  |
| I |                       | I |        | I | 84.0   | I | 1.0    | I | 0.0    | I | 204.0  | I | 4.0    |
| I |                       | I |        | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) |
| I |                       | I |        | I |        | I |        | I |        | I |        | I |        |
| I |                       | I | ARM D  | I | 0.730  | I | 0.139  | I | 0.033  | I | 0.005  | I | 0.093  |
| I |                       | I |        | I | 590.0  | I | 112.0  | I | 27.0   | I | 4.0    | I | 75.0   |
| I |                       | I |        | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) |
| I |                       | I |        | I |        | I |        | I |        | I |        | I |        |
| I |                       | I | ARM E  | I | 0.483  | I | 0.168  | I | 0.000  | I | 0.346  | I | 0.003  |
| I |                       | I |        | I | 141.0  | I | 49.0   | I | 0.0    | I | 101.0  | I | 1.0    |
| I |                       | I |        | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) |
| I |                       | I |        | I |        | I |        | I |        | I |        | I |        |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT



QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 17.15                  | 1.2                            | *     |
| 17.30                  | 1.9                            | **    |
| 17.45                  | 4.5                            | ***** |
| 18.00                  | 4.7                            | ***** |
| 18.15                  | 2.0                            | **    |
| 18.30                  | 1.2                            | *     |

QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 17.15                  | 0.7                            | *  |
| 17.30                  | 1.0                            | *  |
| 17.45                  | 2.1                            | ** |
| 18.00                  | 2.1                            | ** |
| 18.15                  | 1.1                            | *  |
| 18.30                  | 0.7                            | *  |

QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 17.15                  | 0.4                            |    |
| 17.30                  | 0.6                            | *  |
| 17.45                  | 1.9                            | ** |
| 18.00                  | 2.0                            | ** |
| 18.15                  | 0.7                            | *  |
| 18.30                  | 0.4                            |    |

QUEUE AT ARM D

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 17.15                  | 1.2                            | *     |
| 17.30                  | 2.0                            | **    |
| 17.45                  | 6.1                            | ***** |
| 18.00                  | 6.8                            | ***** |
| 18.15                  | 2.2                            | **    |
| 18.30                  | 1.2                            | *     |

QUEUE AT ARM E

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|------------------------|--------------------------------|---|
| 17.15                  | 0.4                            |   |
| 17.30                  | 0.6                            | * |
| 17.45                  | 1.3                            | * |
| 18.00                  | 1.3                            | * |
| 18.15                  | 0.6                            | * |
| 18.30                  | 0.4                            |   |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| T75 |     |   |              |          |   |              |           |                        |       |           |
|-----|-----|---|--------------|----------|---|--------------|-----------|------------------------|-------|-----------|
| I   | ARM | I | TOTAL DEMAND |          | I | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I     |           |
| I   |     | I |              |          | I | * DELAY *    | I         | * DELAY *              | I     |           |
| I   |     | I |              |          | I |              |           | I                      |       |           |
| I   |     | I | (VEH)        | (VEH/H)  | I | (MIN)        | (MIN/VEH) | I                      | (MIN) | (MIN/VEH) |
| I   | A   | I | 1797.6       | I 1198.4 | I | 227.4        | I 0.13    | I                      | 227.5 | I 0.13    |
| I   | B   | I | 908.4        | I 605.6  | I | 112.2        | I 0.12    | I                      | 112.2 | I 0.12    |
| I   | C   | I | 403.3        | I 268.9  | I | 87.2         | I 0.22    | I                      | 87.2  | I 0.22    |
| I   | D   | I | 1112.2       | I 741.4  | I | 275.0        | I 0.25    | I                      | 275.0 | I 0.25    |
| I   | E   | I | 401.9        | I 267.9  | I | 67.8         | I 0.17    | I                      | 67.8  | I 0.17    |
| I   | ALL | I | 4623.4       | I 3082.3 | I | 769.6        | I 0.17    | I                      | 769.7 | I 0.17    |

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

END OF JOB

===== end of file =====

Printed at 11:20:31 on 05/08/2012]

# A R C A D Y 6

## ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_NorthHydeRd AM.vai"  
(drive-on-the-left ) at 11:09:20 on Sunday, 5 August 2012

## FILE PROPERTIES

RUN TITLE: Base Model - Roundabout 1  
LOCATION: North Hyde Road/Dawley Road  
DATE: 23/04/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

## INPUT DATA

ARM A - Dawley Road (N)  
ARM B - North Hyde Road  
ARM C - Millington Road  
ARM D - Daweley Road (S)  
ARM E - Bourne Avenue

## GEOMETRIC DATA

| T5 |     |   |       |      |       |      |       |       |       |       |       |       |           |      |       |       |                     |        |   |
|----|-----|---|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-----------|------|-------|-------|---------------------|--------|---|
| I  | ARM | I | V (M) | I    | E (M) | I    | L (M) | I     | R (M) | I     | D (M) | I     | PHI (DEG) | I    | SLOPE | I     | INTERCEPT (PCU/MIN) | I      |   |
| I  | ARM | A | I     | 3.65 | I     | 9.50 | I     | 13.00 | I     | 22.00 | I     | 75.00 | I         | 20.0 | I     | 0.526 | I                   | 31.736 | I |
| I  | ARM | B | I     | 3.50 | I     | 8.00 | I     | 16.00 | I     | 10.00 | I     | 72.00 | I         | 40.0 | I     | 0.467 | I                   | 27.158 | I |
| I  | ARM | C | I     | 4.00 | I     | 6.00 | I     | 8.00  | I     | 22.00 | I     | 54.00 | I         | 36.0 | I     | 0.553 | I                   | 25.388 | I |
| I  | ARM | D | I     | 3.50 | I     | 5.50 | I     | 12.00 | I     | 20.00 | I     | 76.00 | I         | 46.0 | I     | 0.422 | I                   | 22.915 | I |
| I  | ARM | E | I     | 3.65 | I     | 4.50 | I     | 3.00  | I     | 32.00 | I     | 56.00 | I         | 35.0 | I     | 0.497 | I                   | 20.704 | I |

V = approach half-width L = effective flare length D = inscribed circle diameter  
E = entry width R = entry radius PHI = entry angle

## TRAFFIC DEMAND DATA

Only sets included in the current run are shown

## SCALING FACTORS



|           |        |          |   |
|-----------|--------|----------|---|
| ----- T13 |        |          |   |
| I ARM     | I FLOW | SCALE(%) | I |
| -----     |        |          |   |
| I A       | I      | 100      | I |
| I B       | I      | 100      | I |
| I C       | I      | 100      | I |
| I D       | I      | 100      | I |
| I E       | I      | 100      | I |
| -----     |        |          |   |

TIME PERIOD BEGINS(07.45)AND ENDS(09.15)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com+H5 2024

|           |                                   |               |              |         |          |                        |         |   |
|-----------|-----------------------------------|---------------|--------------|---------|----------|------------------------|---------|---|
| ----- T15 |                                   |               |              |         |          |                        |         |   |
| I         | NUMBER OF MINUTES FROM START WHEN |               |              |         | I        | RATE OF FLOW (VEH/MIN) |         |   |
| I ARM     | I FLOW STARTS                     | I TOP OF PEAK | I FLOW STOPS | I       | I BEFORE | I AT TOP               | I AFTER | I |
| I         | I                                 | I             | I            | I       | I        | I                      | I       | I |
| I         | I TO RISE                         | I IS REACHED  | I FALLING    | I       | I PEAK   | I OF PEAK              | I PEAK  | I |
| -----     |                                   |               |              |         |          |                        |         |   |
| I ARM     | A                                 | I 15.00       | I 45.00      | I 75.00 | I 16.71  | I 25.07                | I 16.71 | I |
| I ARM     | B                                 | I 15.00       | I 45.00      | I 75.00 | I 8.36   | I 12.54                | I 8.36  | I |
| I ARM     | C                                 | I 15.00       | I 45.00      | I 75.00 | I 0.46   | I 0.69                 | I 0.46  | I |
| I ARM     | D                                 | I 15.00       | I 45.00      | I 75.00 | I 10.70  | I 16.05                | I 10.70 | I |
| I ARM     | E                                 | I 15.00       | I 45.00      | I 75.00 | I 5.24   | I 7.86                 | I 5.24  | I |
| -----     |                                   |               |              |         |          |                        |         |   |

DEMAND SET TITLE: Base+Com+H5 2024

|           |                       |          |         |          |          |          |          |          |   |
|-----------|-----------------------|----------|---------|----------|----------|----------|----------|----------|---|
| ----- T33 |                       |          |         |          |          |          |          |          |   |
| I         | TURNING PROPORTIONS   |          |         |          | I        |          |          |          |   |
| I         | TURNING COUNTS        |          |         |          | I        |          |          |          |   |
| I         | (PERCENTAGE OF H.V.S) |          |         |          | I        |          |          |          |   |
| I         | -----                 |          |         |          | I        |          |          |          |   |
| I         | TIME                  | I FROM/T | I ARM A | I ARM B  | I ARM C  | I ARM D  | I ARM E  | I        | I |
| -----     |                       |          |         |          |          |          |          |          |   |
| I         | 07.45 - 09.15         | I        | I       | I        | I        | I        | I        | I        | I |
| I         |                       | I ARM    | A       | I 0.002  | I 0.228  | I 0.088  | I 0.549  | I 0.132  | I |
| I         |                       | I        |         | I 3.0    | I 305.0  | I 118.0  | I 734.0  | I 177.0  | I |
| I         |                       | I        |         | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I |
| I         |                       | I        |         | I        | I        | I        | I        | I        | I |
| I         |                       | I ARM    | B       | I 0.747  | I 0.001  | I 0.004  | I 0.169  | I 0.078  | I |
| I         |                       | I        |         | I 500.0  | I 1.0    | I 3.0    | I 113.0  | I 52.0   | I |
| I         |                       | I        |         | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I |
| I         |                       | I        |         | I        | I        | I        | I        | I        | I |
| I         |                       | I ARM    | C       | I 0.405  | I 0.027  | I 0.000  | I 0.568  | I 0.000  | I |
| I         |                       | I        |         | I 15.0   | I 1.0    | I 0.0    | I 21.0   | I 0.0    | I |
| I         |                       | I        |         | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I |
| I         |                       | I        |         | I        | I        | I        | I        | I        | I |
| I         |                       | I ARM    | D       | I 0.665  | I 0.124  | I 0.161  | I 0.004  | I 0.047  | I |
| I         |                       | I        |         | I 569.0  | I 106.0  | I 138.0  | I 3.0    | I 40.0   | I |
| I         |                       | I        |         | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I |
| I         |                       | I        |         | I        | I        | I        | I        | I        | I |
| I         |                       | I ARM    | E       | I 0.611  | I 0.241  | I 0.010  | I 0.136  | I 0.002  | I |
| I         |                       | I        |         | I 256.0  | I 101.0  | I 4.0    | I 57.0   | I 1.0    | I |
| I         |                       | I        |         | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I |
| I         |                       | I        |         | I        | I        | I        | I        | I        | I |
| -----     |                       |          |         |          |          |          |          |          |   |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|--|
| 08.15-08.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |  |
| ARM A       | 24.53               | 27.87                 | 0.880                        | -                                | 2.3                      | 6.4                    | 82.8                                | -                                             | 0.259                                          |  |
| ARM B       | 12.28               | 16.73                 | 0.734                        | -                                | 1.2                      | 2.6                    | 36.0                                | -                                             | 0.216                                          |  |
| ARM C       | 0.68                | 8.93                  | 0.076                        | -                                | 0.0                      | 0.1                    | 1.2                                 | -                                             | 0.121                                          |  |
| ARM D       | 15.71               | 17.16                 | 0.915                        | -                                | 2.3                      | 7.8                    | 92.8                                | -                                             | 0.475                                          |  |
| ARM E       | 7.69                | 8.73                  | 0.880                        | -                                | 1.3                      | 5.3                    | 62.6                                | -                                             | 0.662                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|--|
| 08.45-09.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |  |
| ARM A       | 20.03               | 28.35                 | 0.707                        | -                                | 6.9                      | 2.5                    | 40.9                                | -                                             | 0.129                                          |  |
| ARM B       | 10.02               | 18.36                 | 0.546                        | -                                | 2.7                      | 1.2                    | 19.4                                | -                                             | 0.123                                          |  |
| ARM C       | 0.55                | 11.61                 | 0.048                        | -                                | 0.1                      | 0.1                    | 0.8                                 | -                                             | 0.091                                          |  |
| ARM D       | 12.83               | 18.12                 | 0.708                        | -                                | 9.0                      | 2.5                    | 46.0                                | -                                             | 0.222                                          |  |
| ARM E       | 6.28                | 10.52                 | 0.597                        | -                                | 6.6                      | 1.5                    | 28.9                                | -                                             | 0.277                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 09.00-09.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| ARM A       | 16.78               | 28.99                 | 0.579                        | -                                | 2.5                      | 1.4                    | 21.7                                | -                                             | 0.083                                          |
| ARM B       | 8.39                | 19.89                 | 0.422                        | -                                | 1.2                      | 0.7                    | 11.4                                | -                                             | 0.087                                          |
| ARM C       | 0.46                | 13.96                 | 0.033                        | -                                | 0.1                      | 0.0                    | 0.5                                 | -                                             | 0.074                                          |
| ARM D       | 10.74               | 18.93                 | 0.567                        | -                                | 2.5                      | 1.3                    | 21.0                                | -                                             | 0.124                                          |
| ARM E       | 5.26                | 12.33                 | 0.427                        | -                                | 1.5                      | 0.8                    | 11.9                                | -                                             | 0.144                                          |

QUEUE AT ARM A

-----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 08.00                  | 1.4                            | *     |
| 08.15                  | 2.3                            | **    |
| 08.30                  | 6.4                            | ***** |
| 08.45                  | 6.9                            | ***** |
| 09.00                  | 2.5                            | **    |
| 09.15                  | 1.4                            | *     |

QUEUE AT ARM B

-----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |     |
|------------------------|--------------------------------|-----|
| 08.00                  | 0.7                            | *   |
| 08.15                  | 1.2                            | *   |
| 08.30                  | 2.6                            | *** |
| 08.45                  | 2.7                            | *** |
| 09.00                  | 1.2                            | *   |
| 09.15                  | 0.7                            | *   |

QUEUE AT ARM C

-----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |  |
|------------------------|--------------------------------|--|
| 08.00                  | 0.0                            |  |
| 08.15                  | 0.0                            |  |
| 08.30                  | 0.1                            |  |
| 08.45                  | 0.1                            |  |
| 09.00                  | 0.1                            |  |
| 09.15                  | 0.0                            |  |

QUEUE AT ARM D

-----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 08.00                  | 1.3                            | *     |
| 08.15                  | 2.3                            | **    |
| 08.30                  | 7.8                            | ***** |
| 08.45                  | 9.0                            | ***** |
| 09.00                  | 2.5                            | ***   |
| 09.15                  | 1.3                            | *     |

QUEUE AT ARM E

-----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 08.00                  | 0.7                            | *     |
| 08.15                  | 1.3                            | *     |
| 08.30                  | 5.3                            | ***** |
| 08.45                  | 6.6                            | ***** |
| 09.00                  | 1.5                            | **    |
| 09.15                  | 0.8                            | *     |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| T75 |     |   |              |          |              |           |                        |           |  |   |
|-----|-----|---|--------------|----------|--------------|-----------|------------------------|-----------|--|---|
| I   | ARM | I | TOTAL DEMAND | I        | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I         |  | I |
| I   |     | I |              | I        | * DELAY *    | I         | * DELAY *              | I         |  | I |
| I   |     | I |              | I        |              | I         |                        | I         |  | I |
| I   |     | I | (VEH)        | (VEH/H)  | (MIN)        | (MIN/VEH) | (MIN)                  | (MIN/VEH) |  | I |
| I   | A   | I | 1840.3       | I 1226.9 | I 298.8      | I 0.16    | I 298.8                | I 0.16    |  | I |
| I   | B   | I | 920.8        | I 613.9  | I 134.3      | I 0.15    | I 134.3                | I 0.15    |  | I |
| I   | C   | I | 50.9         | I 34.0   | I 5.0        | I 0.10    | I 5.0                  | I 0.10    |  | I |
| I   | D   | I | 1178.2       | I 785.5  | I 337.4      | I 0.29    | I 337.5                | I 0.29    |  | I |
| I   | E   | I | 576.7        | I 384.5  | I 223.4      | I 0.39    | I 223.4                | I 0.39    |  | I |
| I   | ALL | I | 4567.0       | I 3044.7 | I 998.9      | I 0.22    | I 999.0                | I 0.22    |  | I |

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

END OF JOB

===== end of file =====

Printed at 11:10:03 on 05/08/2012]

# A R C A D Y 6

## ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_NorthHydeRd PM.vai"  
(drive-on-the-left ) at 11:10:13 on Sunday, 5 August 2012

## FILE PROPERTIES

RUN TITLE: Base Model - Roundabout 1  
LOCATION: North Hyde Road/Dawley Road  
DATE: 23/04/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

## INPUT DATA

ARM A - Dawley Road (N)  
ARM B - North Hyde Road  
ARM C - Millington Road  
ARM D - Daweley Road (S)  
ARM E - Bourne Avenue

## GEOMETRIC DATA

| I | ARM   | I | V (M) | I | E (M) | I | L (M) | I | R (M) | I | D (M) | I | PHI (DEG) | I | SLOPE | I | INTERCEPT (PCU/MIN) | I | T5 |
|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-----------|---|-------|---|---------------------|---|----|
| I | ARM A | I | 3.65  | I | 9.50  | I | 13.00 | I | 22.00 | I | 75.00 | I | 20.0      | I | 0.526 | I | 31.736              | I |    |
| I | ARM B | I | 3.50  | I | 8.00  | I | 16.00 | I | 10.00 | I | 72.00 | I | 40.0      | I | 0.467 | I | 27.158              | I |    |
| I | ARM C | I | 4.00  | I | 6.00  | I | 8.00  | I | 22.00 | I | 54.00 | I | 36.0      | I | 0.553 | I | 25.388              | I |    |
| I | ARM D | I | 3.50  | I | 5.50  | I | 12.00 | I | 20.00 | I | 76.00 | I | 46.0      | I | 0.422 | I | 22.915              | I |    |
| I | ARM E | I | 3.65  | I | 4.50  | I | 3.00  | I | 32.00 | I | 56.00 | I | 35.0      | I | 0.497 | I | 20.704              | I |    |

V = approach half-width L = effective flare length D = inscribed circle diameter  
E = entry width R = entry radius PHI = entry angle

## TRAFFIC DEMAND DATA

Only sets included in the current run are shown

## SCALING FACTORS

|      |   |               |   |
|------|---|---------------|---|
| T13  |   |               |   |
| IARM | I | FLOW SCALE(%) | I |
| I A  | I | 100           | I |
| I B  | I | 100           | I |
| I C  | I | 100           | I |
| I D  | I | 100           | I |
| I E  | I | 100           | I |

TIME PERIOD BEGINS(17.00)AND ENDS(18.30)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com+H5 2024

| T15 |                                   |   |             |       |             |       |                        |       |        |       |         |       |       |       |   |
|-----|-----------------------------------|---|-------------|-------|-------------|-------|------------------------|-------|--------|-------|---------|-------|-------|-------|---|
| I   | NUMBER OF MINUTES FROM START WHEN |   |             |       |             | I     | RATE OF FLOW (VEH/MIN) |       |        |       | I       |       |       |       |   |
| I   | ARM                               | I | FLOW STARTS | I     | TOP OF PEAK | I     | FLOW STOPS             | I     | BEFORE | I     | AT TOP  | I     | AFTER | I     |   |
| I   |                                   | I |             | I     |             | I     |                        | I     |        | I     |         | I     |       | I     |   |
| I   |                                   | I | TO RISE     | I     | IS REACHED  | I     | FALLING                | I     | PEAK   | I     | OF PEAK | I     | PEAK  | I     |   |
| I   | ARM                               | A | I           | 15.00 | I           | 45.00 | I                      | 75.00 | I      | 16.31 | I       | 24.47 | I     | 16.31 | I |
| I   | ARM                               | B | I           | 15.00 | I           | 45.00 | I                      | 75.00 | I      | 8.25  | I       | 12.38 | I     | 8.25  | I |
| I   | ARM                               | C | I           | 15.00 | I           | 45.00 | I                      | 75.00 | I      | 3.21  | I       | 4.82  | I     | 3.21  | I |
| I   | ARM                               | D | I           | 15.00 | I           | 45.00 | I                      | 75.00 | I      | 10.04 | I       | 15.06 | I     | 10.04 | I |
| I   | ARM                               | E | I           | 15.00 | I           | 45.00 | I                      | 75.00 | I      | 3.65  | I       | 5.48  | I     | 3.65  | I |

DEMAND SET TITLE: Base+Com+H5 2024

|   |               |  |   |                       |   |        |   |        |   |        |   |        |   |        |   |
|---|---------------|--|---|-----------------------|---|--------|---|--------|---|--------|---|--------|---|--------|---|
|   |               |  |   |                       |   |        |   |        |   |        |   |        |   | T33    |   |
| I |               |  | I | TURNING PROPORTIONS   |   |        |   |        |   | I      |   |        |   |        |   |
| I |               |  | I | TURNING COUNTS        |   |        |   |        |   | I      |   |        |   |        |   |
| I |               |  | I | (PERCENTAGE OF H.V.S) |   |        |   |        |   | I      |   |        |   |        |   |
| I |               |  |   |                       |   |        |   |        |   |        |   |        |   |        |   |
| I | TIME          |  | I | FROM/T                | I | ARM A  | I | ARM B  | I | ARM C  | I | ARM D  | I | ARM E  | I |
| I | 17.00 - 18.30 |  | I |                       | I |        | I |        | I |        | I |        | I |        | I |
| I |               |  | I | ARM A                 | I | 0.002  | I | 0.254  | I | 0.008  | I | 0.582  | I | 0.154  | I |
| I |               |  | I |                       | I | 2.0    | I | 331.0  | I | 11.0   | I | 760.0  | I | 201.0  | I |
| I |               |  | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I |
| I |               |  | I |                       | I |        | I |        | I |        | I |        | I |        | I |
| I |               |  | I | ARM B                 | I | 0.648  | I | 0.002  | I | 0.002  | I | 0.235  | I | 0.114  | I |
| I |               |  | I |                       | I | 428.0  | I | 1.0    | I | 1.0    | I | 155.0  | I | 75.0   | I |
| I |               |  | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I |
| I |               |  | I |                       | I |        | I |        | I |        | I |        | I |        | I |
| I |               |  | I | ARM C                 | I | 0.300  | I | 0.004  | I | 0.000  | I | 0.685  | I | 0.012  | I |
| I |               |  | I |                       | I | 77.0   | I | 1.0    | I | 0.0    | I | 176.0  | I | 3.0    | I |
| I |               |  | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I |
| I |               |  | I |                       | I |        | I |        | I |        | I |        | I |        | I |
| I |               |  | I | ARM D                 | I | 0.735  | I | 0.139  | I | 0.027  | I | 0.005  | I | 0.093  | I |
| I |               |  | I |                       | I | 590.0  | I | 112.0  | I | 22.0   | I | 4.0    | I | 75.0   | I |
| I |               |  | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I |
| I |               |  | I |                       | I |        | I |        | I |        | I |        | I |        | I |
| I |               |  | I | ARM E                 | I | 0.483  | I | 0.168  | I | 0.000  | I | 0.346  | I | 0.003  | I |
| I |               |  | I |                       | I | 141.0  | I | 49.0   | I | 0.0    | I | 101.0  | I | 1.0    | I |
| I |               |  | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I |
| I |               |  | I |                       | I |        | I |        | I |        | I |        | I |        | I |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT



## QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 17.15                  | 1.2                            | *     |
| 17.30                  | 1.9                            | **    |
| 17.45                  | 4.5                            | ****  |
| 18.00                  | 4.6                            | ***** |
| 18.15                  | 2.0                            | **    |
| 18.30                  | 1.2                            | *     |

## QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 17.15                  | 0.7                            | *  |
| 17.30                  | 1.0                            | *  |
| 17.45                  | 2.1                            | ** |
| 18.00                  | 2.1                            | ** |
| 18.15                  | 1.1                            | *  |
| 18.30                  | 0.7                            | *  |

## QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|------------------------|--------------------------------|---|
| 17.15                  | 0.3                            |   |
| 17.30                  | 0.5                            | * |
| 17.45                  | 1.4                            | * |
| 18.00                  | 1.4                            | * |
| 18.15                  | 0.5                            | * |
| 18.30                  | 0.3                            |   |

## QUEUE AT ARM D

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 17.15                  | 1.1                            | *     |
| 17.30                  | 2.0                            | **    |
| 17.45                  | 5.8                            | ***** |
| 18.00                  | 6.3                            | ***** |
| 18.15                  | 2.1                            | **    |
| 18.30                  | 1.2                            | *     |

## QUEUE AT ARM E

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|------------------------|--------------------------------|---|
| 17.15                  | 0.4                            |   |
| 17.30                  | 0.6                            | * |
| 17.45                  | 1.2                            | * |
| 18.00                  | 1.3                            | * |
| 18.15                  | 0.6                            | * |
| 18.30                  | 0.4                            |   |



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| T75 |     |   |              |          |   |              |           |   |                        |           |   |
|-----|-----|---|--------------|----------|---|--------------|-----------|---|------------------------|-----------|---|
| I   | ARM | I | TOTAL DEMAND |          | I | * QUEUEING * |           | I | * INCLUSIVE QUEUEING * |           | I |
| I   |     | I |              |          | I | * DELAY *    |           | I | * DELAY *              |           | I |
| I   |     | I |              |          | I |              |           | I |                        |           | I |
| I   |     | I | (VEH)        | (VEH/H)  | I | (MIN)        | (MIN/VEH) | I | (MIN)                  | (MIN/VEH) | I |
| I   | A   | I | 1796.2       | I 1197.5 | I | 225.4        | I 0.13    | I | 225.4                  | I 0.13    | I |
| I   | B   | I | 908.4        | I 605.6  | I | 111.5        | I 0.12    | I | 111.5                  | I 0.12    | I |
| I   | C   | I | 353.7        | I 235.8  | I | 66.0         | I 0.19    | I | 66.0                   | I 0.19    | I |
| I   | D   | I | 1105.3       | I 736.8  | I | 262.6        | I 0.24    | I | 262.6                  | I 0.24    | I |
| I   | E   | I | 401.9        | I 267.9  | I | 66.6         | I 0.17    | I | 66.6                   | I 0.17    | I |
| I   | ALL | I | 4565.6       | I 3043.7 | I | 732.1        | I 0.16    | I | 732.2                  | I 0.16    | I |

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

END OF JOB

===== end of file =====

Printed at 11:10:48 on 05/08/2012]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_StationRd AM\_Int.vai"  
(drive-on-the-left ) at 13:29:04 on Sunday, 5 August 2012

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Dawley Road Station Road Site 2 Base Model  
LOCATION: Dawley Road/Station Road  
DATE: 16/07/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - Dawley Road (N)  
ARM B - Station Road (E)  
ARM C - Shepiston Lane (S)

MINI-ROUNDABOUT GEOMETRIC DATA

JUNCTION IN LONDON  
LIGHTING CONDITIONS : NORMAL  
ROAD SURFACE CONDITION: NORMAL  
ARM \*HAS A CENTRAL ISLAND

ARM \* HAS A ZEBRA CROSSING  
ARM \* HAS A ZEBRA CROSSING

| I | ARM   | I | V (M) | I | E (M) | I | Lm(M) | I | Vm(M) | I | A (M) | I | K (M) | I | G (%) | I | SLOPE | I | INTERCEPT | I |
|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-----------|---|
| I |       | I |       | I |       | I |       | I |       | I |       | I |       | I |       | I |       | I | (PCU/MIN) | I |
| I | ARM A | I | 3.75  | I | 6.10  | I | 6.00  | I | 3.75  | I | 11.00 | I | 7.00  | I | 0.00  | I | 0.595 | I | 28.234*   | I |
| I | ARM B | I | 3.85  | I | 5.50  | I | 5.50  | I | 3.85  | I | 11.70 | I | 5.90  | I | 0.00  | I | 0.589 | I | 20.216*   | I |
| I | ARM C | I | 4.69  | I | 6.50  | I | 31.00 | I | 4.69  | I | 16.00 | I | 11.00 | I | 0.00  | I | 0.539 | I | 21.366    | I |

V = approach half-width Lm = effective flare length A = distance between arms  
E = entry width Vm = minimum approach half-width K= entry corner kerb line G=gradient over 50 m  
\*\*WARNING\*\* One or more intercept values (flagged \* in the table)  
have been adjusted according to local input values  
from a previous run and listed below -

T6

| I | ARM   | I | ADJUSTMENT TO       | I |
|---|-------|---|---------------------|---|
| I |       | I | INTERCEPT (PCU/MIN) | I |
| I | ARM A | I | 11.000              | I |
| I | ARM B | I | 5.000               | I |

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

|           |   |               |   |
|-----------|---|---------------|---|
| ----- T13 |   |               |   |
| I ARM     | I | FLOW SCALE(%) | I |
| -----     |   |               |   |
| I A       | I | 100           | I |
| I B       | I | 100           | I |
| I C       | I | 100           | I |
| -----     |   |               |   |

TIME PERIOD BEGINS(07.30)AND ENDS(09.00)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com+H4&5 2024

|           |                                   |             |               |              |                        |           |         |   |
|-----------|-----------------------------------|-------------|---------------|--------------|------------------------|-----------|---------|---|
| ----- T15 |                                   |             |               |              |                        |           |         |   |
| I         | NUMBER OF MINUTES FROM START WHEN |             |               | I            | RATE OF FLOW (VEH/MIN) |           |         | I |
| I ARM     | I                                 | FLOW STARTS | I TOP OF PEAK | I FLOW STOPS | I BEFORE               | I AT TOP  | I AFTER | I |
| I         | I                                 | I           | I             | I            | I                      | I         | I       | I |
| I         | I                                 | TO RISE     | I IS REACHED  | I FALLING    | I PEAK                 | I OF PEAK | I PEAK  | I |
| -----     |                                   |             |               |              |                        |           |         |   |
| I ARM A   | I                                 | 15.00       | I 45.00       | I 75.00      | I 11.54                | I 17.31   | I 11.54 | I |
| I ARM B   | I                                 | 15.00       | I 45.00       | I 75.00      | I 6.57                 | I 9.86    | I 6.57  | I |
| I ARM C   | I                                 | 15.00       | I 45.00       | I 75.00      | I 9.88                 | I 14.81   | I 9.88  | I |
| -----     |                                   |             |               |              |                        |           |         |   |

DEMAND SET TITLE: Base+Com+H4&5 2024

|           |               |  |       |                       |   |        |   |        |   |        |   |
|-----------|---------------|--|-------|-----------------------|---|--------|---|--------|---|--------|---|
| ----- T33 |               |  |       |                       |   |        |   |        |   |        |   |
| I         |               |  | I     | TURNING PROPORTIONS   |   |        |   |        |   | I      |   |
| I         |               |  | I     | TURNING COUNTS        |   |        |   |        |   | I      |   |
| I         |               |  | I     | (PERCENTAGE OF H.V.S) |   |        |   |        |   | I      |   |
| I         |               |  | ----- |                       |   |        |   |        |   |        |   |
| I         | TIME          |  | I     | FROM/T                | I | ARM A  | I | ARM B  | I | ARM C  | I |
| -----     |               |  |       |                       |   |        |   |        |   |        |   |
| I         | 07.30 - 09.00 |  | I     |                       | I |        | I |        | I |        | I |
| I         |               |  | I     | ARM A                 | I | 0.001  | I | 0.293  | I | 0.706  | I |
| I         |               |  | I     |                       | I | 1.0    | I | 270.0  | I | 652.0  | I |
| I         |               |  | I     |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I |
| I         |               |  | I     |                       | I |        | I |        | I |        | I |
| I         |               |  | I     | ARM B                 | I | 0.458  | I | 0.000  | I | 0.542  | I |
| I         |               |  | I     |                       | I | 241.0  | I | 0.0    | I | 285.0  | I |
| I         |               |  | I     |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I |
| I         |               |  | I     |                       | I |        | I |        | I |        | I |
| I         |               |  | I     | ARM C                 | I | 0.722  | I | 0.278  | I | 0.000  | I |
| I         |               |  | I     |                       | I | 570.0  | I | 220.0  | I | 0.0    | I |
| I         |               |  | I     |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I |
| I         |               |  | I     |                       | I |        | I |        | I |        | I |
| -----     |               |  |       |                       |   |        |   |        |   |        |   |

PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING USE:

ARM A: Frequency of use is distributed throughout the period  
in the s 90.0y as vehicular demand on the link. (= times per hour)

ARM B: Frequency of use is distributed throughout the period  
in the s 30.0y as vehicular demand on the link. (= times per hour)

ZEBRA CROSSINGS

T40

| ARM     | LENGTH OF CROSSING<br>(M) | QUEUEING SPACE BETWEEN<br>CROSSING AND JUNCTION<br>(VEHS) | QUEUEING SPACE WITHOUT<br>BLOCKING BACK INTO<br>JUNCTION<br>(VEHS) |
|---------|---------------------------|-----------------------------------------------------------|--------------------------------------------------------------------|
| (ENTRY) | (EXIT)                    | ENTRY                                                     |                                                                    |
| A       | 4.50                      | 0.0                                                       | 3.5                                                                |
| B       | 3.70                      | 3.8                                                       | 2.0                                                                |

## QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|
| 07.30-07.45 |                     |                       |                              |                                  |                          |                        |                                     |                                                |
| ARM A       | 11.58               | 23.31                 | 0.497                        | -                                | 0.0                      | 1.0                    | 14.1                                | 0.084                                          |
| ARM B       | 6.60                | 15.42                 | 0.428                        | -                                | 0.0                      | 0.7                    | 10.6                                | 0.112                                          |
| ARM C       | 9.91                | 19.66                 | 0.504                        | -                                | 0.0                      | 1.0                    | 14.4                                | 0.101                                          |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|
| 07.45-08.00 |                     |                       |                              |                                  |                          |                        |                                     |                                                |
| ARM A       | 13.83               | 22.49                 | 0.615                        | -                                | 1.0                      | 1.6                    | 22.5                                | 0.114                                          |
| ARM B       | 7.88                | 14.47                 | 0.545                        | -                                | 0.7                      | 1.2                    | 16.8                                | 0.150                                          |
| ARM C       | 11.84               | 19.20                 | 0.616                        | -                                | 1.0                      | 1.6                    | 22.5                                | 0.134                                          |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|
| 08.00-08.15 |                     |                       |                              |                                  |                          |                        |                                     |                                                |
| ARM A       | 16.94               | 21.42                 | 0.791                        | -                                | 1.6                      | 3.5                    | 48.2                                | 0.211                                          |
| ARM B       | 9.65                | 13.21                 | 0.731                        | -                                | 1.2                      | 2.5                    | 34.7                                | 0.268                                          |
| ARM C       | 14.50               | 18.38                 | 0.789                        | -                                | 1.6                      | 3.5                    | 46.9                                | 0.242                                          |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|
| 08.15-08.30 |                     |                       |                              |                                  |                          |                        |                                     |                                                |
| ARM A       | 16.94               | 21.40                 | 0.792                        | -                                | 3.5                      | 3.7                    | 54.3                                | 0.223                                          |
| ARM B       | 9.65                | 13.16                 | 0.733                        | -                                | 2.5                      | 2.7                    | 39.2                                | 0.282                                          |
| ARM C       | 14.50               | 18.34                 | 0.791                        | -                                | 3.5                      | 3.6                    | 53.5                                | 0.259                                          |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|
| 08.30-08.45 |                     |                       |                              |                                  |                          |                        |                                     |                                                |
| ARM A       | 13.83               | 22.47                 | 0.616                        | -                                | 3.7                      | 1.6                    | 26.0                                | 0.120                                          |
| ARM B       | 7.88                | 14.40                 | 0.547                        | -                                | 2.7                      | 1.2                    | 19.7                                | 0.158                                          |
| ARM C       | 11.84               | 19.16                 | 0.618                        | -                                | 3.6                      | 1.7                    | 26.5                                | 0.141                                          |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|
| 08.45-09.00 |                     |                       |                              |                                  |                          |                        |                                     |                                                |
| ARM A       | 11.58               | 23.30                 | 0.497                        | -                                | 1.6                      | 1.0                    | 15.5                                | 0.086                                          |
| ARM B       | 6.60                | 15.37                 | 0.429                        | -                                | 1.2                      | 0.8                    | 11.9                                | 0.115                                          |
| ARM C       | 9.91                | 19.63                 | 0.505                        | -                                | 1.7                      | 1.0                    | 16.1                                | 0.104                                          |

QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |      |
|------------------------|--------------------------------|------|
| 07.45                  | 1.0                            | *    |
| 08.00                  | 1.6                            | **   |
| 08.15                  | 3.5                            | **** |
| 08.30                  | 3.7                            | **** |
| 08.45                  | 1.6                            | **   |
| 09.00                  | 1.0                            | *    |

QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |     |
|------------------------|--------------------------------|-----|
| 07.45                  | 0.7                            | *   |
| 08.00                  | 1.2                            | *   |
| 08.15                  | 2.5                            | *** |
| 08.30                  | 2.7                            | *** |
| 08.45                  | 1.2                            | *   |
| 09.00                  | 0.8                            | *   |

QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |      |
|------------------------|--------------------------------|------|
| 07.45                  | 1.0                            | *    |
| 08.00                  | 1.6                            | **   |
| 08.15                  | 3.5                            | ***  |
| 08.30                  | 3.6                            | **** |
| 08.45                  | 1.7                            | **   |
| 09.00                  | 1.0                            | *    |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| T75 |   |              |          |              |           |                        |           |   |   |
|-----|---|--------------|----------|--------------|-----------|------------------------|-----------|---|---|
| ARM | I | TOTAL DEMAND | I        | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I         |   | I |
|     | I |              | I        | * DELAY *    | I         | * DELAY *              | I         |   | I |
|     | I |              | I        |              | I         |                        | I         |   | I |
|     | I | (VEH)        | (VEH/H)  | I (MIN)      | (MIN/VEH) | I (MIN)                | (MIN/VEH) | I | I |
| A   | I | 1270.4       | I 847.0  | I 180.6      | I 0.14    | I 180.6                | I 0.14    | I | I |
| B   | I | 724.0        | I 482.7  | I 132.8      | I 0.18    | I 132.9                | I 0.18    | I | I |
| C   | I | 1087.4       | I 724.9  | I 179.8      | I 0.17    | I 179.9                | I 0.17    | I | I |
| ALL | I | 3081.8       | I 2054.5 | I 493.3      | I 0.16    | I 493.3                | I 0.16    | I | I |

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

END OF JOB

===== end of file =====

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_StationRd PM\_Int.vai"  
(drive-on-the-left ) at 13:29:57 on Sunday, 5 August 2012

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Dawley Road Station Road Site 2 Base Model  
LOCATION: Dawley Road/Station Road  
DATE: 16/07/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - Dawley Road (N)  
ARM B - Station Road (E)  
ARM C - Shepiston Lane (S)

MINI-ROUNDABOUT GEOMETRIC DATA

JUNCTION IN LONDON  
LIGHTING CONDITIONS : NORMAL  
ROAD SURFACE CONDITION: NORMAL  
ARM \*HAS A CENTRAL ISLAND

ARM \* HAS A ZEBRA CROSSING  
ARM \* HAS A ZEBRA CROSSING

| I | ARM   | I | V (M) | I | E (M) | I | Lm(M) | I | Vm(M) | I | A (M) | I | K (M) | I | G (%) | I | SLOPE | I | INTERCEPT | I |
|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-----------|---|
| I |       | I |       | I |       | I |       | I |       | I |       | I |       | I |       | I |       | I | (PCU/MIN) | I |
| I | ARM A | I | 3.75  | I | 6.10  | I | 6.00  | I | 3.75  | I | 11.00 | I | 7.00  | I | 0.00  | I | 0.595 | I | 31.934*   | I |
| I | ARM B | I | 3.85  | I | 5.50  | I | 5.50  | I | 3.85  | I | 11.70 | I | 5.90  | I | 0.00  | I | 0.589 | I | 24.016*   | I |
| I | ARM C | I | 4.69  | I | 6.50  | I | 31.00 | I | 4.69  | I | 16.00 | I | 11.00 | I | 0.00  | I | 0.539 | I | 21.366    | I |

V = approach half-width Lm = effective flare length A = distance between arms  
E = entry width Vm = minimum approach half-width K= entry corner kerb line G=gradient over 50 m  
\*\*WARNING\*\* One or more intercept values (flagged \* in the table)  
have been adjusted according to local input values  
from a previous run and listed below -

T6

| I |       | I | ADJUSTMENT TO       | I |
|---|-------|---|---------------------|---|
| I |       | I | INTERCEPT (PCU/MIN) | I |
| I | ARM A | I | 14.700              | I |
| I | ARM B | I | 8.800               | I |

## ZEBRA CROSSINGS

|     |       |                        |   |                                                     |   |                                                           |
|-----|-------|------------------------|---|-----------------------------------------------------|---|-----------------------------------------------------------|
| T40 |       |                        |   |                                                     |   |                                                           |
| I   | ARM I | LENGTH OF CROSSING (M) | I | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION (VEHS) | I | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) |
| I   | I     | (ENTRY) (EXIT)         | I | ENTRY                                               | I |                                                           |
| I   | A     | 4.50                   | I | 0.0                                                 | I | 3.5                                                       |
| I   | B     | 3.70                   | I | 3.8                                                 | I | 2.0                                                       |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

|     |             |                  |                    |                       |                            |                    |                  |                               |                                          |
|-----|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|------------------------------------------|
| T70 |             |                  |                    |                       |                            |                    |                  |                               |                                          |
| I   | TIME        | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
| I   | I           | I                | I                  | I                     | I                          | I                  | I                | I                             | I                                        |
| I   | -           | -                | -                  | -                     | -                          | -                  | -                | -                             | -                                        |
| I   | 16.45-17.00 |                  |                    |                       |                            |                    |                  |                               |                                          |
| I   | ARM A       | 13.44            | 26.24              | 0.512                 | - - 1.2                    | 0.0                | 1.0              | 15.0                          | 0.077                                    |
| I   | ARM B       | 7.39             | 18.31              | 0.404                 | - - 0.4                    | 0.0                | 0.7              | 9.7                           | 0.091                                    |
| I   | ARM C       | 9.50             | 19.00              | 0.500                 | - - -                      | 0.0                | 1.0              | 14.1                          | 0.104                                    |
| I   | I           |                  |                    |                       |                            |                    |                  |                               | I                                        |

|   |             |                  |                    |                       |                            |                    |                  |                               |                                          |
|---|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|------------------------------------------|
| I | TIME        | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
| I | I           | I                | I                  | I                     | I                          | I                  | I                | I                             | I                                        |
| I | -           | -                | -                  | -                     | -                          | -                  | -                | -                             | -                                        |
| I | 17.00-17.15 |                  |                    |                       |                            |                    |                  |                               |                                          |
| I | ARM A       | 16.05            | 25.31              | 0.634                 | - - 1.5                    | 1.0                | 1.7              | 24.4                          | 0.107                                    |
| I | ARM B       | 8.82             | 17.19              | 0.514                 | - - 0.5                    | 0.7                | 1.0              | 15.0                          | 0.119                                    |
| I | ARM C       | 11.34            | 18.37              | 0.617                 | - - -                      | 1.0                | 1.6              | 22.5                          | 0.141                                    |
| I | I           |                  |                    |                       |                            |                    |                  |                               | I                                        |

|   |             |                  |                    |                       |                            |                    |                  |                               |                                          |
|---|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|------------------------------------------|
| I | TIME        | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
| I | I           | I                | I                  | I                     | I                          | I                  | I                | I                             | I                                        |
| I | -           | -                | -                  | -                     | -                          | -                  | -                | -                             | -                                        |
| I | 17.15-17.30 |                  |                    |                       |                            |                    |                  |                               |                                          |
| I | ARM A       | 19.65            | 24.09              | 0.816                 | - - 1.8                    | 1.7                | 4.1              | 55.5                          | 0.211                                    |
| I | ARM B       | 10.81            | 15.70              | 0.689                 | - - 0.6                    | 1.0                | 2.1              | 29.5                          | 0.199                                    |
| I | ARM C       | 13.89            | 17.18              | 0.809                 | - - -                      | 1.6                | 3.9              | 51.2                          | 0.280                                    |
| I | I           |                  |                    |                       |                            |                    |                  |                               | I                                        |

|   |             |                  |                    |                       |                            |                    |                  |                               |                                          |
|---|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|------------------------------------------|
| I | TIME        | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
| I | I           | I                | I                  | I                     | I                          | I                  | I                | I                             | I                                        |
| I | -           | -                | -                  | -                     | -                          | -                  | -                | -                             | -                                        |
| I | 17.30-17.45 |                  |                    |                       |                            |                    |                  |                               |                                          |
| I | ARM A       | 19.65            | 24.06              | 0.817                 | - - 1.8                    | 4.1                | 4.3              | 63.3                          | 0.225                                    |
| I | ARM B       | 10.81            | 15.63              | 0.691                 | - - 0.6                    | 2.1                | 2.2              | 32.4                          | 0.206                                    |
| I | ARM C       | 13.89            | 17.12              | 0.811                 | - - -                      | 3.9                | 4.1              | 59.8                          | 0.305                                    |
| I | I           |                  |                    |                       |                            |                    |                  |                               | I                                        |

|   |             |                  |                    |                       |                            |                    |                  |                               |                                          |
|---|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|------------------------------------------|
| I | TIME        | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
| I | I           | I                | I                  | I                     | I                          | I                  | I                | I                             | I                                        |
| I | -           | -                | -                  | -                     | -                          | -                  | -                | -                             | -                                        |
| I | 17.45-18.00 |                  |                    |                       |                            |                    |                  |                               |                                          |
| I | ARM A       | 16.05            | 25.28              | 0.635                 | - - 1.5                    | 4.3                | 1.8              | 28.3                          | 0.112                                    |
| I | ARM B       | 8.82             | 17.10              | 0.516                 | - - 0.5                    | 2.2                | 1.1              | 17.1                          | 0.123                                    |
| I | ARM C       | 11.34            | 18.32              | 0.619                 | - - -                      | 4.1                | 1.7              | 27.0                          | 0.150                                    |
| I | I           |                  |                    |                       |                            |                    |                  |                               | I                                        |

|   |             |                  |                    |                       |                            |                    |                  |                               |                                          |
|---|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|------------------------------------------|
| I | TIME        | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
| I | I           | I                | I                  | I                     | I                          | I                  | I                | I                             | I                                        |
| I | -           | -                | -                  | -                     | -                          | -                  | -                | -                             | -                                        |
| I | 18.00-18.15 |                  |                    |                       |                            |                    |                  |                               |                                          |
| I | ARM A       | 13.44            | 26.22              | 0.512                 | - - 1.2                    | 1.8                | 1.1              | 16.5                          | 0.079                                    |
| I | ARM B       | 7.39             | 18.26              | 0.405                 | - - 0.4                    | 1.1                | 0.7              | 10.6                          | 0.093                                    |
| I | ARM C       | 9.50             | 18.98              | 0.501                 | - - -                      | 1.7                | 1.0              | 15.8                          | 0.107                                    |
| I | I           |                  |                    |                       |                            |                    |                  |                               | I                                        |



QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |      |
|------------------------|--------------------------------|------|
| 17.00                  | 1.0                            | *    |
| 17.15                  | 1.7                            | **   |
| 17.30                  | 4.1                            | **** |
| 17.45                  | 4.3                            | **** |
| 18.00                  | 1.8                            | **   |
| 18.15                  | 1.1                            | *    |

QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 17.00                  | 0.7                            | *  |
| 17.15                  | 1.0                            | *  |
| 17.30                  | 2.1                            | ** |
| 17.45                  | 2.2                            | ** |
| 18.00                  | 1.1                            | *  |
| 18.15                  | 0.7                            | *  |

QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |      |
|------------------------|--------------------------------|------|
| 17.00                  | 1.0                            | *    |
| 17.15                  | 1.6                            | **   |
| 17.30                  | 3.9                            | **** |
| 17.45                  | 4.1                            | **** |
| 18.00                  | 1.7                            | **   |
| 18.15                  | 1.0                            | *    |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| T75 |              |         |              |           |                        |           |  |  |  |  |
|-----|--------------|---------|--------------|-----------|------------------------|-----------|--|--|--|--|
| ARM | TOTAL DEMAND |         | * QUEUEING * |           | * INCLUSIVE QUEUEING * |           |  |  |  |  |
|     |              |         | DELAY        |           | DELAY                  |           |  |  |  |  |
|     | (VEH)        | (VEH/H) | (MIN)        | (MIN/VEH) | (MIN)                  | (MIN/VEH) |  |  |  |  |
| A   | 1474.2       | 982.8   | 203.0        | 0.14      | 203.0                  | 0.14      |  |  |  |  |
| B   | 810.7        | 540.5   | 114.4        | 0.14      | 114.4                  | 0.14      |  |  |  |  |
| C   | 1042.0       | 694.6   | 190.5        | 0.18      | 190.5                  | 0.18      |  |  |  |  |
| ALL | 3326.8       | 2217.9  | 507.9        | 0.15      | 507.9                  | 0.15      |  |  |  |  |

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

END OF JOB

===== end of file =====

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_StationRd AM\_Int.vai"  
(drive-on-the-left ) at 13:27:27 on Sunday, 5 August 2012

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Dawley Road Station Road Site 2 Base Model  
LOCATION: Dawley Road/Station Road  
DATE: 16/07/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - Dawley Road (N)  
ARM B - Station Road (E)  
ARM C - Shepiston Lane (S)

MINI-ROUNDABOUT GEOMETRIC DATA

JUNCTION IN LONDON  
LIGHTING CONDITIONS : NORMAL  
ROAD SURFACE CONDITION: NORMAL  
ARM \*HAS A CENTRAL ISLAND

ARM \* HAS A ZEBRA CROSSING  
ARM \* HAS A ZEBRA CROSSING

| I | ARM   | I | V (M) | I | E (M) | I | Lm(M) | I | Vm(M) | I | A (M) | I | K (M) | I | G (%) | I | SLOPE | I | INTERCEPT | I |
|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-----------|---|
| I |       | I |       | I |       | I |       | I |       | I |       | I |       | I |       | I |       | I | (PCU/MIN) | I |
| I | ARM A | I | 3.75  | I | 6.10  | I | 6.00  | I | 3.75  | I | 11.00 | I | 7.00  | I | 0.00  | I | 0.595 | I | 28.234*   | I |
| I | ARM B | I | 3.85  | I | 5.50  | I | 5.50  | I | 3.85  | I | 11.70 | I | 5.90  | I | 0.00  | I | 0.589 | I | 20.216*   | I |
| I | ARM C | I | 4.69  | I | 6.50  | I | 31.00 | I | 4.69  | I | 16.00 | I | 11.00 | I | 0.00  | I | 0.539 | I | 21.366    | I |

V = approach half-width Lm = effective flare length A = distance between arms  
E = entry width Vm = minimum approach half-width K= entry corner kerb line G=gradient over 50 m  
\*\*WARNING\*\* One or more intercept values (flagged \* in the table)  
have been adjusted according to local input values  
from a previous run and listed below -

T6

| I |       | I | ADJUSTMENT TO       | I |
|---|-------|---|---------------------|---|
| I |       | I | INTERCEPT (PCU/MIN) | I |
| I | ARM A | I | 11.000              | I |
| I | ARM B | I | 5.000               | I |



| T40     |                        |                                                     |                                                           |          |  |  |
|---------|------------------------|-----------------------------------------------------|-----------------------------------------------------------|----------|--|--|
| ARM     | LENGTH OF CROSSING (M) | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION (VEHS) | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) |          |  |  |
| (ENTRY) | (EXIT)                 | ENTRY                                               |                                                           | JUNCTION |  |  |
| A       | 4.50                   | 0.0                                                 | 3.5                                                       |          |  |  |
| B       | 3.70                   | 3.8                                                 | 2.0                                                       |          |  |  |

## QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME        | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) | T70   |  |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|------------------------------------------|-------|--|
| 07.30-07.45 |                  |                    |                       |                            |                    |                  |                               |                                          |       |  |
| ARM A       | 11.54            | 23.31              | 0.495                 | -                          | 1.2                | 0.0              | 1.0                           | 14.0                                     | 0.084 |  |
| ARM B       | 6.60             | 15.44              | 0.428                 | -                          | 0.4                | 0.0              | 0.7                           | 10.6                                     | 0.112 |  |
| ARM C       | 9.57             | 19.67              | 0.487                 | -                          | -                  | 0.0              | 0.9                           | 13.5                                     | 0.098 |  |

| TIME        | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |       |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|------------------------------------------|-------|
| 07.45-08.00 |                  |                    |                       |                            |                    |                  |                               |                                          |       |
| ARM A       | 13.78            | 22.49              | 0.613                 | -                          | 1.5                | 1.0              | 1.6                           | 22.3                                     | 0.114 |
| ARM B       | 7.88             | 14.49              | 0.544                 | -                          | 0.5                | 0.7              | 1.2                           | 16.7                                     | 0.150 |
| ARM C       | 11.43            | 19.24              | 0.594                 | -                          | -                  | 0.9              | 1.4                           | 20.6                                     | 0.127 |

| TIME        | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |       |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|------------------------------------------|-------|
| 08.00-08.15 |                  |                    |                       |                            |                    |                  |                               |                                          |       |
| ARM A       | 16.88            | 21.41              | 0.788                 | -                          | 1.8                | 1.6              | 3.5                           | 47.6                                     | 0.209 |
| ARM B       | 9.65             | 13.24              | 0.729                 | -                          | 0.6                | 1.2              | 2.5                           | 34.4                                     | 0.266 |
| ARM C       | 14.00            | 18.48              | 0.758                 | -                          | -                  | 1.4              | 3.0                           | 40.6                                     | 0.214 |

| TIME        | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |       |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|------------------------------------------|-------|
| 08.15-08.30 |                  |                    |                       |                            |                    |                  |                               |                                          |       |
| ARM A       | 16.88            | 21.39              | 0.789                 | -                          | 1.8                | 3.5              | 3.6                           | 53.6                                     | 0.220 |
| ARM B       | 9.65             | 13.19              | 0.732                 | -                          | 0.6                | 2.5              | 2.6                           | 38.8                                     | 0.281 |
| ARM C       | 14.00            | 18.44              | 0.759                 | -                          | -                  | 3.0              | 3.1                           | 45.3                                     | 0.224 |

| TIME        | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |       |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|------------------------------------------|-------|
| 08.30-08.45 |                  |                    |                       |                            |                    |                  |                               |                                          |       |
| ARM A       | 13.78            | 22.47              | 0.613                 | -                          | 1.5                | 3.6              | 1.6                           | 25.7                                     | 0.119 |
| ARM B       | 7.88             | 14.42              | 0.546                 | -                          | 0.5                | 2.6              | 1.2                           | 19.6                                     | 0.157 |
| ARM C       | 11.43            | 19.19              | 0.596                 | -                          | -                  | 3.1              | 1.5                           | 23.8                                     | 0.133 |

| TIME        | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |       |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|------------------------------------------|-------|
| 08.45-09.00 |                  |                    |                       |                            |                    |                  |                               |                                          |       |
| ARM A       | 11.54            | 23.30              | 0.495                 | -                          | 1.2                | 1.6              | 1.0                           | 15.4                                     | 0.086 |
| ARM B       | 6.60             | 15.39              | 0.429                 | -                          | 0.4                | 1.2              | 0.8                           | 11.8                                     | 0.115 |
| ARM C       | 9.57             | 19.64              | 0.487                 | -                          | -                  | 1.5              | 1.0                           | 15.0                                     | 0.100 |

QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |      |
|------------------------|--------------------------------|------|
| 07.45                  | 1.0                            | *    |
| 08.00                  | 1.6                            | **   |
| 08.15                  | 3.5                            | **** |
| 08.30                  | 3.6                            | **** |
| 08.45                  | 1.6                            | **   |
| 09.00                  | 1.0                            | *    |

QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |     |
|------------------------|--------------------------------|-----|
| 07.45                  | 0.7                            | *   |
| 08.00                  | 1.2                            | *   |
| 08.15                  | 2.5                            | *** |
| 08.30                  | 2.6                            | *** |
| 08.45                  | 1.2                            | *   |
| 09.00                  | 0.8                            | *   |

QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |     |
|------------------------|--------------------------------|-----|
| 07.45                  | 0.9                            | *   |
| 08.00                  | 1.4                            | *   |
| 08.15                  | 3.0                            | *** |
| 08.30                  | 3.1                            | *** |
| 08.45                  | 1.5                            | **  |
| 09.00                  | 1.0                            | *   |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| T75 |   |              |          |              |           |                        |           |   |   |
|-----|---|--------------|----------|--------------|-----------|------------------------|-----------|---|---|
| ARM | I | TOTAL DEMAND | I        | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I         |   | I |
|     | I |              | I        | * DELAY *    | I         | * DELAY *              | I         |   | I |
|     | I |              | I        |              | I         |                        | I         |   | I |
|     | I | (VEH)        | (VEH/H)  | I (MIN)      | (MIN/VEH) | I (MIN)                | (MIN/VEH) | I | I |
| A   | I | 1266.3       | I 844.2  | I 178.6      | I 0.14    | I 178.7                | I 0.14    | I | I |
| B   | I | 724.0        | I 482.7  | I 132.1      | I 0.18    | I 132.1                | I 0.18    | I | I |
| C   | I | 1050.2       | I 700.1  | I 158.8      | I 0.15    | I 158.8                | I 0.15    | I | I |
| ALL | I | 3040.5       | I 2027.0 | I 469.5      | I 0.15    | I 469.5                | I 0.15    | I | I |

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

END OF JOB

===== end of file =====

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_StationRd PM\_Int.vai"  
(drive-on-the-left ) at 13:28:17 on Sunday, 5 August 2012

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Dawley Road Station Road Site 2 Base Model  
LOCATION: Dawley Road/Station Road  
DATE: 16/07/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - Dawley Road (N)  
ARM B - Station Road (E)  
ARM C - Shepiston Lane (S)

MINI-ROUNDABOUT GEOMETRIC DATA

JUNCTION IN LONDON  
LIGHTING CONDITIONS : NORMAL  
ROAD SURFACE CONDITION: NORMAL  
ARM \*HAS A CENTRAL ISLAND

ARM \* HAS A ZEBRA CROSSING  
ARM \* HAS A ZEBRA CROSSING

| I | ARM   | I | V (M) | I | E (M) | I | Lm(M) | I | Vm(M) | I | A (M) | I | K (M) | I | G (%) | I | SLOPE | I | INTERCEPT | I |
|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-----------|---|
| I |       | I |       | I |       | I |       | I |       | I |       | I |       | I |       | I |       | I | (PCU/MIN) | I |
| I | ARM A | I | 3.75  | I | 6.10  | I | 6.00  | I | 3.75  | I | 11.00 | I | 7.00  | I | 0.00  | I | 0.595 | I | 31.934*   | I |
| I | ARM B | I | 3.85  | I | 5.50  | I | 5.50  | I | 3.85  | I | 11.70 | I | 5.90  | I | 0.00  | I | 0.589 | I | 24.016*   | I |
| I | ARM C | I | 4.69  | I | 6.50  | I | 31.00 | I | 4.69  | I | 16.00 | I | 11.00 | I | 0.00  | I | 0.539 | I | 21.366    | I |

V = approach half-width Lm = effective flare length A = distance between arms  
E = entry width Vm = minimum approach half-width K= entry corner kerb line G=gradient over 50 m  
\*\*WARNING\*\* One or more intercept values (flagged \* in the table)  
have been adjusted according to local input values  
from a previous run and listed below -

T6

| I |       | I | ADJUSTMENT TO       | I |
|---|-------|---|---------------------|---|
| I |       | I | INTERCEPT (PCU/MIN) | I |
| I | ARM A | I | 14.700              | I |
| I | ARM B | I | 8.800               | I |

## ZEBRA CROSSINGS

| T40     |                        |                                                     |                                                           |          |  |  |
|---------|------------------------|-----------------------------------------------------|-----------------------------------------------------------|----------|--|--|
| ARM     | LENGTH OF CROSSING (M) | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION (VEHS) | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) |          |  |  |
| (ENTRY) | (EXIT)                 | ENTRY                                               |                                                           | JUNCTION |  |  |
| A       | 4.50                   | 0.0                                                 | 3.5                                                       |          |  |  |
| B       | 3.70                   | 3.8                                                 | 2.0                                                       |          |  |  |

## QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME        | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) | T70   |  |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|------------------------------------------|-------|--|
| 16.45-17.00 |                  |                    |                       |                            |                    |                  |                               |                                          |       |  |
| ARM A       | 13.09            | 26.24              | 0.499                 | -                          | 1.2                | 0.0              | 1.0                           | 14.3                                     | 0.075 |  |
| ARM B       | 7.39             | 18.51              | 0.399                 | -                          | 0.4                | 0.0              | 0.7                           | 9.5                                      | 0.089 |  |
| ARM C       | 9.44             | 19.01              | 0.496                 | -                          | -                  | 0.0              | 1.0                           | 14.0                                     | 0.103 |  |

| TIME        | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |       |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|------------------------------------------|-------|
| 17.00-17.15 |                  |                    |                       |                            |                    |                  |                               |                                          |       |
| ARM A       | 15.63            | 25.31              | 0.617                 | -                          | 1.5                | 1.0              | 1.6                           | 22.9                                     | 0.102 |
| ARM B       | 8.82             | 17.43              | 0.506                 | -                          | 0.5                | 0.7              | 1.0                           | 14.6                                     | 0.116 |
| ARM C       | 11.27            | 18.38              | 0.613                 | -                          | -                  | 1.0              | 1.5                           | 22.2                                     | 0.139 |

| TIME        | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |       |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|------------------------------------------|-------|
| 17.15-17.30 |                  |                    |                       |                            |                    |                  |                               |                                          |       |
| ARM A       | 19.14            | 24.09              | 0.795                 | -                          | 1.8                | 1.6              | 3.6                           | 49.7                                     | 0.192 |
| ARM B       | 10.81            | 15.99              | 0.676                 | -                          | 0.6                | 1.0              | 2.0                           | 28.1                                     | 0.188 |
| ARM C       | 13.80            | 17.21              | 0.802                 | -                          | -                  | 1.5              | 3.7                           | 49.6                                     | 0.271 |

| TIME        | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |       |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|------------------------------------------|-------|
| 17.30-17.45 |                  |                    |                       |                            |                    |                  |                               |                                          |       |
| ARM A       | 19.14            | 24.07              | 0.795                 | -                          | 1.8                | 3.6              | 3.8                           | 55.7                                     | 0.201 |
| ARM B       | 10.81            | 15.93              | 0.678                 | -                          | 0.6                | 2.0              | 2.1                           | 30.7                                     | 0.194 |
| ARM C       | 13.80            | 17.15              | 0.805                 | -                          | -                  | 3.7              | 3.9                           | 57.6                                     | 0.295 |

| TIME        | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |       |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|------------------------------------------|-------|
| 17.45-18.00 |                  |                    |                       |                            |                    |                  |                               |                                          |       |
| ARM A       | 15.63            | 25.28              | 0.618                 | -                          | 1.5                | 3.8              | 1.6                           | 26.1                                     | 0.107 |
| ARM B       | 8.82             | 17.35              | 0.509                 | -                          | 0.5                | 2.1              | 1.1                           | 16.5                                     | 0.119 |
| ARM C       | 11.27            | 18.33              | 0.615                 | -                          | -                  | 3.9              | 1.6                           | 26.4                                     | 0.148 |

| TIME        | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |       |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|------------------------------------------|-------|
| 18.00-18.15 |                  |                    |                       |                            |                    |                  |                               |                                          |       |
| ARM A       | 13.09            | 26.22              | 0.499                 | -                          | 1.2                | 1.6              | 1.0                           | 15.6                                     | 0.077 |
| ARM B       | 7.39             | 18.47              | 0.400                 | -                          | 0.4                | 1.1              | 0.7                           | 10.4                                     | 0.091 |
| ARM C       | 9.44             | 18.98              | 0.497                 | -                          | -                  | 1.6              | 1.0                           | 15.6                                     | 0.106 |



QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |      |
|------------------------|--------------------------------|------|
| 17.00                  | 1.0                            | *    |
| 17.15                  | 1.6                            | **   |
| 17.30                  | 3.6                            | **** |
| 17.45                  | 3.8                            | **** |
| 18.00                  | 1.6                            | **   |
| 18.15                  | 1.0                            | *    |

QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 17.00                  | 0.7                            | *  |
| 17.15                  | 1.0                            | *  |
| 17.30                  | 2.0                            | ** |
| 17.45                  | 2.1                            | ** |
| 18.00                  | 1.1                            | *  |
| 18.15                  | 0.7                            | *  |

QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |      |
|------------------------|--------------------------------|------|
| 17.00                  | 1.0                            | *    |
| 17.15                  | 1.5                            | **   |
| 17.30                  | 3.7                            | **** |
| 17.45                  | 3.9                            | **** |
| 18.00                  | 1.6                            | **   |
| 18.15                  | 1.0                            | *    |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| T75 |   |              |          |              |           |                        |           |   |  |   |
|-----|---|--------------|----------|--------------|-----------|------------------------|-----------|---|--|---|
| ARM | I | TOTAL DEMAND | I        | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I         |   |  | I |
|     | I |              | I        | * DELAY *    | I         | * DELAY *              | I         |   |  | I |
|     | I |              | I        |              | I         |                        | I         |   |  | I |
|     | I | (VEH)        | (VEH/H)  | I (MIN)      | (MIN/VEH) | I (MIN)                | (MIN/VEH) | I |  | I |
| A   | I | 1435.6       | I 957.1  | I 184.3      | I 0.13    | I 184.3                | I 0.13    | I |  | I |
| B   | I | 810.7        | I 540.5  | I 109.8      | I 0.14    | I 109.8                | I 0.14    | I |  | I |
| C   | I | 1035.1       | I 690.0  | I 185.2      | I 0.18    | I 185.3                | I 0.18    | I |  | I |
| ALL | I | 3281.4       | I 2187.6 | I 479.3      | I 0.15    | I 479.4                | I 0.15    | I |  | I |

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

END OF JOB

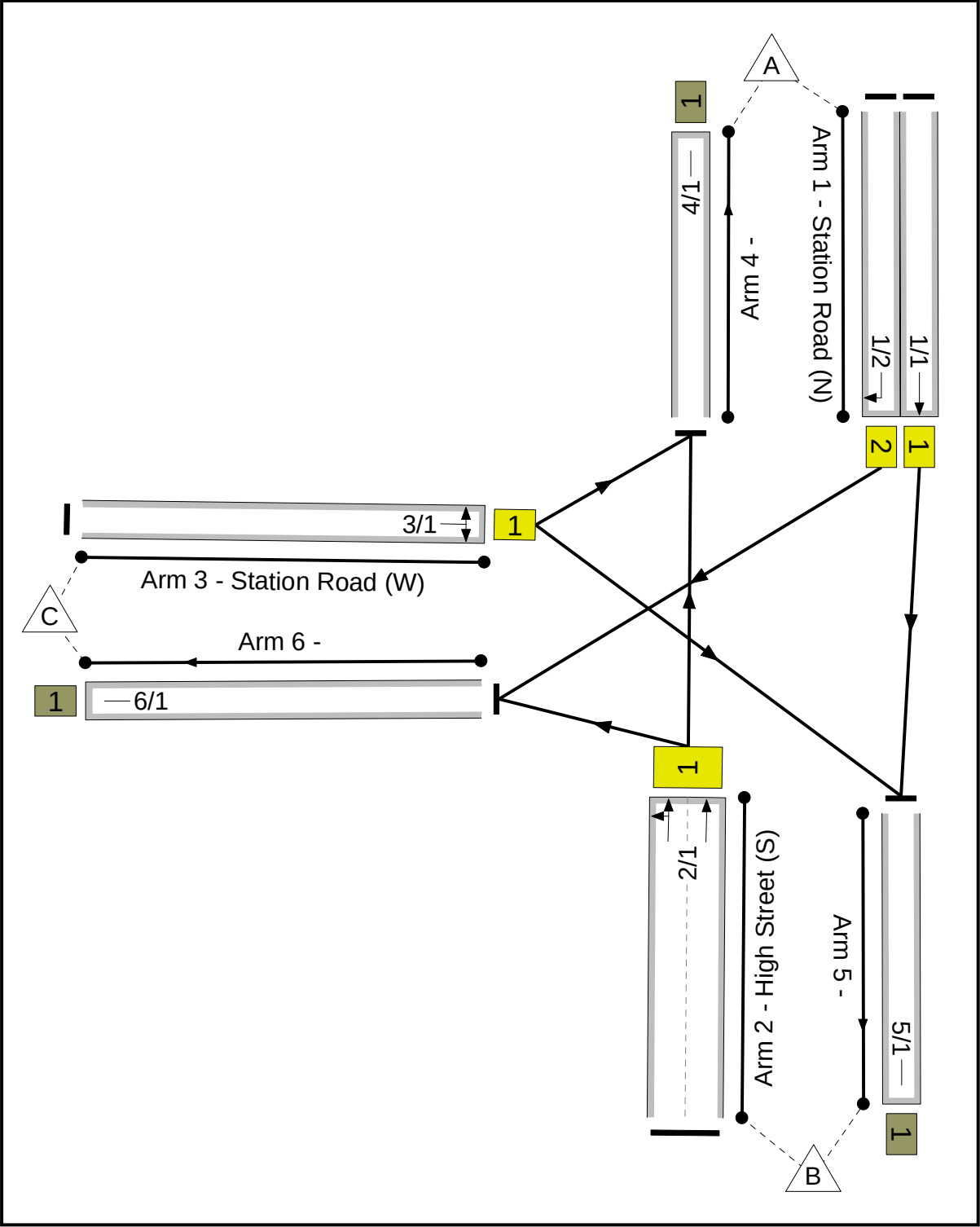
===== end of file =====

## Full Input Data And Results

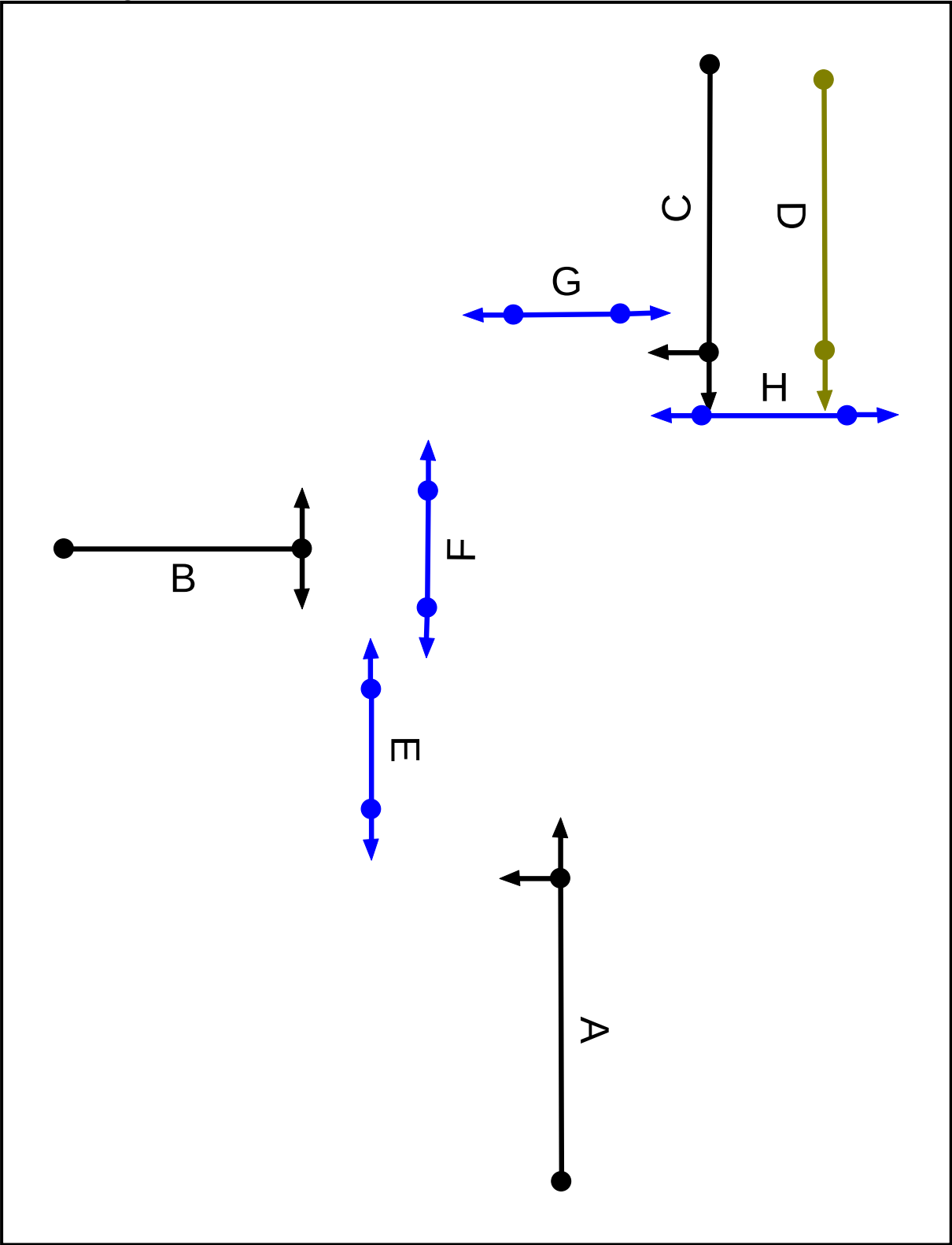
### User and Project Details

|                    |                             |
|--------------------|-----------------------------|
| <b>Project:</b>    |                             |
| <b>Title:</b>      |                             |
| <b>Location:</b>   |                             |
| <b>File name:</b>  |                             |
| <b>Author:</b>     | Station Rd_High Street.lsgx |
| <b>Company:</b>    |                             |
| <b>Address:</b>    | Generic                     |
| <b>Controller:</b> |                             |
| <b>SCN:</b>        |                             |
| <b>Notes:</b>      |                             |

Junction Layout Diagram



Phase Diagram



**Phase Input Data**

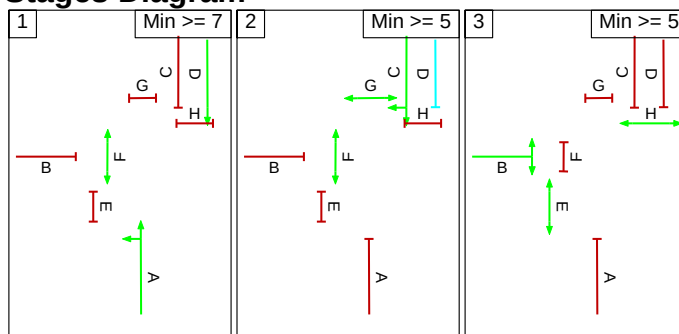
| Phase Name | Phase type | Assoc Phase | Street Min | Cont Min |
|------------|------------|-------------|------------|----------|
| A          | Traffic    |             | 7          | 7        |
| B          | Traffic    |             | 7          | 7        |
| C          | Traffic    |             | 7          | 7        |
| D          | Filter     | C           | 4          | 0        |
| E          | Pedestrian |             | 5          | 5        |
| F          | Pedestrian |             | 5          | 5        |
| G          | Pedestrian |             | 5          | 5        |
| H          | Pedestrian |             | 5          | 5        |

**Phase Intergreens Matrix**

| Terminating Phase | Starting Phase |   |   |   |   |    |   |   |   |
|-------------------|----------------|---|---|---|---|----|---|---|---|
|                   |                | A | B | C | D | E  | F | G | H |
|                   | A              |   | 5 | 5 | - | 7  | - | 8 | - |
|                   | B              | 5 |   | 5 | 5 | -  | 5 | 8 | - |
|                   | C              | 8 | 5 |   | - | 10 | - | - | 5 |
|                   | D              | - | 5 | - |   | -  | - | - | 5 |
|                   | E              | 8 | - | 8 | - |    | - | - | - |
|                   | F              | - | 8 | - | - | -  |   | - | - |
|                   | G              | 8 | 8 | - | - | -  | - |   | - |
|                   | H              | - | - | 8 | 8 | -  | - | - |   |

**Phases in Stage**

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

**Stages Diagram**

**Phase Delays**

| Term. Stage | Start Stage | Phase | Type   | Value | Cont value |
|-------------|-------------|-------|--------|-------|------------|
| 2           | 3           | C     | Losing | 3     | 3          |
| 3           | 1           | B     | Losing | 3     | 3          |

**Prohibited Stage Changes**

| From Stage | To Stage |   |   |
|------------|----------|---|---|
|            | 1        | 2 | 3 |
|            | 1        |   | 8 |
|            | 2        | 8 |   |
|            | 3        | 8 | 8 |

**Link Input Data**

| Arm/ Link | Link Name                   | Link Type | Num Lanes | Phases | Start Disp. | End Disp. |
|-----------|-----------------------------|-----------|-----------|--------|-------------|-----------|
| 1/1       | Station Road (N) Ahead      | U         | 1         | C D    | 2           | 3         |
| 1/2       | Station Road (N) Right      | U         | 1         | C      | 2           | 3         |
| 2/1       | High Street (S) Ahead Left  | U         | 2         | A      | 2           | 3         |
| 3/1       | Station Road (W) Left Right | U         | 1         | B      | 2           | 3         |
| 4/1       |                             | U         | 1         |        | 2           | 3         |
| 5/1       |                             | U         | 1         |        | 2           | 3         |
| 6/1       |                             | U         | 1         |        | 2           | 3         |

Lane Input Data

| Arm/<br>Lane                                     | Link<br>Num                                             | Physic<br>al<br>Length<br>(PCU) | Expecte<br>d<br>Usage<br>(PCU) | Sat<br>Flo<br>w<br>Typ<br>e | User<br>Saturatio<br>n<br>Flow<br>(PCU/Hr) | Lane<br>Widt<br>h<br>(m) | Gradie<br>nt | Nearsid<br>e<br>Lane | Allowe<br>d<br>Turns                | Turnin<br>g<br>Radius<br>(m) |
|--------------------------------------------------|---------------------------------------------------------|---------------------------------|--------------------------------|-----------------------------|--------------------------------------------|--------------------------|--------------|----------------------|-------------------------------------|------------------------------|
| 1/1<br>(Statio<br>n<br>Road<br>(N)<br>Lane<br>1) | Link 1<br>(Statio<br>n<br>Road<br>(N)<br>Ahead<br>)     | Inf                             | Inf                            | User                        | 1766                                       | 3.25                     | 0.00         | Y                    | Arm 5<br>Ahead                      | Inf                          |
| 1/2<br>(Statio<br>n<br>Road<br>(N)<br>Lane<br>2) | Link 2<br>(Statio<br>n<br>Road<br>(N)<br>Right)         | Inf                             | Inf                            | User                        | 1929                                       | 3.25                     | 0.00         | Y                    | Arm 6<br>Right                      | Inf                          |
| 2/1<br>(High<br>Street<br>(S)<br>Lane<br>1)      | Link 1<br>(High<br>Street<br>(S)<br>Ahead<br>Left)      | Inf                             | Inf                            | User                        | 1763                                       | 3.25                     | 0.00         | Y                    | Arm 4<br>Ahead<br><br>Arm 6<br>Left | Inf<br><br>Inf               |
| 2/2<br>(High<br>Street<br>(S)<br>Lane<br>2)      | Link 1<br>(High<br>Street<br>(S)<br>Ahead<br>Left)      | Inf                             | Inf                            | User                        | 1877                                       | 3.25                     | 0.00         | Y                    | Arm 4<br>Ahead                      | Inf                          |
| 3/1<br>(Statio<br>n<br>Road<br>(W)<br>Lane<br>1) | Link 1<br>(Statio<br>n<br>Road<br>(W)<br>Left<br>Right) | Inf                             | Inf                            | User                        | 1691                                       | 3.25                     | 0.00         | Y                    | Arm 4<br>Left<br><br>Arm 5<br>Right | Inf<br><br>Inf               |
| 4/1                                              | Link 1                                                  | Inf                             | Inf                            | User                        | 1800                                       | 3.25                     | 0.00         | Y                    |                                     |                              |
| 5/1                                              | Link 1                                                  | Inf                             | Inf                            | User                        | 1800                                       | 3.25                     | 0.00         | Y                    |                                     |                              |
| 6/1                                              | Link 1                                                  | Inf                             | Inf                            | User                        | 1800                                       | 3.25                     | 0.00         | Y                    |                                     |                              |

Traffic Flow Groups

| Flow Group                      | Start Time | End Time | Duration | Formula |
|---------------------------------|------------|----------|----------|---------|
| 13: 'Base + Com + H4 2024 AM'   | 08:00      | 09:00    | 01:00    |         |
| 14: 'Base + Com + H4 2024 PM'   | 17:00      | 18:00    | 01:00    |         |
| 15: 'Base + Com + H5 2024 AM'   | 08:00      | 09:00    | 01:00    |         |
| 16: 'Base + Com + H5 2024 PM'   | 17:00      | 18:00    | 01:00    |         |
| 17: 'Base + Com + H4 5 2024 AM' | 08:00      | 09:00    | 01:00    |         |
| 18: 'Base + Com + H4 5 2024 PM' | 17:00      | 18:00    | 01:00    |         |

Scenario 13: 'Base + Com + H4 2024 AM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 13: 'Base + Com + H4 2024 AM'

Traffic Flow Matrix

Desired Flow :

| Origin | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
|        | A           | 0   | 659 | 273 | 932  |
|        | B           | 418 | 0   | 206 | 624  |
|        | C           | 254 | 300 | 0   | 554  |
|        | Tot.        | 672 | 959 | 479 | 2110 |

Link Traffic Flows

| Arm/Link | Flow Group 13: Base + Com + H4 2024 AM |
|----------|----------------------------------------|
| 1/1      | 659                                    |
| 1/2      | 273                                    |
| 2/1      | 624                                    |
| 3/1      | 554                                    |
| 4/1      | 672                                    |
| 5/1      | 959                                    |
| 6/1      | 479                                    |



**Lane Saturation Flows**

| Arm/<br>Lane                     | Lane<br>Width<br>(m) | Gradient                                          | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|----------------------------------|----------------------|---------------------------------------------------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Road (N) Lane 1) |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1766                 |
| 1/2<br>(Station Road (N) Lane 2) |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1929                 |
| 2/1<br>(High Street (S) Lane 1)  |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1763                 |
| 2/2<br>(High Street (S) Lane 2)  |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1877                 |
| 3/1<br>(Station Road (W) Lane 1) |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1691                 |
| 4/1                              |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1800                 |
| 5/1                              |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1800                 |
| 6/1                              |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1800                 |

**Scenario 14: 'Base + Com + H4 2024 PM'**

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 14: 'Base + Com + H4 2024 PM'

**Traffic Flow Matrix****Desired Flow :**

|        | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
| Origin | A           | 0   | 467 | 255 | 722  |
|        | B           | 475 | 0   | 331 | 806  |
|        | C           | 208 | 291 | 0   | 499  |
|        | Tot.        | 683 | 758 | 586 | 2027 |

**Link Traffic Flows**

| Arm/Link | Flow<br>Group 14:<br>Base +<br>Com + H4<br>2024 PM |
|----------|----------------------------------------------------|
| 1/1      | 467                                                |
| 1/2      | 255                                                |
| 2/1      | 806                                                |
| 3/1      | 499                                                |
| 4/1      | 683                                                |
| 5/1      | 758                                                |
| 6/1      | 586                                                |

Lane Saturation Flows

| Arm/<br>Lane                     | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|----------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Road (N) Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1766                 |
| 1/2<br>(Station Road (N) Lane 2) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1929                 |
| 2/1<br>(High Street (S) Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1763                 |
| 2/2<br>(High Street (S) Lane 2)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1877                 |
| 3/1<br>(Station Road (W) Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1691                 |
| 4/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 5/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

Scenario 15: ' Base + Com + H5 2024 AM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 15: 'Base + Com + H5 2024 AM'

Traffic Flow Matrix

Desired Flow :

|        | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
| Origin | A           | 0   | 659 | 273 | 932  |
|        | B           | 422 | 0   | 206 | 628  |
|        | C           | 254 | 300 | 0   | 554  |
|        | Tot.        | 676 | 959 | 479 | 2114 |

Link Traffic Flows

| Arm/Link | Flow<br>Group 15:<br>Base +<br>Com + H5<br>2024 AM |
|----------|----------------------------------------------------|
| 1/1      | 659                                                |
| 1/2      | 273                                                |
| 2/1      | 628                                                |
| 3/1      | 554                                                |
| 4/1      | 676                                                |
| 5/1      | 959                                                |
| 6/1      | 479                                                |

**Lane Saturation Flows**

| Arm/<br>Lane                     | Lane<br>Width<br>(m) | Gradient                                          | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|----------------------------------|----------------------|---------------------------------------------------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Road (N) Lane 1) |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1766                 |
| 1/2<br>(Station Road (N) Lane 2) |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1929                 |
| 2/1<br>(High Street (S) Lane 1)  |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1763                 |
| 2/2<br>(High Street (S) Lane 2)  |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1877                 |
| 3/1<br>(Station Road (W) Lane 1) |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1691                 |
| 4/1                              |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1800                 |
| 5/1                              |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1800                 |
| 6/1                              |                      | This lane uses a directly entered Saturation Flow |                  |                  |                          |                  | 1800                 |

**Scenario 16: ' Base + Com + H5 2024 PM'**

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 16: 'Base + Com + H5 2024 PM'

**Traffic Flow Matrix****Desired Flow :**

|        | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
| Origin | A           | 0   | 471 | 255 | 726  |
|        | B           | 476 | 0   | 331 | 807  |
|        | C           | 208 | 291 | 0   | 499  |
|        | Tot.        | 684 | 762 | 586 | 2032 |

**Link Traffic Flows**

| Arm/Link | Flow<br>Group 16:<br>Base +<br>Com + H5<br>2024 PM |
|----------|----------------------------------------------------|
| 1/1      | 471                                                |
| 1/2      | 255                                                |
| 2/1      | 807                                                |
| 3/1      | 499                                                |
| 4/1      | 684                                                |
| 5/1      | 762                                                |
| 6/1      | 586                                                |

Lane Saturation Flows

| Arm/<br>Lane                     | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|----------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Road (N) Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1766                 |
| 1/2<br>(Station Road (N) Lane 2) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1929                 |
| 2/1<br>(High Street (S) Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1763                 |
| 2/2<br>(High Street (S) Lane 2)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1877                 |
| 3/1<br>(Station Road (W) Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1691                 |
| 4/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 5/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

Scenario 17: 'Base + Com + H4 5 2024 AM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 17: 'Base + Com + H4 5 2024 AM'

Traffic Flow Matrix

Desired Flow :

|        | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
| Origin | A           | 0   | 660 | 273 | 933  |
|        | B           | 426 | 0   | 206 | 632  |
|        | C           | 254 | 300 | 0   | 554  |
|        | Tot.        | 680 | 960 | 479 | 2119 |

Link Traffic Flows

| Arm/Link | Flow<br>Group 17:<br>Base +<br>Com + H4<br>5 2024 AM |
|----------|------------------------------------------------------|
| 1/1      | 660                                                  |
| 1/2      | 273                                                  |
| 2/1      | 632                                                  |
| 3/1      | 554                                                  |
| 4/1      | 680                                                  |
| 5/1      | 960                                                  |
| 6/1      | 479                                                  |

Lane Saturation Flows

| Arm/<br>Lane                     | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|----------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Road (N) Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1766                 |
| 1/2<br>(Station Road (N) Lane 2) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1929                 |
| 2/1<br>(High Street (S) Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1763                 |
| 2/2<br>(High Street (S) Lane 2)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1877                 |
| 3/1<br>(Station Road (W) Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1691                 |
| 4/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 5/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                              | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

Scenario 18: 'Base + Com + H4 5 2024 PM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 18: 'Base + Com + H4 5 2024 PM'

Traffic Flow Matrix

Desired Flow :

|        | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
| Origin | A           | 0   | 476 | 255 | 731  |
|        | B           | 476 | 0   | 331 | 807  |
|        | C           | 208 | 291 | 0   | 499  |
|        | Tot.        | 684 | 767 | 586 | 2037 |

Link Traffic Flows

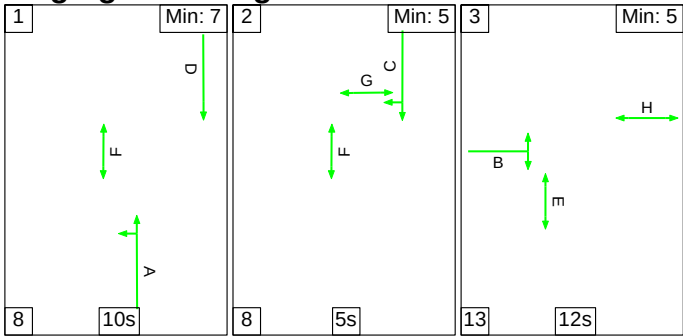
| Arm/Link | Flow<br>Group 18:<br>Base +<br>Com + H4<br>5 2024 PM |
|----------|------------------------------------------------------|
| 1/1      | 476                                                  |
| 1/2      | 255                                                  |
| 2/1      | 807                                                  |
| 3/1      | 499                                                  |
| 4/1      | 684                                                  |
| 5/1      | 767                                                  |
| 6/1      | 586                                                  |

Scenario 15: ' Base + Com + H5 2024 AM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 15: 'Base + Com + H5 2024 AM'

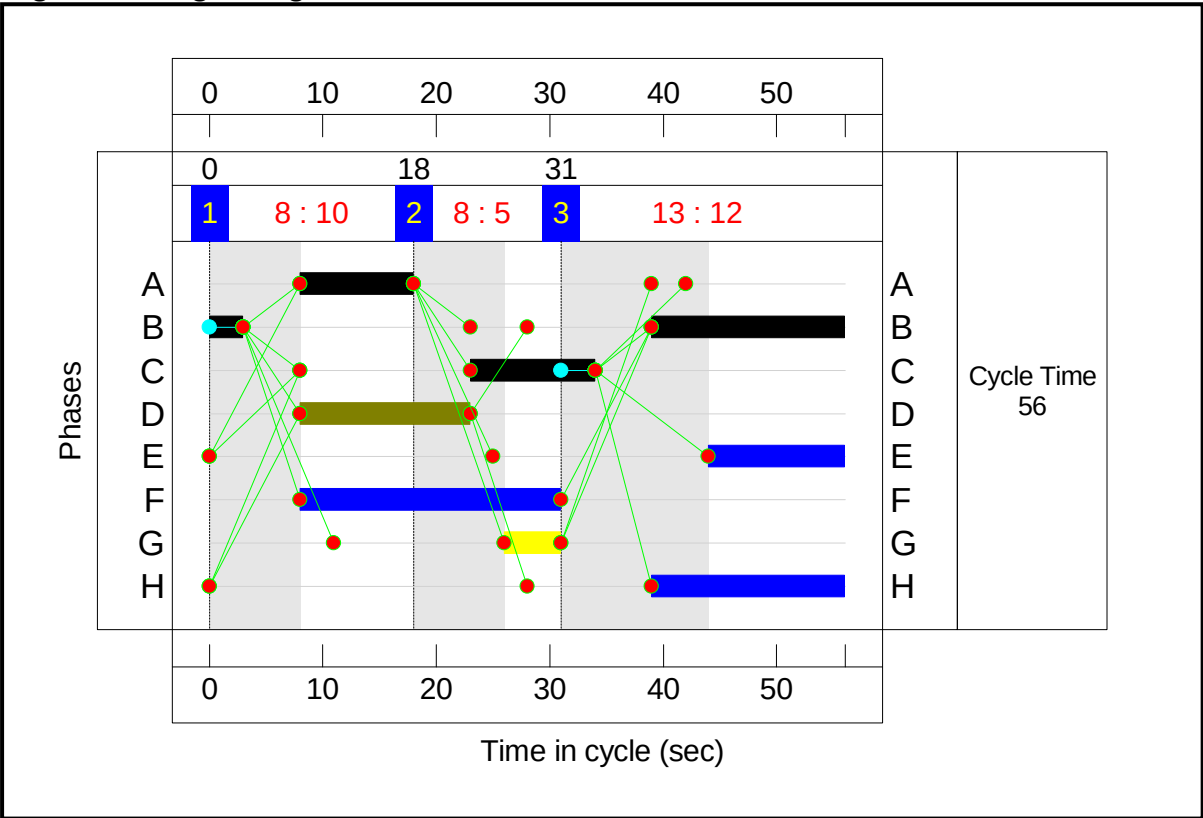
Staging Plan Diagram



Stage Timings

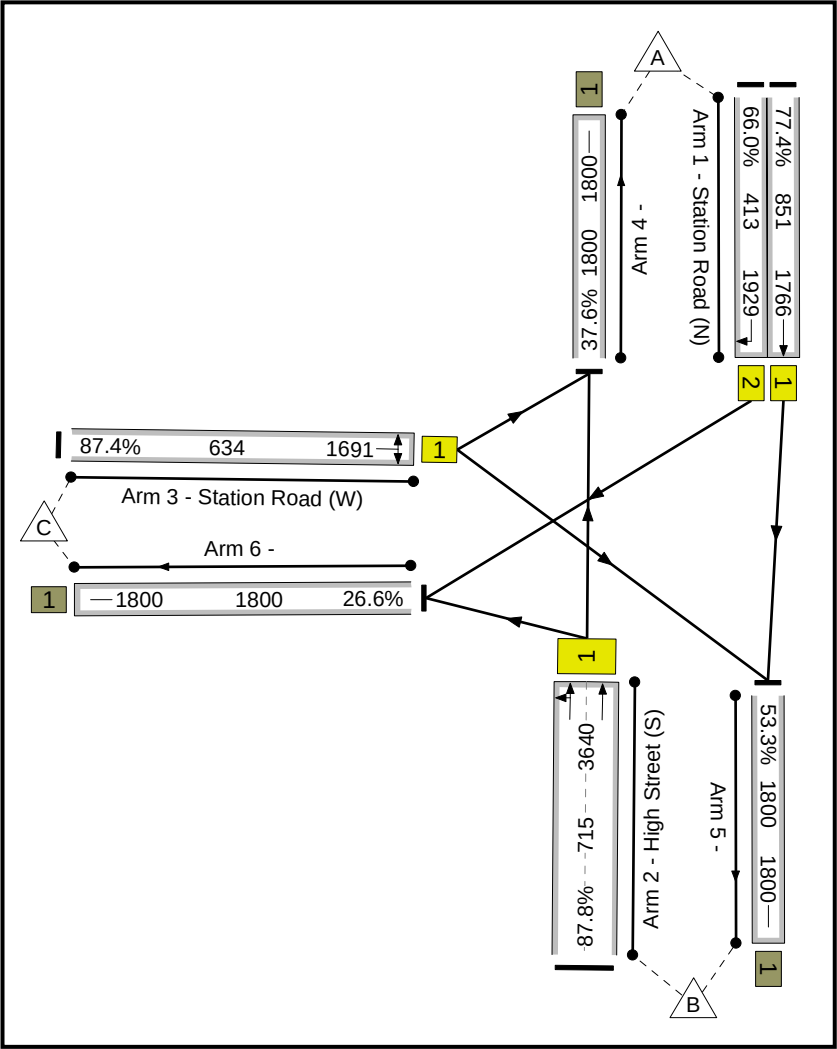
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 10 | 5  | 12 |
| Change Point | 0  | 18 | 31 |

Signal Timings Diagram



Full Input Data And Results

**Junction Layout Diagram**



# Full Input Data And Results

## Link Results

| Link Num                     | Link Desc                   | Link Type     | Stage Stream          | Position In Filtered Route   | Full Phase                               | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Max Sat Flow (pcu/Hr)            | Ave Sat Flow (pcu/Hr)      | Capacity (pcu)       | Deg Sat (%) |
|------------------------------|-----------------------------|---------------|-----------------------|------------------------------|------------------------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|-------------|
| 1/1                          | Station Road (N) Ahead      | U             | N/A                   | N/A                          | C                                        | D                     | 1                            | 26                                 | 15                  | 659                       | 1766                             | 1766                       | 851                  | 77.4        |
| 1/2                          | Station Road (N) Right      | U             | N/A                   | N/A                          | C                                        |                       | 1                            | 11                                 | -                   | 273                       | 1929                             | 1929                       | 413                  | 66.0        |
| 2/1                          | High Street (S) Ahead Left  | U             | N/A                   | N/A                          | A                                        |                       | 1                            | 10                                 | -                   | 628                       | 3640                             | 3640                       | 715                  | 87.8        |
| 3/1                          | Station Road (W) Left Right | U             | N/A                   | N/A                          | B                                        |                       | 1                            | 20                                 | -                   | 554                       | 1691                             | 1691                       | 634                  | 87.4        |
| 4/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 676                       | 1800                             | 1800                       | 1800                 | 37.6        |
| 5/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 959                       | 1800                             | 1800                       | 1800                 | 53.3        |
| 6/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 479                       | 1800                             | 1800                       | 1800                 | 26.6        |
| Link Num                     | Entering (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 Veh (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |             |
| 1/1                          | 659                         | 659           | -                     | -                            | -                                        | 2.2                   | 1.7                          | -                                  | 3.9                 | 21.2                      | 8.4                              | 1.7                        | 10.1                 |             |
| 1/2                          | 273                         | 273           | -                     | -                            | -                                        | 1.5                   | 1.0                          | -                                  | 2.5                 | 32.8                      | 3.9                              | 1.0                        | 4.8                  |             |
| 2/1                          | 628                         | 628           | -                     | -                            | -                                        | 3.8                   | 3.4                          | -                                  | 7.2                 | 41.1                      | 9.4                              | 3.4                        | 12.8                 |             |
| 3/1                          | 554                         | 554           | -                     | -                            | -                                        | 2.5                   | 3.2                          | -                                  | 5.7                 | 37.1                      | 8.0                              | 3.2                        | 11.2                 |             |
| 4/1                          | 676                         | 676           | -                     | -                            | -                                        | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.8                       | 4.5                              | 0.3                        | 4.8                  |             |
| 5/1                          | 959                         | 959           | -                     | -                            | -                                        | 0.0                   | 0.6                          | -                                  | 0.6                 | 2.1                       | 0.0                              | 0.6                        | 0.6                  |             |
| 6/1                          | 479                         | 479           | -                     | -                            | -                                        | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 0.0                              | 0.2                        | 0.2                  |             |
| PRC for Signalled Links (%): |                             |               |                       | 2.5                          | Total Delay for Signalled Links (pcuHr): |                       |                              |                                    | 19.23               |                           |                                  |                            |                      |             |
| PRC Over All Links (%):      |                             |               |                       | 2.5                          | Total Delay Over All Links (pcuHr):      |                       |                              |                                    | 20.33               | Cycle Time (s): 56        |                                  |                            |                      |             |

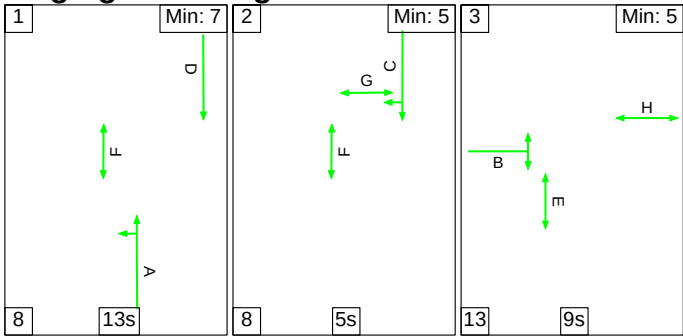


Scenario 16: ' Base + Com + H5 2024 PM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 16: 'Base + Com + H5 2024 PM'

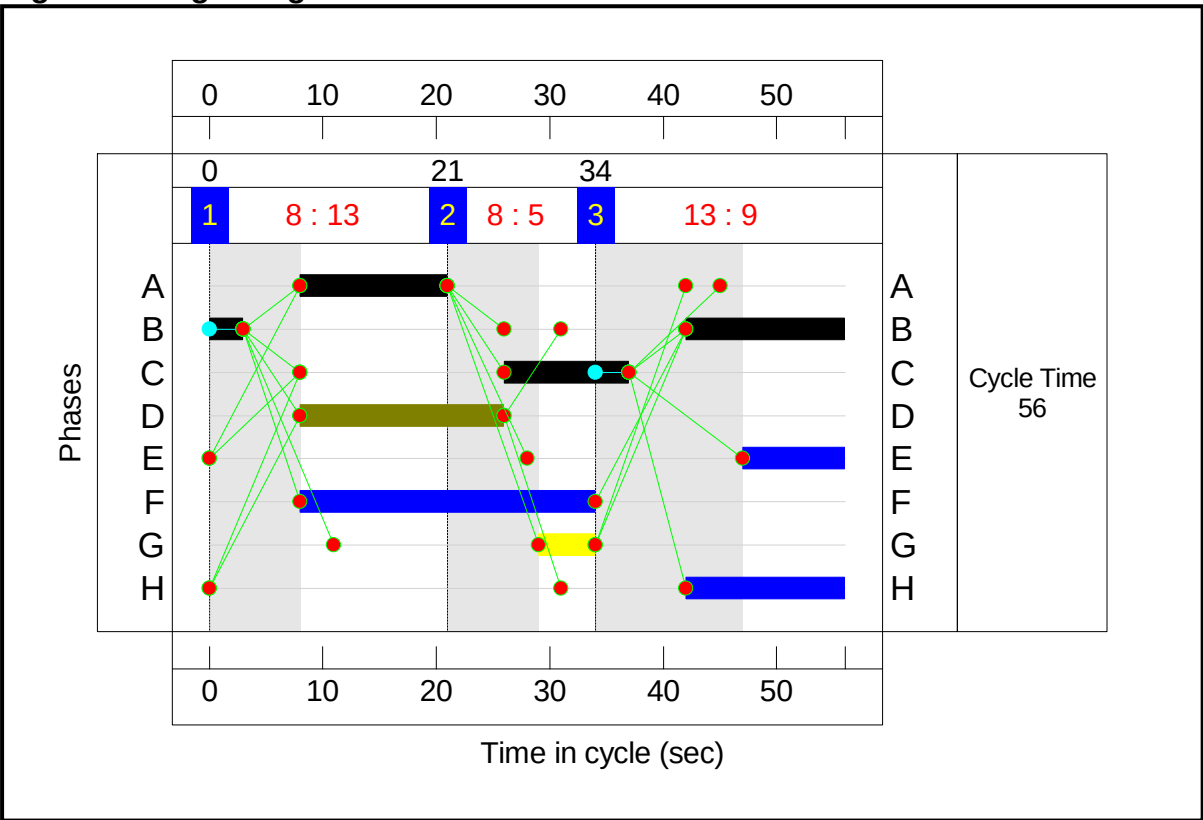
Staging Plan Diagram



Stage Timings

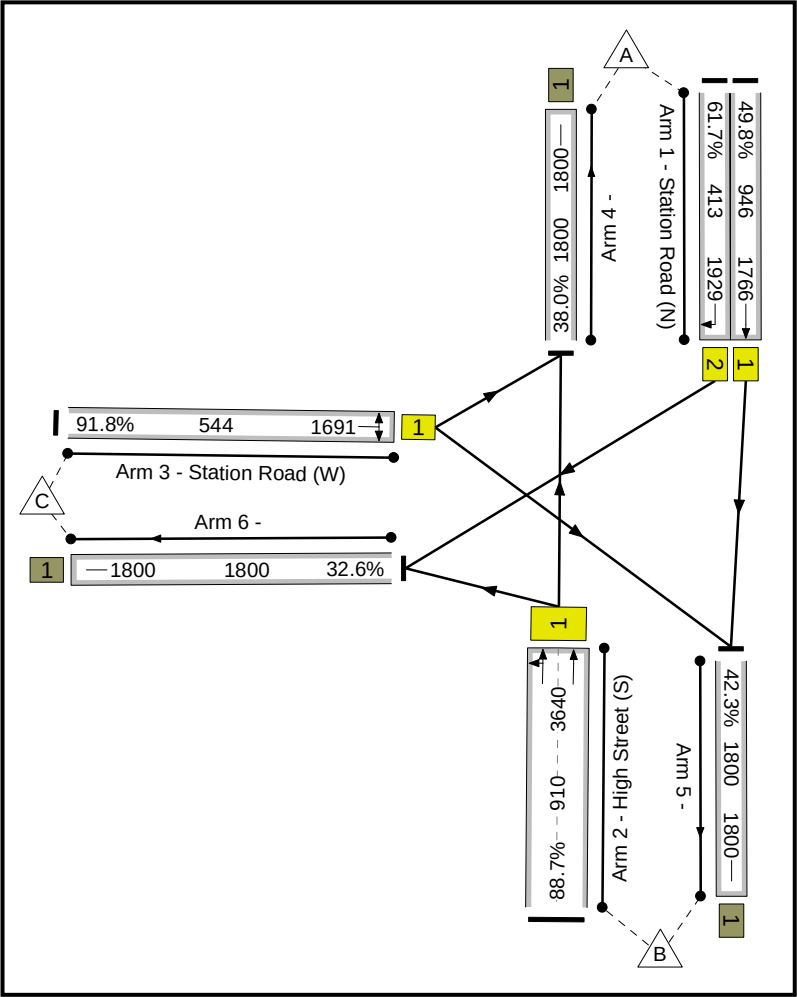
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 13 | 5  | 9  |
| Change Point | 0  | 21 | 34 |

Signal Timings Diagram



Full Input Data And Results

**Junction Layout Diagram**



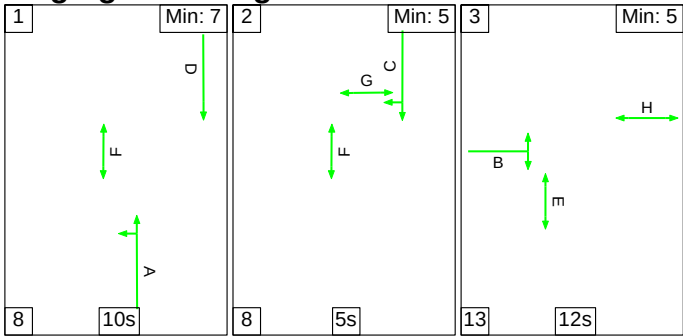
## Link Results

Scenario 17: 'Base + Com + H4 5 2024 AM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 17: 'Base + Com + H4 5 2024 AM'

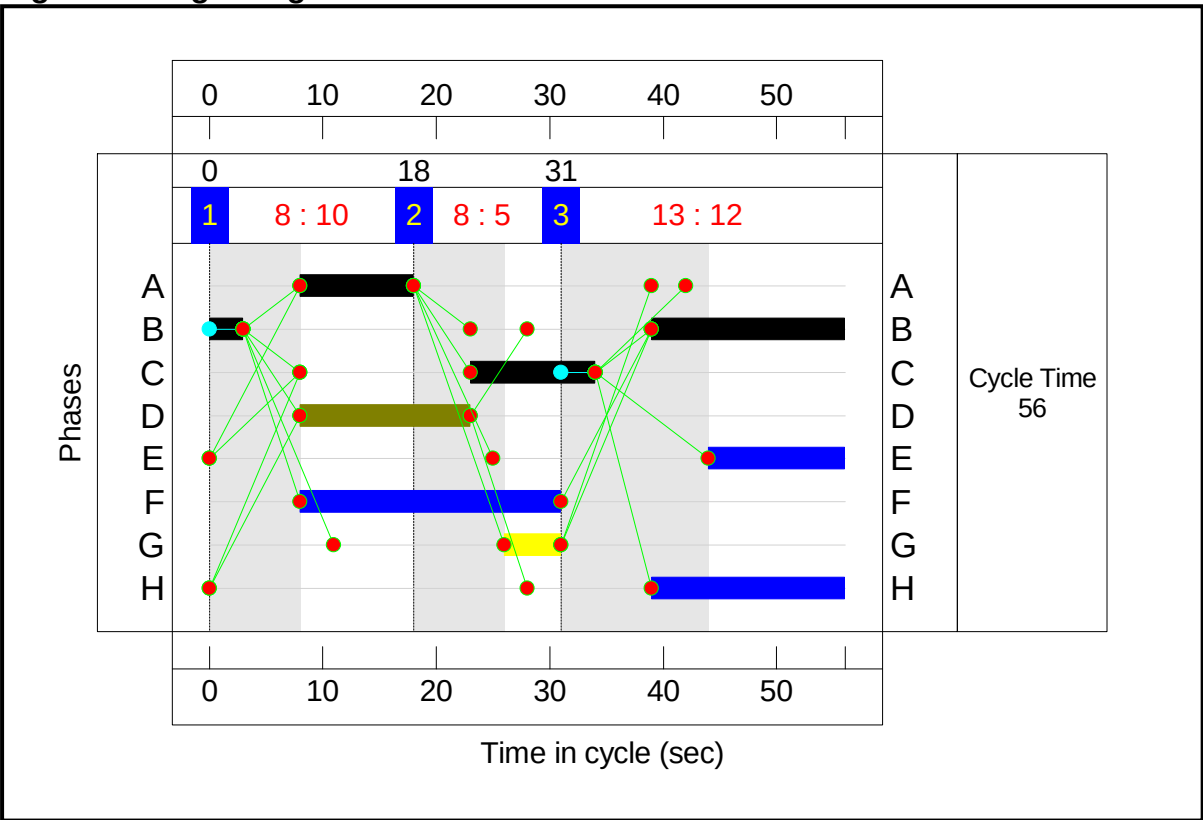
Staging Plan Diagram



Stage Timings

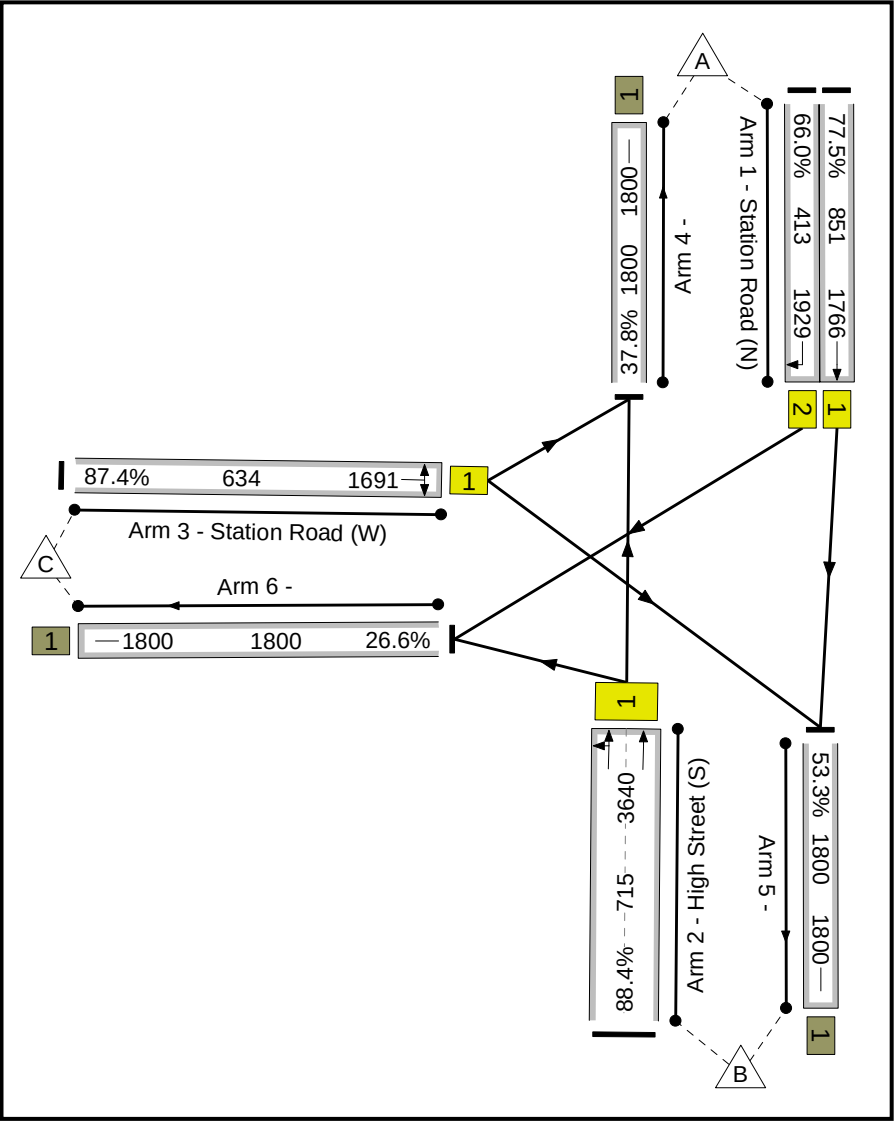
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 10 | 5  | 12 |
| Change Point | 0  | 18 | 31 |

Signal Timings Diagram



Full Input Data And Results

**Junction Layout Diagram**



# Full Input Data And Results

## Link Results

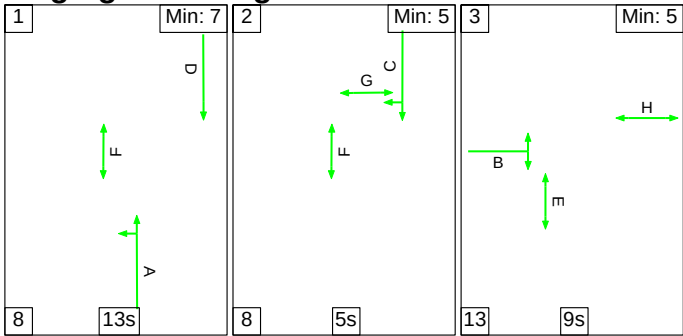
| Link Num                     | Link Desc                   | Link Type     | Stage Stream          | Position In Filtered Route   | Full Phase                               | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Max Sat Flow (pcu/Hr)            | Ave Sat Flow (pcu/Hr)      | Capacity (pcu)       | Deg Sat (%) |
|------------------------------|-----------------------------|---------------|-----------------------|------------------------------|------------------------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|-------------|
| 1/1                          | Station Road (N) Ahead      | U             | N/A                   | N/A                          | C                                        | D                     | 1                            | 26                                 | 15                  | 660                       | 1766                             | 1766                       | 851                  | 77.5        |
| 1/2                          | Station Road (N) Right      | U             | N/A                   | N/A                          | C                                        |                       | 1                            | 11                                 | -                   | 273                       | 1929                             | 1929                       | 413                  | 66.0        |
| 2/1                          | High Street (S) Ahead Left  | U             | N/A                   | N/A                          | A                                        |                       | 1                            | 10                                 | -                   | 632                       | 3640                             | 3640                       | 715                  | 88.4        |
| 3/1                          | Station Road (W) Left Right | U             | N/A                   | N/A                          | B                                        |                       | 1                            | 20                                 | -                   | 554                       | 1691                             | 1691                       | 634                  | 87.4        |
| 4/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 680                       | 1800                             | 1800                       | 1800                 | 37.8        |
| 5/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 960                       | 1800                             | 1800                       | 1800                 | 53.3        |
| 6/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 479                       | 1800                             | 1800                       | 1800                 | 26.6        |
| Link Num                     | Entering (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 Veh (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |             |
| 1/1                          | 660                         | 660           | -                     | -                            | -                                        | 2.2                   | 1.7                          | -                                  | 3.9                 | 21.2                      | 8.4                              | 1.7                        | 10.1                 |             |
| 1/2                          | 273                         | 273           | -                     | -                            | -                                        | 1.5                   | 1.0                          | -                                  | 2.5                 | 32.8                      | 3.9                              | 1.0                        | 4.8                  |             |
| 2/1                          | 632                         | 632           | -                     | -                            | -                                        | 3.8                   | 3.5                          | -                                  | 7.4                 | 41.9                      | 9.5                              | 3.5                        | 13.0                 |             |
| 3/1                          | 554                         | 554           | -                     | -                            | -                                        | 2.5                   | 3.2                          | -                                  | 5.7                 | 37.1                      | 8.0                              | 3.2                        | 11.2                 |             |
| 4/1                          | 680                         | 680           | -                     | -                            | -                                        | 0.0                   | 0.3                          | -                                  | 0.4                 | 1.9                       | 4.6                              | 0.3                        | 4.9                  |             |
| 5/1                          | 960                         | 960           | -                     | -                            | -                                        | 0.0                   | 0.6                          | -                                  | 0.6                 | 2.1                       | 0.0                              | 0.6                        | 0.6                  |             |
| 6/1                          | 479                         | 479           | -                     | -                            | -                                        | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 0.0                              | 0.2                        | 0.2                  |             |
| PRC for Signalled Links (%): |                             |               |                       | 1.8                          | Total Delay for Signalled Links (pcuHr): |                       |                              |                                    | 19.44               |                           |                                  |                            |                      |             |
| PRC Over All Links (%):      |                             |               |                       | 1.8                          | Total Delay Over All Links (pcuHr):      |                       |                              |                                    | 20.54               | Cycle Time (s): 56        |                                  |                            |                      |             |

Scenario 18: 'Base + Com + H4 5 2024 PM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 18: 'Base + Com + H4 5 2024 PM'

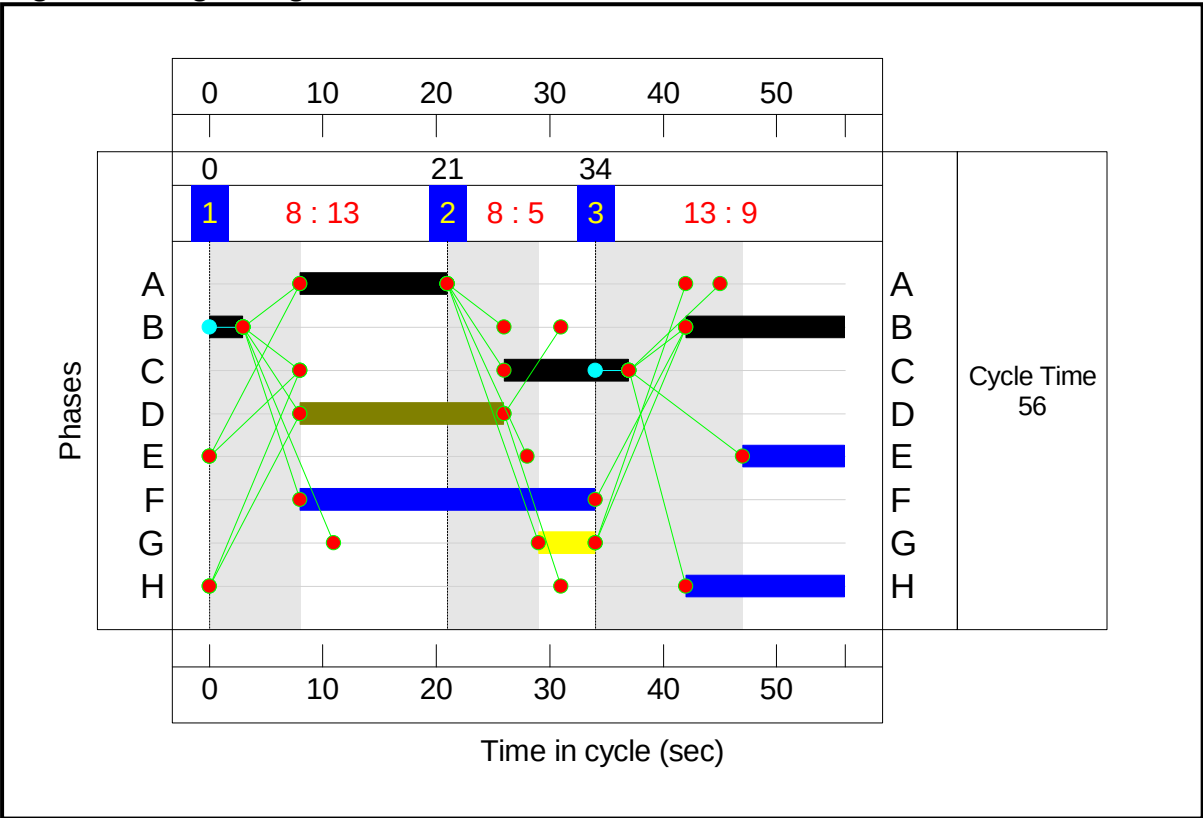
Staging Plan Diagram



Stage Timings

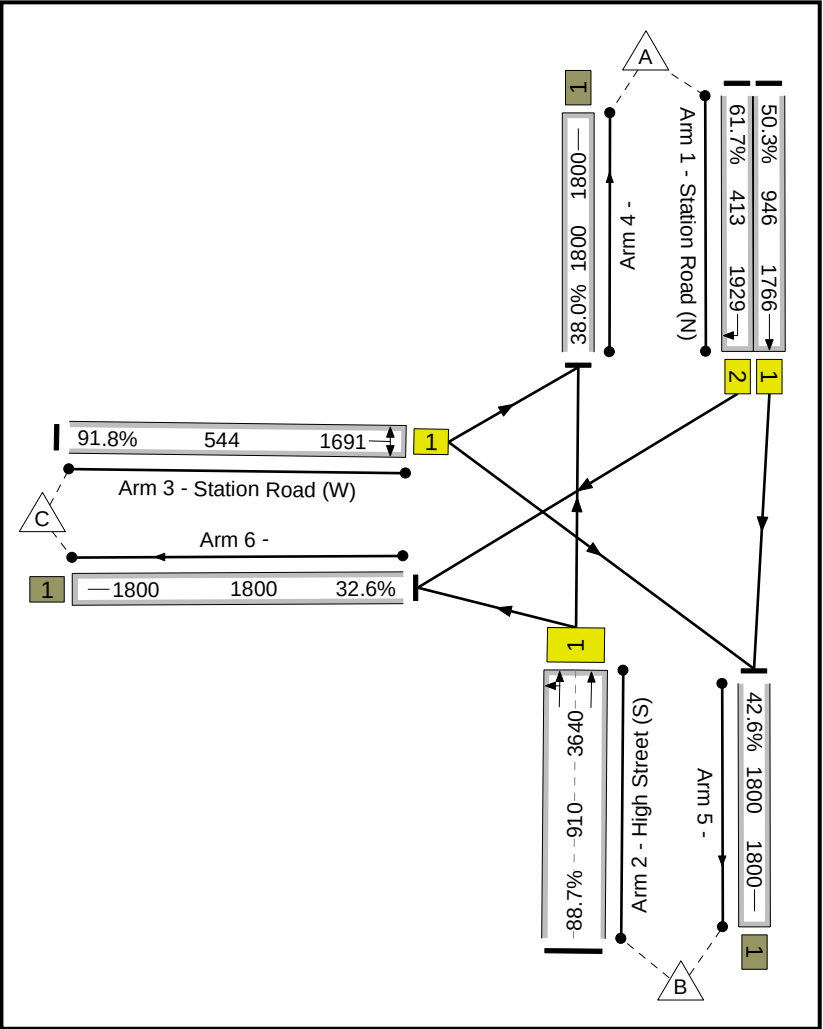
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 13 | 5  | 9  |
| Change Point | 0  | 21 | 34 |

Signal Timings Diagram



Full Input Data And Results

**Junction Layout Diagram**





## Link Results

TRL LIMITED

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

PICADY 5.1 ANALYSIS PROGRAM  
RELEASE 5.0 (JUNE 2010)

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

Run with file:-  
"I:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\NorthHydeRd\_MillingtonRd AM.vpi"  
(drive-on-the-left) at 11:51:23 on Sunday, 5 August 2012

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Base Model Junction 2  
LOCATION : North Hyde Road/Millington Road  
DATE : 23/04/12  
CLIENT :  
ENUMERATOR : rhussain [IE-D00135]  
JOB NUMBER : VN50026  
STATUS : Draft 1  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----

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

ARM A IS North Hyde Road (E)  
ARM B IS Millington Road  
ARM C IS North Hyde Road (W)

STREAM LABELLING CONVENTION  
-----

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

## GEOMETRIC DATA

| I | DATA ITEM                          | I | MINOR ROAD B    | I |
|---|------------------------------------|---|-----------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | ( W ) 7.64 M.   | I |
| I | CENTRAL RESERVE WIDTH              | I | (WCR) 0.00 M.   | I |
| I |                                    | I |                 | I |
| I | MAJOR ROAD RIGHT TURN - WIDTH      | I | (WC-B) 2.20 M.  | I |
| I | - VISIBILITY                       | I | (VC-B)119.00 M. | I |
| I | - BLOCKS TRAFFIC (SPACES)          | I | NO ( 0 )        | I |
| I |                                    | I |                 | I |
| I | MINOR ROAD - VISIBILITY TO LEFT    | I | (VB-C) 23.0 M.  | I |
| I | - VISIBILITY TO RIGHT              | I | (VB-A) 19.0 M.  | I |
| I | - LANE 1 WIDTH                     | I | (WB-C) 3.00 M.  | I |
| I | - LANE 2 WIDTH                     | I | (WB-A) 0.00 M.  | I |

## .SLOPES AND INTERCEPT

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

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | STREAM B-C    | STREAM    | A-C      | STREAM    | A-B      | I |
| I | 635.90        |           | 0.23     |           | 0.09     | I |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | Slope For | Opposing | Slope For | OpposingI |   |
|---|---------------|-----------|----------|-----------|----------|-----------|----------|-----------|-----------|---|
| I | STREAM B-A    | STREAM    | A-C      | STREAM    | A-B      | STREAM    | C-A      | STREAM    | C-B       | I |
| I | 494.40        |           | 0.21     |           | 0.08     |           | 0.13     |           | 0.30      | I |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | STREAM C-B    | STREAM    | A-C      | STREAM    | A-B      | I |
| I | 642.88        |           | 0.23     |           | 0.23     | I |

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

## TRAFFIC DEMAND DATA

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

Demand set: Base+Com+H4 2024

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN | I | RATE OF FLOW (VEH/MIN) | I |
|---|-------|---|-----------------------------------|---|------------------------|---|
| I |       | I | FLOW STARTS                       | I | BEFORE                 | I |
| I |       | I | TOP OF PEAK                       | I | AT TOP                 | I |
| I |       | I | TO RISE                           | I | PEAK                   | I |
| I |       | I | IS REACHED                        | I | OF PEAK                | I |
| I |       | I | FALLING                           | I | PEAK                   | I |
| I | ARM A | I | 15.00                             | I | 8.61                   | I |
| I | ARM B | I | 15.00                             | I | 0.14                   | I |
| I | ARM C | I | 15.00                             | I | 6.44                   | I |
| I |       | I | 45.00                             | I | 12.92                  | I |
| I |       | I | 45.00                             | I | 0.21                   | I |
| I |       | I | 45.00                             | I | 9.66                   | I |
| I |       | I | 75.00                             | I | 8.61                   | I |
| I |       | I | 75.00                             | I | 0.14                   | I |
| I |       | I | 75.00                             | I | 6.44                   | I |

Demand set: Base+Com+H4 2024

| TIME          | TURNING PROPORTIONS   |     |        |        |        |     |   |  |  |
|---------------|-----------------------|-----|--------|--------|--------|-----|---|--|--|
|               | TURNING COUNTS        |     |        |        |        |     |   |  |  |
|               | (PERCENTAGE OF H.V.S) |     |        |        |        |     |   |  |  |
|               | FROM/TO               | ARM | A      | ARM    | B      | ARM | C |  |  |
| 07.45 - 09.15 | ARM A                 |     | 0.000  | 0.107  | 0.893  |     |   |  |  |
|               |                       |     | 0.0    | 74.0   | 615.0  |     |   |  |  |
|               |                       |     | ( 0.0) | ( 0.0) | ( 0.0) |     |   |  |  |
|               | ARM B                 |     | 0.727  | 0.000  | 0.273  |     |   |  |  |
|               |                       |     | 8.0    | 0.0    | 3.0    |     |   |  |  |
|               |                       |     | ( 0.0) | ( 0.0) | ( 0.0) |     |   |  |  |
|               | ARM C                 |     | 0.988  | 0.012  | 0.000  |     |   |  |  |
|               |                       |     | 509.0  | 6.0    | 0.0    |     |   |  |  |
|               |                       |     | ( 0.0) | ( 0.0) | ( 0.0) |     |   |  |  |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

## QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET Base+Com+H4 2024  
AND FOR TIME PERIOD 1

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 07.45-08.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.14                | 6.26                  | 0.022                        |                                  | 0.00                     | 0.02                   | 0.3                                 |                                               | 0.16                                           |
| C-A         | 6.39                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.08                | 8.71                  | 0.009                        |                                  | 0.00                     | 0.01                   | 0.1                                 |                                               | 0.12                                           |
| A-B         | 0.93                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.72                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.00-08.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.16                | 5.76                  | 0.029                        |                                  | 0.02                     | 0.03                   | 0.4                                 |                                               | 0.18                                           |
| C-A         | 7.63                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.09                | 8.33                  | 0.011                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 1.11                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 9.21                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.15-08.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.20                | 5.07                  | 0.040                        |                                  | 0.03                     | 0.04                   | 0.6                                 |                                               | 0.21                                           |
| C-A         | 9.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.11                | 7.79                  | 0.014                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.13                                           |
| A-B         | 1.36                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 11.29               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.30-08.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.20                | 5.07                  | 0.040                        |                                  | 0.04                     | 0.04                   | 0.6                                 |                                               | 0.21                                           |
| C-A         | 9.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.11                | 7.79                  | 0.014                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.13                                           |
| A-B         | 1.36                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 11.29               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.45-09.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.16                | 5.76                  | 0.029                        |                                  | 0.04                     | 0.03                   | 0.5                                 |                                               | 0.18                                           |
| C-A         | 7.63                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.09                | 8.33                  | 0.011                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 1.11                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 9.21                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 09.00-09.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.14                | 6.26                  | 0.022                        |                                  | 0.03                     | 0.02                   | 0.4                                 |                                               | 0.16                                           |
| C-A         | 6.39                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.08                | 8.71                  | 0.009                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.12                                           |
| A-B         | 0.93                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.72                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

QUEUE FOR STREAM B-AC

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

QUEUE FOR STREAM C-B

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

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QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

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| I | STREAM | I | TOTAL  | I | DEMAND  | I | * QUEUEING * | I | * INCLUSIVE QUEUEING * | I |
|---|--------|---|--------|---|---------|---|--------------|---|------------------------|---|
| I |        | I |        | I |         | I | * DELAY *    | I | * DELAY *              | I |
| I |        | I | (VEH)  | I | (VEH/H) | I | (MIN)        | I | (MIN/VEH)              | I |
| I |        | I |        | I |         | I |              | I |                        | I |
| I | B-AC   | I | 15.1   | I | 10.1    | I | 2.8          | I | 0.18                   | I |
| I | C-A    | I | 700.6  | I | 467.1   | I |              | I |                        | I |
| I | C-B    | I | 8.3    | I | 5.5     | I | 1.0          | I | 0.12                   | I |
| I | A-B    | I | 101.9  | I | 67.9    | I |              | I |                        | I |
| I | A-C    | I | 846.5  | I | 564.3   | I |              | I |                        | I |
| I |        | I |        | I |         | I |              | I |                        | I |
| I | ALL    | I | 1672.4 | I | 1114.9  | I | 3.8          | I | 0.00                   | I |

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\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD

\* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES

WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD

\* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS

A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

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

.SLOPES AND INTERCEPT

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

| I | Intercept  | I | Slope For | I | Opposing | I | Slope For  | I | Opposing | I |
|---|------------|---|-----------|---|----------|---|------------|---|----------|---|
| I | STREAM B-C | I | STREAM    | I | A-C      | I | STREAM A-B | I | A-B      | I |
| I | 635.90     | I |           | I | 0.23     | I |            | I | 0.09     | I |

| I | Intercept  | I | Slope For | I | Opposing | I | Slope For  | I | Opposing | I | Slope For | I | Opposing | I |
|---|------------|---|-----------|---|----------|---|------------|---|----------|---|-----------|---|----------|---|
| I | STREAM B-A | I | STREAM    | I | A-C      | I | STREAM A-B | I | STREAM   | I | C-A       | I | STREAM   | I |
| I | 494.40     | I |           | I | 0.21     | I |            | I | 0.08     | I |           | I | 0.13     | I |
| I |            | I |           | I |          | I |            | I |          | I |           | I | 0.30     | I |

| I | Intercept  | I | Slope For | I | Opposing | I | Slope For  | I | Opposing | I |
|---|------------|---|-----------|---|----------|---|------------|---|----------|---|
| I | STREAM C-B | I | STREAM    | I | A-C      | I | STREAM A-B | I | A-B      | I |
| I | 642.88     | I |           | I | 0.23     | I |            | I | 0.23     | I |

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

TRAFFIC DEMAND DATA

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

Demand set: Base+Com+H5 2024

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

LENGTH OF TIME PERIOD - 90 MIN.

LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I |     | I | NUMBER OF MINUTES FROM START WHEN | I | RATE OF FLOW (VEH/MIN) | I |
|---|-----|---|-----------------------------------|---|------------------------|---|
| I | ARM | I | FLOW STARTS                       | I | BEFORE                 | I |
| I |     | I | TO RISE                           | I | AT TOP                 | I |
| I |     | I | IS REACHED                        | I | OF PEAK                | I |
| I |     | I | FALLING                           | I | PEAK                   | I |
| I | ARM | I |                                   | I |                        | I |
| I | A   | I | 15.00                             | I | 8.93                   | I |
| I | B   | I | 15.00                             | I | 0.17                   | I |
| I | C   | I | 15.00                             | I | 6.44                   | I |

Demand set: Base+Com+H5 2024

| TIME          | TURNING PROPORTIONS   |     |        |     |        |     |        |  |  |
|---------------|-----------------------|-----|--------|-----|--------|-----|--------|--|--|
|               | TURNING COUNTS        |     |        |     |        |     |        |  |  |
|               | (PERCENTAGE OF H.V.S) |     |        |     |        |     |        |  |  |
|               | FROM/TO               | ARM | A      | ARM | B      | ARM | C      |  |  |
| 07.45 - 09.15 | ARM A                 |     | 0.000  |     | 0.139  |     | 0.861  |  |  |
|               |                       |     | 0.0    |     | 99.0   |     | 615.0  |  |  |
|               |                       |     | ( 0.0) |     | ( 0.0) |     | ( 0.0) |  |  |
|               | ARM B                 |     | 0.786  |     | 0.000  |     | 0.214  |  |  |
|               |                       |     | 11.0   |     | 0.0    |     | 3.0    |  |  |
|               |                       |     | ( 0.0) |     | ( 0.0) |     | ( 0.0) |  |  |
|               | ARM C                 |     | 0.988  |     | 0.012  |     | 0.000  |  |  |
|               |                       |     | 509.0  |     | 6.0    |     | 0.0    |  |  |
|               |                       |     | ( 0.0) |     | ( 0.0) |     | ( 0.0) |  |  |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

## QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET Base+Com+H5 2024  
AND FOR TIME PERIOD 1

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 07.45-08.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.18                | 6.10                  | 0.029                        |                                  | 0.00                     | 0.03                   | 0.4                                 |                                               | 0.17                                           |
| C-A         | 6.39                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.08                | 8.64                  | 0.009                        |                                  | 0.00                     | 0.01                   | 0.1                                 |                                               | 0.12                                           |
| A-B         | 1.24                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.72                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.00-08.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.21                | 5.59                  | 0.038                        |                                  | 0.03                     | 0.04                   | 0.6                                 |                                               | 0.19                                           |
| C-A         | 7.63                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.09                | 8.24                  | 0.011                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 1.48                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 9.21                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.15-08.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.26                | 4.88                  | 0.053                        |                                  | 0.04                     | 0.05                   | 0.8                                 |                                               | 0.22                                           |
| C-A         | 9.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.11                | 7.68                  | 0.014                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.13                                           |
| A-B         | 1.82                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 11.29               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.30-08.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.26                | 4.88                  | 0.053                        |                                  | 0.05                     | 0.06                   | 0.8                                 |                                               | 0.22                                           |
| C-A         | 9.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.11                | 7.68                  | 0.014                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.13                                           |
| A-B         | 1.82                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 11.29               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| I | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 08.45-09.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | B-AC        | 0.21                | 5.59                  | 0.038                        |                                  | 0.06                     | 0.04                   | 0.6                                 |                                               | 0.19                                           | I |
| I | C-A         | 7.63                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-B         | 0.09                | 8.24                  | 0.011                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           | I |
| I | A-B         | 1.48                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-C         | 9.21                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

| I | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 09.00-09.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | B-AC        | 0.18                | 6.10                  | 0.029                        |                                  | 0.04                     | 0.03                   | 0.5                                 |                                               | 0.17                                           | I |
| I | C-A         | 6.39                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-B         | 0.08                | 8.64                  | 0.009                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.12                                           | I |
| I | A-B         | 1.24                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-C         | 7.72                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

QUEUE FOR STREAM B-AC

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 08.00                     | 0.0                            |
| 08.15                     | 0.0                            |
| 08.30                     | 0.1                            |
| 08.45                     | 0.1                            |
| 09.00                     | 0.0                            |
| 09.15                     | 0.0                            |

QUEUE FOR STREAM C-B

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



## QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL  | I | DEMAND  | I | * QUEUEING * | I | * INCLUSIVE QUEUEING * | I |
|---|--------|---|--------|---|---------|---|--------------|---|------------------------|---|
| I | I      | I | I      | I | I       | I | * DELAY *    | I | * DELAY *              | I |
| I | I      | I | I      | I | I       | I | I            | I | I                      | I |
| I | I      | I | (VEH)  | I | (VEH/H) | I | (MIN)        | I | (MIN/VEH)              | I |
| I | B-AC   | I | 19.3   | I | 12.8    | I | 3.7          | I | 0.19                   | I |
| I | C-A    | I | 700.6  | I | 467.1   | I | I            | I | I                      | I |
| I | C-B    | I | 8.3    | I | 5.5     | I | 1.0          | I | 0.12                   | I |
| I | A-B    | I | 136.3  | I | 90.8    | I | I            | I | I                      | I |
| I | A-C    | I | 846.5  | I | 564.3   | I | I            | I | I                      | I |
| I | ALL    | I | 1710.9 | I | 1140.6  | I | 4.7          | I | 0.00                   | I |

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

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

## .SLOPES AND INTERCEPT

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

| I | Intercept | For | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|-----------|-----|--------|-----|----------|-------|--------|----------|---|
| I | STREAM    | B-C | STREAM | A-C | STREAM   | A-B   | STREAM | A-B      | I |
| I | 635.90    |     | 0.23   |     | 0.09     |       |        |          | I |

| I | Intercept | For | Slope  | For | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | I |
|---|-----------|-----|--------|-----|----------|-------|--------|----------|--------|-----|----------|---|
| I | STREAM    | B-A | STREAM | A-C | STREAM   | A-B   | STREAM | C-A      | STREAM | C-B | STREAM   | I |
| I | 494.40    |     | 0.21   |     | 0.08     |       | 0.13   |          | 0.30   |     |          | I |

| I | Intercept | For | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|-----------|-----|--------|-----|----------|-------|--------|----------|---|
| I | STREAM    | C-B | STREAM | A-C | STREAM   | A-B   | STREAM | A-B      | I |
| I | 642.88    |     | 0.23   |     | 0.23     |       |        |          | I |

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

## TRAFFIC DEMAND DATA

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

Demand set: Base+Com+H4&5 2024

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

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

Demand set: Base+Com+H4&amp;5 2024

| TIME          | TURNING PROPORTIONS   |     |        |        |        |     |   |  |  |  |
|---------------|-----------------------|-----|--------|--------|--------|-----|---|--|--|--|
|               | TURNING COUNTS        |     |        |        |        |     |   |  |  |  |
|               | (PERCENTAGE OF H.V.S) |     |        |        |        |     |   |  |  |  |
|               | FROM/TO               | ARM | A      | ARM    | B      | ARM | C |  |  |  |
| 07.45 - 09.15 | ARM                   | A   | 0.000  | 0.169  | 0.831  |     |   |  |  |  |
|               |                       |     | 0.0    | 125.0  | 615.0  |     |   |  |  |  |
|               |                       |     | ( 0.0) | ( 0.0) | ( 0.0) |     |   |  |  |  |
|               | ARM                   | B   | 0.833  | 0.000  | 0.167  |     |   |  |  |  |
|               |                       |     | 15.0   | 0.0    | 3.0    |     |   |  |  |  |
|               |                       |     | ( 0.0) | ( 0.0) | ( 0.0) |     |   |  |  |  |
|               | ARM                   | C   | 0.988  | 0.012  | 0.000  |     |   |  |  |  |
|               |                       |     | 509.0  | 6.0    | 0.0    |     |   |  |  |  |
|               |                       |     | ( 0.0) | ( 0.0) | ( 0.0) |     |   |  |  |  |
|               |                       |     |        |        |        |     |   |  |  |  |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

## QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET Base+Com+H4&5 2024  
AND FOR TIME PERIOD 1

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 07.45-08.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.23                | 5.96                  | 0.038                        |                                  | 0.00                     | 0.04                   | 0.6                                 |                                               | 0.17                                           |
| C-A         | 6.39                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.08                | 8.57                  | 0.009                        |                                  | 0.00                     | 0.01                   | 0.1                                 |                                               | 0.12                                           |
| A-B         | 1.57                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.72                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.00-08.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.27                | 5.45                  | 0.050                        |                                  | 0.04                     | 0.05                   | 0.7                                 |                                               | 0.19                                           |
| C-A         | 7.63                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.09                | 8.15                  | 0.011                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 1.87                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 9.21                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.15-08.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.33                | 4.73                  | 0.070                        |                                  | 0.05                     | 0.07                   | 1.1                                 |                                               | 0.23                                           |
| C-A         | 9.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.11                | 7.57                  | 0.015                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.13                                           |
| A-B         | 2.29                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 11.29               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.30-08.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.33                | 4.73                  | 0.070                        |                                  | 0.07                     | 0.07                   | 1.1                                 |                                               | 0.23                                           |
| C-A         | 9.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.11                | 7.57                  | 0.015                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.13                                           |
| A-B         | 2.29                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 11.29               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.45-09.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.27                | 5.45                  | 0.050                        |                                  | 0.07                     | 0.05                   | 0.8                                 |                                               | 0.19                                           |
| C-A         | 7.63                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.09                | 8.15                  | 0.011                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 1.87                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 9.21                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 09.00-09.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.23                | 5.96                  | 0.038                        |                                  | 0.05                     | 0.04                   | 0.6                                 |                                               | 0.17                                           |
| C-A         | 6.39                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.08                | 8.57                  | 0.009                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.12                                           |
| A-B         | 1.57                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.72                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

#### QUEUE FOR STREAM B-AC

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 08.00                     | 0.0                            |
| 08.15                     | 0.1                            |
| 08.30                     | 0.1                            |
| 08.45                     | 0.1                            |
| 09.00                     | 0.1                            |
| 09.15                     | 0.0                            |

#### QUEUE FOR STREAM C-B

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

#### QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND<br>(VEH) | DEMAND<br>(VEH/H) | * QUEUEING *<br>DELAY (MIN) | * INCLUSIVE QUEUEING *<br>DELAY (MIN/VEH) |
|--------|-----------------------|-------------------|-----------------------------|-------------------------------------------|
| B-AC   | 24.8                  | 16.5              | 4.9                         | 0.20                                      |
| C-A    | 700.6                 | 467.1             |                             |                                           |
| C-B    | 8.3                   | 5.5               | 1.0                         | 0.13                                      |
| A-B    | 172.1                 | 114.7             |                             |                                           |
| A-C    | 846.5                 | 564.3             |                             |                                           |
| ALL    | 1752.2                | 1168.1            | 6.0                         | 0.00                                      |

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

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

===== end of file =====

TRL LIMITED

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

PICADY 5.1 ANALYSIS PROGRAM  
RELEASE 5.0 (JUNE 2010)

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Run with file:-  
"I:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\NorthHydeRd\_MillingtonRd PM.vpi"  
(drive-on-the-left) at 16:52:57 on Friday, 10 August 2012

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Base Model Junction 2  
LOCATION : North Hyde Road/Millington Road  
DATE : 23/04/12  
CLIENT :  
ENUMERATOR : rhussain [IE-D00135]  
JOB NUMBER : VN50026  
STATUS : Draft 1  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----

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

ARM A IS North Hyde Road (E)  
ARM B IS Millington Road  
ARM C IS North Hyde Road (W)

STREAM LABELLING CONVENTION  
-----

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

## GEOMETRIC DATA

| I | DATA ITEM                          | I | MINOR ROAD B    | I |
|---|------------------------------------|---|-----------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | ( W ) 7.64 M.   | I |
| I | CENTRAL RESERVE WIDTH              | I | (WCR) 0.00 M.   | I |
| I |                                    | I |                 | I |
| I | MAJOR ROAD RIGHT TURN - WIDTH      | I | (WC-B) 2.20 M.  | I |
| I | - VISIBILITY                       | I | (VC-B)119.00 M. | I |
| I | - BLOCKS TRAFFIC (SPACES)          | I | NO ( 0 )        | I |
| I |                                    | I |                 | I |
| I | MINOR ROAD - VISIBILITY TO LEFT    | I | (VB-C) 23.0 M.  | I |
| I | - VISIBILITY TO RIGHT              | I | (VB-A) 19.0 M.  | I |
| I | - LANE 1 WIDTH                     | I | (WB-C) 3.00 M.  | I |
| I | - LANE 2 WIDTH                     | I | (WB-A) 0.00 M.  | I |

## .SLOPES AND INTERCEPT

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

| I | Intercept  | For Slope | For Opposing | Slope For Opposing | I |
|---|------------|-----------|--------------|--------------------|---|
| I | STREAM B-C | STREAM    | A-C          | STREAM A-B         | I |
| I | 635.90     |           | 0.23         | 0.09               | I |

| I | Intercept  | For Slope | For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|------------|-----------|--------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-A | STREAM    | A-C          | STREAM A-B         | STREAM C-A         | STREAM C-B         | I |
| I | 494.40     |           | 0.21         | 0.08               | 0.13               | 0.30               | I |

| I | Intercept  | For Slope | For Opposing | Slope For Opposing | I |
|---|------------|-----------|--------------|--------------------|---|
| I | STREAM C-B | STREAM    | A-C          | STREAM A-B         | I |
| I | 642.88     |           | 0.23         | 0.23               | I |

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

## TRAFFIC DEMAND DATA

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

Demand set: Base+Com+H4 2024

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN | I | RATE OF FLOW (VEH/MIN) | I |
|---|-------|---|-----------------------------------|---|------------------------|---|
| I |       | I | FLOW STARTS                       | I | BEFORE                 | I |
| I |       | I | TOP OF PEAK                       | I | AT TOP                 | I |
| I |       | I | TO RISE                           | I | PEAK                   | I |
| I |       | I | IS REACHED                        | I | OF PEAK                | I |
| I |       | I | FALLING                           | I | PEAK                   | I |
| I | ARM A | I | 15.00                             | I | 7.30                   | I |
| I | ARM B | I | 15.00                             | I | 1.04                   | I |
| I | ARM C | I | 15.00                             | I | 6.19                   | I |

Demand set: Base+Com+H4 2024

| TIME          | TURNING PROPORTIONS   |     |        |        |        |     |   |  |
|---------------|-----------------------|-----|--------|--------|--------|-----|---|--|
|               | TURNING COUNTS        |     |        |        |        |     |   |  |
|               | (PERCENTAGE OF H.V.S) |     |        |        |        |     |   |  |
|               | FROM/TO               | ARM | A      | ARM    | B      | ARM | C |  |
| 17.00 - 18.30 | ARM A                 |     | 0.000  | 0.022  | 0.978  |     |   |  |
|               |                       |     | 0.0    | 13.0   | 571.0  |     |   |  |
|               |                       |     | ( 0.0) | ( 0.0) | ( 0.0) |     |   |  |
|               | ARM B                 |     | 0.614  | 0.000  | 0.386  |     |   |  |
|               |                       |     | 51.0   | 0.0    | 32.0   |     |   |  |
|               |                       |     | ( 0.0) | ( 0.0) | ( 0.0) |     |   |  |
|               | ARM C                 |     | 0.988  | 0.012  | 0.000  |     |   |  |
|               |                       |     | 489.0  | 6.0    | 0.0    |     |   |  |
|               |                       |     | ( 0.0) | ( 0.0) | ( 0.0) |     |   |  |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

## QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET Base+Com+H4 2024  
AND FOR TIME PERIOD 1

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.00-17.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 1.04                | 6.77                  | 0.154                        |                                  | 0.00                     | 0.18                   | 2.6                                 |                                               | 0.17                                           |
| C-A         | 6.14                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.08                | 9.02                  | 0.008                        |                                  | 0.00                     | 0.01                   | 0.1                                 |                                               | 0.11                                           |
| A-B         | 0.16                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.16                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.15-17.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 1.24                | 6.32                  | 0.197                        |                                  | 0.18                     | 0.24                   | 3.5                                 |                                               | 0.20                                           |
| C-A         | 7.33                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.09                | 8.69                  | 0.010                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.19                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 8.56                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.30-17.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 1.52                | 5.69                  | 0.268                        |                                  | 0.24                     | 0.36                   | 5.1                                 |                                               | 0.24                                           |
| C-A         | 8.97                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.11                | 8.24                  | 0.013                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.24                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 10.48               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.45-18.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 1.52                | 5.69                  | 0.268                        |                                  | 0.36                     | 0.36                   | 5.4                                 |                                               | 0.24                                           |
| C-A         | 8.97                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.11                | 8.24                  | 0.013                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.24                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 10.48               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 18.00-18.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 1.24                | 6.32                  | 0.197                        |                                  | 0.36                     | 0.25                   | 3.9                                 |                                               | 0.20                                           |
| C-A         | 7.33                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.09                | 8.69                  | 0.010                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.19                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 8.56                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 18.15-18.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 1.04                | 6.77                  | 0.154                        |                                  | 0.25                     | 0.18                   | 2.9                                 |                                               | 0.17                                           |
| C-A         | 6.14                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.08                | 9.02                  | 0.008                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.11                                           |
| A-B         | 0.16                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.16                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

QUEUE FOR STREAM B-AC

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.15                     | 0.2                            |
| 17.30                     | 0.2                            |
| 17.45                     | 0.4                            |
| 18.00                     | 0.4                            |
| 18.15                     | 0.2                            |
| 18.30                     | 0.2                            |

QUEUE FOR STREAM C-B

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.15                     | 0.0                            |
| 17.30                     | 0.0                            |
| 17.45                     | 0.0                            |
| 18.00                     | 0.0                            |
| 18.15                     | 0.0                            |
| 18.30                     | 0.0                            |

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QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

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| I | STREAM | I | TOTAL  | I | DEMAND  | I | * QUEUEING * | I | * INCLUSIVE QUEUEING * | I |
|---|--------|---|--------|---|---------|---|--------------|---|------------------------|---|
| I |        | I |        | I |         | I | * DELAY *    | I | * DELAY *              | I |
| I |        | I | (VEH)  | I | (VEH/H) | I | (MIN)        | I | (MIN/VEH)              | I |
| I |        | I |        | I |         | I |              | I |                        | I |
| I | B-AC   | I | 114.2  | I | 76.2    | I | 23.4         | I | 0.20                   | I |
| I | C-A    | I | 673.1  | I | 448.7   | I |              | I |                        | I |
| I | C-B    | I | 8.3    | I | 5.5     | I | 1.0          | I | 0.12                   | I |
| I | A-B    | I | 17.9   | I | 11.9    | I |              | I |                        | I |
| I | A-C    | I | 785.9  | I | 524.0   | I |              | I |                        | I |
| I | ALL    | I | 1599.4 | I | 1066.3  | I | 24.3         | I | 0.02                   | I |

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

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

.SLOPES AND INTERCEPT

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

| I | Intercept | For | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|-----------|-----|--------|-----|----------|-------|--------|----------|---|
| I | STREAM    | B-C | STREAM | A-C | STREAM   | A-B   | STREAM | A-B      | I |
| I | 635.90    |     | 0.23   |     | 0.09     |       |        |          | I |

| I | Intercept | For | Slope  | For | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | I |
|---|-----------|-----|--------|-----|----------|-------|--------|----------|--------|-----|----------|---|
| I | STREAM    | B-A | STREAM | A-C | STREAM   | A-B   | STREAM | C-A      | STREAM | C-B | STREAM   | I |
| I | 494.40    |     | 0.21   |     | 0.08     |       | 0.13   |          | 0.30   |     |          | I |

| I | Intercept | For | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|-----------|-----|--------|-----|----------|-------|--------|----------|---|
| I | STREAM    | C-B | STREAM | A-C | STREAM   | A-B   | STREAM | A-B      | I |
| I | 642.88    |     | 0.23   |     | 0.23     |       |        |          | I |

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

TRAFFIC DEMAND DATA

-----

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

Demand set: Base+Com+H5 2024

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN | I | RATE OF FLOW (VEH/MIN) | I |
|---|-------|---|-----------------------------------|---|------------------------|---|
| I |       | I | FLOW STARTS                       | I | BEFORE                 | I |
| I |       | I | TO RISE                           | I | AT TOP                 | I |
| I |       | I | IS REACHED                        | I | OF PEAK                | I |
| I |       | I | FALLING                           | I | PEAK                   | I |
| I |       | I |                                   | I |                        | I |
| I | ARM A | I | 15.00                             | I | 7.35                   | I |
| I | ARM B | I | 15.00                             | I | 1.35                   | I |
| I | ARM C | I | 15.00                             | I | 6.19                   | I |



Demand set: Base+Com+H5 2024

| TIME          | TURNING PROPORTIONS   |     |        |        |   |        |   |  |
|---------------|-----------------------|-----|--------|--------|---|--------|---|--|
|               | TURNING COUNTS        |     |        |        |   |        |   |  |
|               | (PERCENTAGE OF H.V.S) |     |        |        |   |        |   |  |
|               | FROM/TO               | ARM | A      | ARM    | B | ARM    | C |  |
| 17.00 - 18.30 | ARM A                 |     | 0.000  | 0.029  |   | 0.971  |   |  |
|               |                       |     | 0.0    | 17.0   |   | 571.0  |   |  |
|               |                       |     | ( 0.0) | ( 0.0) |   | ( 0.0) |   |  |
|               | ARM B                 |     | 0.704  | 0.000  |   | 0.296  |   |  |
|               |                       |     | 76.0   | 0.0    |   | 32.0   |   |  |
|               |                       |     | ( 0.0) | ( 0.0) |   | ( 0.0) |   |  |
|               | ARM C                 |     | 0.988  | 0.012  |   | 0.000  |   |  |
|               |                       |     | 489.0  | 6.0    |   | 0.0    |   |  |
|               |                       |     | ( 0.0) | ( 0.0) |   | ( 0.0) |   |  |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

## QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET Base+Com+H5 2024  
AND FOR TIME PERIOD 1

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.00-17.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 1.36                | 6.53                  | 0.207                        |                                  | 0.00                     | 0.26                   | 3.7                                 |                                               | 0.19                                           |
| C-A         | 6.14                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.08                | 9.01                  | 0.008                        |                                  | 0.00                     | 0.01                   | 0.1                                 |                                               | 0.11                                           |
| A-B         | 0.21                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.16                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.15-17.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 1.62                | 6.08                  | 0.266                        |                                  | 0.26                     | 0.36                   | 5.1                                 |                                               | 0.22                                           |
| C-A         | 7.33                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.09                | 8.68                  | 0.010                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.25                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 8.56                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.30-17.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 1.98                | 5.44                  | 0.364                        |                                  | 0.36                     | 0.56                   | 7.9                                 |                                               | 0.29                                           |
| C-A         | 8.97                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.11                | 8.22                  | 0.013                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.31                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 10.48               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.45-18.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 1.98                | 5.44                  | 0.364                        |                                  | 0.56                     | 0.56                   | 8.4                                 |                                               | 0.29                                           |
| C-A         | 8.97                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.11                | 8.22                  | 0.013                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.31                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 10.48               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| I | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 18.00-18.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | B-AC        | 1.62                | 6.08                  | 0.266                        |                                  | 0.56                     | 0.37                   | 5.8                                 |                                               | 0.23                                           | I |
| I | C-A         | 7.33                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-B         | 0.09                | 8.68                  | 0.010                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           | I |
| I | A-B         | 0.25                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-C         | 8.56                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

| I | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 18.15-18.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | B-AC        | 1.36                | 6.53                  | 0.207                        |                                  | 0.37                     | 0.27                   | 4.1                                 |                                               | 0.19                                           | I |
| I | C-A         | 6.14                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-B         | 0.08                | 9.01                  | 0.008                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.11                                           | I |
| I | A-B         | 0.21                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-C         | 7.16                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

QUEUE FOR STREAM B-AC

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|---------------------------|--------------------------------|---|
| 17.15                     | 0.3                            |   |
| 17.30                     | 0.4                            |   |
| 17.45                     | 0.6                            | * |
| 18.00                     | 0.6                            | * |
| 18.15                     | 0.4                            |   |
| 18.30                     | 0.3                            |   |

QUEUE FOR STREAM C-B

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |  |
|---------------------------|--------------------------------|--|
| 17.15                     | 0.0                            |  |
| 17.30                     | 0.0                            |  |
| 17.45                     | 0.0                            |  |
| 18.00                     | 0.0                            |  |
| 18.15                     | 0.0                            |  |
| 18.30                     | 0.0                            |  |

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QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

-----

| I | STREAM | I | TOTAL  | I | DEMAND  | I | * QUEUEING * | I | * INCLUSIVE QUEUEING * | I |
|---|--------|---|--------|---|---------|---|--------------|---|------------------------|---|
| I |        | I |        | I |         | I | * DELAY *    | I | * DELAY *              | I |
| I |        | I | (VEH)  | I | (VEH/H) | I | (MIN)        | I | (MIN/VEH)              | I |
| I |        | I |        | I |         | I |              | I |                        | I |
| I | B-AC   | I | 148.7  | I | 99.1    | I | 35.1         | I | 0.24                   | I |
| I | C-A    | I | 673.1  | I | 448.7   | I |              | I |                        | I |
| I | C-B    | I | 8.3    | I | 5.5     | I | 1.0          | I | 0.12                   | I |
| I | A-B    | I | 23.4   | I | 15.6    | I |              | I |                        | I |
| I | A-C    | I | 785.9  | I | 524.0   | I |              | I |                        | I |
| I | ALL    | I | 1639.3 | I | 1092.9  | I | 36.0         | I | 0.02                   | I |

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

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

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SLOPES AND INTERCEPT

-----

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

| I | Intercept  | I | Slope For | I | Opposing | I | Slope For | I | Opposing | I |
|---|------------|---|-----------|---|----------|---|-----------|---|----------|---|
| I | STREAM B-C | I | STREAM    | I | A-C      | I | STREAM    | I | A-B      | I |
| I | 635.90     | I |           | I | 0.23     | I |           | I | 0.09     | I |

| I | Intercept  | I | Slope For | I | Opposing | I | Slope For | I | Opposing | I | Slope For | I | Opposing | I |
|---|------------|---|-----------|---|----------|---|-----------|---|----------|---|-----------|---|----------|---|
| I | STREAM B-A | I | STREAM    | I | A-C      | I | STREAM    | I | A-B      | I | STREAM    | I | C-A      | I |
| I | 494.40     | I |           | I | 0.21     | I |           | I | 0.08     | I |           | I | 0.13     | I |
| I |            | I |           | I |          | I |           | I |          | I |           | I | 0.30     | I |

| I | Intercept  | I | Slope For | I | Opposing | I | Slope For | I | Opposing | I |
|---|------------|---|-----------|---|----------|---|-----------|---|----------|---|
| I | STREAM C-B | I | STREAM    | I | A-C      | I | STREAM    | I | A-B      | I |
| I | 642.88     | I |           | I | 0.23     | I |           | I | 0.23     | I |

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

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TRAFFIC DEMAND DATA

-----

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

Demand set: Base+Com+H4&5 2024

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM | I | NUMBER OF MINUTES FROM START WHEN | I | RATE OF FLOW (VEH/MIN) | I |
|---|-----|---|-----------------------------------|---|------------------------|---|
| I |     | I | FLOW STARTS                       | I | BEFORE                 | I |
| I |     | I | TOP OF PEAK                       | I | AT TOP                 | I |
| I |     | I | FLOW STOPS                        | I | AFTER                  | I |
| I |     | I | TO RISE                           | I | PEAK                   | I |
| I |     | I | IS REACHED                        | I | OF PEAK                | I |
| I |     | I | FALLING                           | I | PEAK                   | I |
| I | ARM | I | 15.00                             | I | 7.41                   | I |
| I | A   | I | 45.00                             | I | 11.12                  | I |
| I | B   | I | 75.00                             | I | 7.41                   | I |
| I | C   | I | 15.00                             | I | 1.69                   | I |
| I | A   | I | 45.00                             | I | 2.53                   | I |
| I | B   | I | 75.00                             | I | 1.69                   | I |
| I | C   | I | 15.00                             | I | 6.19                   | I |
| I | A   | I | 45.00                             | I | 9.28                   | I |
| I | B   | I | 75.00                             | I | 6.19                   | I |

Demand set: Base+Com+H4&5 2024

| TIME          | TURNING PROPORTIONS   |     |        |     |        |     |        |  |  |  |
|---------------|-----------------------|-----|--------|-----|--------|-----|--------|--|--|--|
|               | TURNING COUNTS        |     |        |     |        |     |        |  |  |  |
|               | (PERCENTAGE OF H.V.S) |     |        |     |        |     |        |  |  |  |
|               | FROM/TO               | ARM | A      | ARM | B      | ARM | C      |  |  |  |
| 17.00 - 18.30 | ARM A                 |     | 0.000  |     | 0.037  |     | 0.963  |  |  |  |
|               |                       |     | 0.0    |     | 22.0   |     | 571.0  |  |  |  |
|               |                       |     | ( 0.0) |     | ( 0.0) |     | ( 0.0) |  |  |  |
|               | ARM B                 |     | 0.763  |     | 0.000  |     | 0.237  |  |  |  |
|               |                       |     | 103.0  |     | 0.0    |     | 32.0   |  |  |  |
|               |                       |     | ( 0.0) |     | ( 0.0) |     | ( 0.0) |  |  |  |
|               | ARM C                 |     | 0.988  |     | 0.012  |     | 0.000  |  |  |  |
|               |                       |     | 489.0  |     | 6.0    |     | 0.0    |  |  |  |
|               |                       |     | ( 0.0) |     | ( 0.0) |     | ( 0.0) |  |  |  |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET Base+Com+H4&5 2024  
AND FOR TIME PERIOD 1

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.00-17.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 1.69                | 6.38                  | 0.265                        |                                  | 0.00                     | 0.35                   | 5.0                                 |                                               | 0.21                                           |
| C-A         | 6.14                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.08                | 8.99                  | 0.008                        |                                  | 0.00                     | 0.01                   | 0.1                                 |                                               | 0.11                                           |
| A-B         | 0.28                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.16                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.15-17.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 2.02                | 5.93                  | 0.341                        |                                  | 0.35                     | 0.51                   | 7.3                                 |                                               | 0.25                                           |
| C-A         | 7.33                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.09                | 8.66                  | 0.010                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.33                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 8.56                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.30-17.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 2.48                | 5.29                  | 0.469                        |                                  | 0.51                     | 0.85                   | 11.9                                |                                               | 0.35                                           |
| C-A         | 8.97                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.11                | 8.20                  | 0.013                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.40                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 10.48               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.45-18.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 2.48                | 5.29                  | 0.469                        |                                  | 0.85                     | 0.86                   | 12.8                                |                                               | 0.36                                           |
| C-A         | 8.97                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.11                | 8.20                  | 0.013                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.40                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 10.48               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 18.00-18.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 2.02                | 5.93                  | 0.341                        |                                  | 0.86                     | 0.53                   | 8.4                                 |                                               | 0.26                                           |
| C-A         | 7.33                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.09                | 8.66                  | 0.010                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.33                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 8.56                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 18.15-18.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 1.69                | 6.38                  | 0.265                        |                                  | 0.53                     | 0.37                   | 5.8                                 |                                               | 0.21                                           |
| C-A         | 6.14                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.08                | 8.99                  | 0.008                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.11                                           |
| A-B         | 0.28                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.16                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

#### QUEUE FOR STREAM B-AC

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.15                     | 0.4                            |
| 17.30                     | 0.5 *                          |
| 17.45                     | 0.8 *                          |
| 18.00                     | 0.9 *                          |
| 18.15                     | 0.5 *                          |
| 18.30                     | 0.4                            |

#### QUEUE FOR STREAM C-B

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.15                     | 0.0                            |
| 17.30                     | 0.0                            |
| 17.45                     | 0.0                            |
| 18.00                     | 0.0                            |
| 18.15                     | 0.0                            |
| 18.30                     | 0.0                            |

#### QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND<br>(VEH) | DEMAND<br>(VEH/H) | QUEUEING<br>DELAY<br>(MIN) | QUEUEING<br>DELAY<br>(MIN/VEH) | INCLUSIVE QUEUEING<br>DELAY<br>(MIN) | INCLUSIVE QUEUEING<br>DELAY<br>(MIN/VEH) |
|--------|-----------------------|-------------------|----------------------------|--------------------------------|--------------------------------------|------------------------------------------|
| B-AC   | 185.8                 | 123.9             | 51.2                       | 0.28                           | 51.2                                 | 0.28                                     |
| C-A    | 673.1                 | 448.7             |                            |                                |                                      |                                          |
| C-B    | 8.3                   | 5.5               | 1.0                        | 0.12                           | 1.0                                  | 0.12                                     |
| A-B    | 30.3                  | 20.2              |                            |                                |                                      |                                          |
| A-C    | 785.9                 | 524.0             |                            |                                |                                      |                                          |
| ALL    | 1683.4                | 1122.2            | 52.1                       | 0.03                           | 52.1                                 | 0.03                                     |

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

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

===== end of file =====

TRL LIMITED

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

PICADY 5.1 ANALYSIS PROGRAM  
RELEASE 5.0 (JUNE 2010)

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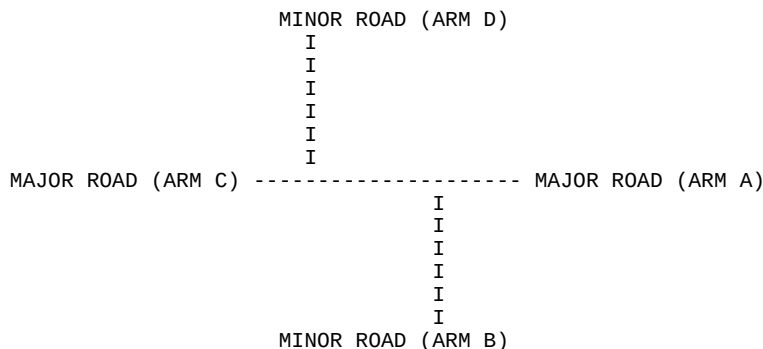
Run with file:-  
"I:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\StationRd\_MillingtonRd AM.vpi"  
(drive-on-the-left) at 12:43:15 on Sunday, 5 August 2012

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Base Model Junction 4  
LOCATION : Station Road/Millington Road  
DATE : 23/04/12  
CLIENT :  
ENUMERATOR : rhussain [IE-D00135]  
JOB NUMBER : VN50026  
STATUS : Draft 1  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----



ARM A IS Station Road (S)  
ARM B IS Millington Road  
ARM C IS Station Road (N)  
ARM D IS Bedwell Gardens

STREAM LABELLING CONVENTION  
-----

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

## GEOMETRIC DATA

| I | DATA ITEM                          | I | MINOR ROAD B      | I | MINOR ROAD D      | I |
|---|------------------------------------|---|-------------------|---|-------------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | ( W ) 8.25 M.     | I | ( W ) 8.25 M.     | I |
| I | CENTRAL RESERVE WIDTH              | I | ( WCR ) 0.00 M.   | I | ( WCR ) 0.00 M.   | I |
| I |                                    | I |                   | I |                   | I |
| I | MAJOR ROAD RIGHT TURN - WIDTH      | I | ( WC-B ) 2.20 M.  | I | ( WA-D ) 2.20 M.  | I |
| I | - VISIBILITY                       | I | ( VC-B ) 60.00 M. | I | ( VA-D ) 80.00 M. | I |
| I | - BLOCKS TRAFFIC (SPACES)          | I | YES ( 2 )         | I | YES ( 2 )         | I |
| I |                                    | I |                   | I |                   | I |
| I | MINOR ROAD - VISIBILITY TO LEFT    | I | ( VB-C ) 29.0 M.  | I | ( VD-A ) 31.0 M.  | I |
| I | - VISIBILITY TO RIGHT              | I | ( VB-A ) 41.0 M.  | I | ( VD-C ) 26.0 M.  | I |
| I | - LANE 1 WIDTH                     | I | ( WB-C ) 5.00 M.  | I | ( WD-A ) 3.52 M.  | I |
| I | - LANE 2 WIDTH                     | I | ( WB-A ) 0.00 M.  | I | ( WD-C ) 0.00 M.  | I |

## .SLOPES AND INTERCEPT

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

## STREAM B-A

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-A    | STREAM A-C         | STREAM A-D         | STREAM A-B         | STREAM C-A         | I |
| I | 608.68        | 0.25               | 0.25               | 0.10               | 0.16               | I |

| I | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-A         | STREAM C-B         | STREAM D-B         | STREAM D-B         | I |
| I | 0.16               | 0.36               | 0.36               |                    | I |

## STREAM D-C

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-C    | STREAM C-A         | STREAM C-B         | STREAM C-D         | STREAM A-C         | I |
| I | 526.46        | 0.22               | 0.22               | 0.09               | 0.14               | I |

| I | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-C         | STREAM A-D         | STREAM B-D         | STREAM B-D         | I |
| I | 0.14               | 0.31               | 0.31               |                    | I |

## STREAM CD-B

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM CD-B   | STREAM A-B         | STREAM A-C         | STREAM A-D         | STREAM A-D         | I |
| I | 620.29        | 0.21               | 0.21               | 0.25               |                    | I |

## STREAM AB-D

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM AB-D   | STREAM C-D         | STREAM C-A         | STREAM C-B         | STREAM C-B         | I |
| I | 620.29        | 0.22               | 0.22               | 0.22               |                    | I |

## STREAM B-CD

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-CD   | STREAM A-C         | STREAM A-D         | STREAM A-B         | STREAM A-B         | I |
| I | 779.85        | 0.27               | 0.27               | 0.11               |                    | I |

## STREAM D-AB

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-AB   | STREAM C-A         | STREAM C-B         | STREAM C-D         | STREAM C-D         | I |
| I | 673.64        | 0.24               | 0.24               | 0.09               |                    | I |

TRAFFIC DEMAND DATA

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

Demand set: Base+Com+H4 2024

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| NUMBER OF MINUTES FROM START WHEN |             |             |            |        |         |       |  |  |  |
|-----------------------------------|-------------|-------------|------------|--------|---------|-------|--|--|--|
| RATE OF FLOW (VEH/MIN)            |             |             |            |        |         |       |  |  |  |
| ARM                               | FLOW STARTS | TOP OF PEAK | FLOW STOPS | BEFORE | AT TOP  | AFTER |  |  |  |
|                                   | TO RISE     | IS REACHED  | FALLING    | PEAK   | OF PEAK | PEAK  |  |  |  |
| ARM A                             | 15.00       | 45.00       | 75.00      | 7.01   | 10.52   | 7.01  |  |  |  |
| ARM B                             | 15.00       | 45.00       | 75.00      | 0.50   | 0.75    | 0.50  |  |  |  |
| ARM C                             | 15.00       | 45.00       | 75.00      | 10.45  | 15.67   | 10.45 |  |  |  |
| ARM D                             | 15.00       | 45.00       | 75.00      | 1.42   | 2.14    | 1.42  |  |  |  |

Demand set: Base+Com+H4 2024

| TURNING PROPORTIONS   |         |     |        |        |        |        |   |     |   |
|-----------------------|---------|-----|--------|--------|--------|--------|---|-----|---|
| TURNING COUNTS        |         |     |        |        |        |        |   |     |   |
| (PERCENTAGE OF H.V.S) |         |     |        |        |        |        |   |     |   |
|                       |         |     |        |        |        |        |   |     |   |
| TIME                  | FROM/TO | ARM | A      | ARM    | B      | ARM    | C | ARM | D |
| 07.45 - 09.15         | ARM A   | A   | 0.000  | 0.135  | 0.822  | 0.043  |   |     |   |
|                       |         |     | 0.0    | 76.0   | 461.0  | 24.0   |   |     |   |
|                       |         |     | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |   |     |   |
|                       |         |     |        |        |        |        |   |     |   |
|                       | ARM B   | B   | 0.475  | 0.000  | 0.525  | 0.000  |   |     |   |
|                       |         |     | 19.0   | 0.0    | 21.0   | 0.0    |   |     |   |
|                       |         |     | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |   |     |   |
|                       |         |     |        |        |        |        |   |     |   |
|                       | ARM C   | C   | 0.795  | 0.069  | 0.000  | 0.135  |   |     |   |
|                       |         |     | 665.0  | 58.0   | 0.0    | 113.0  |   |     |   |
|                       |         |     | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |   |     |   |
|                       |         |     |        |        |        |        |   |     |   |
|                       | ARM D   | D   | 0.088  | 0.000  | 0.912  | 0.000  |   |     |   |
|                       |         |     | 10.0   | 0.0    | 104.0  | 0.0    |   |     |   |
|                       |         |     | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |   |     |   |
|                       |         |     |        |        |        |        |   |     |   |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET Base+Com+H4 2024  
AND FOR TIME PERIOD 1



|  | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|--|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
|  | 07.45-08.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | B-ACD       | 0.50                | 8.65                  | 0.058                        |                                  | 0.00                     | 0.06                   | 0.9                                 |                                               | 0.12                                           |
|  | A-B         | 0.95                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | A-C         | 5.78                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | A-D         | 0.30                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | AB-CD       | ( 0.30)             | 8.06                  | 0.037                        |                                  | 0.00                     | 0.04                   | 0.6                                 |                                               | 0.13                                           |
|  | AB-C        | ( 6.05)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | D-ABC       | 1.43                | 5.93                  | 0.241                        |                                  | 0.00                     | 0.31                   | 4.4                                 |                                               | 0.22                                           |
|  | C-D         | 1.42                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | C-A         | 8.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | C-B         | 0.73                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | CD-AB       | ( 0.73)             | 8.65                  | 0.084                        |                                  | 0.00                     | 0.08                   | 1.2                                 |                                               | 0.13                                           |
|  | CD-A        | ( 8.47)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

|  | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|--|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
|  | 08.00-08.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | B-ACD       | 0.60                | 8.07                  | 0.074                        |                                  | 0.06                     | 0.08                   | 1.2                                 |                                               | 0.13                                           |
|  | A-B         | 1.14                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | A-C         | 6.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | A-D         | 0.36                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | AB-CD       | ( 0.36)             | 7.62                  | 0.047                        |                                  | 0.04                     | 0.05                   | 0.7                                 |                                               | 0.14                                           |
|  | AB-C        | ( 7.22)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | D-ABC       | 1.71                | 5.34                  | 0.320                        |                                  | 0.31                     | 0.46                   | 6.6                                 |                                               | 0.27                                           |
|  | C-D         | 1.69                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | C-A         | 9.96                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | C-B         | 0.87                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | CD-AB       | ( 0.87)             | 8.36                  | 0.104                        |                                  | 0.08                     | 0.10                   | 1.6                                 |                                               | 0.13                                           |
|  | CD-A        | ( 10.11)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

|  | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|--|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
|  | 08.15-08.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | B-ACD       | 0.73                | 7.23                  | 0.102                        |                                  | 0.08                     | 0.11                   | 1.6                                 |                                               | 0.15                                           |
|  | A-B         | 1.39                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | A-C         | 8.46                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | A-D         | 0.44                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | AB-CD       | ( 0.44)             | 7.01                  | 0.063                        |                                  | 0.05                     | 0.06                   | 0.9                                 |                                               | 0.15                                           |
|  | AB-C        | ( 8.84)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | D-ABC       | 2.09                | 4.52                  | 0.463                        |                                  | 0.46                     | 0.82                   | 11.4                                |                                               | 0.40                                           |
|  | C-D         | 2.07                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | C-A         | 12.20               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | C-B         | 1.06                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | CD-AB       | ( 1.06)             | 7.95                  | 0.134                        |                                  | 0.10                     | 0.13                   | 2.0                                 |                                               | 0.15                                           |
|  | CD-A        | ( 12.38)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

|  | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|--|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
|  | 08.30-08.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | B-ACD       | 0.73                | 7.23                  | 0.102                        |                                  | 0.11                     | 0.11                   | 1.7                                 |                                               | 0.15                                           |
|  | A-B         | 1.39                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | A-C         | 8.46                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | A-D         | 0.44                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | AB-CD       | ( 0.44)             | 7.01                  | 0.063                        |                                  | 0.06                     | 0.06                   | 0.9                                 |                                               | 0.15                                           |
|  | AB-C        | ( 8.84)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | D-ABC       | 2.09                | 4.52                  | 0.463                        |                                  | 0.82                     | 0.84                   | 12.5                                |                                               | 0.41                                           |
|  | C-D         | 2.07                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | C-A         | 12.20               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | C-B         | 1.06                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | CD-AB       | ( 1.06)             | 7.95                  | 0.134                        |                                  | 0.13                     | 0.13                   | 2.0                                 |                                               | 0.15                                           |
|  | CD-A        | ( 12.39)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| I | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 08.45-09.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | B-ACD       | 0.60                | 8.07                  | 0.074                        |                                  | 0.11                     | 0.08                   | 1.2                                 |                                               | 0.13                                           | I |
| I | A-B         | 1.14                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-C         | 6.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-D         | 0.36                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | AB-CD       | ( 0.36)             | 7.62                  | 0.047                        |                                  | 0.06                     | 0.05                   | 0.7                                 |                                               | 0.14                                           | I |
| I | AB-C        | ( 7.22)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | D-ABC       | 1.71                | 5.34                  | 0.320                        |                                  | 0.84                     | 0.48                   | 7.7                                 |                                               | 0.28                                           | I |
| I | C-D         | 1.69                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-A         | 9.96                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-B         | 0.87                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | CD-AB       | ( 0.87)             | 8.36                  | 0.104                        |                                  | 0.13                     | 0.10                   | 1.6                                 |                                               | 0.13                                           | I |
| I | CD-A        | ( 10.12)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

| I | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 09.00-09.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | B-ACD       | 0.50                | 8.65                  | 0.058                        |                                  | 0.08                     | 0.06                   | 1.0                                 |                                               | 0.12                                           | I |
| I | A-B         | 0.95                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-C         | 5.78                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-D         | 0.30                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | AB-CD       | ( 0.30)             | 8.06                  | 0.037                        |                                  | 0.05                     | 0.04                   | 0.6                                 |                                               | 0.13                                           | I |
| I | AB-C        | ( 6.05)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | D-ABC       | 1.43                | 5.93                  | 0.241                        |                                  | 0.48                     | 0.32                   | 5.1                                 |                                               | 0.22                                           | I |
| I | C-D         | 1.42                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-A         | 8.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-B         | 0.73                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | CD-AB       | ( 0.73)             | 8.65                  | 0.084                        |                                  | 0.10                     | 0.08                   | 1.3                                 |                                               | 0.13                                           | I |
| I | CD-A        | ( 8.47)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

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

#### QUEUE FOR STREAM B-ACD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 08.00                     | 0.1                            |
| 08.15                     | 0.1                            |
| 08.30                     | 0.1                            |
| 08.45                     | 0.1                            |
| 09.00                     | 0.1                            |
| 09.15                     | 0.1                            |

#### QUEUE FOR STREAM AB-CD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 08.00                     | 0.0                            |
| 08.15                     | 0.0                            |
| 08.30                     | 0.1                            |
| 08.45                     | 0.1                            |
| 09.00                     | 0.0                            |
| 09.15                     | 0.0                            |

#### QUEUE FOR STREAM D-ABC

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|---------------------------|--------------------------------|---|
| 08.00                     | 0.3                            |   |
| 08.15                     | 0.5                            |   |
| 08.30                     | 0.8                            | * |
| 08.45                     | 0.8                            | * |
| 09.00                     | 0.5                            |   |
| 09.15                     | 0.3                            |   |

| QUEUE FOR STREAM | CD-AB    |
|------------------|----------|
| TIME             | NO. OF   |
| SEGMENT          | VEHICLES |
| ENDING           | IN QUEUE |
| 08.00            | 0.1      |
| 08.15            | 0.1      |
| 08.30            | 0.1      |
| 08.45            | 0.1      |
| 09.00            | 0.1      |
| 09.15            | 0.1      |

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QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

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| I | STREAM | I | TOTAL    | I | DEMAND   | I | * QUEUEING * | I | * INCLUSIVE QUEUEING * | I |
|---|--------|---|----------|---|----------|---|--------------|---|------------------------|---|
| I | I      | I | I        | I | I        | I | * DELAY *    | I | * DELAY *              | I |
| I | I      | I | I        | I | I        | I | I            | I | I                      | I |
| I | I      | I | (VEH)    | I | (VEH/H)  | I | (MIN)        | I | (MIN/VEH)              | I |
| I | B-ACD  | I | 55.1     | I | 36.7     | I | 7.6          | I | 0.14                   | I |
| I | A-B    | I | 104.6    | I | 69.7     | I | I            | I | I                      | I |
| I | A-C    | I | 634.5    | I | 423.0    | I | I            | I | I                      | I |
| I | A-D    | I | 33.0     | I | 22.0     | I | I            | I | I                      | I |
| I | AB-CD  | I | ( 33.0)  | I | ( 22.0)  | I | 4.4          | I | 0.13                   | I |
| I | AB-C   | I | ( 663.4) | I | ( 442.3) | I | I            | I | I                      | I |
| I | D-ABC  | I | 156.9    | I | 104.6    | I | 47.7         | I | 0.30                   | I |
| I | C-D    | I | 155.5    | I | 103.7    | I | I            | I | I                      | I |
| I | C-A    | I | 915.3    | I | 610.2    | I | I            | I | I                      | I |
| I | C-B    | I | 79.8     | I | 53.2     | I | I            | I | I                      | I |
| I | CD-AB  | I | ( 79.8)  | I | ( 53.2)  | I | 9.6          | I | 0.12                   | I |
| I | CD-A   | I | ( 929.1) | I | ( 619.4) | I | I            | I | I                      | I |
| I | ALL    | I | 2134.8   | I | 1423.2   | I | 69.3         | I | 0.03                   | I |

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

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

.SLOPES AND INTERCEPT

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

STREAM B-A

| I | Intercept | For | Slope  | For | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|-----------|-----|--------|-----|----------|-------|--------|----------|--------|-----|----------|-------|--------|----------|---|
| I | STREAM    | B-A | STREAM | A-C | STREAM   | A-D   | STREAM | A-B      | STREAM | C-A | STREAM   | C-B   | STREAM | D-A      | I |
| I | 608.68    |     | 0.25   |     | 0.25     |       | 0.10   |          | 0.16   |     |          |       |        |          | I |

| I | Slope  | For | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|--------|-----|----------|-------|--------|----------|--------|-----|----------|-------|--------|----------|---|
| I | STREAM | D-A | STREAM   | C-B   | STREAM | D-B      | STREAM | A-C | STREAM   | B-D   | STREAM | A-D      | I |
| I | 0.16   |     | 0.36     |       | 0.36   |          |        |     |          |       |        |          | I |

STREAM D-C

| I | Intercept | For | Slope  | For | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|-----------|-----|--------|-----|----------|-------|--------|----------|--------|-----|----------|-------|--------|----------|---|
| I | STREAM    | D-C | STREAM | C-A | STREAM   | C-B   | STREAM | C-D      | STREAM | A-C | STREAM   | B-D   | STREAM | A-D      | I |
| I | 526.46    |     | 0.22   |     | 0.22     |       | 0.09   |          | 0.14   |     |          |       |        |          | I |

| I | Slope  | For | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|--------|-----|----------|-------|--------|----------|--------|-----|----------|-------|--------|----------|---|
| I | STREAM | B-C | STREAM   | A-D   | STREAM | B-D      | STREAM | A-C | STREAM   | B-D   | STREAM | A-D      | I |
| I | 0.14   |     | 0.31     |       | 0.31   |          |        |     |          |       |        |          | I |

STREAM CD-B

| I | Intercept | For  | Slope  | For | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|-----------|------|--------|-----|----------|-------|--------|----------|--------|-----|----------|-------|--------|----------|---|
| I | STREAM    | CD-B | STREAM | A-B | STREAM   | A-C   | STREAM | A-D      | STREAM | C-B | STREAM   | D-A   | STREAM | C-A      | I |
| I | 620.29    |      | 0.21   |     | 0.21     |       | 0.25   |          |        |     |          |       |        |          | I |

STREAM AB-D

| I | Intercept | For  | Slope  | For | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|-----------|------|--------|-----|----------|-------|--------|----------|--------|-----|----------|-------|--------|----------|---|
| I | STREAM    | AB-D | STREAM | C-D | STREAM   | C-A   | STREAM | C-B      | STREAM | D-A | STREAM   | D-B   | STREAM | A-C      | I |
| I | 620.29    |      | 0.22   |     | 0.22     |       | 0.22   |          |        |     |          |       |        |          | I |

STREAM B-CD

-----

|   |               |                    |                    |                    |                    |   |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
| I | STREAM B-CD   | STREAM A-C         | STREAM A-D         | STREAM A-B         |                    | I |
| I | 779.85        | 0.27               | 0.27               | 0.11               |                    | I |

STREAM D-AB

|   |               |                    |                    |                    |                    |   |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
| I | STREAM D-AB   | STREAM C-A         | STREAM C-B         | STREAM C-D         |                    | I |
| I | 673.64        | 0.24               | 0.24               | 0.09               |                    | I |

TRAFFIC DEMAND DATA

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

Demand set:                      Base+Com+H5 2024

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

|   |       |   |                                    |   |                        |   |
|---|-------|---|------------------------------------|---|------------------------|---|
| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN  | I | RATE OF FLOW (VEH/MIN) | I |
| I |       | I | FLOW STARTS TOP OF PEAK FLOW STOPS | I | BEFORE AT TOP AFTER    | I |
| I |       | I | TO RISE IS REACHED FALLING         | I | PEAK OF PEAK PEAK      | I |
| I |       | I |                                    | I |                        | I |
| I | ARM A | I | 15.00 45.00 75.00                  | I | 7.06 10.59 7.06        | I |
| I | ARM B | I | 15.00 45.00 75.00                  | I | 0.50 0.75 0.50         | I |
| I | ARM C | I | 15.00 45.00 75.00                  | I | 10.45 15.67 10.45      | I |
| I | ARM D | I | 15.00 45.00 75.00                  | I | 1.42 2.14 1.42         | I |

Demand set:                      Base+Com+H5 2024

|   |               |   |                                 |   |
|---|---------------|---|---------------------------------|---|
| I |               | I | TURNING PROPORTIONS             | I |
| I |               | I | TURNING COUNTS                  | I |
| I |               | I | (PERCENTAGE OF H.V.S)           | I |
| I |               | I |                                 | I |
| I | TIME          | I | FROM/TO ARM A ARM B ARM C ARM D | I |
| I | 07.45 - 09.15 | I |                                 | I |
| I |               | I | ARM A                           | I |
| I |               | I | 0.000 0.142 0.816 0.042         | I |
| I |               | I | 0.0 80.0 461.0 24.0             | I |
| I |               | I | ( 0.0) ( 0.0) ( 0.0) ( 0.0)     | I |
| I |               | I |                                 | I |
| I |               | I | ARM B                           | I |
| I |               | I | 0.475 0.000 0.525 0.000         | I |
| I |               | I | 19.0 0.0 21.0 0.0               | I |
| I |               | I | ( 0.0) ( 0.0) ( 0.0) ( 0.0)     | I |
| I |               | I |                                 | I |
| I |               | I | ARM C                           | I |
| I |               | I | 0.795 0.069 0.000 0.135         | I |
| I |               | I | 665.0 58.0 0.0 113.0            | I |
| I |               | I | ( 0.0) ( 0.0) ( 0.0) ( 0.0)     | I |
| I |               | I |                                 | I |
| I |               | I | ARM D                           | I |
| I |               | I | 0.088 0.000 0.912 0.000         | I |
| I |               | I | 10.0 0.0 104.0 0.0              | I |
| I |               | I | ( 0.0) ( 0.0) ( 0.0) ( 0.0)     | I |
| I |               | I |                                 | I |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

|                     |                  |
|---------------------|------------------|
| FOR DEMAND SET      | Base+Com+H5 2024 |
| AND FOR TIME PERIOD | 1                |

|  | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|--|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
|  | 07.45-08.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | B-ACD       | 0.50                | 8.65                  | 0.058                        |                                  | 0.00                     | 0.06                   | 0.9                                 |                                               | 0.12                                           |
|  | A-B         | 1.00                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | A-C         | 5.78                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | A-D         | 0.30                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | AB-CD       | ( 0.30)             | 8.06                  | 0.037                        |                                  | 0.00                     | 0.04                   | 0.6                                 |                                               | 0.13                                           |
|  | AB-C        | ( 6.05)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | D-ABC       | 1.43                | 5.93                  | 0.241                        |                                  | 0.00                     | 0.31                   | 4.4                                 |                                               | 0.22                                           |
|  | C-D         | 1.42                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | C-A         | 8.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | C-B         | 0.73                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | CD-AB       | ( 0.73)             | 8.64                  | 0.084                        |                                  | 0.00                     | 0.08                   | 1.2                                 |                                               | 0.13                                           |
|  | CD-A        | ( 8.47)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

|  | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|--|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
|  | 08.00-08.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | B-ACD       | 0.60                | 8.06                  | 0.074                        |                                  | 0.06                     | 0.08                   | 1.2                                 |                                               | 0.13                                           |
|  | A-B         | 1.20                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | A-C         | 6.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | A-D         | 0.36                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | AB-CD       | ( 0.36)             | 7.62                  | 0.047                        |                                  | 0.04                     | 0.05                   | 0.7                                 |                                               | 0.14                                           |
|  | AB-C        | ( 7.22)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | D-ABC       | 1.71                | 5.34                  | 0.320                        |                                  | 0.31                     | 0.46                   | 6.6                                 |                                               | 0.27                                           |
|  | C-D         | 1.69                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | C-A         | 9.96                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | C-B         | 0.87                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | CD-AB       | ( 0.87)             | 8.34                  | 0.104                        |                                  | 0.08                     | 0.10                   | 1.6                                 |                                               | 0.13                                           |
|  | CD-A        | ( 10.11)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

|  | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|--|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
|  | 08.15-08.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | B-ACD       | 0.73                | 7.22                  | 0.102                        |                                  | 0.08                     | 0.11                   | 1.6                                 |                                               | 0.15                                           |
|  | A-B         | 1.47                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | A-C         | 8.46                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | A-D         | 0.44                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | AB-CD       | ( 0.44)             | 7.01                  | 0.063                        |                                  | 0.05                     | 0.06                   | 0.9                                 |                                               | 0.15                                           |
|  | AB-C        | ( 8.84)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | D-ABC       | 2.09                | 4.52                  | 0.463                        |                                  | 0.46                     | 0.82                   | 11.4                                |                                               | 0.40                                           |
|  | C-D         | 2.07                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | C-A         | 12.20               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | C-B         | 1.06                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | CD-AB       | ( 1.06)             | 7.94                  | 0.134                        |                                  | 0.10                     | 0.13                   | 2.0                                 |                                               | 0.15                                           |
|  | CD-A        | ( 12.38)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

|  | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|--|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
|  | 08.30-08.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | B-ACD       | 0.73                | 7.22                  | 0.102                        |                                  | 0.11                     | 0.11                   | 1.7                                 |                                               | 0.15                                           |
|  | A-B         | 1.47                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | A-C         | 8.46                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | A-D         | 0.44                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | AB-CD       | ( 0.44)             | 7.01                  | 0.063                        |                                  | 0.06                     | 0.06                   | 0.9                                 |                                               | 0.15                                           |
|  | AB-C        | ( 8.84)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | D-ABC       | 2.09                | 4.52                  | 0.463                        |                                  | 0.82                     | 0.84                   | 12.5                                |                                               | 0.41                                           |
|  | C-D         | 2.07                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | C-A         | 12.20               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | C-B         | 1.06                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | CD-AB       | ( 1.06)             | 7.94                  | 0.134                        |                                  | 0.13                     | 0.13                   | 2.0                                 |                                               | 0.15                                           |
|  | CD-A        | ( 12.39)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.45-09.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 0.60                | 8.06                  | 0.074                        |                                  | 0.11                     | 0.08                   | 1.2                                 |                                               | 0.13                                           |
| A-B         | 1.20                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 6.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.36                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.36)             | 7.62                  | 0.047                        |                                  | 0.06                     | 0.05                   | 0.7                                 |                                               | 0.14                                           |
| AB-C        | ( 7.22)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.71                | 5.34                  | 0.320                        |                                  | 0.84                     | 0.48                   | 7.7                                 |                                               | 0.28                                           |
| C-D         | 1.69                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 9.96                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.87                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 0.87)             | 8.34                  | 0.104                        |                                  | 0.13                     | 0.10                   | 1.6                                 |                                               | 0.13                                           |
| CD-A        | ( 10.12)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 09.00-09.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 0.50                | 8.65                  | 0.058                        |                                  | 0.08                     | 0.06                   | 1.0                                 |                                               | 0.12                                           |
| A-B         | 1.00                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 5.78                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.30                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.30)             | 8.06                  | 0.037                        |                                  | 0.05                     | 0.04                   | 0.6                                 |                                               | 0.13                                           |
| AB-C        | ( 6.05)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.43                | 5.93                  | 0.241                        |                                  | 0.48                     | 0.32                   | 5.1                                 |                                               | 0.22                                           |
| C-D         | 1.42                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 8.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.73                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 0.73)             | 8.64                  | 0.084                        |                                  | 0.10                     | 0.08                   | 1.3                                 |                                               | 0.13                                           |
| CD-A        | ( 8.47)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

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

#### QUEUE FOR STREAM B-ACD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 08.00                     | 0.1                            |
| 08.15                     | 0.1                            |
| 08.30                     | 0.1                            |
| 08.45                     | 0.1                            |
| 09.00                     | 0.1                            |
| 09.15                     | 0.1                            |

#### QUEUE FOR STREAM AB-CD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 08.00                     | 0.0                            |
| 08.15                     | 0.0                            |
| 08.30                     | 0.1                            |
| 08.45                     | 0.1                            |
| 09.00                     | 0.0                            |
| 09.15                     | 0.0                            |

#### QUEUE FOR STREAM D-ABC

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|---------------------------|--------------------------------|---|
| 08.00                     | 0.3                            |   |
| 08.15                     | 0.5                            |   |
| 08.30                     | 0.8                            | * |
| 08.45                     | 0.8                            | * |
| 09.00                     | 0.5                            |   |
| 09.15                     | 0.3                            |   |

| QUEUE FOR STREAM | CD-AB    |
|------------------|----------|
| TIME             | NO. OF   |
| SEGMENT          | VEHICLES |
| ENDING           | IN QUEUE |
| 08.00            | 0.1      |
| 08.15            | 0.1      |
| 08.30            | 0.1      |
| 08.45            | 0.1      |
| 09.00            | 0.1      |
| 09.15            | 0.1      |



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QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

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| I | STREAM | I | TOTAL    | I | DEMAND   | I | * QUEUEING * | I | * INCLUSIVE QUEUEING * | I |
|---|--------|---|----------|---|----------|---|--------------|---|------------------------|---|
| I | I      | I | I        | I | I        | I | * DELAY *    | I | * DELAY *              | I |
| I | I      | I | I        | I | I        | I | I            | I | I                      | I |
| I | I      | I | (VEH)    | I | (VEH/H)  | I | (MIN)        | I | (MIN/VEH)              | I |
| I | B-ACD  | I | 55.1     | I | 36.7     | I | 7.6          | I | 0.14                   | I |
| I | A-B    | I | 110.1    | I | 73.4     | I | I            | I | I                      | I |
| I | A-C    | I | 634.5    | I | 423.0    | I | I            | I | I                      | I |
| I | A-D    | I | 33.0     | I | 22.0     | I | I            | I | I                      | I |
| I | AB-CD  | I | ( 33.0)  | I | ( 22.0)  | I | 4.4          | I | 0.13                   | I |
| I | AB-C   | I | ( 663.4) | I | ( 442.3) | I | I            | I | I                      | I |
| I | D-ABC  | I | 156.9    | I | 104.6    | I | 47.7         | I | 0.30                   | I |
| I | C-D    | I | 155.5    | I | 103.7    | I | I            | I | I                      | I |
| I | C-A    | I | 915.3    | I | 610.2    | I | I            | I | I                      | I |
| I | C-B    | I | 79.8     | I | 53.2     | I | I            | I | I                      | I |
| I | CD-AB  | I | ( 79.8)  | I | ( 53.2)  | I | 9.7          | I | 0.12                   | I |
| I | CD-A   | I | ( 929.1) | I | ( 619.4) | I | I            | I | I                      | I |
| I | ALL    | I | 2140.3   | I | 1426.9   | I | 69.3         | I | 0.03                   | I |

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

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

.SLOPES AND INTERCEPT

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

STREAM B-A

| I | Intercept | For | Slope  | For | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|-----------|-----|--------|-----|----------|-------|--------|----------|--------|-----|----------|-------|--------|----------|---|
| I | STREAM    | B-A | STREAM | A-C | STREAM   | A-D   | STREAM | A-B      | STREAM | C-A | STREAM   | C-B   | STREAM | D-A      | I |
| I | 608.68    |     | 0.25   |     | 0.25     |       | 0.10   |          | 0.16   |     |          |       |        |          | I |

| I | Slope  | For | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|--------|-----|----------|-------|--------|----------|--------|-----|----------|-------|--------|----------|---|
| I | STREAM | D-A | STREAM   | C-B   | STREAM | D-B      | STREAM | A-C | STREAM   | B-D   | STREAM | A-D      | I |
| I | 0.16   |     | 0.36     |       | 0.36   |          |        |     |          |       |        |          | I |

STREAM D-C

| I | Intercept | For | Slope  | For | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|-----------|-----|--------|-----|----------|-------|--------|----------|--------|-----|----------|-------|--------|----------|---|
| I | STREAM    | D-C | STREAM | C-A | STREAM   | C-B   | STREAM | C-D      | STREAM | A-C | STREAM   | A-B   | STREAM | D-B      | I |
| I | 526.46    |     | 0.22   |     | 0.22     |       | 0.09   |          | 0.14   |     |          |       |        |          | I |

| I | Slope  | For | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|--------|-----|----------|-------|--------|----------|--------|-----|----------|-------|--------|----------|---|
| I | STREAM | B-C | STREAM   | A-D   | STREAM | B-D      | STREAM | A-C | STREAM   | B-D   | STREAM | A-D      | I |
| I | 0.14   |     | 0.31     |       | 0.31   |          |        |     |          |       |        |          | I |

STREAM CD-B

| I | Intercept | For  | Slope  | For | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|-----------|------|--------|-----|----------|-------|--------|----------|--------|-----|----------|-------|--------|----------|---|
| I | STREAM    | CD-B | STREAM | A-B | STREAM   | A-C   | STREAM | A-D      | STREAM | A-B | STREAM   | A-C   | STREAM | A-D      | I |
| I | 620.29    |      | 0.21   |     | 0.21     |       | 0.25   |          |        |     |          |       |        |          | I |

STREAM AB-D

| I | Intercept | For  | Slope  | For | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|-----------|------|--------|-----|----------|-------|--------|----------|--------|-----|----------|-------|--------|----------|---|
| I | STREAM    | AB-D | STREAM | C-D | STREAM   | C-A   | STREAM | C-B      | STREAM | C-D | STREAM   | C-A   | STREAM | C-B      | I |
| I | 620.29    |      | 0.22   |     | 0.22     |       | 0.22   |          |        |     |          |       |        |          | I |

STREAM B-CD

-----

| I | Intercept For<br>I STREAM B-CD | Slope For Opposing<br>STREAM A-C | Slope For Opposing<br>STREAM A-D | Slope For Opposing<br>STREAM A-B | Slope For Opposing<br>I |
|---|--------------------------------|----------------------------------|----------------------------------|----------------------------------|-------------------------|
| I | 779.85                         | 0.27                             | 0.27                             | 0.11                             | I                       |

STREAM D-AB

| I | Intercept For<br>I STREAM D-AB | Slope For Opposing<br>STREAM C-A | Slope For Opposing<br>STREAM C-B | Slope For Opposing<br>STREAM C-D | Slope For Opposing<br>I |
|---|--------------------------------|----------------------------------|----------------------------------|----------------------------------|-------------------------|
| I | 673.64                         | 0.24                             | 0.24                             | 0.09                             | I                       |

TRAFFIC DEMAND DATA

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

Demand set: Base+Com+H4&5 2024

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN<br>I FLOW STARTS<br>I TO RISE | I | MINUTES FROM START WHEN<br>I TOP OF PEAK IS REACHED<br>I FALLING | I | RATE OF FLOW (VEH/MIN)<br>I BEFORE<br>I PEAK | I | AT TOP<br>I OF PEAK | I | AFTER<br>I PEAK | I |
|---|-------|---|-----------------------------------------------------------------|---|------------------------------------------------------------------|---|----------------------------------------------|---|---------------------|---|-----------------|---|
| I | ARM A | I | 15.00                                                           | I | 45.00                                                            | I | 7.11                                         | I | 10.67               | I | 7.11            | I |
| I | ARM B | I | 15.00                                                           | I | 45.00                                                            | I | 0.51                                         | I | 0.77                | I | 0.51            | I |
| I | ARM C | I | 15.00                                                           | I | 45.00                                                            | I | 10.45                                        | I | 15.67               | I | 10.45           | I |
| I | ARM D | I | 15.00                                                           | I | 45.00                                                            | I | 1.42                                         | I | 2.14                | I | 1.42            | I |

Demand set: Base+Com+H4&5 2024

| I | TIME          | I | FROM/TO | I | ARM    | A | I      | ARM | B      | I | ARM    | C | I | ARM | D | I |
|---|---------------|---|---------|---|--------|---|--------|-----|--------|---|--------|---|---|-----|---|---|
| I | 07.45 - 09.15 | I | ARM A   | I | 0.000  | I | 0.148  | I   | 0.810  | I | 0.042  | I | I | I   | I | I |
| I |               | I |         | I | 0.0    | I | 84.0   | I   | 461.0  | I | 24.0   | I | I | I   | I | I |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I | I | I   | I | I |
| I |               | I | ARM B   | I | 0.488  | I | 0.000  | I   | 0.512  | I | 0.000  | I | I | I   | I | I |
| I |               | I |         | I | 20.0   | I | 0.0    | I   | 21.0   | I | 0.0    | I | I | I   | I | I |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I | I | I   | I | I |
| I |               | I | ARM C   | I | 0.795  | I | 0.069  | I   | 0.000  | I | 0.135  | I | I | I   | I | I |
| I |               | I |         | I | 665.0  | I | 58.0   | I   | 0.0    | I | 113.0  | I | I | I   | I | I |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I | I | I   | I | I |
| I |               | I | ARM D   | I | 0.088  | I | 0.000  | I   | 0.912  | I | 0.000  | I | I | I   | I | I |
| I |               | I |         | I | 10.0   | I | 0.0    | I   | 104.0  | I | 0.0    | I | I | I   | I | I |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I | I | I   | I | I |
| I |               | I |         | I |        | I |        | I   |        | I |        | I | I | I   | I | I |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET Base+Com+H4&5 2024  
AND FOR TIME PERIOD 1

| I | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 07.45-08.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | B-ACD       | 0.51                | 8.59                  | 0.060                        |                                  | 0.00                     | 0.06                   | 0.9                                 |                                               | 0.12                                           | I |
| I | A-B         | 1.05                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-C         | 5.78                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-D         | 0.30                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | AB-CD       | ( 0.30)             | 8.06                  | 0.037                        |                                  | 0.00                     | 0.04                   | 0.6                                 |                                               | 0.13                                           | I |
| I | AB-C        | ( 6.05)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | D-ABC       | 1.43                | 5.93                  | 0.241                        |                                  | 0.00                     | 0.31                   | 4.4                                 |                                               | 0.22                                           | I |
| I | C-D         | 1.42                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-A         | 8.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-B         | 0.73                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | CD-AB       | ( 0.73)             | 8.63                  | 0.084                        |                                  | 0.00                     | 0.08                   | 1.2                                 |                                               | 0.13                                           | I |
| I | CD-A        | ( 8.47)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I |             |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

|  | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|--|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
|  | 08.00-08.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | B-ACD       | 0.61                | 8.00                  | 0.077                        |                                  | 0.06                     | 0.08                   | 1.2                                 |                                               | 0.14                                           |
|  | A-B         | 1.26                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | A-C         | 6.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | A-D         | 0.36                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | AB-CD       | ( 0.36)             | 7.62                  | 0.047                        |                                  | 0.04                     | 0.05                   | 0.7                                 |                                               | 0.14                                           |
|  | AB-C        | ( 7.22)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | D-ABC       | 1.71                | 5.34                  | 0.320                        |                                  | 0.31                     | 0.46                   | 6.6                                 |                                               | 0.27                                           |
|  | C-D         | 1.69                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | C-A         | 9.96                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | C-B         | 0.87                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | CD-AB       | ( 0.87)             | 8.33                  | 0.104                        |                                  | 0.08                     | 0.10                   | 1.6                                 |                                               | 0.13                                           |
|  | CD-A        | ( 10.11)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

|  | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|--|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
|  | 08.15-08.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | B-ACD       | 0.75                | 7.15                  | 0.105                        |                                  | 0.08                     | 0.12                   | 1.7                                 |                                               | 0.16                                           |
|  | A-B         | 1.54                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | A-C         | 8.46                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | A-D         | 0.44                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | AB-CD       | ( 0.44)             | 7.01                  | 0.063                        |                                  | 0.05                     | 0.06                   | 0.9                                 |                                               | 0.15                                           |
|  | AB-C        | ( 8.84)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | D-ABC       | 2.09                | 4.52                  | 0.463                        |                                  | 0.46                     | 0.82                   | 11.4                                |                                               | 0.40                                           |
|  | C-D         | 2.07                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | C-A         | 12.20               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | C-B         | 1.06                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | CD-AB       | ( 1.06)             | 7.92                  | 0.134                        |                                  | 0.10                     | 0.13                   | 2.0                                 |                                               | 0.15                                           |
|  | CD-A        | ( 12.38)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

|  | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|--|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
|  | 08.30-08.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | B-ACD       | 0.75                | 7.15                  | 0.105                        |                                  | 0.12                     | 0.12                   | 1.7                                 |                                               | 0.16                                           |
|  | A-B         | 1.54                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | A-C         | 8.46                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | A-D         | 0.44                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | AB-CD       | ( 0.44)             | 7.01                  | 0.063                        |                                  | 0.06                     | 0.06                   | 0.9                                 |                                               | 0.15                                           |
|  | AB-C        | ( 8.84)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | D-ABC       | 2.09                | 4.52                  | 0.463                        |                                  | 0.82                     | 0.84                   | 12.5                                |                                               | 0.41                                           |
|  | C-D         | 2.07                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | C-A         | 12.20               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | C-B         | 1.06                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
|  | CD-AB       | ( 1.06)             | 7.92                  | 0.134                        |                                  | 0.13                     | 0.13                   | 2.0                                 |                                               | 0.15                                           |
|  | CD-A        | ( 12.39)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| I | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 08.45-09.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | B-ACD       | 0.61                | 8.00                  | 0.077                        |                                  | 0.12                     | 0.08                   | 1.3                                 |                                               | 0.14                                           | I |
| I | A-B         | 1.26                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-C         | 6.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-D         | 0.36                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | AB-CD       | ( 0.36)             | 7.62                  | 0.047                        |                                  | 0.06                     | 0.05                   | 0.7                                 |                                               | 0.14                                           | I |
| I | AB-C        | ( 7.22)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | D-ABC       | 1.71                | 5.34                  | 0.320                        |                                  | 0.84                     | 0.48                   | 7.7                                 |                                               | 0.28                                           | I |
| I | C-D         | 1.69                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-A         | 9.96                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-B         | 0.87                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | CD-AB       | ( 0.87)             | 8.33                  | 0.104                        |                                  | 0.13                     | 0.11                   | 1.6                                 |                                               | 0.13                                           | I |
| I | CD-A        | ( 10.12)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

| I | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 09.00-09.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | B-ACD       | 0.51                | 8.59                  | 0.060                        |                                  | 0.08                     | 0.06                   | 1.0                                 |                                               | 0.12                                           | I |
| I | A-B         | 1.05                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-C         | 5.78                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-D         | 0.30                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | AB-CD       | ( 0.30)             | 8.06                  | 0.037                        |                                  | 0.05                     | 0.04                   | 0.6                                 |                                               | 0.13                                           | I |
| I | AB-C        | ( 6.05)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | D-ABC       | 1.43                | 5.93                  | 0.241                        |                                  | 0.48                     | 0.32                   | 5.1                                 |                                               | 0.22                                           | I |
| I | C-D         | 1.42                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-A         | 8.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-B         | 0.73                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | CD-AB       | ( 0.73)             | 8.63                  | 0.084                        |                                  | 0.11                     | 0.08                   | 1.3                                 |                                               | 0.13                                           | I |
| I | CD-A        | ( 8.47)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

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

#### QUEUE FOR STREAM B-ACD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 08.00                     | 0.1                            |
| 08.15                     | 0.1                            |
| 08.30                     | 0.1                            |
| 08.45                     | 0.1                            |
| 09.00                     | 0.1                            |
| 09.15                     | 0.1                            |

#### QUEUE FOR STREAM AB-CD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 08.00                     | 0.0                            |
| 08.15                     | 0.0                            |
| 08.30                     | 0.1                            |
| 08.45                     | 0.1                            |
| 09.00                     | 0.0                            |
| 09.15                     | 0.0                            |

#### QUEUE FOR STREAM D-ABC

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|---------------------------|--------------------------------|---|
| 08.00                     | 0.3                            |   |
| 08.15                     | 0.5                            |   |
| 08.30                     | 0.8                            | * |
| 08.45                     | 0.8                            | * |
| 09.00                     | 0.5                            |   |
| 09.15                     | 0.3                            |   |

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 08.00                     | 0.1                            |
| 08.15                     | 0.1                            |
| 08.30                     | 0.1                            |
| 08.45                     | 0.1                            |
| 09.00                     | 0.1                            |
| 09.15                     | 0.1                            |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I         | TOTAL DEMAND | I       | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I         |
|---|--------|-----------|--------------|---------|--------------|-----------|------------------------|-----------|
| I | I      | I         | I            | I       | * DELAY *    | I         | * DELAY *              | I         |
| I | I      | I         | I            | I       | I            | I         | I                      | I         |
| I | I      | I         | (VEH)        | (VEH/H) | (MIN)        | (MIN/VEH) | (MIN)                  | (MIN/VEH) |
| I | B-ACD  | I         | 56.4         | I 37.6  | I 7.8        | I 0.14    | I 7.8                  | I 0.14    |
| I | A-B    | I         | 115.6        | I 77.1  | I            | I         | I                      | I         |
| I | A-C    | I         | 634.5        | I 423.0 | I            | I         | I                      | I         |
| I | A-D    | I         | 33.0         | I 22.0  | I            | I         | I                      | I         |
| I | AB-CD  | I( 33.0)  | I( 22.0)     | I       | 4.4          | I 0.13    | I 4.4                  | I 0.13    |
| I | AB-C   | I( 663.4) | I( 442.3)    | I       | I            | I         | I                      | I         |
| I | D-ABC  | I 156.9   | I 104.6      | I       | 47.7         | I 0.30    | I 47.7                 | I 0.30    |
| I | C-D    | I 155.5   | I 103.7      | I       | I            | I         | I                      | I         |
| I | C-A    | I 915.3   | I 610.2      | I       | I            | I         | I                      | I         |
| I | C-B    | I 79.8    | I 53.2       | I       | I            | I         | I                      | I         |
| I | CD-AB  | I( 79.8)  | I( 53.2)     | I       | 9.7          | I 0.12    | I 9.7                  | I 0.12    |
| I | CD-A   | I( 929.1) | I( 619.4)    | I       | I            | I         | I                      | I         |
| I | ALL    | I 2147.2  | I 1431.5     | I       | 69.6         | I 0.03    | I 69.6                 | I 0.03    |

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

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

===== end of file =====

TRL LIMITED

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

PICADY 5.1 ANALYSIS PROGRAM  
RELEASE 5.0 (JUNE 2010)

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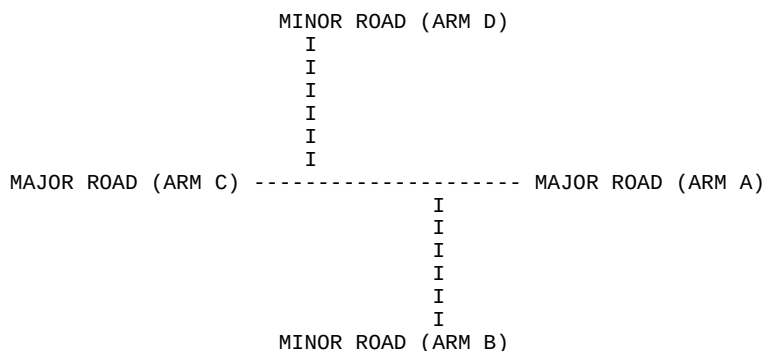
Run with file:-  
"I:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\StationRd\_MillingtonRd PM.vpi"  
(drive-on-the-left) at 12:44:39 on Sunday, 5 August 2012

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Base Model Junction 4  
LOCATION : Station Road/Millington Road  
DATE : 23/04/12  
CLIENT :  
ENUMERATOR : rhussain [IE-D00135]  
JOB NUMBER : VN50026  
STATUS : Draft 1  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----



ARM A IS Station Road (S)  
ARM B IS Millington Road  
ARM C IS Station Road (N)  
ARM D IS Bedwell Gardens

STREAM LABELLING CONVENTION  
-----

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

## GEOMETRIC DATA

| I | DATA ITEM                          | I | MINOR ROAD B      | I | MINOR ROAD D      | I |
|---|------------------------------------|---|-------------------|---|-------------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | ( W ) 8.25 M.     | I | ( W ) 8.25 M.     | I |
| I | CENTRAL RESERVE WIDTH              | I | ( WCR ) 0.00 M.   | I | ( WCR ) 0.00 M.   | I |
| I |                                    | I |                   | I |                   | I |
| I | MAJOR ROAD RIGHT TURN - WIDTH      | I | ( WC-B ) 2.20 M.  | I | ( WA-D ) 2.20 M.  | I |
| I | - VISIBILITY                       | I | ( VC-B ) 60.00 M. | I | ( VA-D ) 80.00 M. | I |
| I | - BLOCKS TRAFFIC (SPACES)          | I | YES ( 2 )         | I | YES ( 2 )         | I |
| I |                                    | I |                   | I |                   | I |
| I | MINOR ROAD - VISIBILITY TO LEFT    | I | ( VB-C ) 29.0 M.  | I | ( VD-A ) 31.0 M.  | I |
| I | - VISIBILITY TO RIGHT              | I | ( VB-A ) 41.0 M.  | I | ( VD-C ) 26.0 M.  | I |
| I | - LANE 1 WIDTH                     | I | ( WB-C ) 5.00 M.  | I | ( WD-A ) 3.52 M.  | I |
| I | - LANE 2 WIDTH                     | I | ( WB-A ) 0.00 M.  | I | ( WD-C ) 0.00 M.  | I |

## .SLOPES AND INTERCEPT

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

## STREAM B-A

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-A    | STREAM A-C         | STREAM A-D         | STREAM A-B         | STREAM C-A         | I |
| I | 608.68        | 0.25               | 0.25               | 0.10               | 0.16               | I |

| I | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-A         | STREAM C-B         | STREAM D-B         | STREAM C-A         | I |
| I | 0.16               | 0.36               | 0.36               |                    | I |

## STREAM D-C

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-C    | STREAM C-A         | STREAM C-B         | STREAM C-D         | STREAM A-C         | I |
| I | 526.46        | 0.22               | 0.22               | 0.09               | 0.14               | I |

| I | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-C         | STREAM A-D         | STREAM B-D         | STREAM C-D         | I |
| I | 0.14               | 0.31               | 0.31               |                    | I |

## STREAM CD-B

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM CD-B   | STREAM A-B         | STREAM A-C         | STREAM A-D         | STREAM C-B         | I |
| I | 620.29        | 0.21               | 0.21               | 0.25               |                    | I |

## STREAM AB-D

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM AB-D   | STREAM C-D         | STREAM C-A         | STREAM C-B         | STREAM A-B         | I |
| I | 620.29        | 0.22               | 0.22               | 0.22               |                    | I |

## STREAM B-CD

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-CD   | STREAM A-C         | STREAM A-D         | STREAM A-B         | STREAM C-D         | I |
| I | 779.85        | 0.27               | 0.27               | 0.11               |                    | I |

## STREAM D-AB

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-AB   | STREAM C-A         | STREAM C-B         | STREAM C-D         | STREAM A-B         | I |
| I | 673.64        | 0.24               | 0.24               | 0.09               |                    | I |

TRAFFIC DEMAND DATA

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

Demand set: Base+Com+H4 2024

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I |  |  |  |  |  |  |  |  |  |
|---|--|--|--|--|--|--|--|--|--|
| I |  |  |  |  |  |  |  |  |  |
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| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 16.45-17.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.22                | 8.16                  | 0.149                        |                                  | 0.00                     | 0.17                   | 2.5                                 |                                               | 0.14                                           |
| A-B         | 0.21                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.27                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.29                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.29)             | 8.43                  | 0.034                        |                                  | 0.00                     | 0.03                   | 0.5                                 |                                               | 0.12                                           |
| AB-C        | ( 7.75)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 0.73                | 5.94                  | 0.123                        |                                  | 0.00                     | 0.14                   | 2.0                                 |                                               | 0.19                                           |
| C-D         | 1.30                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 7.33                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.19                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 0.19)             | 8.49                  | 0.022                        |                                  | 0.00                     | 0.02                   | 0.3                                 |                                               | 0.12                                           |
| CD-A        | ( 7.35)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.00-17.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.45                | 7.56                  | 0.192                        |                                  | 0.17                     | 0.23                   | 3.4                                 |                                               | 0.16                                           |
| A-B         | 0.25                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 8.68                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.34)             | 8.05                  | 0.043                        |                                  | 0.03                     | 0.04                   | 0.6                                 |                                               | 0.13                                           |
| AB-C        | ( 9.26)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 0.87                | 5.37                  | 0.162                        |                                  | 0.14                     | 0.19                   | 2.8                                 |                                               | 0.22                                           |
| C-D         | 1.56                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 8.75                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.22                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 0.22)             | 8.17                  | 0.028                        |                                  | 0.02                     | 0.03                   | 0.4                                 |                                               | 0.13                                           |
| CD-A        | ( 8.78)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.15-17.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.78                | 6.72                  | 0.265                        |                                  | 0.23                     | 0.35                   | 5.1                                 |                                               | 0.20                                           |
| A-B         | 0.31                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 10.62               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.42                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.42)             | 7.54                  | 0.056                        |                                  | 0.04                     | 0.06                   | 0.8                                 |                                               | 0.14                                           |
| AB-C        | ( 11.34)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.06                | 4.59                  | 0.232                        |                                  | 0.19                     | 0.30                   | 4.2                                 |                                               | 0.28                                           |
| C-D         | 1.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 10.72               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.28                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 0.28)             | 7.73                  | 0.036                        |                                  | 0.03                     | 0.04                   | 0.5                                 |                                               | 0.13                                           |
| CD-A        | ( 10.75)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.30-17.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.78                | 6.72                  | 0.265                        |                                  | 0.35                     | 0.36                   | 5.3                                 |                                               | 0.20                                           |
| A-B         | 0.31                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 10.62               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.42                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.42)             | 7.54                  | 0.056                        |                                  | 0.06                     | 0.06                   | 0.8                                 |                                               | 0.14                                           |
| AB-C        | ( 11.34)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.06                | 4.59                  | 0.232                        |                                  | 0.30                     | 0.30                   | 4.5                                 |                                               | 0.28                                           |
| C-D         | 1.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 10.72               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.28                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 0.28)             | 7.73                  | 0.036                        |                                  | 0.04                     | 0.04                   | 0.5                                 |                                               | 0.13                                           |
| CD-A        | ( 10.75)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.45-18.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.45                | 7.56                  | 0.192                        |                                  | 0.36                     | 0.24                   | 3.7                                 |                                               | 0.16                                           |
| A-B         | 0.25                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 8.68                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.34)             | 8.05                  | 0.043                        |                                  | 0.06                     | 0.04                   | 0.6                                 |                                               | 0.13                                           |
| AB-C        | ( 9.26)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 0.87                | 5.37                  | 0.162                        |                                  | 0.30                     | 0.20                   | 3.1                                 |                                               | 0.22                                           |
| C-D         | 1.56                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 8.75                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.22                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 0.22)             | 8.17                  | 0.028                        |                                  | 0.04                     | 0.03                   | 0.4                                 |                                               | 0.13                                           |
| CD-A        | ( 8.78)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 18.00-18.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.22                | 8.16                  | 0.149                        |                                  | 0.24                     | 0.18                   | 2.7                                 |                                               | 0.14                                           |
| A-B         | 0.21                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.27                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.29                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.29)             | 8.43                  | 0.034                        |                                  | 0.04                     | 0.03                   | 0.5                                 |                                               | 0.12                                           |
| AB-C        | ( 7.76)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 0.73                | 5.94                  | 0.123                        |                                  | 0.20                     | 0.14                   | 2.2                                 |                                               | 0.19                                           |
| C-D         | 1.30                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 7.33                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.19                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 0.19)             | 8.49                  | 0.022                        |                                  | 0.03                     | 0.02                   | 0.3                                 |                                               | 0.12                                           |
| CD-A        | ( 7.35)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

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

#### QUEUE FOR STREAM B-ACD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.00                     | 0.2                            |
| 17.15                     | 0.2                            |
| 17.30                     | 0.4                            |
| 17.45                     | 0.4                            |
| 18.00                     | 0.2                            |
| 18.15                     | 0.2                            |

#### QUEUE FOR STREAM AB-CD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.00                     | 0.0                            |
| 17.15                     | 0.0                            |
| 17.30                     | 0.1                            |
| 17.45                     | 0.1                            |
| 18.00                     | 0.0                            |
| 18.15                     | 0.0                            |

#### QUEUE FOR STREAM D-ABC

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.00                     | 0.1                            |
| 17.15                     | 0.2                            |
| 17.30                     | 0.3                            |
| 17.45                     | 0.3                            |
| 18.00                     | 0.2                            |
| 18.15                     | 0.1                            |

| QUEUE FOR STREAM | CD-AB    |
|------------------|----------|
| TIME             | NO. OF   |
| SEGMENT          | VEHICLES |
| ENDING           | IN QUEUE |
| 17.00            | 0.0      |
| 17.15            | 0.0      |
| 17.30            | 0.0      |
| 17.45            | 0.0      |
| 18.00            | 0.0      |
| 18.15            | 0.0      |

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QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

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| I | STREAM | I | TOTAL    | I | DEMAND   | I | * QUEUEING * | I | * INCLUSIVE QUEUEING * | I |
|---|--------|---|----------|---|----------|---|--------------|---|------------------------|---|
| I | I      | I | I        | I | I        | I | * DELAY *    | I | * DELAY *              | I |
| I | I      | I | I        | I | I        | I | I            | I | I                      | I |
| I | I      | I | (VEH)    | I | (VEH/H)  | I | (MIN)        | I | (MIN/VEH)              | I |
| I | B-ACD  | I | 133.5    | I | 89.0     | I | 22.9         | I | 0.17                   | I |
| I | A-B    | I | 23.4     | I | 15.6     | I |              | I |                        | I |
| I | A-C    | I | 797.0    | I | 531.3    | I |              | I |                        | I |
| I | A-D    | I | 31.7     | I | 21.1     | I |              | I |                        | I |
| I | AB-CD  | I | ( 31.7)  | I | ( 21.1)  | I | 4.0          | I | 0.13                   | I |
| I | AB-C   | I | ( 850.6) | I | ( 567.0) | I |              | I |                        | I |
| I | D-ABC  | I | 79.8     | I | 53.2     | I | 18.7         | I | 0.23                   | I |
| I | C-D    | I | 143.1    | I | 95.4     | I |              | I |                        | I |
| I | C-A    | I | 803.8    | I | 535.9    | I |              | I |                        | I |
| I | C-B    | I | 20.6     | I | 13.8     | I |              | I |                        | I |
| I | CD-AB  | I | ( 20.6)  | I | ( 13.8)  | I | 2.6          | I | 0.12                   | I |
| I | CD-A   | I | ( 806.6) | I | ( 537.7) | I |              | I |                        | I |
| I | ALL    | I | 2033.0   | I | 1355.3   | I | 48.1         | I | 0.02                   | I |

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

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

.SLOPES AND INTERCEPT

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

STREAM B-A

| I | Intercept | For    | Slope  | For  | Opposing | Slope | For    | Opposing | Slope  | For  | Opposing | Slope | For    | Opposing | I |
|---|-----------|--------|--------|------|----------|-------|--------|----------|--------|------|----------|-------|--------|----------|---|
| I | STREAM    | B-A    | STREAM | A-C  | STREAM   | A-D   | STREAM | A-B      | STREAM | C-A  | STREAM   | C-B   | STREAM | D-B      | I |
| I |           | 608.68 |        | 0.25 |          | 0.25  |        | 0.10     |        | 0.16 |          |       |        |          | I |

| I |  | Slope  | For  | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|--|--------|------|----------|-------|--------|----------|--------|-----|----------|-------|--------|----------|---|
| I |  | STREAM | D-A  | STREAM   | C-B   | STREAM | D-B      | STREAM | A-C | STREAM   | B-D   | STREAM | C-A      | I |
| I |  |        | 0.16 |          | 0.36  |        | 0.36     |        |     |          |       |        |          | I |

STREAM D-C

| I | Intercept | For    | Slope  | For  | Opposing | Slope | For    | Opposing | Slope  | For  | Opposing | Slope | For    | Opposing | I |
|---|-----------|--------|--------|------|----------|-------|--------|----------|--------|------|----------|-------|--------|----------|---|
| I | STREAM    | D-C    | STREAM | C-A  | STREAM   | C-B   | STREAM | C-D      | STREAM | A-C  | STREAM   | B-D   | STREAM | C-A      | I |
| I |           | 526.46 |        | 0.22 |          | 0.22  |        | 0.09     |        | 0.14 |          |       |        |          | I |

| I |  | Slope  | For  | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|--|--------|------|----------|-------|--------|----------|--------|-----|----------|-------|--------|----------|---|
| I |  | STREAM | B-C  | STREAM   | A-D   | STREAM | B-D      | STREAM | A-C | STREAM   | B-D   | STREAM | C-A      | I |
| I |  |        | 0.14 |          | 0.31  |        | 0.31     |        |     |          |       |        |          | I |

STREAM CD-B

| I | Intercept | For    | Slope  | For  | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|-----------|--------|--------|------|----------|-------|--------|----------|--------|-----|----------|-------|--------|----------|---|
| I | STREAM    | CD-B   | STREAM | A-B  | STREAM   | A-C   | STREAM | A-D      | STREAM | C-B | STREAM   | D-B   | STREAM | C-A      | I |
| I |           | 620.29 |        | 0.21 |          | 0.21  |        | 0.25     |        |     |          |       |        |          | I |

STREAM AB-D

| I | Intercept | For    | Slope  | For  | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|-----------|--------|--------|------|----------|-------|--------|----------|--------|-----|----------|-------|--------|----------|---|
| I | STREAM    | AB-D   | STREAM | C-D  | STREAM   | C-A   | STREAM | C-B      | STREAM | D-B | STREAM   | C-A   | STREAM | B-D      | I |
| I |           | 620.29 |        | 0.22 |          | 0.22  |        | 0.22     |        |     |          |       |        |          | I |

STREAM B-CD

-----

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-CD   | STREAM A-C         | STREAM A-D         | STREAM A-B         |                    | I |
| I | 779.85        | 0.27               | 0.27               | 0.11               |                    | I |

| STREAM |               | D-AB      |          |           |          |           |          |           |          |   |   |
|--------|---------------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|---|---|
| I      | Intercept For | Slope For | Opposing | Slope For | Opposing | Slope For | Opposing | Slope For | Opposing | I |   |
| I      | STREAM D-AB   | STREAM    | C-A      | STREAM    | C-B      | STREAM    | C-D      |           |          |   | I |
| I      | 673.64        |           | 0.24     |           | 0.24     |           | 0.09     |           |          |   | I |

TRAFFIC DEMAND DATA

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

Demand set: Base+Com+H5 2024

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM | I | NUMBER OF MINUTES FROM START WHEN        | I | RATE OF FLOW (VEH/MIN)  | I |
|---|-----|---|------------------------------------------|---|-------------------------|---|
| I | I   | I | FLOW STARTS I TOP OF PEAK I FLOW STOPS I | I | BEFORE I AT TOP I AFTER | I |
| I | I   | I | TO RISE I IS REACHED I FALLING I         | I | PEAK I OF PEAK I PEAK   | I |
| I | A   | I | 15.00 I 45.00 I 75.00                    | I | 7.74 I 11.61 I 7.74     | I |
| I | B   | I | 15.00 I 45.00 I 75.00                    | I | 1.26 I 1.89 I 1.26      | I |
| I | C   | I | 15.00 I 45.00 I 75.00                    | I | 8.79 I 13.18 I 8.79     | I |
| I | D   | I | 15.00 I 45.00 I 75.00                    | I | 0.73 I 1.09 I 0.73      | I |

Demand set: Base+Com+H5 2024

| I | I             | I | TURNING PROPORTIONS                       | I |
|---|---------------|---|-------------------------------------------|---|
| I | I             | I | TURNING COUNTS                            | I |
| I | I             | I | (PERCENTAGE OF H.V.S)                     | I |
| I | TIME          | I | FROM/TO I ARM A I ARM B I ARM C I ARM D   | I |
| I | 16.45 - 18.15 | I | I I I I I I                               | I |
| I |               | I | I ARM A I 0.000 I 0.027 I 0.935 I 0.037 I | I |
| I |               | I | I I 0.0 I 17.0 I 579.0 I 23.0 I           | I |
| I |               | I | I I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I       | I |
| I |               | I | I I I I I I                               | I |
| I |               | I | I ARM B I 0.614 I 0.000 I 0.386 I 0.000 I | I |
| I |               | I | I I 62.0 I 0.0 I 39.0 I 0.0 I             | I |
| I |               | I | I I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I       | I |
| I |               | I | I I I I I I                               | I |
| I |               | I | I ARM C I 0.831 I 0.021 I 0.000 I 0.148 I | I |
| I |               | I | I I 584.0 I 15.0 I 0.0 I 104.0 I          | I |
| I |               | I | I I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I       | I |
| I |               | I | I I I I I I                               | I |
| I |               | I | I ARM D I 0.034 I 0.000 I 0.966 I 0.000 I | I |
| I |               | I | I I 2.0 I 0.0 I 56.0 I 0.0 I              | I |
| I |               | I | I I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I       | I |
| I |               | I | I I I I I I                               | I |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET Base+Com+H5 2024  
AND FOR TIME PERIOD 1

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 16.45-17.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.27                | 8.11                  | 0.156                        |                                  | 0.00                     | 0.18                   | 2.6                                 |                                               | 0.15                                           |
| A-B         | 0.21                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.27                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.29                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.29)             | 8.43                  | 0.034                        |                                  | 0.00                     | 0.03                   | 0.5                                 |                                               | 0.12                                           |
| AB-C        | ( 7.75)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 0.73                | 5.94                  | 0.123                        |                                  | 0.00                     | 0.14                   | 2.0                                 |                                               | 0.19                                           |
| C-D         | 1.30                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 7.33                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.19                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 0.19)             | 8.49                  | 0.022                        |                                  | 0.00                     | 0.02                   | 0.3                                 |                                               | 0.12                                           |
| CD-A        | ( 7.35)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.00-17.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.51                | 7.51                  | 0.202                        |                                  | 0.18                     | 0.25                   | 3.6                                 |                                               | 0.17                                           |
| A-B         | 0.25                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 8.68                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.34)             | 8.05                  | 0.043                        |                                  | 0.03                     | 0.04                   | 0.6                                 |                                               | 0.13                                           |
| AB-C        | ( 9.26)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 0.87                | 5.37                  | 0.162                        |                                  | 0.14                     | 0.19                   | 2.8                                 |                                               | 0.22                                           |
| C-D         | 1.56                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 8.75                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.22                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 0.22)             | 8.17                  | 0.028                        |                                  | 0.02                     | 0.03                   | 0.4                                 |                                               | 0.13                                           |
| CD-A        | ( 8.78)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.15-17.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.85                | 6.66                  | 0.278                        |                                  | 0.25                     | 0.38                   | 5.5                                 |                                               | 0.21                                           |
| A-B         | 0.31                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 10.62               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.42                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.42)             | 7.54                  | 0.056                        |                                  | 0.04                     | 0.06                   | 0.8                                 |                                               | 0.14                                           |
| AB-C        | ( 11.34)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.06                | 4.59                  | 0.232                        |                                  | 0.19                     | 0.30                   | 4.2                                 |                                               | 0.28                                           |
| C-D         | 1.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 10.72               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.28                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 0.28)             | 7.73                  | 0.036                        |                                  | 0.03                     | 0.04                   | 0.5                                 |                                               | 0.13                                           |
| CD-A        | ( 10.75)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.30-17.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.85                | 6.66                  | 0.278                        |                                  | 0.38                     | 0.38                   | 5.7                                 |                                               | 0.21                                           |
| A-B         | 0.31                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 10.62               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.42                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.42)             | 7.54                  | 0.056                        |                                  | 0.06                     | 0.06                   | 0.8                                 |                                               | 0.14                                           |
| AB-C        | ( 11.34)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.06                | 4.59                  | 0.232                        |                                  | 0.30                     | 0.30                   | 4.5                                 |                                               | 0.28                                           |
| C-D         | 1.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 10.72               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.28                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 0.28)             | 7.73                  | 0.036                        |                                  | 0.04                     | 0.04                   | 0.5                                 |                                               | 0.13                                           |
| CD-A        | ( 10.75)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.45-18.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.51                | 7.51                  | 0.202                        |                                  | 0.38                     | 0.26                   | 4.0                                 |                                               | 0.17                                           |
| A-B         | 0.25                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 8.68                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.34)             | 8.05                  | 0.043                        |                                  | 0.06                     | 0.04                   | 0.6                                 |                                               | 0.13                                           |
| AB-C        | ( 9.26)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 0.87                | 5.37                  | 0.162                        |                                  | 0.30                     | 0.20                   | 3.1                                 |                                               | 0.22                                           |
| C-D         | 1.56                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 8.75                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.22                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 0.22)             | 8.17                  | 0.028                        |                                  | 0.04                     | 0.03                   | 0.4                                 |                                               | 0.13                                           |
| CD-A        | ( 8.78)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 18.00-18.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.27                | 8.11                  | 0.156                        |                                  | 0.26                     | 0.19                   | 2.9                                 |                                               | 0.15                                           |
| A-B         | 0.21                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.27                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.29                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.29)             | 8.43                  | 0.034                        |                                  | 0.04                     | 0.03                   | 0.5                                 |                                               | 0.12                                           |
| AB-C        | ( 7.76)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 0.73                | 5.94                  | 0.123                        |                                  | 0.20                     | 0.14                   | 2.2                                 |                                               | 0.19                                           |
| C-D         | 1.30                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 7.33                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.19                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 0.19)             | 8.49                  | 0.022                        |                                  | 0.03                     | 0.02                   | 0.3                                 |                                               | 0.12                                           |
| CD-A        | ( 7.35)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

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

#### QUEUE FOR STREAM B-ACD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.00                     | 0.2                            |
| 17.15                     | 0.2                            |
| 17.30                     | 0.4                            |
| 17.45                     | 0.4                            |
| 18.00                     | 0.3                            |
| 18.15                     | 0.2                            |

#### QUEUE FOR STREAM AB-CD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.00                     | 0.0                            |
| 17.15                     | 0.0                            |
| 17.30                     | 0.1                            |
| 17.45                     | 0.1                            |
| 18.00                     | 0.0                            |
| 18.15                     | 0.0                            |

#### QUEUE FOR STREAM D-ABC

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.00                     | 0.1                            |
| 17.15                     | 0.2                            |
| 17.30                     | 0.3                            |
| 17.45                     | 0.3                            |
| 18.00                     | 0.2                            |
| 18.15                     | 0.1                            |

| QUEUE FOR STREAM | CD-AB    |
|------------------|----------|
| TIME             | NO. OF   |
| SEGMENT          | VEHICLES |
| ENDING           | IN QUEUE |
| 17.00            | 0.0      |
| 17.15            | 0.0      |
| 17.30            | 0.0      |
| 17.45            | 0.0      |
| 18.00            | 0.0      |
| 18.15            | 0.0      |



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QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

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| I | STREAM | I | TOTAL    | I | DEMAND   | I | * QUEUEING * | I | * INCLUSIVE QUEUEING * | I |
|---|--------|---|----------|---|----------|---|--------------|---|------------------------|---|
| I | I      | I | I        | I | I        | I | * DELAY *    | I | * DELAY *              | I |
| I | I      | I | I        | I | I        | I | I            | I | I                      | I |
| I | I      | I | (VEH)    | I | (VEH/H)  | I | (MIN)        | I | (MIN/VEH)              | I |
| I | B-ACD  | I | 139.0    | I | 92.7     | I | 24.3         | I | 0.17                   | I |
| I | A-B    | I | 23.4     | I | 15.6     | I |              | I |                        | I |
| I | A-C    | I | 797.0    | I | 531.3    | I |              | I |                        | I |
| I | A-D    | I | 31.7     | I | 21.1     | I |              | I |                        | I |
| I | AB-CD  | I | ( 31.7)  | I | ( 21.1)  | I | 4.0          | I | 0.13                   | I |
| I | AB-C   | I | ( 850.6) | I | ( 567.0) | I |              | I |                        | I |
| I | D-ABC  | I | 79.8     | I | 53.2     | I | 18.7         | I | 0.23                   | I |
| I | C-D    | I | 143.1    | I | 95.4     | I |              | I |                        | I |
| I | C-A    | I | 803.8    | I | 535.9    | I |              | I |                        | I |
| I | C-B    | I | 20.6     | I | 13.8     | I |              | I |                        | I |
| I | CD-AB  | I | ( 20.6)  | I | ( 13.8)  | I | 2.6          | I | 0.12                   | I |
| I | CD-A   | I | ( 806.6) | I | ( 537.7) | I |              | I |                        | I |
| I | ALL    | I | 2038.5   | I | 1359.0   | I | 49.5         | I | 0.02                   | I |

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

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

.SLOPES AND INTERCEPT

-----

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

STREAM B-A

| I | Intercept | For    | Slope  | For  | Opposing | Slope | For    | Opposing | Slope  | For  | Opposing | Slope | For    | Opposing | I |
|---|-----------|--------|--------|------|----------|-------|--------|----------|--------|------|----------|-------|--------|----------|---|
| I | STREAM    | B-A    | STREAM | A-C  | STREAM   | A-D   | STREAM | A-B      | STREAM | C-A  | STREAM   | C-B   | STREAM | D-B      | I |
| I |           | 608.68 |        | 0.25 |          | 0.25  |        | 0.10     |        | 0.16 |          |       |        |          | I |

| I |  | Slope  | For  | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|--|--------|------|----------|-------|--------|----------|--------|-----|----------|-------|--------|----------|---|
| I |  | STREAM | D-A  | STREAM   | C-B   | STREAM | D-B      | STREAM | A-C | STREAM   | B-D   | STREAM | C-D      | I |
| I |  |        | 0.16 |          | 0.36  |        | 0.36     |        |     |          |       |        |          | I |

STREAM D-C

| I | Intercept | For | Slope  | For | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|-----------|-----|--------|-----|----------|-------|--------|----------|--------|-----|----------|-------|--------|----------|---|
| I | STREAM    | D-C | STREAM | C-A | STREAM   | C-B   | STREAM | C-D      | STREAM | A-C | STREAM   | B-D   | STREAM | C-D      | I |
| I | 526.46    |     | 0.22   |     | 0.22     |       | 0.09   |          | 0.14   |     |          |       |        | I        |   |

| I |  | Slope  | For  | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|--|--------|------|----------|-------|--------|----------|--------|-----|----------|-------|--------|----------|---|
| I |  | STREAM | B-C  | STREAM   | A-D   | STREAM | B-D      | STREAM | A-C | STREAM   | B-D   | STREAM | C-D      | I |
| I |  |        | 0.14 |          | 0.31  |        | 0.31     |        |     |          |       |        |          | I |

STREAM CD-B

| I | Intercept | For  | Slope  | For | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|-----------|------|--------|-----|----------|-------|--------|----------|--------|-----|----------|-------|--------|----------|---|
| I | STREAM    | CD-B | STREAM | A-B | STREAM   | A-C   | STREAM | A-D      | STREAM | A-B | STREAM   | A-C   | STREAM | A-D      | I |
| I | 620.29    |      | 0.21   |     | 0.21     |       | 0.25   |          |        |     |          |       |        |          | I |

STREAM AB-D

| I | Intercept | For  | Slope  | For | Opposing | Slope | For    | Opposing | Slope  | For | Opposing | Slope | For    | Opposing | I |
|---|-----------|------|--------|-----|----------|-------|--------|----------|--------|-----|----------|-------|--------|----------|---|
| I | STREAM    | AB-D | STREAM | C-D | STREAM   | C-A   | STREAM | C-B      | STREAM | C-B | STREAM   | C-B   | STREAM | C-B      | I |
| I | 620.29    |      | 0.22   |     | 0.22     |       | 0.22   |          | 0.22   |     |          |       |        |          | I |

STREAM B-CD

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| I Intercept For<br>I STREAM B-CD | Slope For Opposing<br>STREAM A-C | Slope For Opposing<br>STREAM A-D | Slope For Opposing<br>STREAM A-B | Slope For Opposing<br>I |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-------------------------|
| I 779.85                         | I 0.27                           | I 0.27                           | I 0.11                           | I                       |

| I Intercept For<br>I STREAM D-AB | Slope For Opposing<br>STREAM C-A | Slope For Opposing<br>STREAM C-B | Slope For Opposing<br>STREAM C-D | Slope For Opposing<br>I |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-------------------------|
| I 673.64                         | I 0.24                           | I 0.24                           | I 0.09                           | I                       |

TRAFFIC DEMAND DATA

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

Demand set: Base+Com+H4&5 2024

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I ARM   | I NUMBER OF MINUTES FROM START WHEN<br>I FLOW STARTS I TOP OF PEAK I FLOW STOPS I<br>I TO RISE I IS REACHED I FALLING I | I RATE OF FLOW (VEH/MIN)<br>I BEFORE I AT TOP I AFTER<br>I PEAK I OF PEAK I PEAK I |
|---------|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| I ARM A | I 15.00 I 45.00 I 75.00                                                                                                 | I 7.75 I 11.63 I 7.75 I                                                            |
| I ARM B | I 15.00 I 45.00 I 75.00                                                                                                 | I 1.33 I 1.99 I 1.33 I                                                             |
| I ARM C | I 15.00 I 45.00 I 75.00                                                                                                 | I 8.79 I 13.18 I 8.79 I                                                            |
| I ARM D | I 15.00 I 45.00 I 75.00                                                                                                 | I 0.73 I 1.09 I 0.73 I                                                             |

Demand set: Base+Com+H4&5 2024

| I TIME          | I FROM/TO | I ARM                             | I A | I ARM | I B | I ARM | I C | I ARM | I D |
|-----------------|-----------|-----------------------------------|-----|-------|-----|-------|-----|-------|-----|
| I 16.45 - 18.15 | I         | I                                 | I   | I     | I   | I     | I   | I     | I   |
| I               | I ARM A   | I 0.000 I 0.029 I 0.934 I 0.037 I | I   | I     | I   | I     | I   | I     | I   |
| I               | I         | I 0.0 I 18.0 I 579.0 I 23.0 I     | I   | I     | I   | I     | I   | I     | I   |
| I               | I         | I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I | I   | I     | I   | I     | I   | I     | I   |
| I               | I         | I                                 | I   | I     | I   | I     | I   | I     | I   |
| I               | I ARM B   | I 0.632 I 0.000 I 0.368 I 0.000 I | I   | I     | I   | I     | I   | I     | I   |
| I               | I         | I 67.0 I 0.0 I 39.0 I 0.0 I       | I   | I     | I   | I     | I   | I     | I   |
| I               | I         | I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I | I   | I     | I   | I     | I   | I     | I   |
| I               | I         | I                                 | I   | I     | I   | I     | I   | I     | I   |
| I               | I ARM C   | I 0.831 I 0.021 I 0.000 I 0.148 I | I   | I     | I   | I     | I   | I     | I   |
| I               | I         | I 584.0 I 15.0 I 0.0 I 104.0 I    | I   | I     | I   | I     | I   | I     | I   |
| I               | I         | I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I | I   | I     | I   | I     | I   | I     | I   |
| I               | I         | I                                 | I   | I     | I   | I     | I   | I     | I   |
| I               | I ARM D   | I 0.034 I 0.000 I 0.966 I 0.000 I | I   | I     | I   | I     | I   | I     | I   |
| I               | I         | I 2.0 I 0.0 I 56.0 I 0.0 I        | I   | I     | I   | I     | I   | I     | I   |
| I               | I         | I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I | I   | I     | I   | I     | I   | I     | I   |
| I               | I         | I                                 | I   | I     | I   | I     | I   | I     | I   |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET Base+Com+H4&5 2024  
AND FOR TIME PERIOD 1

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 16.45-17.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.33                | 8.04                  | 0.165                        |                                  | 0.00                     | 0.20                   | 2.8                                 |                                               | 0.15                                           |
| A-B         | 0.23                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.27                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.29                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.29)             | 8.43                  | 0.034                        |                                  | 0.00                     | 0.03                   | 0.5                                 |                                               | 0.12                                           |
| AB-C        | ( 7.75)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 0.73                | 5.94                  | 0.123                        |                                  | 0.00                     | 0.14                   | 2.0                                 |                                               | 0.19                                           |
| C-D         | 1.30                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 7.33                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.19                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 0.19)             | 8.49                  | 0.022                        |                                  | 0.00                     | 0.02                   | 0.3                                 |                                               | 0.12                                           |
| CD-A        | ( 7.35)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.00-17.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.59                | 7.44                  | 0.213                        |                                  | 0.20                     | 0.27                   | 3.9                                 |                                               | 0.17                                           |
| A-B         | 0.27                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 8.68                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.34)             | 8.05                  | 0.043                        |                                  | 0.03                     | 0.04                   | 0.6                                 |                                               | 0.13                                           |
| AB-C        | ( 9.26)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 0.87                | 5.37                  | 0.162                        |                                  | 0.14                     | 0.19                   | 2.8                                 |                                               | 0.22                                           |
| C-D         | 1.56                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 8.75                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.22                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 0.22)             | 8.17                  | 0.028                        |                                  | 0.02                     | 0.03                   | 0.4                                 |                                               | 0.13                                           |
| CD-A        | ( 8.78)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.15-17.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.95                | 6.59                  | 0.295                        |                                  | 0.27                     | 0.41                   | 5.9                                 |                                               | 0.21                                           |
| A-B         | 0.33                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 10.62               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.42                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.42)             | 7.54                  | 0.056                        |                                  | 0.04                     | 0.06                   | 0.8                                 |                                               | 0.14                                           |
| AB-C        | ( 11.34)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.06                | 4.59                  | 0.232                        |                                  | 0.19                     | 0.30                   | 4.2                                 |                                               | 0.28                                           |
| C-D         | 1.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 10.72               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.28                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 0.28)             | 7.72                  | 0.036                        |                                  | 0.03                     | 0.04                   | 0.5                                 |                                               | 0.13                                           |
| CD-A        | ( 10.75)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.30-17.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.95                | 6.59                  | 0.295                        |                                  | 0.41                     | 0.41                   | 6.2                                 |                                               | 0.22                                           |
| A-B         | 0.33                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 10.62               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.42                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.42)             | 7.54                  | 0.056                        |                                  | 0.06                     | 0.06                   | 0.8                                 |                                               | 0.14                                           |
| AB-C        | ( 11.34)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.06                | 4.59                  | 0.232                        |                                  | 0.30                     | 0.30                   | 4.5                                 |                                               | 0.28                                           |
| C-D         | 1.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 10.72               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.28                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 0.28)             | 7.72                  | 0.036                        |                                  | 0.04                     | 0.04                   | 0.5                                 |                                               | 0.13                                           |
| CD-A        | ( 10.75)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.45-18.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.59                | 7.44                  | 0.213                        |                                  | 0.41                     | 0.28                   | 4.3                                 |                                               | 0.17                                           |
| A-B         | 0.27                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 8.68                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.34)             | 8.05                  | 0.043                        |                                  | 0.06                     | 0.04                   | 0.6                                 |                                               | 0.13                                           |
| AB-C        | ( 9.26)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 0.87                | 5.37                  | 0.162                        |                                  | 0.30                     | 0.20                   | 3.1                                 |                                               | 0.22                                           |
| C-D         | 1.56                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 8.75                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.22                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 0.22)             | 8.17                  | 0.028                        |                                  | 0.04                     | 0.03                   | 0.4                                 |                                               | 0.13                                           |
| CD-A        | ( 8.78)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 18.00-18.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.33                | 8.04                  | 0.165                        |                                  | 0.28                     | 0.20                   | 3.1                                 |                                               | 0.15                                           |
| A-B         | 0.23                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.27                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.29                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.29)             | 8.43                  | 0.034                        |                                  | 0.04                     | 0.03                   | 0.5                                 |                                               | 0.12                                           |
| AB-C        | ( 7.76)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 0.73                | 5.94                  | 0.123                        |                                  | 0.20                     | 0.14                   | 2.2                                 |                                               | 0.19                                           |
| C-D         | 1.30                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 7.33                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.19                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 0.19)             | 8.49                  | 0.022                        |                                  | 0.03                     | 0.02                   | 0.3                                 |                                               | 0.12                                           |
| CD-A        | ( 7.35)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

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

#### QUEUE FOR STREAM B-ACD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.00                     | 0.2                            |
| 17.15                     | 0.3                            |
| 17.30                     | 0.4                            |
| 17.45                     | 0.4                            |
| 18.00                     | 0.3                            |
| 18.15                     | 0.2                            |

#### QUEUE FOR STREAM AB-CD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.00                     | 0.0                            |
| 17.15                     | 0.0                            |
| 17.30                     | 0.1                            |
| 17.45                     | 0.1                            |
| 18.00                     | 0.0                            |
| 18.15                     | 0.0                            |

#### QUEUE FOR STREAM D-ABC

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.00                     | 0.1                            |
| 17.15                     | 0.2                            |
| 17.30                     | 0.3                            |
| 17.45                     | 0.3                            |
| 18.00                     | 0.2                            |
| 18.15                     | 0.1                            |

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL DEMAND | I         | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I         |
|---|--------|---|--------------|-----------|--------------|-----------|------------------------|-----------|
| I | I      | I | I            | I         | * DELAY *    | I         | * DELAY *              | I         |
| I | I      | I | I            | I         | I            | I         | I                      | I         |
| I | I      | I | (VEH)        | (VEH/H)   | (MIN)        | (MIN/VEH) | (MIN)                  | (MIN/VEH) |
| I | B-ACD  | I | 145.9        | I 97.3    | I 26.2       | I 0.18    | I 26.2                 | I 0.18    |
| I | A-B    | I | 24.8         | I 16.5    | I            | I         | I                      | I         |
| I | A-C    | I | 797.0        | I 531.3   | I            | I         | I                      | I         |
| I | A-D    | I | 31.7         | I 21.1    | I            | I         | I                      | I         |
| I | AB-CD  | I | ( 31.7)      | I( 21.1)  | I 4.0        | I 0.13    | I 4.0                  | I 0.13    |
| I | AB-C   | I | ( 850.6)     | I( 567.0) | I            | I         | I                      | I         |
| I | D-ABC  | I | 79.8         | I 53.2    | I 18.7       | I 0.23    | I 18.7                 | I 0.23    |
| I | C-D    | I | 143.1        | I 95.4    | I            | I         | I                      | I         |
| I | C-A    | I | 803.8        | I 535.9   | I            | I         | I                      | I         |
| I | C-B    | I | 20.6         | I 13.8    | I            | I         | I                      | I         |
| I | CD-AB  | I | ( 20.6)      | I( 13.8)  | I 2.6        | I 0.12    | I 2.6                  | I 0.12    |
| I | CD-A   | I | ( 806.6)     | I( 537.7) | I            | I         | I                      | I         |
| I | ALL    | I | 2046.7       | I 1364.5  | I 51.4       | I 0.03    | I 51.4                 | I 0.03    |

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

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

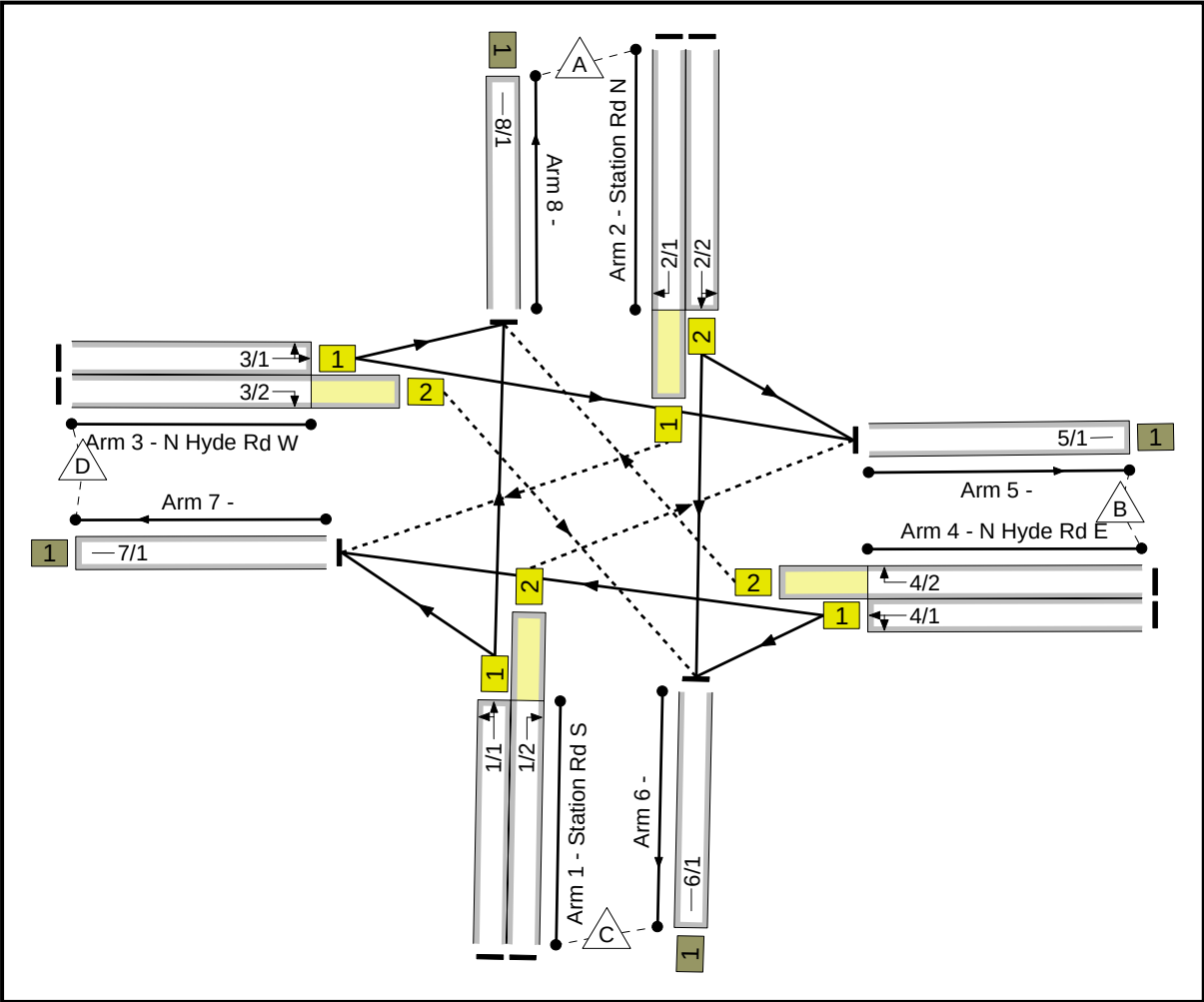
===== end of file =====

Full Input Data And Results

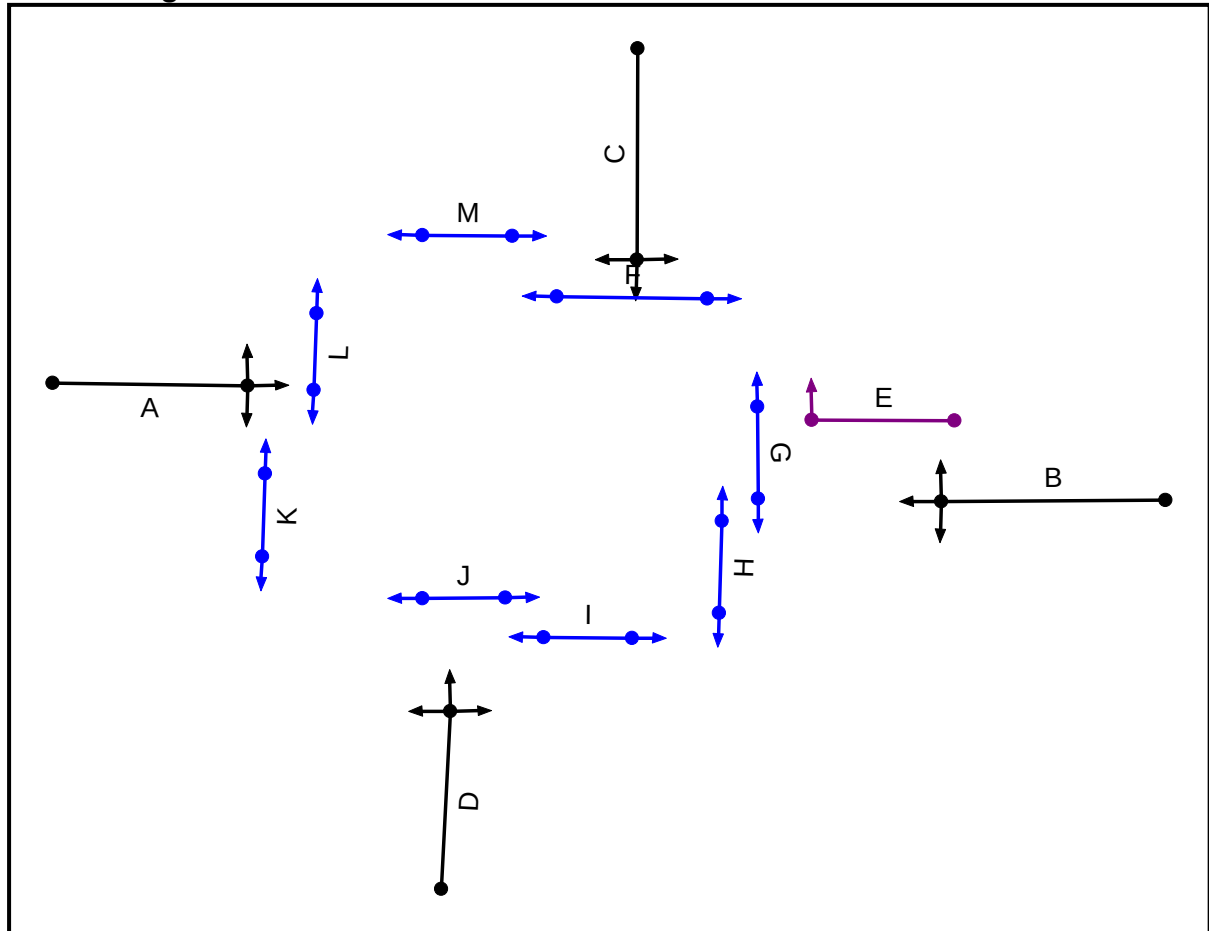
User and Project Details

|             |                 |
|-------------|-----------------|
| Project:    |                 |
| Title:      |                 |
| Location:   |                 |
| File name:  | 26_10PM_LL.lsgx |
| Author:     |                 |
| Company:    |                 |
| Address:    |                 |
| Controller: | Generic         |
| SCN:        |                 |
| Notes:      |                 |

Junction 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          | Ind. Arrow | B           | 4          | 4        |
| F          | Pedestrian |             | 5          | 5        |
| G          | Pedestrian |             | 5          | 5        |
| H          | Pedestrian |             | 5          | 5        |
| I          | Pedestrian |             | 5          | 5        |
| J          | Pedestrian |             | 5          | 5        |
| K          | Pedestrian |             | 5          | 5        |
| L          | Pedestrian |             | 5          | 5        |
| M          | Pedestrian |             | 5          | 5        |

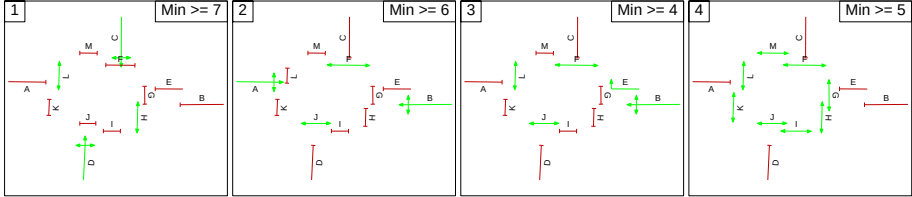
Phase Intergreens Matrix

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

Phases in Stage

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1         | C D H L         |
| 2         | A B F J         |
| 3         | B E F J L       |
| 4         | F G H I J K L M |

Stages Diagram



Phase Delays

| Term. Stage | Start Stage | Phase | Type   | Value | Cont value |
|-------------|-------------|-------|--------|-------|------------|
| 1           | 2           | C     | Losing | 3     | 3          |
| 1           | 2           | D     | Losing | 3     | 3          |
| 2           | 1           | A     | Losing | 3     | 3          |
| 2           | 1           | B     | Losing | 3     | 3          |



**Prohibited Stage Changes**

|            | To Stage |   |    |    |    |
|------------|----------|---|----|----|----|
| From Stage |          | 1 | 2  | 3  | 4  |
|            | 1        |   | 10 | 10 | 10 |
|            | 2        | 9 |    | 5  | 10 |
|            | 3        | 9 | 9  |    | 10 |
|            | 4        | 9 | 10 | 10 |    |

**Link Input Data**

| Arm/ Link | Link Name               | Link Type | Num Lanes | Phases | Start Disp. | End Disp. |
|-----------|-------------------------|-----------|-----------|--------|-------------|-----------|
| 1/1       | Station Rd S Left Ahead | U         | 1         | D      | 2           | 3         |
| 1/2       | Station Rd S Right      | O         | 1         | D      | 2           | 3         |
| 2/1       | Station Rd N Right      | O         | 1         | C      | 2           | 3         |
| 2/2       | Station Rd N Left Ahead | U         | 1         | C      | 2           | 3         |
| 3/1       | N Hyde Rd W Ahead Left  | U         | 1         | A      | 2           | 3         |
| 3/2       | N Hyde Rd W Right       | O         | 1         | A      | 2           | 3         |
| 4/1       | N Hyde Rd E Left Ahead  | U         | 1         | B      | 2           | 3         |
| 4/2       | N Hyde Rd E Right       | O         | 1         | B E    | 2           | 3         |
| 5/1       |                         | U         | 1         |        | 2           | 3         |
| 6/1       |                         | U         | 1         |        | 2           | 3         |
| 7/1       |                         | U         | 1         |        | 2           | 3         |
| 8/1       |                         | U         | 1         |        | 2           | 3         |

# Full Input Data And Results

## Give-Way Link Input Data

| Arm/<br>Link | Link Name             | Movement   | Max Flow when<br>Giving Way<br>(PCU/Hr) | Opposing<br>Link | Opp. Link<br>Coeff. | Opp.<br>Mvmnts. | Right Turn<br>Storage (PCU) | RTF  | Right Turn<br>Move up time<br>(s) | Max Turns in<br>Intergreen (PCU) |
|--------------|-----------------------|------------|-----------------------------------------|------------------|---------------------|-----------------|-----------------------------|------|-----------------------------------|----------------------------------|
| 1/2          | Station Rd<br>S Right | 1/2 to 5/1 | 1440                                    | 2/2              | 1.09                | 2/2             | 4.00                        | 0.50 | 4                                 | 4.00                             |
| 2/1          | Station Rd<br>N Right | 2/1 to 7/1 | 1440                                    | 1/1              | 1.09                | 1/1             | 4.00                        | 0.50 | 4                                 | 2.00                             |
| 3/2          | N Hyde Rd<br>W Right  | 3/2 to 6/1 | 1440                                    | 4/1              | 1.09                | 4/1             | 4.00                        | 0.50 | 4                                 | 4.00                             |
| 4/2          | N Hyde Rd<br>E Right  | 4/2 to 8/1 | 1440                                    | 3/1              | 1.09                | 3/1             | 4.00                        | 0.50 | 4                                 | 4.00                             |

## Lane Input Data

| Arm/<br>Lane                    | Link<br>Num                            | Physical<br>Length<br>(PCU) | Expected<br>Usage<br>(PCU) | Sat<br>Flow<br>Type | User<br>Saturation<br>Flow<br>(PCU/Hr) | Lane<br>Width<br>(m) | Gradient | Nearside<br>Lane | Allowed<br>Turns                    | Turning<br>Radius<br>(m) |
|---------------------------------|----------------------------------------|-----------------------------|----------------------------|---------------------|----------------------------------------|----------------------|----------|------------------|-------------------------------------|--------------------------|
| 1/1<br>(Station Rd S<br>Lane 1) | Link 1<br>(Station Rd S<br>Left Ahead) | Inf                         | Inf                        | User                | 1833                                   | 3.25                 | 0.00     | Y                | Arm 7<br>Left<br><br>Arm 8<br>Ahead | Inf<br><br>Inf           |
| 1/2<br>(Station Rd S<br>Lane 2) | Link 2<br>(Station Rd S<br>Right)      | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 5<br>Right                      | 15.00                    |
| 2/1<br>(Station Rd N<br>Lane 1) | Link 2<br>(Station Rd N<br>Left Ahead) | Inf                         | Inf                        | User                | 1919                                   | 3.25                 | 0.00     | Y                | Arm 5<br>Left<br><br>Arm 6<br>Ahead | Inf<br><br>Inf           |
| 2/2<br>(Station Rd N<br>Lane 2) | Link 1<br>(Station Rd N<br>Right)      | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 7<br>Right                      | 14.00                    |
| 3/1<br>(N Hyde Rd W<br>Lane 1)  | Link 1<br>(N Hyde Rd W<br>Ahead Left)  | Inf                         | Inf                        | User                | 1818                                   | 3.25                 | 0.00     | Y                | Arm 5<br>Ahead<br><br>Arm 8<br>Left | Inf<br><br>Inf           |
| 3/2<br>(N Hyde Rd W<br>Lane 2)  | Link 2<br>(N Hyde Rd W<br>Right)       | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 6<br>Right                      | 17.00                    |
| 4/1<br>(N Hyde Rd E<br>Lane 1)  | Link 1<br>(N Hyde Rd E<br>Left Ahead)  | Inf                         | Inf                        | User                | 1821                                   | 3.25                 | 0.00     | Y                | Arm 6<br>Left<br><br>Arm 7<br>Ahead | Inf<br><br>Inf           |
| 4/2<br>(N Hyde Rd E<br>Lane 2)  | Link 2<br>(N Hyde Rd E<br>Right)       | Inf                         | Inf                        | Geom                | 1800                                   | 3.60                 | 0.00     | Y                | Arm 8<br>Right                      | 17.00                    |
| 5/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |
| 6/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |
| 7/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |

Full Input Data And Results

|     |        |     |     |      |      |      |      |   |  |  |
|-----|--------|-----|-----|------|------|------|------|---|--|--|
| 8/1 | Link 1 | Inf | Inf | User | 1800 | 3.25 | 0.00 | Y |  |  |
|-----|--------|-----|-----|------|------|------|------|---|--|--|

Traffic Flow Groups

| Flow Group                      | Start Time | End Time | Duration | Formula |
|---------------------------------|------------|----------|----------|---------|
| 14: 'Base + Com + H4 2024 PM'   | 17:30      | 18:30    | 01:00    |         |
| 16: 'Base + Com + H5 2024 PM'   | 17:30      | 18:30    | 01:00    |         |
| 18: 'Base + Com + H4 5 2024 PM' | 17:30      | 18:30    | 01:00    |         |

Scenario 10: 'Base + Com + H4 2024 PM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 14: 'Base + Com + H4 2024 PM'

Traffic Flow Matrix

Desired Flow :

| Origin | Destination |     |     |     |     |      |
|--------|-------------|-----|-----|-----|-----|------|
|        |             | A   | B   | C   | D   | Tot. |
|        | A           | 0   | 187 | 372 | 132 | 691  |
|        | B           | 229 | 0   | 275 | 387 | 891  |
|        | C           | 323 | 259 | 0   | 92  | 674  |
|        | D           | 120 | 315 | 56  | 0   | 491  |
|        | Tot.        | 672 | 761 | 703 | 611 | 2747 |

Link Traffic Flows

| Arm/Link | Flow Group 14: Base + Com + H4 2024 PM |
|----------|----------------------------------------|
| 1/1      | 415                                    |
| 1/2      | 259                                    |
| 2/1      | 132                                    |
| 2/2      | 559                                    |
| 3/1      | 435                                    |
| 3/2      | 56                                     |
| 4/1      | 662                                    |
| 4/2      | 229                                    |
| 5/1      | 761                                    |
| 6/1      | 703                                    |
| 7/1      | 611                                    |
| 8/1      | 672                                    |

Lane Saturation Flows

| Arm/<br>Lane                 | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Rd S Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1833                 |
| 1/2<br>(Station Rd S Lane 2) | 3.00                                              | 0.00     | Y                | Arm 5 Right      | 15.00                    | 100.0 %          | 1741                 |
| 2/1<br>(Station Rd N Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1919                 |
| 2/2<br>(Station Rd N Lane 2) | 3.00                                              | 0.00     | Y                | Arm 7 Right      | 14.00                    | 100.0 %          | 1730                 |
| 3/1<br>(N Hyde Rd W Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1818                 |
| 3/2<br>(N Hyde Rd W Lane 2)  | 3.00                                              | 0.00     | Y                | Arm 6 Right      | 17.00                    | 100.0 %          | 1760                 |
| 4/1<br>(N Hyde Rd E Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1821                 |
| 4/2<br>(N Hyde Rd E Lane 2)  | 3.60                                              | 0.00     | Y                | Arm 8 Right      | 17.00                    | 100.0 %          | 1815                 |
| 5/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 7/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 8/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

Scenario 12: 'Base + Com + H5 2024 PM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 16: 'Base + Com + H5 2024 PM'

Traffic Flow Matrix

Desired Flow :

|        | Destination |     |     |     |     |      |
|--------|-------------|-----|-----|-----|-----|------|
|        |             | A   | B   | C   | D   | Tot. |
| Origin | A           | 0   | 187 | 372 | 132 | 691  |
|        | B           | 229 | 0   | 275 | 392 | 896  |
|        | C           | 323 | 259 | 0   | 92  | 674  |
|        | D           | 121 | 339 | 56  | 0   | 516  |
|        | Tot.        | 673 | 785 | 703 | 616 | 2777 |

**Link Traffic Flows**

| Arm/Link | Flow<br>Group 16:<br>Base +<br>Com + H5<br>2024 PM |
|----------|----------------------------------------------------|
| 1/1      | 415                                                |
| 1/2      | 259                                                |
| 2/1      | 132                                                |
| 2/2      | 559                                                |
| 3/1      | 460                                                |
| 3/2      | 56                                                 |
| 4/1      | 667                                                |
| 4/2      | 229                                                |
| 5/1      | 785                                                |
| 6/1      | 703                                                |
| 7/1      | 616                                                |
| 8/1      | 673                                                |

**Lane Saturation Flows**

| Arm/<br>Lane                 | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Rd S Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1833                 |
| 1/2<br>(Station Rd S Lane 2) | 3.00                                              | 0.00     | Y                | Arm 5 Right      | 15.00                    | 100.0 %          | 1741                 |
| 2/1<br>(Station Rd N Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1919                 |
| 2/2<br>(Station Rd N Lane 2) | 3.00                                              | 0.00     | Y                | Arm 7 Right      | 14.00                    | 100.0 %          | 1730                 |
| 3/1<br>(N Hyde Rd W Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1818                 |
| 3/2<br>(N Hyde Rd W Lane 2)  | 3.00                                              | 0.00     | Y                | Arm 6 Right      | 17.00                    | 100.0 %          | 1760                 |
| 4/1<br>(N Hyde Rd E Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1821                 |
| 4/2<br>(N Hyde Rd E Lane 2)  | 3.60                                              | 0.00     | Y                | Arm 8 Right      | 17.00                    | 100.0 %          | 1815                 |
| 5/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 7/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 8/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

**Scenario 14: 'Base + Com + H4 5 2024 PM'**

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 18: 'Base + Com + H4 5 2024 PM'

**Traffic Flow Matrix**

**Desired Flow :**

|        | Destination |     |     |     |     |      |
|--------|-------------|-----|-----|-----|-----|------|
|        |             | A   | B   | C   | D   | Tot. |
| Origin | A           | 0   | 187 | 372 | 132 | 691  |
|        | B           | 229 | 0   | 275 | 396 | 900  |
|        | C           | 323 | 259 | 0   | 92  | 674  |
|        | D           | 122 | 364 | 56  | 0   | 542  |
|        | Tot.        | 674 | 810 | 703 | 620 | 2807 |

**Link Traffic Flows**

| Arm/Link | Flow Group 18:<br>Base +<br>Com + H4<br>5 2024 PM |
|----------|---------------------------------------------------|
| 1/1      | 415                                               |
| 1/2      | 259                                               |
| 2/1      | 132                                               |
| 2/2      | 559                                               |
| 3/1      | 486                                               |
| 3/2      | 56                                                |
| 4/1      | 671                                               |
| 4/2      | 229                                               |
| 5/1      | 810                                               |
| 6/1      | 703                                               |
| 7/1      | 620                                               |
| 8/1      | 674                                               |

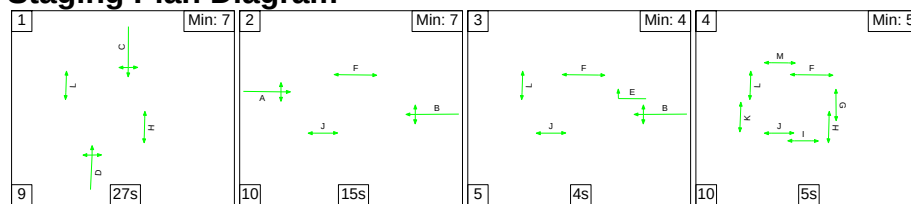
**Lane Saturation Flows**

| Arm/<br>Lane                 | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Rd S Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1833                 |
| 1/2<br>(Station Rd S Lane 2) | 3.00                                              | 0.00     | Y                | Arm 5 Right      | 15.00                    | 100.0 %          | 1741                 |
| 2/1<br>(Station Rd N Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1919                 |
| 2/2<br>(Station Rd N Lane 2) | 3.00                                              | 0.00     | Y                | Arm 7 Right      | 14.00                    | 100.0 %          | 1730                 |
| 3/1<br>(N Hyde Rd W Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1818                 |
| 3/2<br>(N Hyde Rd W Lane 2)  | 3.00                                              | 0.00     | Y                | Arm 6 Right      | 17.00                    | 100.0 %          | 1760                 |
| 4/1<br>(N Hyde Rd E Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1821                 |
| 4/2<br>(N Hyde Rd E Lane 2)  | 3.60                                              | 0.00     | Y                | Arm 8 Right      | 17.00                    | 100.0 %          | 1815                 |
| 5/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 7/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 8/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

**Scenario 10: 'Base + Com + H4 2024 PM'**

Staging Plan 1: 'Staging Plan No. 1'

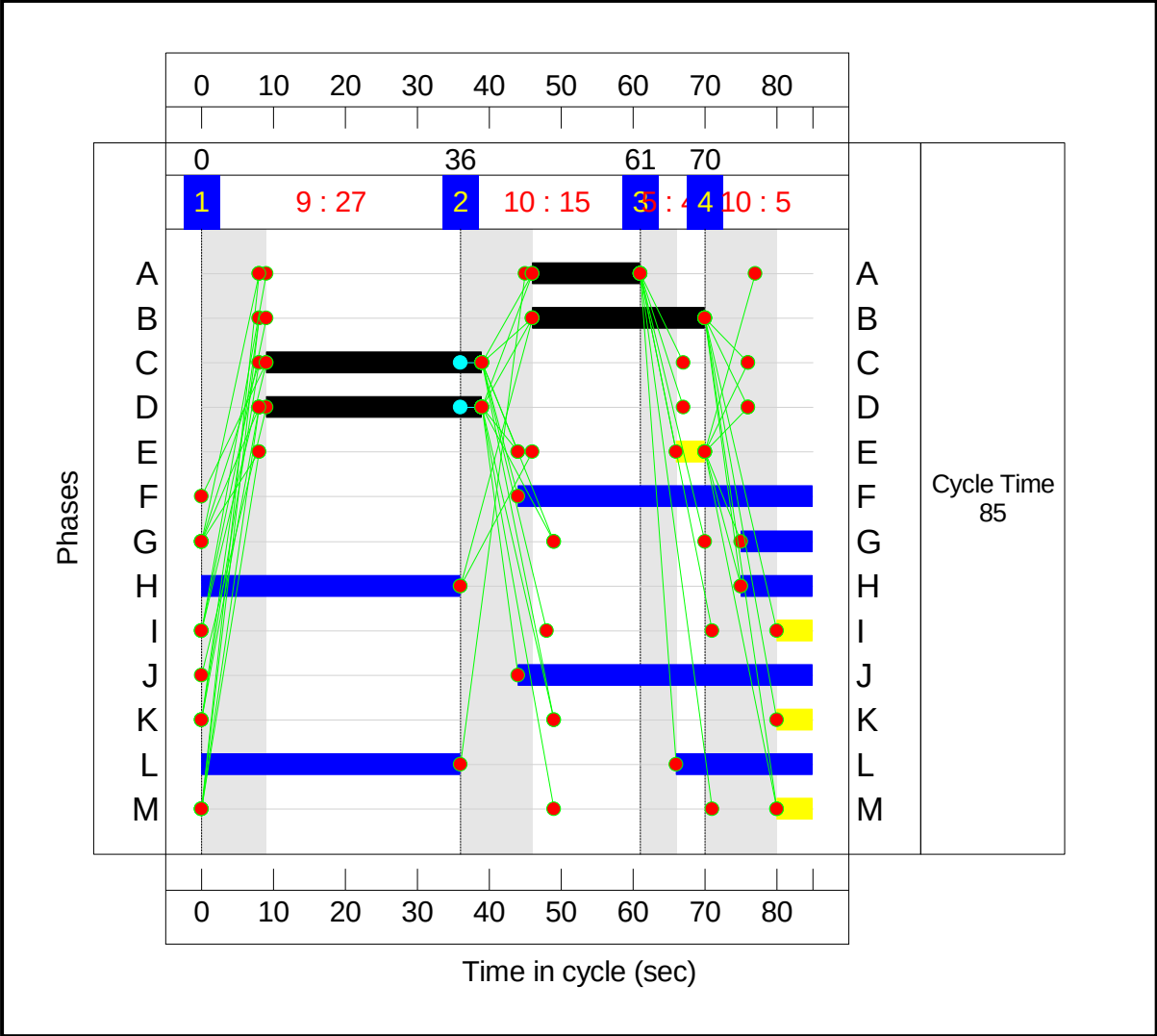
Flow Group 14: 'Base + Com + H4 2024 PM'

**Staging Plan Diagram****Stage Timings**

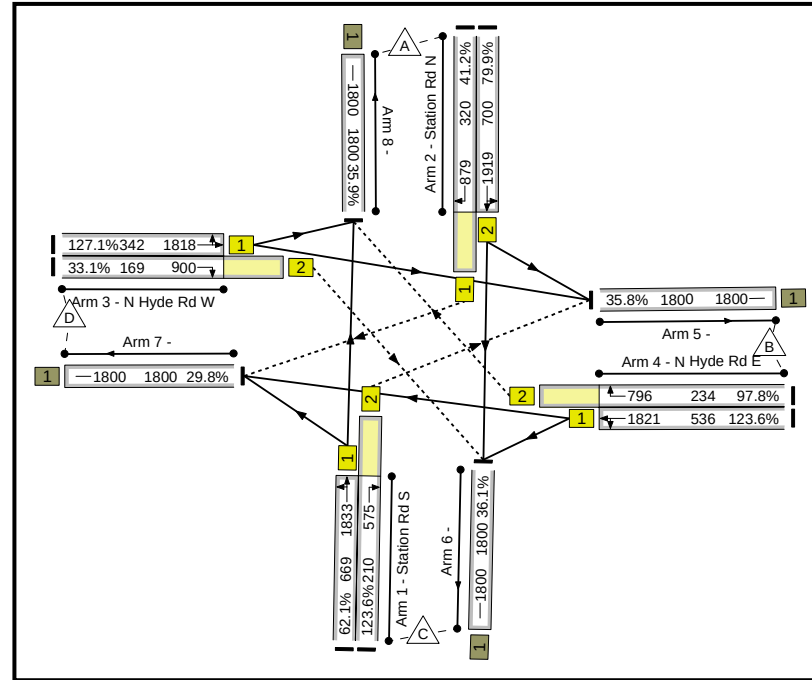
| Stage        | 1  | 2  | 3  | 4  |
|--------------|----|----|----|----|
| Duration     | 27 | 15 | 4  | 5  |
| Change Point | 0  | 36 | 61 | 70 |



Signal Timings Diagram



## Junction Layout Diagram



## Full Input Data And Results

### Link Results

| Link Num | Link Desc               | Link Type | Stage Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Max Sat Flow (pcu/Hr) | Ave Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|----------|-------------------------|-----------|--------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-----------------------|-----------------------|----------------|-------------|
| 1/1      | Station Rd S Left Ahead | U         | N/A          | N/A                        | D          |             | 1          | 30              | -               | 415               | 1833                  | 1833                  | 669            | 62.1        |
| 1/2      | Station Rd S Right      | O         | N/A          | N/A                        | D          |             | 1          | 30              | -               | 259               | 1741                  | 575                   | 210            | 123.6       |
| 2/1      | Station Rd N Right      | O         | N/A          | N/A                        | C          |             | 1          | 30              | -               | 132               | 1730                  | 879                   | 320            | 41.2        |
| 2/2      | Station Rd N Left Ahead | U         | N/A          | N/A                        | C          |             | 1          | 30              | -               | 559               | 1919                  | 1919                  | 700            | 79.9        |
| 3/1      | N Hyde Rd W Ahead Left  | U         | N/A          | N/A                        | A          |             | 1          | 15              | -               | 435               | 1818                  | 1818                  | 342            | 127.1       |
| 3/2      | N Hyde Rd W Right       | O         | N/A          | N/A                        | A          |             | 1          | 15              | -               | 56                | 1760                  | 900                   | 169            | 33.1        |
| 4/1      | N Hyde Rd E Left Ahead  | U         | N/A          | N/A                        | B          |             | 1          | 24              | -               | 662               | 1821                  | 1821                  | 536            | 123.6       |
| 4/2      | N Hyde Rd E Right       | O         | N/A          | N/A                        | B          | E           | 1          | 24              | 4               | 229               | 1815                  | 796                   | 234            | 97.8        |
| 5/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 761               | 1800                  | 1800                  | 1800           | 35.8        |
| 6/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 703               | 1800                  | 1800                  | 1800           | 36.1        |
| 7/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 611               | 1800                  | 1800                  | 1800           | 29.8        |
| 8/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 672               | 1800                  | 1800                  | 1800           | 35.9        |

## Full Input Data And Results

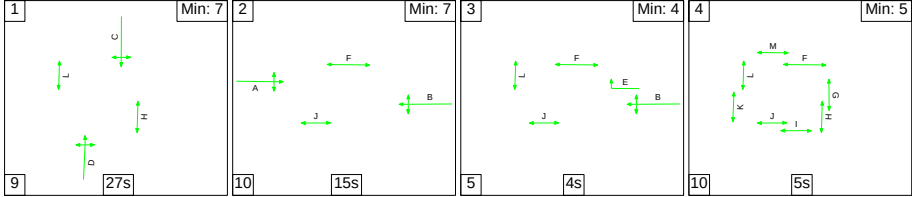
[illegible]

Scenario 12: 'Base + Com + H5 2024 PM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 16: 'Base + Com + H5 2024 PM'

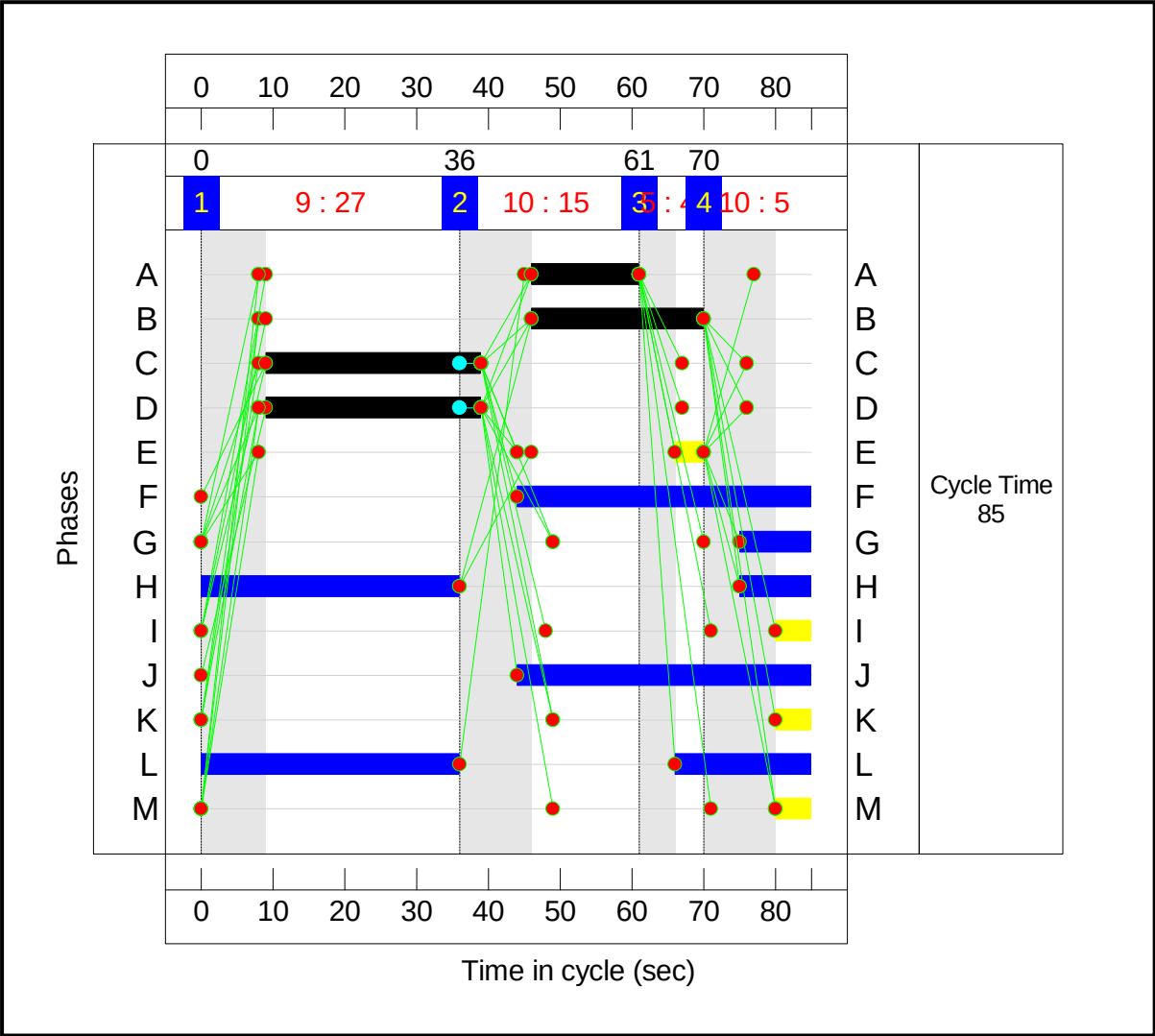
Staging Plan Diagram



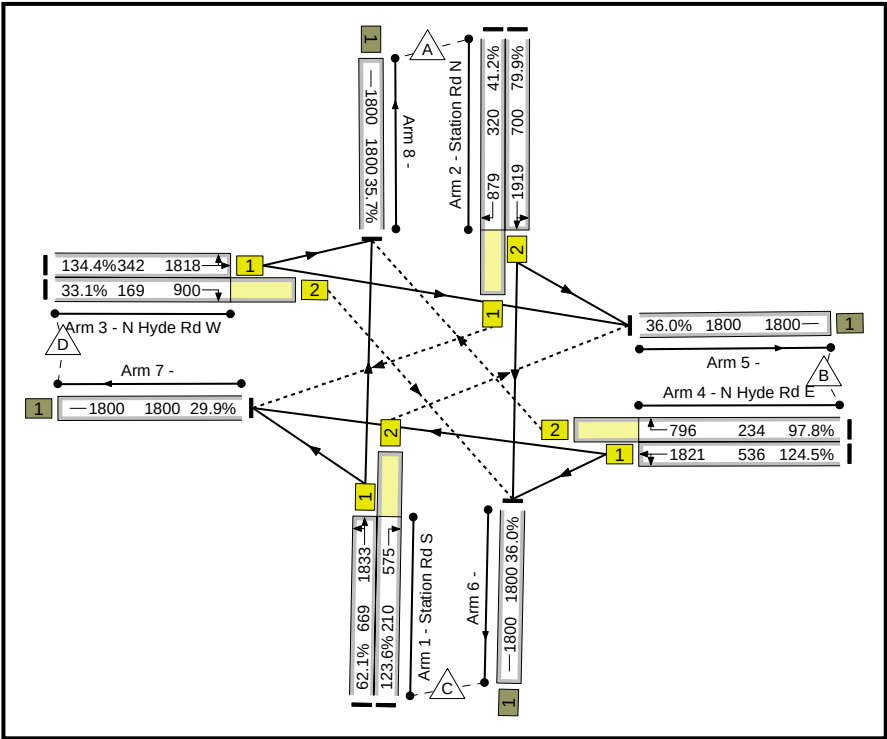
Stage Timings

| Stage        | 1  | 2  | 3  | 4  |
|--------------|----|----|----|----|
| Duration     | 27 | 15 | 4  | 5  |
| Change Point | 0  | 36 | 61 | 70 |

Signal Timings Diagram



Junction Layout Diagram



## Full Input Data And Results

### Link Results

| Link Num | Link Desc               | Link Type | Stage Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Max Sat Flow (pcu/Hr) | Ave Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|----------|-------------------------|-----------|--------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-----------------------|-----------------------|----------------|-------------|
| 1/1      | Station Rd S Left Ahead | U         | N/A          | N/A                        | D          |             | 1          | 30              | -               | 415               | 1833                  | 1833                  | 669            | 62.1        |
| 1/2      | Station Rd S Right      | O         | N/A          | N/A                        | D          |             | 1          | 30              | -               | 259               | 1741                  | 575                   | 210            | 123.6       |
| 2/1      | Station Rd N Right      | O         | N/A          | N/A                        | C          |             | 1          | 30              | -               | 132               | 1730                  | 879                   | 320            | 41.2        |
| 2/2      | Station Rd N Left Ahead | U         | N/A          | N/A                        | C          |             | 1          | 30              | -               | 559               | 1919                  | 1919                  | 700            | 79.9        |
| 3/1      | N Hyde Rd W Ahead Left  | U         | N/A          | N/A                        | A          |             | 1          | 15              | -               | 460               | 1818                  | 1818                  | 342            | 134.4       |
| 3/2      | N Hyde Rd W Right       | O         | N/A          | N/A                        | A          |             | 1          | 15              | -               | 56                | 1760                  | 900                   | 169            | 33.1        |
| 4/1      | N Hyde Rd E Left Ahead  | U         | N/A          | N/A                        | B          |             | 1          | 24              | -               | 667               | 1821                  | 1821                  | 536            | 124.5       |
| 4/2      | N Hyde Rd E Right       | O         | N/A          | N/A                        | B          | E           | 1          | 24              | 4               | 229               | 1815                  | 796                   | 234            | 97.8        |
| 5/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 785               | 1800                  | 1800                  | 1800           | 36.0        |
| 6/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 703               | 1800                  | 1800                  | 1800           | 36.0        |
| 7/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 616               | 1800                  | 1800                  | 1800           | 29.9        |
| 8/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 673               | 1800                  | 1800                  | 1800           | 35.7        |

## Full Input Data And Results

| Link Num                                                                                                                                                                                        | Entering (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 Veh (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|--|
| 1/1                                                                                                                                                                                             | 415            | 415           | -                     | -                            | -                           | 2.6                   | 0.8                          | -                                  | 3.4                 | 29.2                      | 8.0                              | 0.8                        | 8.8                  |  |
| 1/2                                                                                                                                                                                             | 259            | 210           | 85                    | 0                            | 125                         | 3.5                   | 27.1                         | 1.2                                | 31.8                | 441.9                     | 7.3                              | 27.1                       | 34.4                 |  |
| 2/1                                                                                                                                                                                             | 132            | 132           | 129                   | 0                            | 3                           | 0.7                   | 0.3                          | 0.5                                | 1.5                 | 40.9                      | 2.1                              | 0.3                        | 2.5                  |  |
| 2/2                                                                                                                                                                                             | 559            | 559           | -                     | -                            | -                           | 3.8                   | 1.9                          | -                                  | 5.7                 | 36.6                      | 11.8                             | 1.9                        | 13.7                 |  |
| 3/1                                                                                                                                                                                             | 460            | 342           | -                     | -                            | -                           | 8.3                   | 60.8                         | -                                  | 69.0                | 540.3                     | 13.7                             | 60.8                       | 74.5                 |  |
| 3/2                                                                                                                                                                                             | 56             | 56            | 0                     | 0                            | 56                          | 0.5                   | 0.2                          | 0.3                                | 1.0                 | 66.7                      | 1.1                              | 0.2                        | 1.4                  |  |
| 4/1                                                                                                                                                                                             | 667            | 536           | -                     | -                            | -                           | 10.5                  | 68.2                         | -                                  | 78.6                | 424.3                     | 19.7                             | 68.2                       | 87.9                 |  |
| 4/2                                                                                                                                                                                             | 229            | 229           | 0                     | 149                          | 80                          | 1.7                   | 6.4                          | 0.7                                | 8.7                 | 137.2                     | 5.3                              | 6.4                        | 11.7                 |  |
| 5/1                                                                                                                                                                                             | 649            | 649           | -                     | -                            | -                           | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.3                       | 3.6                              | 0.3                        | 3.9                  |  |
| 6/1                                                                                                                                                                                             | 649            | 649           | -                     | -                            | -                           | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.4                       | 0.0                              | 0.3                        | 0.3                  |  |
| 7/1                                                                                                                                                                                             | 539            | 539           | -                     | -                            | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.2                       | 0.0                              | 0.2                        | 0.2                  |  |
| 8/1                                                                                                                                                                                             | 642            | 642           | -                     | -                            | -                           | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.5                       | 0.0                              | 0.3                        | 0.3                  |  |
| PRC for Signalled Links (%): -49.4      Total Delay for Signalled Links (pcuHr): 199.76<br>PRC Over All Links (%): -49.4      Total Delay Over All Links(pcuHr): 200.83      Cycle Time (s): 85 |                |               |                       |                              |                             |                       |                              |                                    |                     |                           |                                  |                            |                      |  |

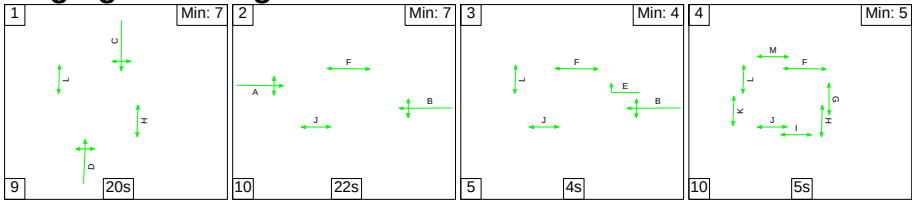


Scenario 14: 'Base + Com + H4 5 2024 PM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 18: 'Base + Com + H4 5 2024 PM'

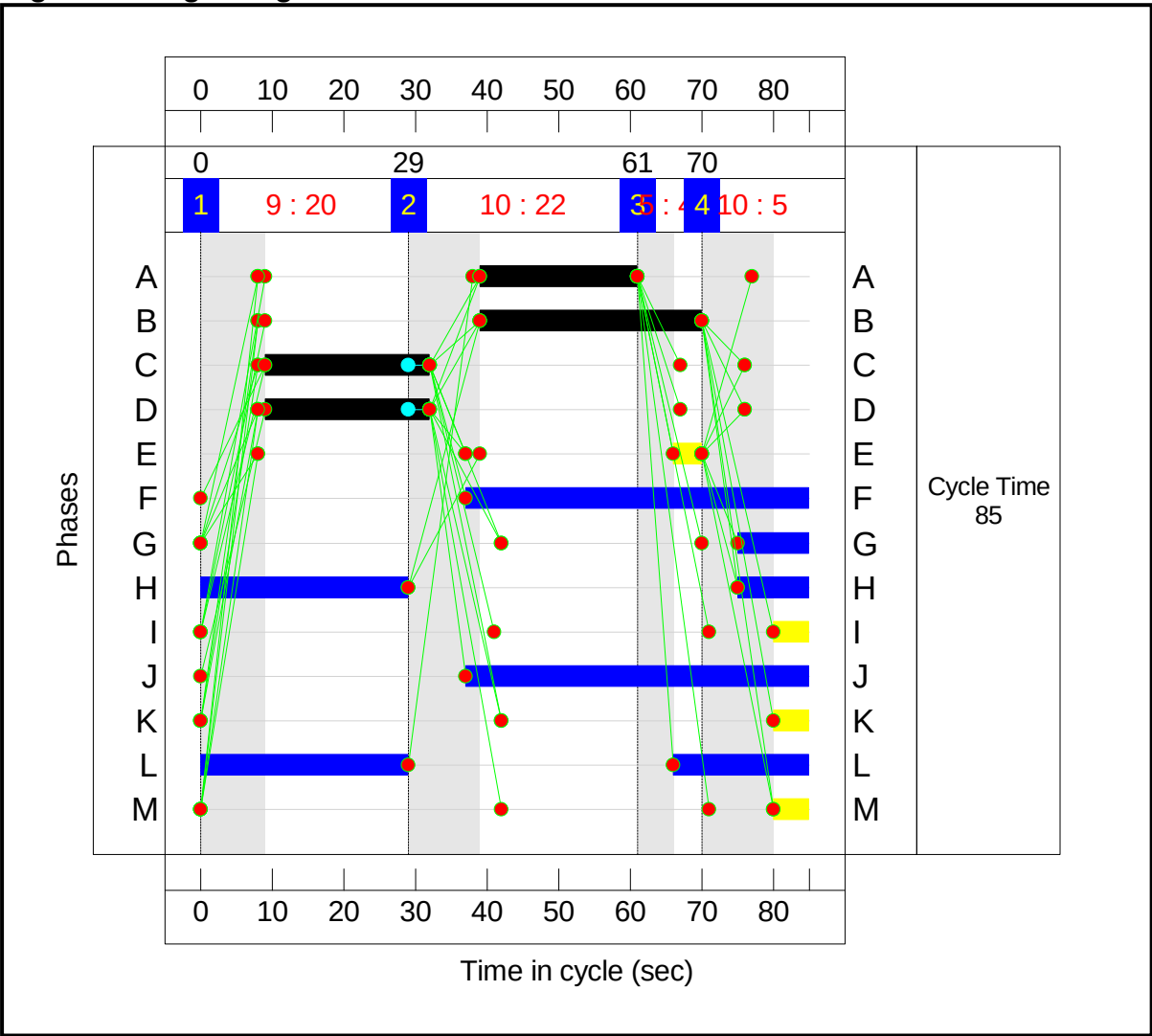
Staging Plan Diagram



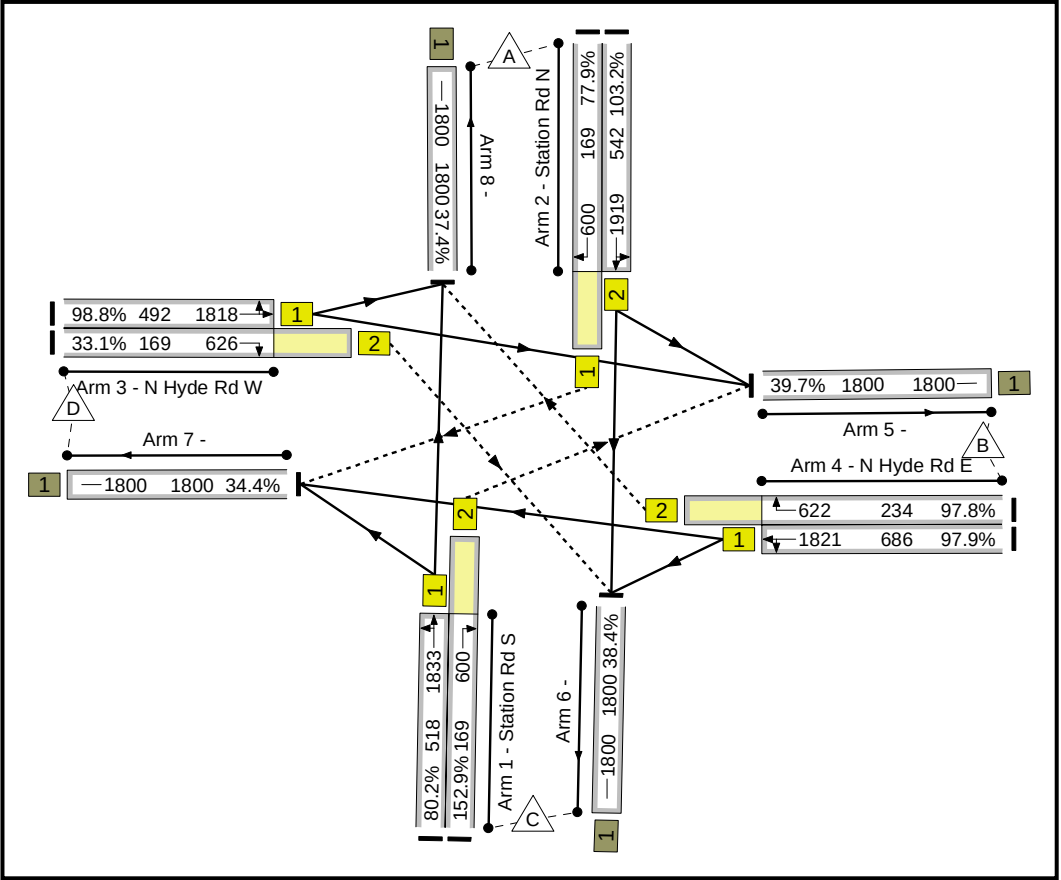
Stage Timings

| Stage        | 1  | 2  | 3  | 4  |
|--------------|----|----|----|----|
| Duration     | 20 | 22 | 4  | 5  |
| Change Point | 0  | 29 | 61 | 70 |

Signal Timings Diagram



Junction Layout Diagram



## Full Input Data And Results

### Link Results

| Link Num | Link Desc               | Link Type | Stage Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Max Sat Flow (pcu/Hr) | Ave Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|----------|-------------------------|-----------|--------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-----------------------|-----------------------|----------------|-------------|
| 1/1      | Station Rd S Left Ahead | U         | N/A          | N/A                        | D          |             | 1          | 23              | -               | 415               | 1833                  | 1833                  | 518            | 80.2        |
| 1/2      | Station Rd S Right      | O         | N/A          | N/A                        | D          |             | 1          | 23              | -               | 259               | 1741                  | 600                   | 169            | 152.9       |
| 2/1      | Station Rd N Right      | O         | N/A          | N/A                        | C          |             | 1          | 23              | -               | 132               | 1730                  | 600                   | 169            | 77.9        |
| 2/2      | Station Rd N Left Ahead | U         | N/A          | N/A                        | C          |             | 1          | 23              | -               | 559               | 1919                  | 1919                  | 542            | 103.2       |
| 3/1      | N Hyde Rd W Ahead Left  | U         | N/A          | N/A                        | A          |             | 1          | 22              | -               | 486               | 1818                  | 1818                  | 492            | 98.8        |
| 3/2      | N Hyde Rd W Right       | O         | N/A          | N/A                        | A          |             | 1          | 22              | -               | 56                | 1760                  | 626                   | 169            | 33.1        |
| 4/1      | N Hyde Rd E Left Ahead  | U         | N/A          | N/A                        | B          |             | 1          | 31              | -               | 671               | 1821                  | 1821                  | 686            | 97.9        |
| 4/2      | N Hyde Rd E Right       | O         | N/A          | N/A                        | B          | E           | 1          | 31              | 4               | 229               | 1815                  | 622                   | 234            | 97.8        |
| 5/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 810               | 1800                  | 1800                  | 1800           | 39.7        |
| 6/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 703               | 1800                  | 1800                  | 1800           | 38.4        |
| 7/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 620               | 1800                  | 1800                  | 1800           | 34.4        |
| 8/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 674               | 1800                  | 1800                  | 1800           | 37.4        |

## Full Input Data And Results

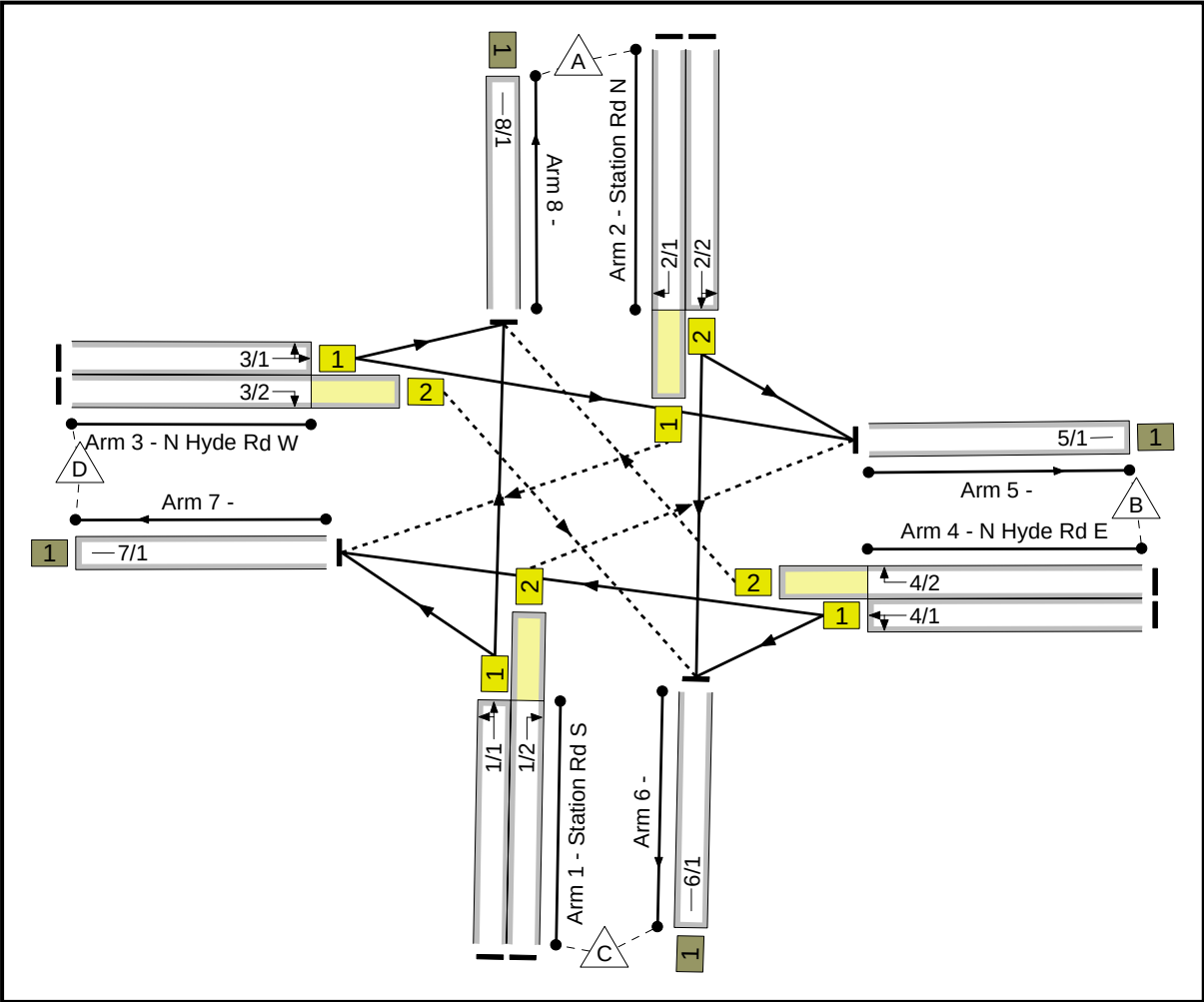
| Link Num                     | Entering (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu)              | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per Veh (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |  |
|------------------------------|----------------|---------------|-----------------------|------------------------------|------------------------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|--|
| 1/1                          | 415            | 415           | -                     | -                            | -                                        | 3.3                   | 1.9                          | -                                  | 5.2                 | 45.2                      | 9.0                              | 1.9                        | 10.9                 |  |
| 1/2                          | 259            | 169           | 0                     | 0                            | 169                                      | 5.5                   | 46.2                         | 1.0                                | 52.7                | 732.9                     | 8.2                              | 46.2                       | 54.4                 |  |
| 2/1                          | 132            | 132           | 70                    | 0                            | 62                                       | 0.9                   | 1.6                          | 0.6                                | 3.1                 | 83.9                      | 2.4                              | 1.6                        | 4.0                  |  |
| 2/2                          | 559            | 542           | -                     | -                            | -                                        | 5.4                   | 16.9                         | -                                  | 22.3                | 143.7                     | 13.6                             | 16.9                       | 30.5                 |  |
| 3/1                          | 486            | 486           | -                     | -                            | -                                        | 4.2                   | 9.6                          | -                                  | 13.8                | 102.3                     | 11.3                             | 9.6                        | 21.0                 |  |
| 3/2                          | 56             | 56            | 8                     | 0                            | 48                                       | 0.4                   | 0.2                          | 0.4                                | 1.0                 | 66.2                      | 1.0                              | 0.2                        | 1.2                  |  |
| 4/1                          | 671            | 671           | -                     | -                            | -                                        | 4.9                   | 9.8                          | -                                  | 14.7                | 78.8                      | 15.5                             | 9.8                        | 25.3                 |  |
| 4/2                          | 229            | 229           | 0                     | 149                          | 79                                       | 1.4                   | 6.4                          | 1.0                                | 8.7                 | 136.9                     | 3.8                              | 6.4                        | 10.2                 |  |
| 5/1                          | 715            | 715           | -                     | -                            | -                                        | 0.1                   | 0.3                          | -                                  | 0.4                 | 1.8                       | 7.6                              | 0.3                        | 7.9                  |  |
| 6/1                          | 692            | 692           | -                     | -                            | -                                        | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.6                       | 0.0                              | 0.3                        | 0.3                  |  |
| 7/1                          | 620            | 620           | -                     | -                            | -                                        | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.5                       | 0.0                              | 0.3                        | 0.3                  |  |
| 8/1                          | 674            | 674           | -                     | -                            | -                                        | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.6                       | 0.0                              | 0.3                        | 0.3                  |  |
| PRC for Signalled Links (%): |                |               |                       | -69.9                        | Total Delay for Signalled Links (pcuHr): |                       |                              | 121.56                             |                     |                           |                                  |                            |                      |  |
| PRC Over All Links (%):      |                |               |                       | -69.9                        | Total Delay Over All Links(pcuHr):       |                       |                              | 122.84                             | Cycle Time (s):     |                           | 85                               |                            |                      |  |

Full Input Data And Results

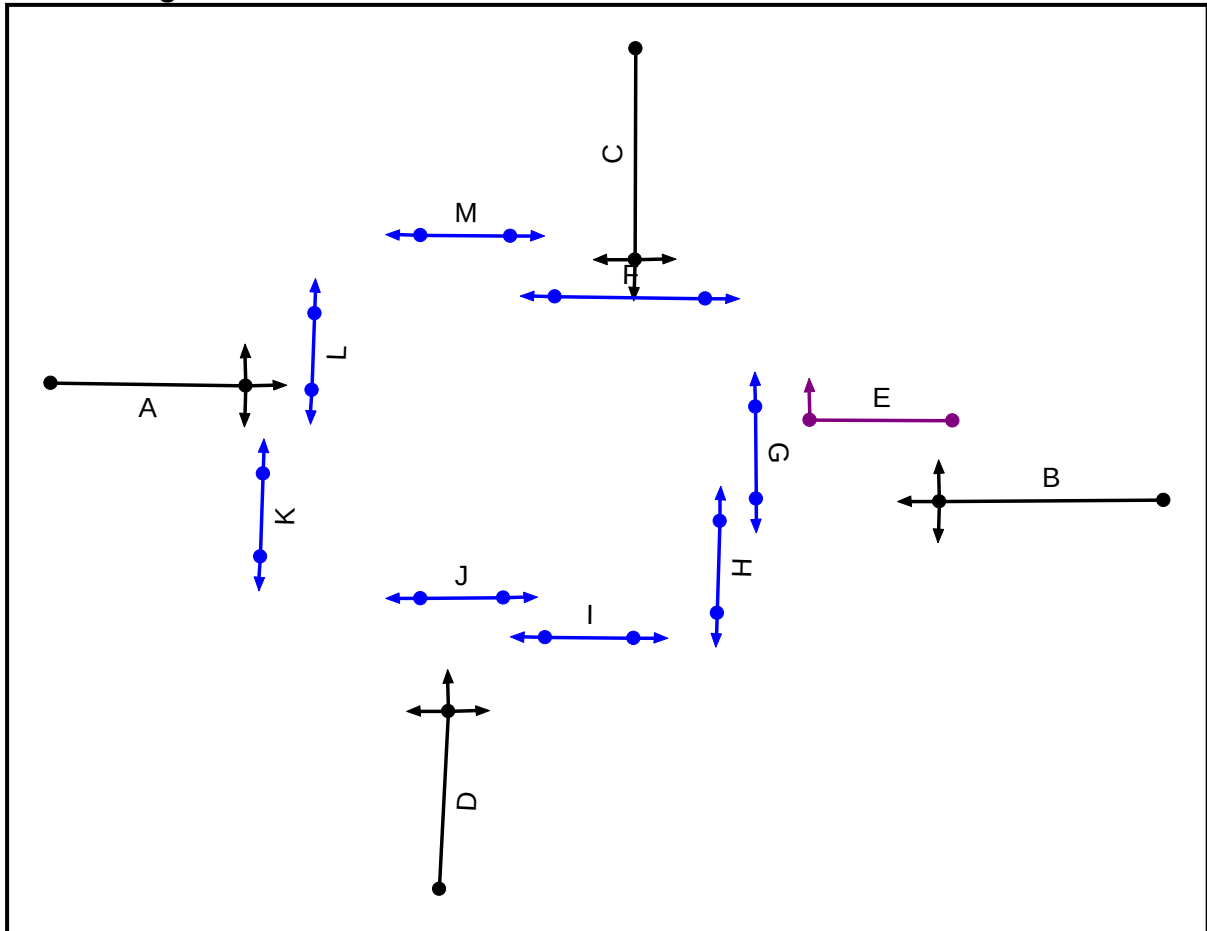
User and Project Details

|             |                 |
|-------------|-----------------|
| Project:    |                 |
| Title:      |                 |
| Location:   |                 |
| File name:  | 26_10AM_LL.lsgx |
| Author:     |                 |
| Company:    |                 |
| Address:    |                 |
| Controller: | Generic         |
| SCN:        |                 |
| Notes:      |                 |

Junction 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          | Ind. Arrow | B           | 4          | 4        |
| F          | Pedestrian |             | 1          | 1        |
| G          | Pedestrian |             | 1          | 1        |
| H          | Pedestrian |             | 1          | 1        |
| I          | Pedestrian |             | 4          | 4        |
| J          | Pedestrian |             | 1          | 1        |
| K          | Pedestrian |             | 4          | 4        |
| L          | Pedestrian |             | 1          | 1        |
| M          | Pedestrian |             | 4          | 4        |

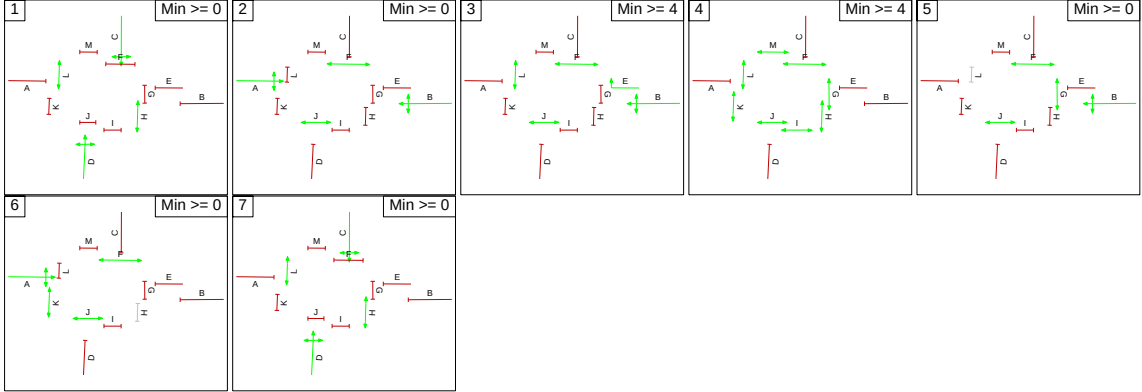
Phase Intergreens Matrix

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

Phases in Stage

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1         | C D H L         |
| 2         | A B F J         |
| 3         | B E F J L       |
| 4         | F G H I J K L M |
| 5         | B F G J         |
| 6         | A F J K         |
| 7         | C D H L         |

Stages Diagram



## Full Input Data And Results

### Phase Delays

| Term. Stage | Start Stage | Phase | Type   | Value | Cont value |
|-------------|-------------|-------|--------|-------|------------|
| 1           | 2           | C     | Losing | 3     | 3          |
| 1           | 2           | D     | Losing | 3     | 3          |
| 2           | 1           | A     | Losing | 3     | 3          |
| 2           | 1           | B     | Losing | 3     | 3          |

### Prohibited Stage Changes

| From Stage | To Stage |    |    |    |    |    |    |
|------------|----------|----|----|----|----|----|----|
|            | 1        | 2  | 3  | 4  | 5  | 6  | 7  |
|            | 1        | 10 | 10 | 10 | 10 | 10 | 0  |
|            | 2        | 9  | 10 | 5  | 10 | 9  | 10 |
|            | 3        | 9  | 9  | 10 | 5  | 10 | 9  |
|            | 4        | 9  | 10 | 10 | 10 | 9  | 9  |
|            | 5        | 9  | 8  | 8  | 10 | 10 | 9  |
|            | 6        | 9  | 8  | 10 | 9  | 10 | 9  |
|            | 7        | 0  | 10 | 10 | 10 | 10 | 10 |

### Link Input Data

| Arm/ Link | Link Name               | Link Type | Num Lanes | Phases | Start Disp. | End Disp. |
|-----------|-------------------------|-----------|-----------|--------|-------------|-----------|
| 1/1       | Station Rd S Left Ahead | U         | 1         | D      | 2           | 3         |
| 1/2       | Station Rd S Right      | O         | 1         | D      | 2           | 3         |
| 2/1       | Station Rd N Right      | O         | 1         | C      | 2           | 3         |
| 2/2       | Station Rd N Left Ahead | U         | 1         | C      | 2           | 3         |
| 3/1       | N Hyde Rd W Ahead Left  | U         | 1         | A      | 2           | 3         |
| 3/2       | N Hyde Rd W Right       | O         | 1         | A      | 2           | 3         |
| 4/1       | N Hyde Rd E Left Ahead  | U         | 1         | B      | 2           | 3         |
| 4/2       | N Hyde Rd E Right       | O         | 1         | B E    | 2           | 3         |
| 5/1       |                         | U         | 1         |        | 2           | 3         |
| 6/1       |                         | U         | 1         |        | 2           | 3         |
| 7/1       |                         | U         | 1         |        | 2           | 3         |
| 8/1       |                         | U         | 1         |        | 2           | 3         |



# Full Input Data And Results

## Give-Way Link Input Data

| Arm/<br>Link | Link Name             | Movement   | Max Flow when<br>Giving Way<br>(PCU/Hr) | Opposing<br>Link | Opp. Link<br>Coeff. | Opp.<br>Mvmnts. | Right Turn<br>Storage (PCU) | RTF  | Right Turn<br>Move up time<br>(s) | Max Turns in<br>Intergreen (PCU) |
|--------------|-----------------------|------------|-----------------------------------------|------------------|---------------------|-----------------|-----------------------------|------|-----------------------------------|----------------------------------|
| 1/2          | Station Rd<br>S Right | 1/2 to 5/1 | 1440                                    | 2/2              | 1.09                | 2/2             | 4.00                        | 0.50 | 4                                 | 4.00                             |
| 2/1          | Station Rd<br>N Right | 2/1 to 7/1 | 1440                                    | 1/1              | 1.09                | 1/1             | 4.00                        | 0.50 | 4                                 | 2.00                             |
| 3/2          | N Hyde Rd<br>W Right  | 3/2 to 6/1 | 1440                                    | 4/1              | 1.09                | 4/1             | 4.00                        | 0.50 | 4                                 | 4.00                             |
| 4/2          | N Hyde Rd<br>E Right  | 4/2 to 8/1 | 1440                                    | 3/1              | 1.09                | 3/1             | 4.00                        | 0.50 | 4                                 | 4.00                             |

## Lane Input Data

| Arm/<br>Lane                    | Link<br>Num                            | Physical<br>Length<br>(PCU) | Expected<br>Usage<br>(PCU) | Sat<br>Flow<br>Type | User<br>Saturation<br>Flow<br>(PCU/Hr) | Lane<br>Width<br>(m) | Gradient | Nearside<br>Lane | Allowed<br>Turns                    | Turning<br>Radius<br>(m) |
|---------------------------------|----------------------------------------|-----------------------------|----------------------------|---------------------|----------------------------------------|----------------------|----------|------------------|-------------------------------------|--------------------------|
| 1/1<br>(Station Rd S<br>Lane 1) | Link 1<br>(Station Rd S<br>Left Ahead) | Inf                         | Inf                        | User                | 1833                                   | 3.25                 | 0.00     | Y                | Arm 7<br>Left<br><br>Arm 8<br>Ahead | Inf<br><br>Inf           |
| 1/2<br>(Station Rd S<br>Lane 2) | Link 2<br>(Station Rd S<br>Right)      | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 5<br>Right                      | 15.00                    |
| 2/1<br>(Station Rd N<br>Lane 1) | Link 2<br>(Station Rd N<br>Left Ahead) | Inf                         | Inf                        | User                | 1919                                   | 3.25                 | 0.00     | Y                | Arm 5<br>Left<br><br>Arm 6<br>Ahead | Inf<br><br>Inf           |
| 2/2<br>(Station Rd N<br>Lane 2) | Link 1<br>(Station Rd N<br>Right)      | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 7<br>Right                      | 14.00                    |
| 3/1<br>(N Hyde Rd W<br>Lane 1)  | Link 1<br>(N Hyde Rd W<br>Ahead Left)  | Inf                         | Inf                        | User                | 1818                                   | 3.25                 | 0.00     | Y                | Arm 5<br>Ahead<br><br>Arm 8<br>Left | Inf<br><br>Inf           |
| 3/2<br>(N Hyde Rd W<br>Lane 2)  | Link 2<br>(N Hyde Rd W<br>Right)       | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 6<br>Right                      | 17.00                    |
| 4/1<br>(N Hyde Rd E<br>Lane 1)  | Link 1<br>(N Hyde Rd E<br>Left Ahead)  | Inf                         | Inf                        | User                | 1821                                   | 3.25                 | 0.00     | Y                | Arm 6<br>Left<br><br>Arm 7<br>Ahead | Inf<br><br>Inf           |
| 4/2<br>(N Hyde Rd E<br>Lane 2)  | Link 2<br>(N Hyde Rd E<br>Right)       | Inf                         | Inf                        | Geom                | 1800                                   | 3.60                 | 0.00     | Y                | Arm 8<br>Right                      | 17.00                    |
| 5/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |
| 6/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |
| 7/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |

**Lane Saturation Flows**

| Arm/<br>Lane                 | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Rd S Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1833                 |
| 1/2<br>(Station Rd S Lane 2) | 3.00                                              | 0.00     | Y                | Arm 5 Right      | 15.00                    | 100.0 %          | 1741                 |
| 2/1<br>(Station Rd N Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1919                 |
| 2/2<br>(Station Rd N Lane 2) | 3.00                                              | 0.00     | Y                | Arm 7 Right      | 14.00                    | 100.0 %          | 1730                 |
| 3/1<br>(N Hyde Rd W Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1818                 |
| 3/2<br>(N Hyde Rd W Lane 2)  | 3.00                                              | 0.00     | Y                | Arm 6 Right      | 17.00                    | 100.0 %          | 1760                 |
| 4/1<br>(N Hyde Rd E Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1821                 |
| 4/2<br>(N Hyde Rd E Lane 2)  | 3.60                                              | 0.00     | Y                | Arm 8 Right      | 17.00                    | 100.0 %          | 1815                 |
| 5/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 7/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 8/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

**Scenario 12: 'Base + Com + H5 2024 AM'**

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 15: 'Base + Com + H5 2024 AM'

**Traffic Flow Matrix****Desired Flow :**

|        | Destination |     |     |     |     |      |
|--------|-------------|-----|-----|-----|-----|------|
|        |             | A   | B   | C   | D   | Tot. |
| Origin | A           | 0   | 151 | 426 | 145 | 722  |
|        | B           | 145 | 0   | 331 | 488 | 964  |
|        | C           | 305 | 163 | 0   | 118 | 586  |
|        | D           | 110 | 265 | 79  | 0   | 454  |
|        | Tot.        | 560 | 579 | 836 | 751 | 2726 |

**Link Traffic Flows**

| Arm/Link | Flow Group 15: Base + Com + H5 2024 AM |
|----------|----------------------------------------|
| 1/1      | 423                                    |
| 1/2      | 163                                    |
| 2/1      | 145                                    |
| 2/2      | 577                                    |
| 3/1      | 375                                    |
| 3/2      | 79                                     |
| 4/1      | 819                                    |
| 4/2      | 145                                    |
| 5/1      | 579                                    |
| 6/1      | 836                                    |
| 7/1      | 751                                    |
| 8/1      | 560                                    |

**Lane Saturation Flows**

| Arm/Lane                     | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat flow (PCU/Hr) |
|------------------------------|---------------------------------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|
| 1/1<br>(Station Rd S Lane 1) | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1833              |
| 1/2<br>(Station Rd S Lane 2) | 3.00                                              | 0.00     | Y             | Arm 5 Right   | 15.00              | 100.0 %       | 1741              |
| 2/1<br>(Station Rd N Lane 1) | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1919              |
| 2/2<br>(Station Rd N Lane 2) | 3.00                                              | 0.00     | Y             | Arm 7 Right   | 14.00              | 100.0 %       | 1730              |
| 3/1<br>(N Hyde Rd W Lane 1)  | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1818              |
| 3/2<br>(N Hyde Rd W Lane 2)  | 3.00                                              | 0.00     | Y             | Arm 6 Right   | 17.00              | 100.0 %       | 1760              |
| 4/1<br>(N Hyde Rd E Lane 1)  | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1821              |
| 4/2<br>(N Hyde Rd E Lane 2)  | 3.60                                              | 0.00     | Y             | Arm 8 Right   | 17.00              | 100.0 %       | 1815              |
| 5/1                          | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1800              |
| 6/1                          | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1800              |
| 7/1                          | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1800              |
| 8/1                          | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1800              |

**Scenario 14: 'Base + Com + H4 5 2024 AM'**

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 17: 'Base + Com + H4 5 2024 AM'

**Traffic Flow Matrix**

**Desired Flow :**

|        | Destination |     |     |     |     |      |
|--------|-------------|-----|-----|-----|-----|------|
|        |             | A   | B   | C   | D   | Tot. |
| Origin | A           | 0   | 151 | 426 | 146 | 723  |
|        | B           | 145 | 0   | 331 | 513 | 989  |
|        | C           | 305 | 163 | 0   | 118 | 586  |
|        | D           | 110 | 268 | 79  | 0   | 457  |
|        | Tot.        | 560 | 582 | 836 | 777 | 2755 |

**Link Traffic Flows**

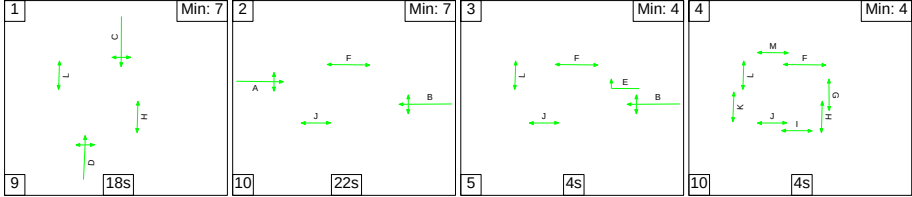
| Arm/Link | Flow<br>Group 17:<br>Base +<br>Com + H4<br>5 2024 AM |
|----------|------------------------------------------------------|
| 1/1      | 423                                                  |
| 1/2      | 163                                                  |
| 2/1      | 146                                                  |
| 2/2      | 577                                                  |
| 3/1      | 378                                                  |
| 3/2      | 79                                                   |
| 4/1      | 844                                                  |
| 4/2      | 145                                                  |
| 5/1      | 582                                                  |
| 6/1      | 836                                                  |
| 7/1      | 777                                                  |
| 8/1      | 560                                                  |

Scenario 12: 'Base + Com + H5 2024 AM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 15: 'Base + Com + H5 2024 AM'

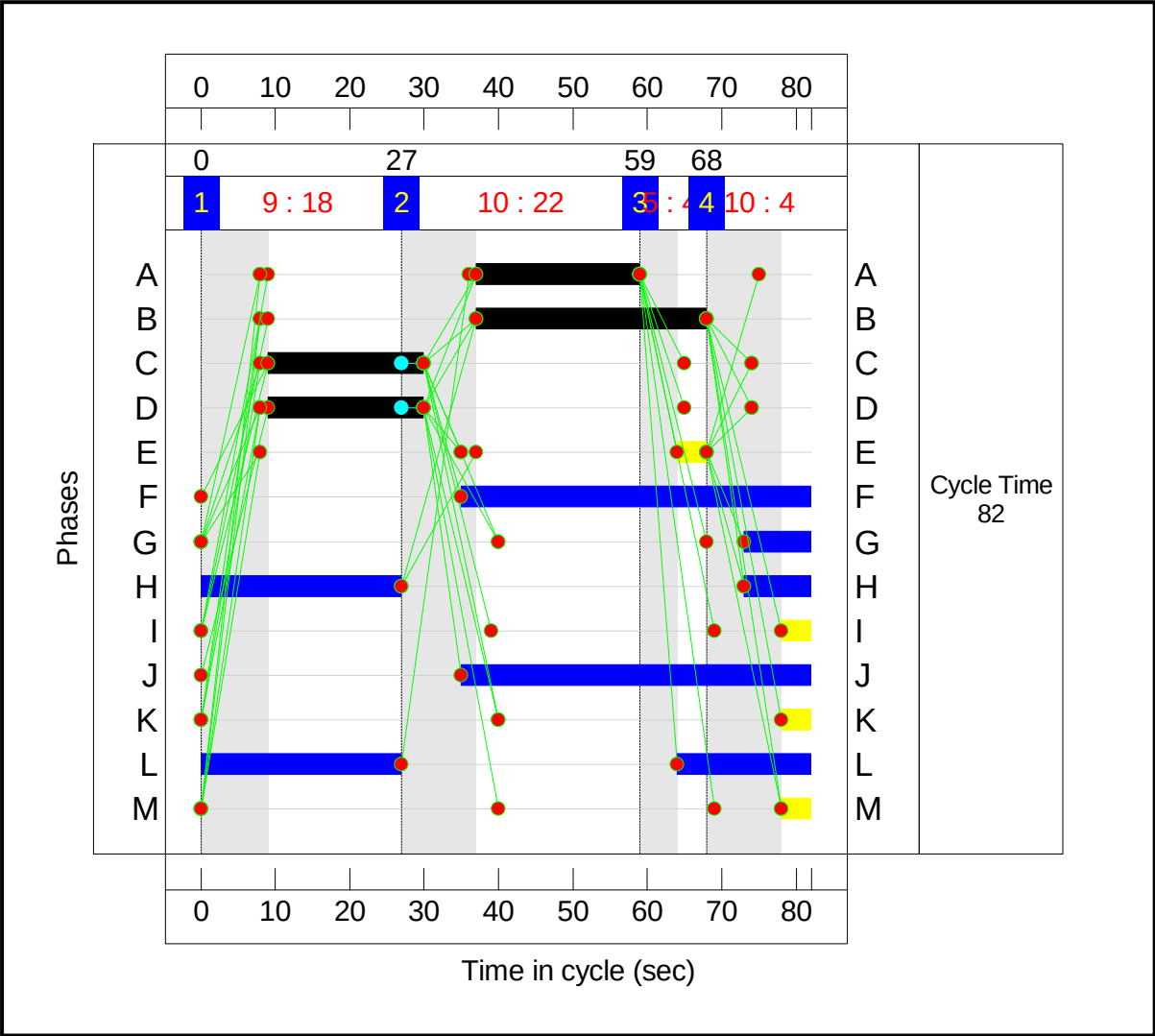
Staging Plan Diagram



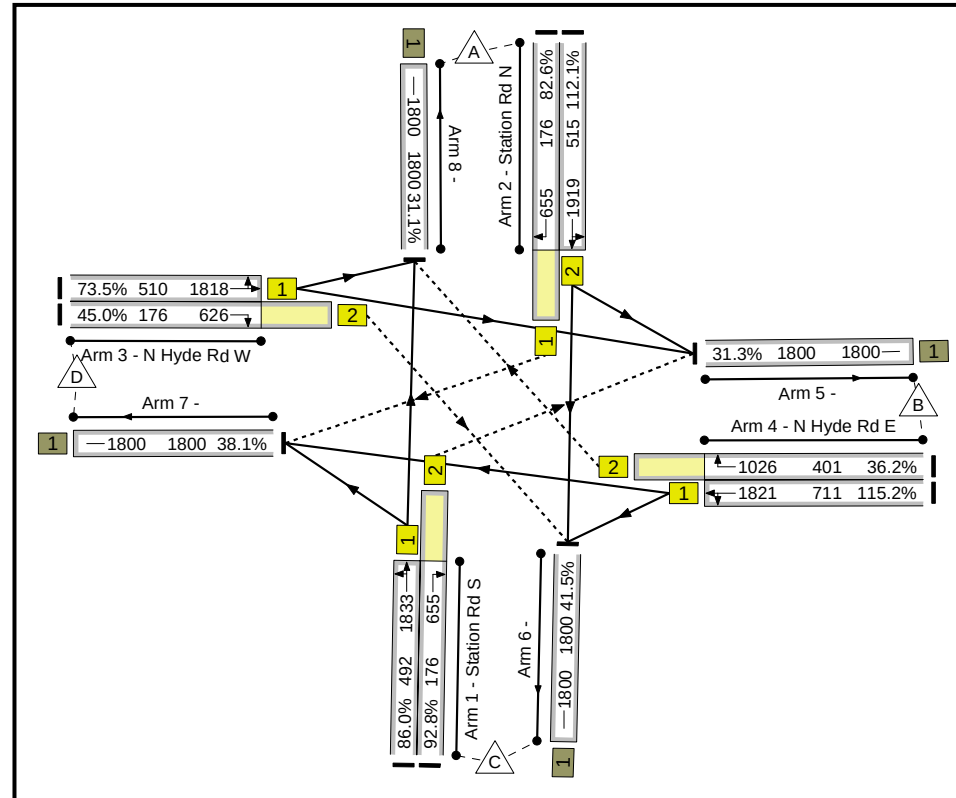
Stage Timings

| Stage        | 1  | 2  | 3  | 4  |
|--------------|----|----|----|----|
| Duration     | 18 | 22 | 4  | 4  |
| Change Point | 0  | 27 | 59 | 68 |

Signal Timings Diagram



## Junction Layout Diagram



## Full Input Data And Results

### Link Results

| Link Num | Link Desc               | Link Type | Stage Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Max Sat Flow (pcu/Hr) | Ave Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|----------|-------------------------|-----------|--------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-----------------------|-----------------------|----------------|-------------|
| 1/1      | Station Rd S Left Ahead | U         | N/A          | N/A                        | D          |             | 1          | 21              | -               | 423               | 1833                  | 1833                  | 492            | 86.0        |
| 1/2      | Station Rd S Right      | O         | N/A          | N/A                        | D          |             | 1          | 21              | -               | 163               | 1741                  | 655                   | 176            | 92.8        |
| 2/1      | Station Rd N Right      | O         | N/A          | N/A                        | C          |             | 1          | 21              | -               | 145               | 1730                  | 655                   | 176            | 82.6        |
| 2/2      | Station Rd N Left Ahead | U         | N/A          | N/A                        | C          |             | 1          | 21              | -               | 577               | 1919                  | 1919                  | 515            | 112.1       |
| 3/1      | N Hyde Rd W Ahead Left  | U         | N/A          | N/A                        | A          |             | 1          | 22              | -               | 375               | 1818                  | 1818                  | 510            | 73.5        |
| 3/2      | N Hyde Rd W Right       | O         | N/A          | N/A                        | A          |             | 1          | 22              | -               | 79                | 1760                  | 626                   | 176            | 45.0        |
| 4/1      | N Hyde Rd E Left Ahead  | U         | N/A          | N/A                        | B          |             | 1          | 31              | -               | 819               | 1821                  | 1821                  | 711            | 115.2       |
| 4/2      | N Hyde Rd E Right       | O         | N/A          | N/A                        | B          | E           | 1          | 31              | 4               | 145               | 1815                  | 1026                  | 401            | 36.2        |
| 5/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 579               | 1800                  | 1800                  | 1800           | 31.3        |
| 6/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 836               | 1800                  | 1800                  | 1800           | 41.5        |
| 7/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 751               | 1800                  | 1800                  | 1800           | 38.1        |
| 8/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 560               | 1800                  | 1800                  | 1800           | 31.1        |



## Full Input Data And Results

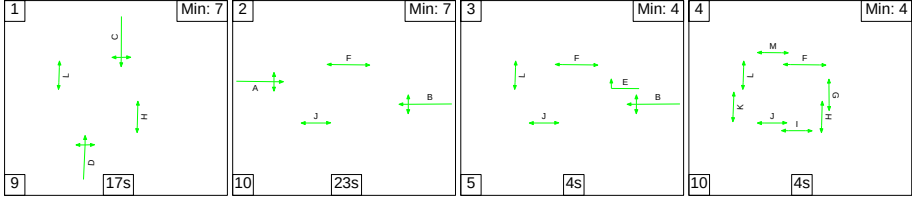
[illegible]

Scenario 14: 'Base + Com + H4 5 2024 AM'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 17: 'Base + Com + H4 5 2024 AM'

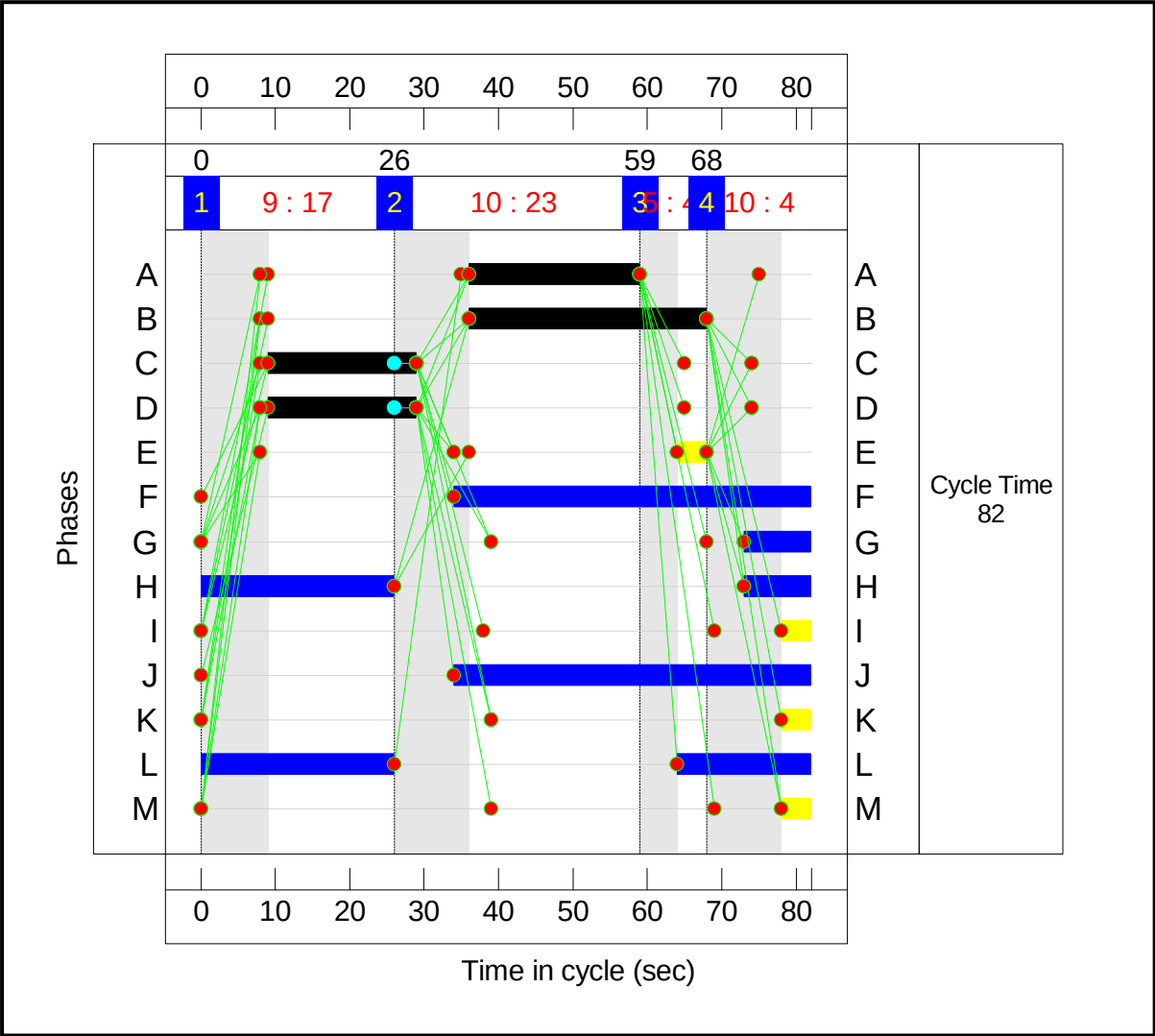
Staging Plan Diagram



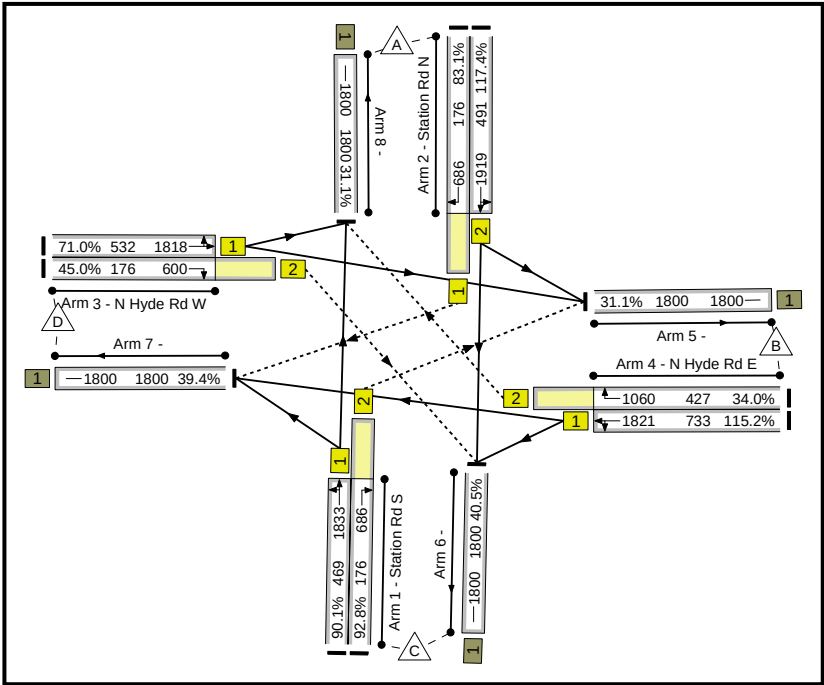
Stage Timings

| Stage        | 1  | 2  | 3  | 4  |
|--------------|----|----|----|----|
| Duration     | 17 | 23 | 4  | 4  |
| Change Point | 0  | 26 | 59 | 68 |

Signal Timings Diagram



Junction Layout Diagram



## Full Input Data And Results

### Link Results

| Link Num | Link Desc               | Link Type | Stage Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Max Sat Flow (pcu/Hr) | Ave Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|----------|-------------------------|-----------|--------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-----------------------|-----------------------|----------------|-------------|
| 1/1      | Station Rd S Left Ahead | U         | N/A          | N/A                        | D          |             | 1          | 20              | -               | 423               | 1833                  | 1833                  | 469            | 90.1        |
| 1/2      | Station Rd S Right      | O         | N/A          | N/A                        | D          |             | 1          | 20              | -               | 163               | 1741                  | 686                   | 176            | 92.8        |
| 2/1      | Station Rd N Right      | O         | N/A          | N/A                        | C          |             | 1          | 20              | -               | 146               | 1730                  | 686                   | 176            | 83.1        |
| 2/2      | Station Rd N Left Ahead | U         | N/A          | N/A                        | C          |             | 1          | 20              | -               | 577               | 1919                  | 1919                  | 491            | 117.4       |
| 3/1      | N Hyde Rd W Ahead Left  | U         | N/A          | N/A                        | A          |             | 1          | 23              | -               | 378               | 1818                  | 1818                  | 532            | 71.0        |
| 3/2      | N Hyde Rd W Right       | O         | N/A          | N/A                        | A          |             | 1          | 23              | -               | 79                | 1760                  | 600                   | 176            | 45.0        |
| 4/1      | N Hyde Rd E Left Ahead  | U         | N/A          | N/A                        | B          |             | 1          | 32              | -               | 844               | 1821                  | 1821                  | 733            | 115.2       |
| 4/2      | N Hyde Rd E Right       | O         | N/A          | N/A                        | B          | E           | 1          | 32              | 4               | 145               | 1815                  | 1060                  | 427            | 34.0        |
| 5/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 582               | 1800                  | 1800                  | 1800           | 31.1        |
| 6/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 836               | 1800                  | 1800                  | 1800           | 40.5        |
| 7/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 777               | 1800                  | 1800                  | 1800           | 39.4        |
| 8/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 560               | 1800                  | 1800                  | 1800           | 31.1        |

## Full Input Data And Results

[illegible]

## APPENDIX P

## Sensitivity Test

### 2014 Baseline Sensitivity

As requested by LBH Highways, each of the junction assessed in Section 2 of this report have been re-assessed using the 2014 Baseline Sensitivity traffic flows. The following paragraphs describe the results of these models under 2014 Baseline Sensitivity flows.

#### Dawley Road/Blyth Road/Kestral Way/Betam Road Roundabout

| ARM             | AM Peak |       | PM Peak |       |
|-----------------|---------|-------|---------|-------|
|                 | RFC     | Queue | RFC     | Queue |
| Dawley Road (N) | 0.654   | 2     | 0.511   | 1     |
| Blyth Road      | 0.862   | 5     | 0.588   | 1     |
| Dawley Road (S) | 0.681   | 2     | 0.695   | 2     |
| Kestral Way     | 0.080   | 0     | 0.224   | 0     |
| Betam Road      | 0.050   | 0     | 0.120   | 0     |

This junction operates within capacity under anticipated 2014 Baseline Sensitivity traffic flows.

#### Dawley Road/North Hyde Road/Millington Road/Bourne Avenue Roundabout

| ARM             | AM Peak |       | PM Peak |       |
|-----------------|---------|-------|---------|-------|
|                 | RFC     | Queue | RFC     | Queue |
| Dawley Road (N) | 0.787   | 4     | 0.720   | 3     |
| North Hyde Road | 0.616   | 2     | 0.558   | 1     |
| Millington Road | 0.093   | 0     | 0.531   | 1     |
| Dawley Road (S) | 0.676   | 2     | 0.751   | 3     |
| Bourne Avenue   | 0.645   | 2     | 0.472   | 1     |

This junction operates within capacity under anticipated 2014 Baseline Sensitivity traffic flows.

#### Dawley Road/Station Road/Shepiston Lane mini-roundabout

| ARM             | AM Peak |       | PM Peak |       |
|-----------------|---------|-------|---------|-------|
|                 | RFC     | Queue | RFC     | Queue |
| Dawley Road (N) | 0.672   | 2     | 0.643   | 2     |
| Station Road    | 0.591   | 1     | 0.530   | 1     |
| Shepiston Lane  | 0.586   | 1     | 0.666   | 2     |

This junction operates within capacity under anticipated 2014 Baseline Sensitivity traffic flows.

#### North Hyde Road/Millington Road priority junction

| ARM                            | AM Peak |       | PM Peak |       |
|--------------------------------|---------|-------|---------|-------|
|                                | RFC     | Queue | RFC     | Queue |
| Millington Road right turn     | 0.021   | 0     | 0.152   | 0     |
| North Hyde Road (W) right turn | 0.009   | 0     | 0.012   | 0     |

This junction operates within capacity under anticipated 2014 Baseline Sensitivity traffic flows.

#### Station Road /Millington Road/ Bedwell Gardens priority junction

| ARM                         | AM Peak |       | PM Peak |       |
|-----------------------------|---------|-------|---------|-------|
|                             | RFC     | Queue | RFC     | Queue |
| Millington Road right turn  | 0.237   | 0     | 0.811   | 4     |
| Station Road (S) right turn | 0.054   | 0     | 0.049   | 0     |
| Bedwell Gardens right turn  | 0.399   | 1     | 0.220   | 0     |
| Station Road (N) right turn | 0.346   | 0     | 0.370   | 0     |

This junction operates within capacity under anticipated 2014 Baseline Sensitivity traffic flows.

#### North Hyde Road / Station Road signals junction

| LINK | ARM                     | AM Peak |       | PM Peak |       |
|------|-------------------------|---------|-------|---------|-------|
|      |                         | DoS     | Queue | DoS     | Queue |
| 1/1  | Station Rd S Left Ahead | 72.0    | 8.8   | 66.0    | 9.2   |
| 1/2  | Station Rd S Right      | 80.9    | 4.4   | 98.0    | 14.0  |
| 2/1  | Station Rd N Right      | 63.1    | 3.1   | 39.0    | 2.2   |
| 2/2  | Station Rd N Left Ahead | 100.3   | 24.4  | 63.7    | 9.1   |
| 3/1  | N Hyde Rd W Ahead Left  | 63.6    | 7.1   | 88.1    | 11.0  |
| 3/2  | N Hyde Rd W Right       | 40.4    | 1.6   | 36.6    | 1.5   |
| 4/1  | N Hyde Rd E Left Ahead  | 104.4   | 40.1  | 103.7   | 33.4  |
| 4/2  | N Hyde Rd E Right       | 26.4    | 1.9   | 71.5    | 4.8   |
| PRC  |                         | -16.0%  |       | -15.3%  |       |

In the morning peak hour this junction operates over capacity with both the Station Road North left and ahead lane and North Hyde Road East left and ahead lane, with a degrees of saturation over 100%. In the evening peak both the Station Road South right turn lane and North Hyde Rd East left and ahead lane operate over-capacity.



#### High Street / Station Road signals junction

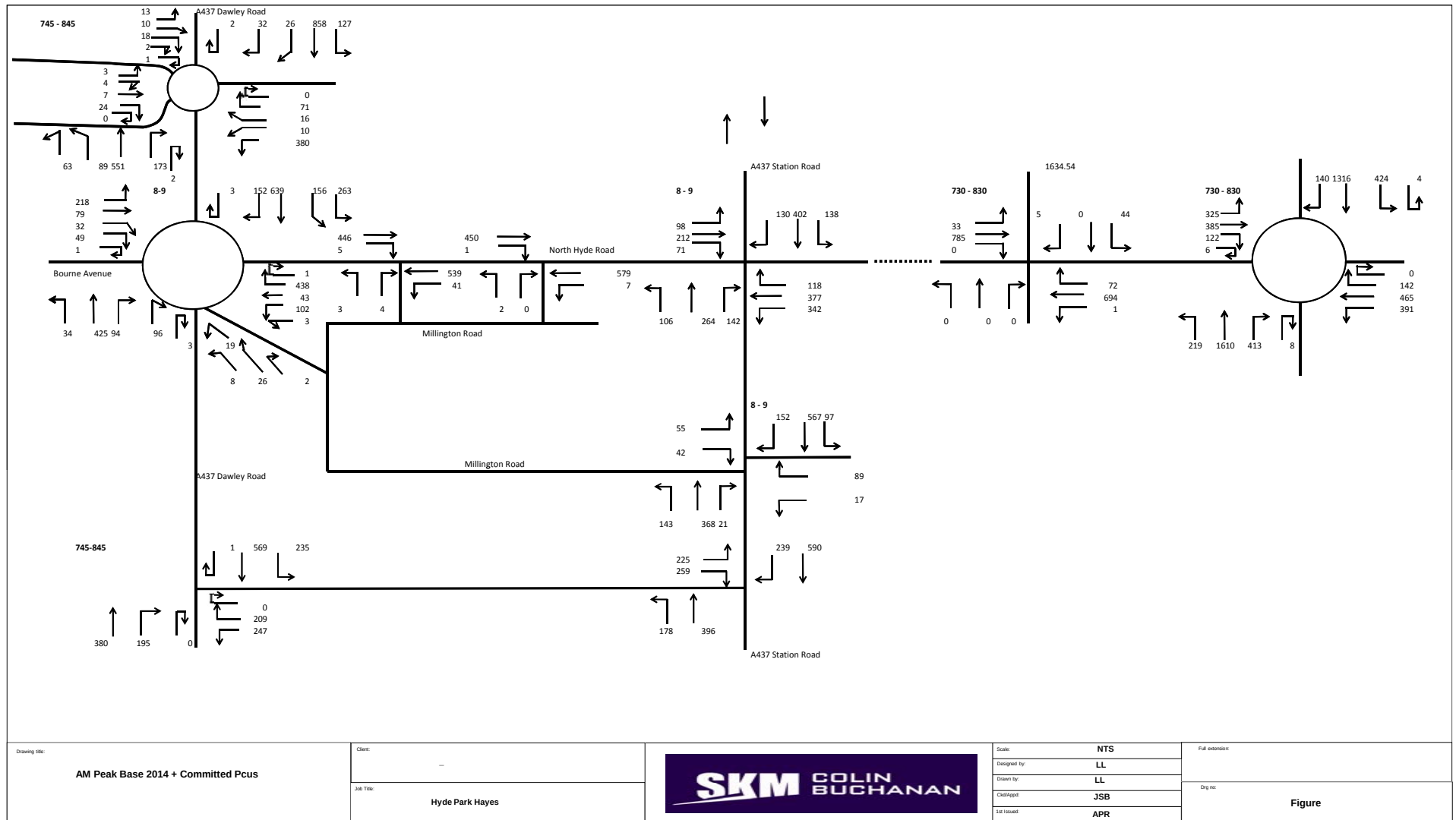
| LINK | ARM                         | AM Peak |       | PM Peak |       |
|------|-----------------------------|---------|-------|---------|-------|
|      |                             | DoS     | Queue | DoS     | Queue |
| 1/1  | Station Road (N) Ahead      | 66.8    | 7.9   | 47.1    | 4.7   |
| 1/2  | Station Road (N) Right      | 57.8    | 4.0   | 56.1    | 3.9   |
| 2/1  | High Street (S) Ahead Left  | 73.6    | 9.7   | 80.8    | 12.7  |
| 3/1  | Station Road (W) Left Right | 80.1    | 8.7   | 80.2    | 8.1   |
| PRC  |                             | 12.3%   |       | 11.4%   |       |

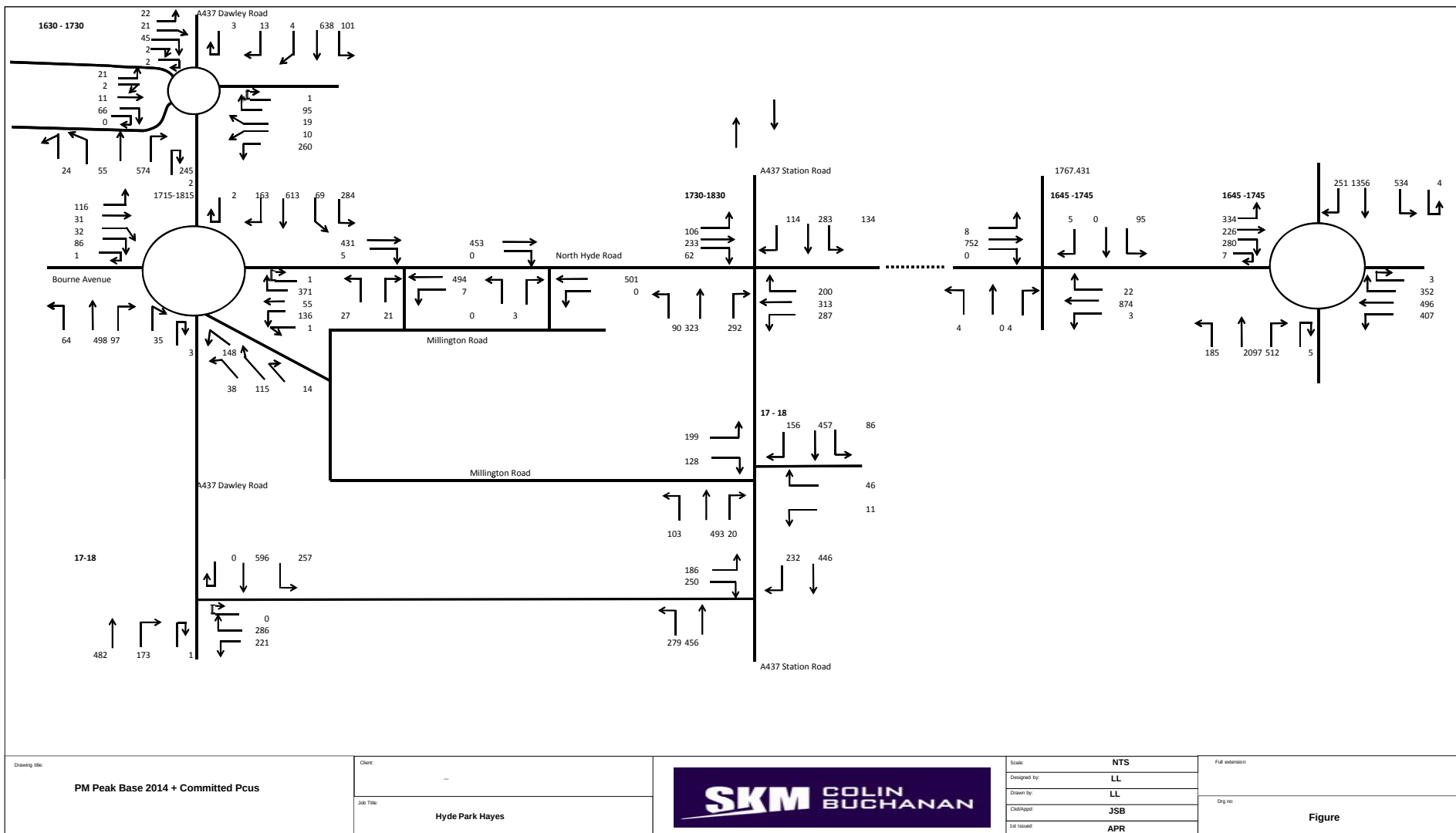
This junction operates within capacity under anticipated 2014 Baseline Sensitivity traffic flows.

Transyt Results –North Hyde Gardens/North Hyde Road/Watersplash Lane & North Hyde Road / Hayes Bypass  
/ Hayes Road signalised roundabout

| Approach                                 | AM Peak |       | PM Peak |       |
|------------------------------------------|---------|-------|---------|-------|
|                                          | DoS %   | Queue | DoS%    | Queue |
| <b>Bulls Bridge Roundabout</b>           |         |       |         |       |
| Hayes Road Eastbound nearside            | 66      | 5     | 77      | 7     |
| Hayes Road Eastbound lane 2              | 43      | 2     | 84      | 8     |
| Hayes Road Eastbound lane 3              | 11      | 0     | 38      | 2     |
| The Parkway Southbound nearside          | 85      | 13    | 84      | 15    |
| The Parkway Southbound lane 2            | 86      | 13    | 85      | 15    |
| The Parkway Southbound lane 3            | 87      | 13    | 58      | 7     |
| Hayes Road Westbound nearside            | 67      | 4     | 77      | 8     |
| Hayes Road Westbound lane 2              | 65      | 4     | 27      | 1     |
| Hayes Road Westbound lane 3              | 62      | 4     | 76      | 8     |
| Hayes Road Westbound lane 4              | 29      | 2     | 65      | 5     |
| The Parkway Northbound nearside          | 29      | 3     | 86      | 15    |
| The Parkway Northbound lane 2            | 84      | 13    | 87      | 15    |
| The Parkway Northbound lane 3            | 89      | 16    | 86      | 16    |
| The Parkway Northbound lane 4            | 85      | 13    | 58      | 8     |
| <b>North Hyde Rd/ North Hyde Gardens</b> |         |       |         |       |
| North Hyde Gardens Southbound            | 8       | 1     | 15      | 1     |
| Watersplash Lane                         | 9       | 0     | 9       | 0     |
| North Hyde Rd Eastbound                  | 84      | 15    | 79      | 13    |
| North Hyde Rd Westbound nearside         | 47      | 2     | 55      | 3     |
| North Hyde Rd Westbound Right turn       | 12      | 0     | 3       | 0     |
| <b>Internal Links</b>                    |         |       |         |       |
| Internal Eastbound nearside              | 33      | 4     | 28      | 3     |
| Internal Eastbound lane 2                | 27      | 3     | 44      | 4     |
| Internal Eastbound lane 3                | 30      | 4     | 47      | 4     |
| Internal Eastbound lane 4                | 9       | 1     | 25      | 0     |
| Internal southbound nearside             | 30      | 1     | 59      | 2     |
| Internal southbound lane 2               | 46      | 3     | 55      | 2     |
| Internal southbound lane 3               | 44      | 2     | 34      | 2     |
| Internal southbound lane 4               | 13      | 0     | 25      | 0     |
| Internal westbound nearside              | 39      | 4     | 49      | 5     |
| Internal westbound lane 2                | 31      | 5     | 49      | 1     |
| Internal westbound lane 3                | 16      | 2     | 45      | 1     |
| Internal northbound nearside             | 63      | 1     | 58      | 1     |
| Internal northbound lane 2               | 76      | 4     | 69      | 5     |
| Internal northbound lane 3               | 58      | 3     | 76      | 4     |
| Internal northbound lane 4               | 51      | 1     | 47      | 3     |

During the AM and PM peak the network operates within the capacity for the 2014 Baseline traffic flows. All approaches operate below 90% degree of saturation and all internal queues do not exceed 5PCUs.





# <Enter Report 1 Title Here>

## PRT File

## AM Base B14+Com

1 T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 3 (March 2004)  
(c) Copyright TRL Limited, 2004

For sales and distribution information,  
program advice and maintenance, contact:

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Old Wokingham road Fax: +44 (0) 1344 770864  
Crowthorne, Berks. Email: softwarebureau@trl.co.uk  
RG45 6AU, UK. Web: www.trlsoftware.co.uk

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

Run with file:- "BULLS BRIDGE RABOUT\_AM\_ST.DAT" at 19:04 on 06/08/12

TRANSYT 12.0

### PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES = 8  
NUMBER OF LINKS = 70  
NUMBER OF OPTIMISED NODES = 8  
MAXIMUM NUMBER OF GRAPHIC PLOTS = 0  
NUMBER OF STEPS IN CYCLE = 65  
MAXIMUM NUMBER OF SHARED STOPLINES = 2  
MAXIMUM NUMBER OF TIMING POINTS = 3  
MAXIMUM LINKS AT ANY NODE = 12

CORE REQUESTED = 14800 WORDS  
CORE AVAILABLE = 72000 WORDS

### DATA INPUT :-

CARD NO. CARD TYPE  
( 1)= TITLE:-  
CARD NO. CARD TYPE CYCLE TIME NO. OF STEPS PERIOD DISPLACEMENTS SETTINGS CYCLE SCALE SCALE CARD32 0=NONE COPIES CLIMB VALUE VALUE  
(SEC) PER 1-1200 START END 0=NO 1=EQUAL 10-200 50-200 0=TIMES 1=0/SET FINAL OUTPUT P PER P PER  
CYCLE MINS. (SEC) 3 0 1 100 100 0 0 0 0 1420 260 100  
LIST OF NODES TO BE OPTIMISED  
2)= 1 65 65 60 2 3 0 1 100 100 0 0 0 0 0 0  
CARD NO. CARD TYPE  
3)= 2 146 126 127 128 129 130 131 132 0 0 0 0 0 0 0

LINKS HAVING SHARED STOPLINES  
CARD NO. CARD TYPE FIRST SET..... SECOND SET..... THIRD SET.....  
4)= 7 29 12602 0 0 0 0 0 0 0 0 0 0 0 0 0  
5)= 7 31 58 0 0 0 0 0 0 0 0 0 0 0 0 0  
6)= 7 36 37 0 0 0 0 0 0 0 0 0 0 0 0 0  
7)= 7 38 39 0 0 0 0 0 0 0 0 0 0 0 0 0  
8)= 7 40 41 0 0 0 0 0 0 0 0 0 0 0 0 0  
9)= 7 42 62 0 0 0 0 0 0 0 0 0 0 0 0 0  
10)= 7 52 53 0 0 0 0 0 0 0 0 0 0 0 0 0  
11)= 7 54 56 0 0 0 0 0 0 0 0 0 0 0 0 0  
12)= 7 1262 1261 0 0 0 0 0 0 0 0 0 0 0 0 0  
13)= 7 1264 1263 0 0 0 0 0 0 0 0 0 0 0 0 0  
14)= 7 1267 1266 0 0 0 0 0 0 0 0 0 0 0 0 0  
15)= 7 1272 1271 0 0 0 0 0 0 0 0 0 0 0 0 0  
16)= 7 1274 1273 0 0 0 0 0 0 0 0 0 0 0 0 0  
17)= 7 1276 1275 0 0 0 0 0 0 0 0 0 0 0 0 0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
18)= 10 126 7 7  
19)= 10 127 7 7  
20)= 10 128 7 7  
21)= 10 129 7 7  
22)= 10 130 7 7  
23)= 10 131 7 7  
24)= 10 132 7 7  
25)= 10 146 7 7 7

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
26)= 11 126 6 6  
27)= 11 127 5 5  
28)= 11 128 6 6  
29)= 11 129 5 5  
30)= 11 130 6 6  
31)= 11 131 5 5  
32)= 11 132 5 6  
33)= 11 146 7 8 8

NODE CARDS: STAGE CHANGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. Sgl/Db1 Cycled S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
34)= 12 126 1 3 36  
35)= 12 127 1 31 61  
36)= 12 128 1 32 19  
37)= 12 129 1 16 38  
38)= 12 130 1 16 3



| LINK<br>NUMBER | FLOW<br>INTO<br>LINK | SAT<br>FLOW | DEGREE<br>OF<br>SAT | MEAN<br>PER<br>CRUISE | -----DELAY----- |                                        |                                       |                              | ---STOPS---                   |                       | ---QUEUE---                   |                                     | PERFORMANCE<br>INDEX<br>SUM | EXIT<br>NODE | GREEN<br>START<br>END |
|----------------|----------------------|-------------|---------------------|-----------------------|-----------------|----------------------------------------|---------------------------------------|------------------------------|-------------------------------|-----------------------|-------------------------------|-------------------------------------|-----------------------------|--------------|-----------------------|
|                |                      |             |                     |                       | TIMES<br>(SEC)  | UNIFORM<br>(U+R+O=MEAN Q)<br>(PCU-H/H) | RANDOM+<br>OVERSAT<br>DELAY<br>(\$/H) | COST<br>STOPS<br>/PCU<br>(%) | MEAN<br>OF<br>STOPS<br>(\$/H) | COST<br>MAX.<br>(PCU) | AVERAGE<br>EXCESS OF<br>(PCU) | WEIGHTED<br>( )<br>VALUES<br>(\$/H) |                             |              |                       |
|                |                      |             |                     |                       |                 |                                        |                                       |                              |                               |                       |                               |                                     |                             |              |                       |
| 1266           | 72                   | 1267L       | 58                  | 7.5                   | 33.7            | 0.6 + 0.6                              | ( 9.4 )                               | 107                          | ( 0.8 )                       | 3                     |                               | 10.3                                | 126                         | 9            | 37                    |
| 1267           | 451                  | 2019S       | 58                  | 5.5                   | 5.6             | 0.0 + 0.1                              | ( 9.2 )                               | 12                           | ( 1.1 )                       | 3                     |                               | 10.3                                | 126                         | 9            | 37                    |
| 1269           | 413                  | 1824        | 51                  | 5.5                   | 5.2             | 0.0 + 0.5                              | ( 7.7 )                               | 8                            | ( 0.7 )                       | 1                     |                               | 8.4                                 | 126                         | 9            | 37                    |
| 1271           | 140                  | 1272L       | 33                  | 8.5                   | 15.4            | 0.5 + 0.1                              | ( 8.2 )                               | 45                           | ( 0.8 )                       | 4                     |                               | 9.0                                 | 127                         | 1            | 31                    |
| 1272           | 152                  | 1876S       | 33                  | 6.5                   | 14.6            | 0.5 + 0.1                              | ( 8.5 )                               | 88                           | ( 3.0 )                       | 4                     |                               | 11.4                                | 127                         | 1            | 31                    |
| 1273           | 137                  | 1274L       | 27                  | 8.5                   | 15.0            | 0.5 + 0.1                              | ( 7.8 )                               | 44                           | ( 0.8 )                       | 3                     |                               | 8.6                                 | 127                         | 1            | 31                    |
| 1274           | 129                  | 2046S       | 27                  | 6.5                   | 14.1            | 0.4 + 0.1                              | ( 6.9 )                               | 84                           | ( 2.4 )                       | 3                     |                               | 9.4                                 | 127                         | 1            | 31                    |
| 1275           | 136                  | 1276L       | 30                  | 8.5                   | 15.2            | 0.5 + 0.1                              | ( 7.9 )                               | 45                           | ( 0.8 )                       | 4                     |                               | 8.6                                 | 127                         | 1            | 31                    |
| 1276           | 144                  | 1973S       | 30                  | 6.5                   | 14.5            | 0.5 + 0.1                              | ( 8.0 )                               | 86                           | ( 2.8 )                       | 4                     |                               | 10.7                                | 127                         | 1            | 31                    |
| 1278           | 77                   | 1770        | 9                   | 6.5                   | 12.2            | 0.2 + 0.0                              | ( 3.5 )                               | 77                           | ( 1.3 )                       | 1                     |                               | 4.8                                 | 127                         | 1            | 31                    |

|       |      |       |    |      |      |           |         |     |         |    |       |     |    |    |
|-------|------|-------|----|------|------|-----------|---------|-----|---------|----|-------|-----|----|----|
| 1461  | 44   | 1860  | 8  | 18.5 | 20.8 | 0.2 + 0.0 | ( 3.5)  | 73  | ( 0.7)  | 1  | 4.2   | 146 | 50 | 3  |
| 1462  | 72   | 1774  | 12 | 13.5 | 8.1  | 0.1 + 0.1 | ( 2.2)  | 36  | ( 0.4)  | 0  | 2.6   | 146 | 18 | 3  |
| 1463  | 752  | 1833  | 47 | 13.5 | 3.0  | 0.1 + 0.4 | ( 7.4)  | 9   | ( 1.2)  | 2  | 8.6   | 146 | 18 | 9  |
| 1464  | 20   | 1833  | 9  | 18.5 | 34.7 | 0.1 + 0.0 | ( 2.7)  | 96  | ( 0.4)  | 0  | 3.1   | 146 | 11 | 18 |
| 1465  | 818  | 1926  | 84 | 18.5 | 25.1 | 3.1 + 2.5 | ( 79.4) | 93  | ( 16.1) | 15 | 95.6  | 146 | 18 | 50 |
| 1466  | 33   | 715   | 5  | 2.5  | 3.2  | 0.0 + 0.0 | ( 0.3)  | 0   | ( 0.0)  | 0  | 0.3   |     |    |    |
| 1467  | 185  | 2000  | 5  | 18.5 | 1.5  | 0.0 + 0.0 | ( 0.4)  | 1   | ( 0.0)  | 0  | 0.4   |     |    |    |
| 1468  | 20   | 2000  | 1  | 18.5 | 1.4  | 0.0 + 0.0 | ( 0.1)  | 1   | ( 0.0)  | 0  | 0.1   |     |    |    |
| 1469  | 751  | 2000  | 38 | 18.5 | 1.9  | 0.0 + 0.3 | ( 4.3)  | 2   | ( 0.4)  | 0  | 4.6   |     |    |    |
| 12601 | 832  | 1800  | 46 | 18.3 | 2.4  | 0.0 + 0.4 | ( 6.1)  | 3   | ( 0.5)  | 0  | 6.6   |     |    |    |
| 12602 | 142  | 29L   | 52 | 18.5 | 1.5  | 0.0 + 0.0 | ( 0.5)  | 3   | ( 0.1)  | 18 | 0.6   |     |    |    |
| 12603 | 10   | 10000 | 0  | 4.5  | 11.7 | 0.0 + 0.0 | ( 0.4)  | 57  | ( 0.0)  | 0  | 0.4   | 126 | 9  | 36 |
| 12604 | 10   | 10000 | 0  | 4.5  | 11.7 | 0.0 + 0.0 | ( 0.4)  | 57  | ( 0.0)  | 0  | 0.4   | 126 | 9  | 36 |
| 12605 | 273  | 1522  | 43 | 2.5  | 9.5  | 0.3 + 0.4 | ( 9.7)  | 31  | ( 1.5)  | 2  | 11.1  | 126 | 42 | 3  |
| 12606 | 77   | 1640  | 11 | 2.5  | 7.1  | 0.1 + 0.1 | ( 2.0)  | 23  | ( 0.3)  | 0  | 2.3   | 126 | 42 | 3  |
| 12607 | 483  | 1757  | 66 | 2.5  | 12.2 | 0.6 + 1.0 | ( 22.3) | 44  | ( 3.6)  | 5  | 25.9  | 126 | 42 | 3  |
| 12701 | 617  | 1777  | 87 | 2.5  | 36.3 | 3.1 + 3.1 | ( 87.2) | 110 | ( 15.9) | 13 | 103.1 | 127 | 36 | 61 |
| 12702 | 617  | 1775  | 87 | 2.5  | 36.5 | 3.1 + 3.1 | ( 87.6) | 111 | ( 15.9) | 13 | 103.5 | 127 | 36 | 61 |
| 12703 | 1880 | 3600  | 52 | 18.5 | 1.5  | 0.0 + 0.5 | ( 7.8)  | 2   | ( 0.6)  | 1  | 8.4   |     |    |    |
| 12704 | 650  | 1907  | 85 | 2.5  | 33.6 | 3.2 + 2.8 | ( 84.8) | 106 | ( 16.1) | 13 | 100.9 | 127 | 36 | 61 |

| TOTAL<br>DISTANCE<br>TRAVELLED | TOTAL<br>TIME<br>SPENT | MEAN<br>JOURNEY<br>SPEED | TOTAL<br>UNIFORM<br>DELAY | TOTAL<br>RANDOM+<br>OVERSAT<br>DELAY | TOTAL<br>COST<br>OF | TOTAL<br>COST<br>OF | PENALTY<br>FOR<br>EXCESS<br>QUEUES | TOTAL<br>PERFORMANCE<br>INDEX |
|--------------------------------|------------------------|--------------------------|---------------------------|--------------------------------------|---------------------|---------------------|------------------------------------|-------------------------------|
| (PCU-KM/H)                     | (PCU-H/H)              | (KM/H)                   | (PCU-H/H)                 | (PCU-H/H)                            | (\$/H)              | (\$/H)              | (\$/H)                             | (\$/H)                        |

3319.7 159.1 20.9 37.7 36.0 (1045.9) + ( 186.6) + ( 0.0) = 1232.5 TOTALS

ROUTE

| CRUISE<br>LITRES PER HOUR | DELAY<br>LITRES PER HOUR | STOPS<br>LITRES PER HOUR | TOTALS<br>LITRES PER HOUR |
|---------------------------|--------------------------|--------------------------|---------------------------|
|---------------------------|--------------------------|--------------------------|---------------------------|

FUEL CONSUMPTION PREDICTIONS 185.0 + 84.7 + 85.0 = 354.8

NO. OF ENTRIES TO SUBPT = 1  
NO. OF LINKS RECALCULATED= 70

PROGRAM TRANSYT FINISHED



# <Enter Report 1 Title Here>

## PRT File PM Base B14+Com

1 T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 3 (March 2004)  
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program advice and maintenance, contact:

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Old Wokingham road Fax: +44 (0) 1344 770864  
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RG45 6AU, UK. Web: www.trlsoftware.co.uk

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

Run with file:- "BULLS BRIDGE RABOUT\_PM\_MC\_ST.DAT" at 19:05 on 06/08/12

TRANSYT 12.0

### PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES = 8  
NUMBER OF LINKS = 70  
NUMBER OF OPTIMISED NODES = 8  
MAXIMUM NUMBER OF GRAPHIC PLOTS = 8  
NUMBER OF STEPS IN CYCLE = 66  
MAXIMUM NUMBER OF SHARED STOPLINES = 2  
MAXIMUM NUMBER OF TIMING POINTS = 3  
MAXIMUM LINKS AT ANY NODE = 12

CORE REQUESTED = 14914 WORDS  
CORE AVAILABLE = 72000 WORDS

### DATA INPUT :-

CARD NO. CARD TYPE  
( 1)= TITLE:-  
CARD NO. CARD TYPE CYCLE TIME NO. OF STEPS PERIOD DISPLACEMENTS SETTINGS CYCLE SCALE SCALE CARD32 0=NONE COPIES CLIMB VALUE VALUE  
(SEC) PER 1-1200 START END 0=NO 1=EQUAL 10-200 50-200 0=TIMES 1=0/SET FINAL OUTPUT P PER P PER  
CYCLE CYCLE MINS. (SEC) (SEC) 1=YES CYCLE % % 1=SPEEDS 2=FULL OUTPUT 1=FULL PCU-H 100  
2)= 1 66 66 60 2 3 0 1 100 100 0 0 0 0 1420 260 100  
CARD NO. CARD TYPE  
3)= 2 146 126 127 128 129 130 131 132 0 0 0 0 0 0 0

LINKS HAVING SHARED STOPLINES  
CARD NO. CARD TYPE FIRST SET..... SECOND SET..... THIRD SET.....  
4)= 7 29 12602 0 0 0 0 0 0 0 0 0 0 0 0 0  
5)= 7 31 58 0 0 0 0 0 0 0 0 0 0 0 0 0  
6)= 7 36 37 0 0 0 0 0 0 0 0 0 0 0 0 0  
7)= 7 38 39 0 0 0 0 0 0 0 0 0 0 0 0 0  
8)= 7 40 41 0 0 0 0 0 0 0 0 0 0 0 0 0  
9)= 7 42 62 0 0 0 0 0 0 0 0 0 0 0 0 0  
10)= 7 52 53 0 0 0 0 0 0 0 0 0 0 0 0 0  
11)= 7 54 56 0 0 0 0 0 0 0 0 0 0 0 0 0  
12)= 7 1262 1261 0 0 0 0 0 0 0 0 0 0 0 0 0  
13)= 7 1264 1263 0 0 0 0 0 0 0 0 0 0 0 0 0  
14)= 7 1267 1266 0 0 0 0 0 0 0 0 0 0 0 0 0  
15)= 7 1272 1271 0 0 0 0 0 0 0 0 0 0 0 0 0  
16)= 7 1274 1273 0 0 0 0 0 0 0 0 0 0 0 0 0  
17)= 7 1276 1275 0 0 0 0 0 0 0 0 0 0 0 0 0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
18)= 10 126 7 7  
19)= 10 127 7 7  
20)= 10 128 7 7  
21)= 10 129 7 7  
22)= 10 130 7 7  
23)= 10 131 7 7  
24)= 10 132 7 7  
25)= 10 146 7 7 7

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
26)= 11 126 6 6  
27)= 11 127 5 5  
28)= 11 128 6 6  
29)= 11 129 5 5  
30)= 11 130 6 6  
31)= 11 131 5 5  
32)= 11 132 5 6  
33)= 11 146 7 8 8

NODE CARDS: STAGE CHANGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. Sgl/Db1 Cycled S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
34)= 12 126 1 30 8  
35)= 12 127 1 33 5  
36)= 12 128 1 52 39  
37)= 12 129 1 9 34  
38)= 12 130 1 7 60

| CARD NO. | CARD TYPE | CARD NO. | LINK1 NO. | LINK2 NO. | ONLY % FLOW | A1 X100 | A2 X100 |   |   |   |   |   |   |    |     |     |      |   |   |
|----------|-----------|----------|-----------|-----------|-------------|---------|---------|---|---|---|---|---|---|----|-----|-----|------|---|---|
|          |           |          |           |           |             |         |         |   |   |   |   |   |   |    |     |     |      |   |   |
| 42)=     | 30        | 1462     | 1465      |           | 0           | 0       | 50      | 0 | 0 | 0 | 0 | 0 | 0 | 0  | 130 | 0   | 1000 | 0 | 0 |
| 43)=     | 30        | 1466     | 1462      |           | 0           | 0       | 22      | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 0   | 715 | 0    | 0 |   |

| CARD NO. |    | CARD TYPE | LINK NO. | TOTAL FLOW | LINK CARDS:  |          |      |             |          |      |             |          |      |             |          |      |             |
|----------|----|-----------|----------|------------|--------------|----------|------|-------------|----------|------|-------------|----------|------|-------------|----------|------|-------------|
|          |    |           |          |            | ENTRY 1      |          |      | ENTRY 2     |          |      | ENTRY 3     |          |      | ENTRY 4     |          |      |             |
|          |    |           |          |            | UNIFORM FLOW | LINK NO. | FLOW | CRUISE TIME | LINK NO. | FLOW | CRUISE TIME | LINK NO. | FLOW | CRUISE TIME | LINK NO. | FLOW | CRUISE TIME |
| 113)     | 32 | 29        | 2097     | 0          | 1262         | 656      | 18   | 1264        | 640      | 18   | 1267        | 801      | 18   | 0           | 0        | 0    | 0           |
| 114)     | 32 | 31        | 395      | 0          | 1272         | 16       | 9    | 1274        | 159      | 9    | 1275        | 169      | 9    | 1276        | 51       | 9    | 0           |
| 115)     | 32 | 32        | 10       | 0          | 0            | 0        | 4    | 0           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 116)     | 32 | 33        | 1272     | 0          | 31           | 395      | 18   | 58          | 877      | 18   | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 117)     | 32 | 34        | 251      | 0          | 12702        | 251      | 5    | 0           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 118)     | 32 | 36        | 280      | 0          | 12702        | 280      | 5    | 0           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 119)     | 32 | 37        | 111      | 0          | 1278         | 111      | 7    | 0           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 120)     | 32 | 38        | 538      | 0          | 12701        | 538      | 5    | 0           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 121)     | 32 | 39        | 89       | 0          | 1276         | 39       | 7    | 1278        | 50       | 7    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 122)     | 32 | 40        | 538      | 0          | 12701        | 248      | 5    | 12704       | 200      | 5    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 123)     | 32 | 41        | 80       | 0          | 1276         | 80       | 7    | 0           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 124)     | 32 | 42        | 681      | 0          | 50           | 369      | 5    | 52          | 127      | 5    | 55          | 185      | 5    | 0           | 0        | 0    | 0           |
| 125)     | 32 | 43        | 10       | 0          | 0            | 0        | 4    | 0           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 126)     | 32 | 44        | 397      | 0          | 63           | 397      | 4    | 0           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 127)     | 32 | 45        | 137      | 0          | 63           | 137      | 4    | 0           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 128)     | 32 | 46        | 1255     | 0          | 0            | 0        | 18   | 0           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 129)     | 32 | 47        | 10       | 0          | 0            | 0        | 4    | 0           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 130)     | 32 | 48        | 332      | 0          | 65           | 332      | 6    | 0           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 131)     | 32 | 50        | 389      | 0          | 64           | 389      | 6    | 0           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 132)     | 32 | 52        | 127      | 0          | 45           | 127      | 6    | 0           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 133)     | 32 | 53        | 251      | 0          | 34           | 251      | 8    | 0           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 134)     | 32 | 54        | 1753     | 0          | 36           | 280      | 18   | 38          | 538      | 18   | 40          | 538      | 18   | 44          | 397      | 18   | 0           |
| 135)     | 32 | 55        | 750      | 0          | 68           | 750      | 4    | 0           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 136)     | 32 | 56        | 290      | 0          | 37           | 111      | 18   | 39          | 89       | 18   | 41          | 80       | 18   | 45          | 10       | 18   | 0           |
| 137)     | 32 | 57        | 731      | 0          | 68           | 731      | 4    | 0           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 138)     | 32 | 58        | 877      | 0          | 1271         | 174      | 9    | 1273        | 169      | 9    | 12704       | 534      | 11   | 0           | 0        | 0    | 0           |
| 139)     | 32 | 59        | 10       | 0          | 0            | 0        | 4    | 0           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 140)     | 32 | 60        | 10       | 0          | 0            | 0        | 4    | 0           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 141)     | 32 | 61        | 10       | 0          | 0            | 0        | 4    | 0           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 142)     | 32 | 62        | 251      | 0          | 53           | 251      | 5    | 0           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 143)     | 32 | 63        | 1255     | 0          | 46           | 1255     | 1    | 0           | 0        | 0    | 0           | 0        | 0    | 0           | 0        | 0    | 0           |
| 144)     | 32 | 64        | 389      |            |              |          |      |             |          |      |             |          |      |             |          |      |             |

[illegible]

| CARD NO. | CARD TYPE | ROUTE NUMBER | ROUTE DESCRIPTION |
|----------|-----------|--------------|-------------------|
| 184)=    | 41        | 1            | <Route Name>      |
| 185)=    | 41        | 2            | <Route Name>      |
| 186)=    | 41        | 3            | <Route Name>      |
| 187)=    | 41        | 4            | <Route Name>      |

[illegible]

INITIAL SETTINGS  
- (SECONDS)

| NO  | NUMBER | STAGE | STAGE | STAGE | STAGE | STAGE | STAGE | STAGE | STAGE | STAGE | STAGE |
|-----|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| NO  | OF     | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
| 126 | 2      | 30    | 8     |       |       |       |       |       |       |       |       |
| 127 | 2      | 33    | 5     |       |       |       |       |       |       |       |       |
| 128 | 2      | 52    | 39    |       |       |       |       |       |       |       |       |
| 129 | 2      | 9     | 34    |       |       |       |       |       |       |       |       |
| 130 | 2      | 7     | 60    |       |       |       |       |       |       |       |       |
| 131 | 2      | 36    | 5     |       |       |       |       |       |       |       |       |
| 132 | 2      | 53    | 40    |       |       |       |       |       |       |       |       |
| 146 | 3      | 55    | 18    | 40    |       |       |       |       |       |       |       |

| LINK<br>NUMBER | FLOW<br>INTO<br>LINK | SAT<br>FLOW | DEGREE<br>OF<br>SAT | MEAN<br>PER<br>CRUISE | TIMES<br>PER<br>PERCU | -----DELAY----- |         |        |         | -----STOPS----- |           | -----QUEUE----- |          | PERFORMANCE |     | EXIT<br>NODE | GREEN<br>START | TIMES<br>END |       |       |        |        |
|----------------|----------------------|-------------|---------------------|-----------------------|-----------------------|-----------------|---------|--------|---------|-----------------|-----------|-----------------|----------|-------------|-----|--------------|----------------|--------------|-------|-------|--------|--------|
|                |                      |             |                     |                       |                       | UNIFORM         | RANDOM+ | COST   | MEAN    | COST            | MAX.      | AVERAGE         | WEIGHTED | INDEX       | SUM |              |                |              |       |       |        |        |
|                |                      |             |                     |                       |                       |                 |         |        |         |                 |           |                 |          |             |     |              |                |              | STOPS | STOPS | EXCESS | VALUES |
|                |                      |             |                     |                       |                       |                 |         |        |         |                 |           |                 |          |             |     |              |                |              |       |       |        |        |
| (PCU/H)        | (PCU/H)              | (%)         | (SEC)               | (SEC)                 | (PCU-H/H)             | (\$/H)          | (%)     | (\$/H) | (PCU)   | (PCU)           | (SECONDS) | 1ST             | 2ND      |             |     |              |                |              |       |       |        |        |
| 29             | 2096                 | 4000S       | 70                  | 18.5                  | 3.6                   | 1.0 + 0.9       | ( 25.8) | 41     | ( 18.2) | 33              | 44.0      |                 |          |             |     |              |                |              |       |       |        |        |
| 31             | 396                  | 5591S       | 31                  | 9.5                   | 2.9                   | 0.2 + 0.1       | ( 3.8)  | 12     | ( 0.9)  | 4               | 4.7       | 128             | 58       | 39          |     |              |                |              |       |       |        |        |
| 32             | 10                   | 10000       | 1                   | 4.5                   | 27.9                  | 0.1 + 0.0       | ( 1.1)  | 89     | ( 0.0)  | 0               | 1.1       | 128             | 45       | 52          |     |              |                |              |       |       |        |        |
| 33             | 1273                 | 6000        | 21                  | 18.5                  | 0.9                   | 0.0 + 0.0       | ( 1.9)  | 1      | ( 0.2)  | 0               | 2.1       |                 |          |             |     |              |                |              |       |       |        |        |
| 34             | 251                  | 1806        | 25                  | 5.5                   | 3.4                   | 0.0 + 0.2       | ( 2.9)  | 6      | ( 0.3)  | 0               | 3.2       | 129             | 39       | 9           |     |              |                |              |       |       |        |        |
| 36             | 280                  | 2047S       | 34                  | 5.5                   | 3.5                   | 0.0 + 0.2       | ( 3.3)  | 6      | ( 0.3)  | 2               | 3.6       | 129             | 39       | 9           |     |              |                |              |       |       |        |        |
| 37             | 111                  | 361         | 34                  | 7.5                   | 12.4                  | 0.3 + 0.1       | ( 5.2)  | 89     | ( 0.0)  | 2               | 6.2       | 129             | 39       | 9           |     |              |                |              |       |       |        |        |
| 38             | 539                  | 2028S       | 55                  | 5.5                   | 2.7                   | 0.2 + 0.5       | ( 2.0)  | 7      | ( 0.8)  | 2               | 2.6       | 129             | 39       | 9           |     |              |                |              |       |       |        |        |
| 39             | 89                   | 381         | 55                  | 7.5                   | 12.7                  | 0.2 + 0.1       | ( 4.3)  | 86     | ( 0.8)  | 2               | 5.1       | 129             | 39       | 9           |     |              |                |              |       |       |        |        |
| 40             | 538                  | 1867S       | 59                  | 5.5                   | 5.3                   | 0.1 + 0.6       | ( 10.1) | 8      | ( 0.9)  | 2               | 11.1      | 129             | 39       | 9           |     |              |                |              |       |       |        |        |
| 41             | 80                   | 40L         | 59                  | 7.5                   | 12.5                  | 0.2 + 0.1       | ( 3.8)  | 82     | ( 0.7)  | 2               | 4.4       | 129             | 39       | 9           |     |              |                |              |       |       |        |        |
| 42             | 681                  | 2028S       | 62                  | 5.5                   | 5.1                   | 0.3 + 0.6       | ( 12.5) | 20     | ( 3.2)  | 3               | 15.7      | 132             | 58       | 40          |     |              |                |              |       |       |        |        |
| 43             | 10                   | 10000       | 1                   | 4.5                   | 27.9                  | 0.1 + 0.0       | ( 1.1)  | 89     | ( 0.0)  | 0               | 1.1       | 132             | 46       | 53          |     |              |                |              |       |       |        |        |
| 44             | 397                  | 1612        | 77                  | 4.5                   | 32.2                  | 1.8 + 1.7       | ( 49.7) | 92     | ( 8.1)  | 8               | 57.8      | 129             | 14       | 34          |     |              |                |              |       |       |        |        |
| 45             | 138                  | 1613        | 27                  | 4.5                   | 19.9                  | 0.6 + 0.2       | ( 10.6) | 55     | ( 1.7)  | 1               | 12.2      | 129             | 14       | 34          |     |              |                |              |       |       |        |        |
| 46             | 1255                 | 4839        | 36                  | 18.5                  | 4.6                   | 1.2 + 0.3       | ( 20.4) | 31     | ( 8.4)  | 9               | 28.7      | 130             | 13       | 60          |     |              |                |              |       |       |        |        |
| 47             | 10                   | 10000       | 1                   | 4.5                   | 27.9                  | 0.1 + 0.0       | ( 1.1)  | 89     | ( 0.0)  | 0               | 1.1       | 130             | 0        | 7           |     |              |                |              |       |       |        |        |
| 48             | 331                  | 1806        | 45                  | 6.5                   | 7.9                   | 0.3 + 0.4       | ( 9.7)  | 15     | ( 0.9)  | 1               | 10.7      | 131             | 10       | 36          |     |              |                |              |       |       |        |        |
| 50             | 389                  | 1922        | 49                  | 6.5                   | 8.3                   | 0.4 + 0.5       | ( 12.0) | 16     | ( 1.2)  | 1               | 13.2      | 131             | 10       | 36          |     |              |                |              |       |       |        |        |
| 52             | 128                  | 1806S       | 49                  | 6.5                   | 23.0                  | 0.1 + 0.2       | ( 3.8)  | 15     | ( 0.4)  | 5               | 4.2       | 131             | 10       | 36          |     |              |                |              |       |       |        |        |
| 53             | 251                  | 52L         | 49                  | 8.5                   | 8.9                   | 0.3 + 0.3       | ( 22.3) | 102    | ( 2.8)  | 5               | 25.1      | 131             | 10       | 36          |     |              |                |              |       |       |        |        |
| 54             | 1754                 | 6000S       | 34                  | 18.5                  | 1.0                   | 0.0 + 0.2       | ( 3.1)  | 1      | ( 0.3)  | 0               | 3.4       |                 |          |             |     |              |                |              |       |       |        |        |
| 55             | 749                  | 1855        | 86                  | 4.5                   | 30.1                  | 3.2 + 2.9       | ( 87.4) | 101    | ( 12.9) | 15              | 100.3     | 131             | 41       | 5           |     |              |                |              |       |       |        |        |
| 56             | 290                  | 54L         | 34                  | 18.5                  | 1.0                   | 0.0 + 0.0       | ( 0.5)  | 1      | ( 0.0)  | 0               | 0.6       |                 |          |             |     |              |                |              |       |       |        |        |
| 57             | 732                  | 1800        | 87                  | 4.5                   | 31.2                  | 3.2 + 3.1       | ( 88.6) | 103    | ( 12.8) | 15              | 81.5      | 131             | 41       | 5           |     |              |                |              |       |       |        |        |
| 58             | 877                  | 31L         | 31                  | 10.7                  | 2.2                   | 0.3 + 0.2       | ( 6.0)  | 16     | ( 2.7)  | 4               | 8.8       | 128             | 58       | 39</        |     |              |                |              |       |       |        |        |

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I      ^^^^^^^      111111111111
500+11      ^^^^^^^      111111111111
I1111      ^^^^^^^      11111111111111
I111111111111000000^      111111111111111
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```

PROGRAM TRANSYT FINISHED

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Wokingham, Berks. Web: www.trlsoftware.co.uk  
RG40 3GA,UK

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IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_BlythRd AM Sen.vai"  
(drive-on-the-left ) at 10:30:46 on Sunday, 5 August 2012

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Site 4 Base Model  
LOCATION: Hayes and Harlington  
DATE: 17/07/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - Dawley Road (N)  
ARM B - Blyth Road (E)  
ARM C - Dawley Road (S)  
ARM D - Kestral Way (SW)  
ARM E - Betam Road (NW)

GEOMETRIC DATA  
-----

| T5 |     |   |       |      |       |      |       |       |       |       |       |       |           |      |       |       |                     |        |   |
|----|-----|---|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-----------|------|-------|-------|---------------------|--------|---|
| I  | ARM | I | V (M) | I    | E (M) | I    | L (M) | I     | R (M) | I     | D (M) | I     | PHI (DEG) | I    | SLOPE | I     | INTERCEPT (PCU/MIN) | I      |   |
| I  | ARM | A | I     | 3.90 | I     | 7.86 | I     | 19.00 | I     | 13.60 | I     | 34.70 | I         | 17.0 | I     | 0.708 | I                   | 32.392 | I |
| I  | ARM | B | I     | 3.29 | I     | 5.65 | I     | 3.60  | I     | 7.00  | I     | 35.00 | I         | 16.5 | I     | 0.531 | I                   | 19.562 | I |
| I  | ARM | C | I     | 4.97 | I     | 9.46 | I     | 13.00 | I     | 3.00  | I     | 34.70 | I         | 36.0 | I     | 0.522 | I                   | 25.183 | I |
| I  | ARM | D | I     | 3.90 | I     | 4.66 | I     | 3.20  | I     | 3.00  | I     | 34.00 | I         | 28.0 | I     | 0.419 | I                   | 15.966 | I |
| I  | ARM | E | I     | 3.60 | I     | 7.70 | I     | 8.00  | I     | 8.20  | I     | 35.00 | I         | 16.5 | I     | 0.609 | I                   | 25.411 | I |

V = approach half-width L = effective flare length D = inscribed circle diameter  
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA  
-----

Only sets included in the current run are shown

SCALING FACTORS

LENGTH OF TIME PERIOD - ( 90 ) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

| T15 |     |   |                                   |            |         |                        |         |       |   |             |             |            |        |        |       |
|-----|-----|---|-----------------------------------|------------|---------|------------------------|---------|-------|---|-------------|-------------|------------|--------|--------|-------|
| I   | ARM | I | NUMBER OF MINUTES FROM START WHEN |            |         | RATE OF FLOW (VEH/MIN) |         |       | I |             |             |            |        |        |       |
|     |     |   | I                                 | I          | I       | I                      | I       | I     |   |             |             |            |        |        |       |
|     |     |   |                                   |            |         |                        |         |       |   | FLOW STARTS | TOP OF PEAK | FLOW STOPS | BEFORE | AT TOP | AFTER |
| I   |     | I | I                                 | I          | I       | I                      | I       | I     | I |             |             |            |        |        |       |
| I   |     | I | TO RISE                           | IS REACHED | FALLING | PEAK                   | OF PEAK | PEAK  | I |             |             |            |        |        |       |
| I   | ARM | A | I                                 | 15.00      | I       | 45.00                  | I       | 75.00 | I | 13.06       | I           | 19.59      | I      | 13.06  | I     |
| I   | ARM | B | I                                 | 15.00      | I       | 45.00                  | I       | 75.00 | I | 5.96        | I           | 8.94       | I      | 5.96   | I     |
| I   | ARM | C | I                                 | 15.00      | I       | 45.00                  | I       | 75.00 | I | 10.98       | I           | 16.46      | I      | 10.98  | I     |
| I   | ARM | D | I                                 | 15.00      | I       | 45.00                  | I       | 75.00 | I | 0.47        | I           | 0.71       | I      | 0.47   | I     |
| I   | ARM | E | I                                 | 15.00      | I       | 45.00                  | I       | 75.00 | I | 0.55        | I           | 0.83       | I      | 0.55   | I     |

| TURNING PROPORTIONS   |        |     |        |        |        |        |        |  |  | T33 |
|-----------------------|--------|-----|--------|--------|--------|--------|--------|--|--|-----|
| TURNING COUNTS        |        |     |        |        |        |        |        |  |  |     |
| (PERCENTAGE OF H.V.S) |        |     |        |        |        |        |        |  |  |     |
|                       |        |     |        |        |        |        |        |  |  |     |
| TIME                  | FROM/T | ARM | A      | B      | C      | D      | E      |  |  |     |
| 07.30 - 09.00         | ARM A  |     | 0.002  | 0.122  | 0.821  | 0.025  | 0.031  |  |  |     |
|                       |        |     | 2.0    | 127.0  | 858.0  | 26.0   | 32.0   |  |  |     |
|                       |        |     | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |  |  |     |
|                       |        |     |        |        |        |        |        |  |  |     |
|                       | ARM B  |     | 0.149  | 0.000  | 0.797  | 0.021  | 0.034  |  |  |     |
|                       |        |     | 71.0   | 0.0    | 380.0  | 10.0   | 16.0   |  |  |     |
|                       |        |     | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |  |  |     |
|                       |        |     |        |        |        |        |        |  |  |     |
|                       | ARM C  |     | 0.628  | 0.197  | 0.002  | 0.072  | 0.101  |  |  |     |
|                       |        |     | 551.0  | 173.0  | 2.0    | 63.0   | 89.0   |  |  |     |
|                       |        |     | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |  |  |     |
|                       |        |     |        |        |        |        |        |  |  |     |
|                       | ARM D  |     | 0.079  | 0.184  | 0.632  | 0.000  | 0.105  |  |  |     |
|                       |        |     | 3.0    | 7.0    | 24.0   | 0.0    | 4.0    |  |  |     |
|                       |        |     | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |  |  |     |
|                       |        |     |        |        |        |        |        |  |  |     |
|                       | ARM E  |     | 0.295  | 0.227  | 0.409  | 0.045  | 0.023  |  |  |     |
|                       |        |     | 13.0   | 10.0   | 18.0   | 2.0    | 1.0    |  |  |     |
|                       |        |     | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |  |  |     |
|                       |        |     |        |        |        |        |        |  |  |     |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT





QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 07.45                  | 0.8                            | *  |
| 08.00                  | 1.1                            | *  |
| 08.15                  | 1.9                            | ** |
| 08.30                  | 1.9                            | ** |
| 08.45                  | 1.1                            | *  |
| 09.00                  | 0.8                            | *  |

QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 07.45                  | 0.8                            | *     |
| 08.00                  | 1.5                            | *     |
| 08.15                  | 4.9                            | ***** |
| 08.30                  | 5.4                            | ***** |
| 08.45                  | 1.6                            | **    |
| 09.00                  | 0.9                            | *     |

QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 07.45                  | 0.8                            | *  |
| 08.00                  | 1.2                            | *  |
| 08.15                  | 2.1                            | ** |
| 08.30                  | 2.1                            | ** |
| 08.45                  | 1.2                            | *  |
| 09.00                  | 0.8                            | *  |

QUEUE AT ARM D

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

QUEUE AT ARM E

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| T75 |     |   |              |          |   |              |           |   |                        |           |   |
|-----|-----|---|--------------|----------|---|--------------|-----------|---|------------------------|-----------|---|
| I   | ARM | I | TOTAL DEMAND |          | I | * QUEUEING * |           | I | * INCLUSIVE QUEUEING * |           | I |
| I   |     | I |              |          | I | * DELAY *    |           | I | * DELAY *              |           | I |
| I   |     | I | (VEH)        | (VEH/H)  | I | (MIN)        | (MIN/VEH) | I | (MIN)                  | (MIN/VEH) | I |
| I   | A   | I | 1438.4       | I 958.9  | I | 110.7        | I 0.08    | I | 110.7                  | I 0.08    | I |
| I   | B   | I | 656.6        | I 437.7  | I | 210.4        | I 0.32    | I | 210.4                  | I 0.32    | I |
| I   | C   | I | 1208.5       | I 805.7  | I | 122.9        | I 0.10    | I | 122.9                  | I 0.10    | I |
| I   | D   | I | 52.3         | I 34.9   | I | 5.7          | I 0.11    | I | 5.7                    | I 0.11    | I |
| I   | E   | I | 60.6         | I 40.4   | I | 3.6          | I 0.06    | I | 3.6                    | I 0.06    | I |
| I   | ALL | I | 3416.3       | I 2277.5 | I | 453.3        | I 0.13    | I | 453.3                  | I 0.13    | I |

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

END OF JOB

===== end of file =====

Printed at 10:32:06 on 05/08/2012]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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RG40 3GA,UK

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_BlythRd PM Sen.vai"  
(drive-on-the-left ) at 10:32:14 on Sunday, 5 August 2012

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Site 4 Base Model  
LOCATION: Hayes and Harlington  
DATE: 17/07/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - Dawley Road (N)  
ARM B - Blyth Road (E)  
ARM C - Dawley Road (S)  
ARM D - Kestral Way (SW)  
ARM E - Betam Road (NW)

GEOMETRIC DATA  
-----

| T5 |     |   |       |      |       |      |       |       |       |       |       |       |           |      |       |       |                     |        |   |
|----|-----|---|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-----------|------|-------|-------|---------------------|--------|---|
| I  | ARM | I | V (M) | I    | E (M) | I    | L (M) | I     | R (M) | I     | D (M) | I     | PHI (DEG) | I    | SLOPE | I     | INTERCEPT (PCU/MIN) | I      |   |
| I  | ARM | A | I     | 3.90 | I     | 7.86 | I     | 19.00 | I     | 13.60 | I     | 34.70 | I         | 17.0 | I     | 0.708 | I                   | 32.392 | I |
| I  | ARM | B | I     | 3.29 | I     | 5.65 | I     | 3.60  | I     | 7.00  | I     | 35.00 | I         | 16.5 | I     | 0.531 | I                   | 19.562 | I |
| I  | ARM | C | I     | 4.97 | I     | 9.46 | I     | 13.00 | I     | 3.00  | I     | 34.70 | I         | 36.0 | I     | 0.522 | I                   | 25.183 | I |
| I  | ARM | D | I     | 3.90 | I     | 4.66 | I     | 3.20  | I     | 3.00  | I     | 34.00 | I         | 28.0 | I     | 0.419 | I                   | 15.966 | I |
| I  | ARM | E | I     | 3.60 | I     | 7.70 | I     | 8.00  | I     | 8.20  | I     | 35.00 | I         | 16.5 | I     | 0.609 | I                   | 25.411 | I |

V = approach half-width L = effective flare length D = inscribed circle diameter  
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA  
-----

Only sets included in the current run are shown

SCALING FACTORS

LENGTH OF TIME PERIOD - ( 90 ) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

| T15     |   |             |                         |            |   |                        |         |         |   |
|---------|---|-------------|-------------------------|------------|---|------------------------|---------|---------|---|
| I       | I |             | I                       |            |   | I                      |         |         | I |
| ARM     |   | NUMBER OF   | MINUTES FROM START WHEN |            |   | RATE OF FLOW (VEH/MIN) |         |         |   |
|         |   | FLOW STARTS | TOP OF PEAK             | FLOW STOPS |   | BEFORE                 | AT TOP  | AFTER   |   |
|         |   |             |                         |            |   |                        |         |         |   |
|         |   | TO RISE     | IS REACHED              | FALLING    |   | PEAK                   | OF PEAK | PEAK    |   |
| I ARM A | I | 15.00       | I 45.00                 | I 75.00    | I | 9.49                   | I 14.23 | I 9.49  | I |
| I ARM B | I | 15.00       | I 45.00                 | I 75.00    | I | 4.81                   | I 7.22  | I 4.81  | I |
| I ARM C | I | 15.00       | I 45.00                 | I 75.00    | I | 11.25                  | I 16.88 | I 11.25 | I |
| I ARM D | I | 15.00       | I 45.00                 | I 75.00    | I | 1.25                   | I 1.88  | I 1.25  | I |
| I ARM E | I | 15.00       | I 45.00                 | I 75.00    | I | 1.15                   | I 1.72  | I 1.15  | I |

| TURNING PROPORTIONS   |        |        |        |        |        |        |  |  |  | T33 |
|-----------------------|--------|--------|--------|--------|--------|--------|--|--|--|-----|
| TURNING COUNTS        |        |        |        |        |        |        |  |  |  |     |
| (PERCENTAGE OF H.V.S) |        |        |        |        |        |        |  |  |  |     |
| TIME                  | FROM/T | ARM A  | ARM B  | ARM C  | ARM D  | ARM E  |  |  |  |     |
| 16.15 - 17.45         | ARM A  | 0.004  | 0.133  | 0.841  | 0.005  | 0.017  |  |  |  |     |
|                       |        | 3.0    | 101.0  | 638.0  | 4.0    | 13.0   |  |  |  |     |
|                       |        | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |  |  |  |     |
|                       |        |        |        |        |        |        |  |  |  |     |
|                       | ARM B  | 0.247  | 0.003  | 0.675  | 0.026  | 0.049  |  |  |  |     |
|                       |        | 95.0   | 1.0    | 260.0  | 10.0   | 19.0   |  |  |  |     |
|                       |        | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |  |  |  |     |
|                       |        |        |        |        |        |        |  |  |  |     |
|                       | ARM C  | 0.638  | 0.272  | 0.002  | 0.027  | 0.061  |  |  |  |     |
|                       |        | 574.0  | 245.0  | 2.0    | 24.0   | 55.0   |  |  |  |     |
|                       |        | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |  |  |  |     |
|                       |        |        |        |        |        |        |  |  |  |     |
| ARM D                 | 0.210  | 0.110  | 0.660  | 0.000  | 0.020  |        |  |  |  |     |
|                       | 21.0   | 11.0   | 66.0   | 0.0    | 2.0    |        |  |  |  |     |
|                       | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |        |  |  |  |     |
|                       |        |        |        |        |        |        |  |  |  |     |
| ARM E                 | 0.239  | 0.228  | 0.489  | 0.022  | 0.022  |        |  |  |  |     |
|                       | 22.0   | 21.0   | 45.0   | 2.0    | 2.0    |        |  |  |  |     |
|                       | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |        |  |  |  |     |
|                       |        |        |        |        |        |        |  |  |  |     |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT



QUEUE AT ARM A

-----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|------------------------|--------------------------------|---|
| 16.30                  | 0.5                            |   |
| 16.45                  | 0.7                            | * |
| 17.00                  | 1.0                            | * |
| 17.15                  | 1.0                            | * |
| 17.30                  | 0.7                            | * |
| 17.45                  | 0.5                            |   |

QUEUE AT ARM B

-----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|------------------------|--------------------------------|---|
| 16.30                  | 0.5                            |   |
| 16.45                  | 0.7                            | * |
| 17.00                  | 1.4                            | * |
| 17.15                  | 1.4                            | * |
| 17.30                  | 0.8                            | * |
| 17.45                  | 0.5                            | * |

QUEUE AT ARM C

-----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 16.30                  | 0.9                            | *  |
| 16.45                  | 1.3                            | *  |
| 17.00                  | 2.2                            | ** |
| 17.15                  | 2.2                            | ** |
| 17.30                  | 1.3                            | *  |
| 17.45                  | 0.9                            | *  |

QUEUE AT ARM D

-----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |  |
|------------------------|--------------------------------|--|
| 16.30                  | 0.1                            |  |
| 16.45                  | 0.2                            |  |
| 17.00                  | 0.3                            |  |
| 17.15                  | 0.3                            |  |
| 17.30                  | 0.2                            |  |
| 17.45                  | 0.1                            |  |

QUEUE AT ARM E

-----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |  |
|------------------------|--------------------------------|--|
| 16.30                  | 0.1                            |  |
| 16.45                  | 0.1                            |  |
| 17.00                  | 0.1                            |  |
| 17.15                  | 0.1                            |  |
| 17.30                  | 0.1                            |  |
| 17.45                  | 0.1                            |  |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

|   |     |   |              |          |   |              |           |   |                        |           | T75 |
|---|-----|---|--------------|----------|---|--------------|-----------|---|------------------------|-----------|-----|
| I | ARM | I | TOTAL DEMAND |          | I | * QUEUEING * |           | I | * INCLUSIVE QUEUEING * |           | I   |
| I |     | I |              |          | I | * DELAY *    |           | I | * DELAY *              |           | I   |
| I |     | I |              |          | I |              |           | I |                        |           | I   |
| I |     | I | (VEH)        | (VEH/H)  | I | (MIN)        | (MIN/VEH) | I | (MIN)                  | (MIN/VEH) | I   |
| I | A   | I | 1044.7       | I 696.5  | I | 65.7         | I 0.06    | I | 65.7                   | I 0.06    | I   |
| I | B   | I | 529.9        | I 353.3  | I | 78.4         | I 0.15    | I | 78.4                   | I 0.15    | I   |
| I | C   | I | 1238.8       | I 825.9  | I | 129.7        | I 0.10    | I | 129.7                  | I 0.10    | I   |
| I | D   | I | 137.6        | I 91.8   | I | 17.9         | I 0.13    | I | 17.9                   | I 0.13    | I   |
| I | E   | I | 126.6        | I 84.4   | I | 8.9          | I 0.07    | I | 8.9                    | I 0.07    | I   |
| I | ALL | I | 3077.7       | I 2051.8 | I | 300.7        | I 0.10    | I | 300.7                  | I 0.10    | I   |

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

END OF JOB

===== end of file =====

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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RG40 3GA,UK

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_NorthHydeRd AM Sen.vai"  
(drive-on-the-left ) at 11:22:53 on Sunday, 5 August 2012

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Base Model - Roundabout 1  
LOCATION: North Hyde Road/Dawley Road  
DATE: 23/04/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - Dawley Road (N)  
ARM B - North Hyde Road  
ARM C - Millington Road  
ARM D - Daweley Road (S)  
ARM E - Bourne Avenue

GEOMETRIC DATA  
-----

| I | ARM   | I | V (M) | I | E (M) | I | L (M) | I | R (M) | I | D (M) | I | PHI (DEG) | I | SLOPE | I | INTERCEPT (PCU/MIN) | I | T5 |
|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-----------|---|-------|---|---------------------|---|----|
| I | ARM A | I | 3.65  | I | 9.50  | I | 13.00 | I | 22.00 | I | 75.00 | I | 20.0      | I | 0.526 | I | 31.736              | I |    |
| I | ARM B | I | 3.50  | I | 8.00  | I | 16.00 | I | 10.00 | I | 72.00 | I | 40.0      | I | 0.467 | I | 27.158              | I |    |
| I | ARM C | I | 4.00  | I | 6.00  | I | 8.00  | I | 22.00 | I | 54.00 | I | 36.0      | I | 0.553 | I | 25.388              | I |    |
| I | ARM D | I | 3.50  | I | 5.50  | I | 12.00 | I | 20.00 | I | 76.00 | I | 46.0      | I | 0.422 | I | 22.915              | I |    |
| I | ARM E | I | 3.65  | I | 4.50  | I | 3.00  | I | 32.00 | I | 56.00 | I | 35.0      | I | 0.497 | I | 20.704              | I |    |

V = approach half-width L = effective flare length D = inscribed circle diameter  
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA  
-----

Only sets included in the current run are shown

SCALING FACTORS



----- T13

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

-----

TIME PERIOD BEGINS(07.45)AND ENDS(09.15)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com 2014

| T15 |       |   |                                   |   |             |   |                        |   |        |   |         |   |       |   |
|-----|-------|---|-----------------------------------|---|-------------|---|------------------------|---|--------|---|---------|---|-------|---|
| I   | I     | I | NUMBER OF MINUTES FROM START WHEN | I | I           | I | RATE OF FLOW (VEH/MIN) | I | I      | I |         |   |       |   |
| I   | ARM   | I | FLOW STARTS                       | I | TOP OF PEAK | I | FLOW STOPS             | I | BEFORE | I | AT TOP  | I | AFTER | I |
| I   |       | I |                                   | I |             | I |                        | I |        | I |         | I |       | I |
| I   |       | I | TO RISE                           | I | IS REACHED  | I | FALLING                | I | PEAK   | I | OF PEAK | I | PEAK  | I |
| I   | ARM A | I | 15.00                             | I | 45.00       | I | 75.00                  | I | 15.16  | I | 22.74   | I | 15.16 | I |
| I   | ARM B | I | 15.00                             | I | 45.00       | I | 75.00                  | I | 7.34   | I | 11.01   | I | 7.34  | I |
| I   | ARM C | I | 15.00                             | I | 45.00       | I | 75.00                  | I | 0.69   | I | 1.03    | I | 0.69  | I |
| I   | ARM D | I | 15.00                             | I | 45.00       | I | 75.00                  | I | 8.15   | I | 12.22   | I | 8.15  | I |
| I   | ARM E | I | 15.00                             | I | 45.00       | I | 75.00                  | I | 4.74   | I | 7.11    | I | 4.74  | I |

DEMAND SET TITLE: Base+Com 2014

----- T33

| I | I             | TURNING PROPORTIONS   | I                                                 |
|---|---------------|-----------------------|---------------------------------------------------|
| I | I             | TURNING COUNTS        | I                                                 |
| I | I             | (PERCENTAGE OF H.V.S) | I                                                 |
| I | I             |                       | I                                                 |
| I | TIME          | I FROM/T              | I ARM A I ARM B I ARM C I ARM D I ARM E I         |
| I | 07.45 - 09.15 | I                     | I I I I I I I                                     |
| I |               | I                     | I ARM A I 0.002 I 0.217 I 0.129 I 0.527 I 0.125 I |
| I |               | I                     | I 3.0 I 263.0 I 156.0 I 639.0 I 152.0 I           |
| I |               | I                     | I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I         |
| I |               | I                     | I I I I I I I                                     |
| I |               | I                     | I ARM B I 0.746 I 0.002 I 0.005 I 0.174 I 0.073 I |
| I |               | I                     | I 438.0 I 1.0 I 3.0 I 102.0 I 43.0 I              |
| I |               | I                     | I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I         |
| I |               | I                     | I I I I I I I                                     |
| I |               | I                     | I ARM C I 0.473 I 0.036 I 0.000 I 0.345 I 0.145 I |
| I |               | I                     | I 26.0 I 2.0 I 0.0 I 19.0 I 8.0 I                 |
| I |               | I                     | I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I         |
| I |               | I                     | I I I I I I I                                     |
| I |               | I                     | I ARM D I 0.652 I 0.144 I 0.147 I 0.005 I 0.052 I |
| I |               | I                     | I 425.0 I 94.0 I 96.0 I 3.0 I 34.0 I              |
| I |               | I                     | I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I         |
| I |               | I                     | I I I I I I I                                     |
| I |               | I                     | I ARM E I 0.575 I 0.208 I 0.084 I 0.129 I 0.003 I |
| I |               | I                     | I 218.0 I 79.0 I 32.0 I 49.0 I 1.0 I              |
| I |               | I                     | I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I         |
| I |               | I                     | I I I I I I I                                     |

-----

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

-----

|   | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|--|
| I | 07.45-08.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |  |
| I | ARM A       | 15.22               | 29.39                 | 0.518                        | -                                | 0.0                      | 1.1                    | 15.4                                | -                                             | 0.070                                          |  |
| I | ARM B       | 7.37                | 20.57                 | 0.358                        | -                                | 0.0                      | 0.6                    | 8.1                                 | -                                             | 0.075                                          |  |
| I | ARM C       | 0.69                | 15.52                 | 0.044                        | -                                | 0.0                      | 0.0                    | 0.7                                 | -                                             | 0.067                                          |  |
| I | ARM D       | 8.18                | 19.37                 | 0.422                        | -                                | 0.0                      | 0.7                    | 10.5                                | -                                             | 0.089                                          |  |
| I | ARM E       | 4.76                | 13.96                 | 0.341                        | -                                | 0.0                      | 0.5                    | 7.4                                 | -                                             | 0.108                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |       |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|-------|
| 08.00-08.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |       |
| ARM A       | 18.17               | 28.93                 | 0.628                        | - -                              | -                        | 1.1                    | 1.7                                 | 24.0                                          | -                                              | 0.092 |
| ARM B       | 8.80                | 19.27                 | 0.456                        | - -                              | -                        | 0.6                    | 0.8                                 | 12.1                                          | -                                              | 0.095 |
| ARM C       | 0.82                | 13.57                 | 0.061                        | - -                              | -                        | 0.0                    | 0.1                                 | 0.9                                           | -                                              | 0.078 |
| ARM D       | 9.77                | 18.67                 | 0.523                        | - -                              | -                        | 0.7                    | 1.1                                 | 15.7                                          | -                                              | 0.112 |
| ARM E       | 5.68                | 12.62                 | 0.450                        | - -                              | -                        | 0.5                    | 0.8                                 | 11.6                                          | -                                              | 0.143 |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|--|
| 08.15-08.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |  |
| ARM A       | 22.26               | 28.31                 | 0.786                        | -                                | 1.7                      | 3.5                    | 48.5                                | -                                             | 0.159                                          |  |
| ARM B       | 10.77               | 17.53                 | 0.615                        | -                                | 0.8                      | 1.6                    | 22.1                                | -                                             | 0.146                                          |  |
| ARM C       | 1.01                | 10.96                 | 0.092                        | -                                | 0.1                      | 0.1                    | 1.5                                 | -                                             | 0.100                                          |  |
| ARM D       | 11.96               | 17.73                 | 0.675                        | -                                | 1.1                      | 2.0                    | 28.3                                | -                                             | 0.170                                          |  |
| ARM E       | 6.95                | 10.83                 | 0.642                        | -                                | 0.8                      | 1.7                    | 23.7                                | -                                             | 0.250                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.30-08.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| ARM A       | 22.26               | 28.29                 | 0.787                        | -                                | 3.5                      | 3.6                    | 53.4                                | -                                             | 0.165                                          |
| ARM B       | 10.77               | 17.48                 | 0.616                        | -                                | 1.6                      | 1.6                    | 23.6                                | -                                             | 0.149                                          |
| ARM C       | 1.01                | 10.88                 | 0.093                        | -                                | 0.1                      | 0.1                    | 1.5                                 | -                                             | 0.101                                          |
| ARM D       | 11.96               | 17.70                 | 0.676                        | -                                | 2.0                      | 2.0                    | 30.5                                | -                                             | 0.174                                          |
| ARM E       | 6.95                | 10.79                 | 0.645                        | -                                | 1.7                      | 1.8                    | 26.2                                | -                                             | 0.260                                          |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.45-09.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| ARM A       | 18.17               | 28.90                 | 0.629                        | -                                | 3.6                      | 1.7                    | 27.1                                | -                                             | 0.095                                          |
| ARM B       | 8.80                | 19.19                 | 0.458                        | -                                | 1.6                      | 0.9                    | 13.3                                | -                                             | 0.097                                          |
| ARM C       | 0.82                | 13.46                 | 0.061                        | -                                | 0.1                      | 0.1                    | 1.0                                 | -                                             | 0.079                                          |
| ARM D       | 9.77                | 18.63                 | 0.524                        | -                                | 2.0                      | 1.1                    | 17.5                                | -                                             | 0.114                                          |
| ARM E       | 5.68                | 12.56                 | 0.452                        | -                                | 1.8                      | 0.8                    | 13.3                                | -                                             | 0.148                                          |

[illegible]

-----  
 QUEUE AT ARM A  
 -----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |      |
|------------------------|--------------------------------|------|
| 08.00                  | 1.1                            | *    |
| 08.15                  | 1.7                            | **   |
| 08.30                  | 3.5                            | **** |
| 08.45                  | 3.6                            | **** |
| 09.00                  | 1.7                            | **   |
| 09.15                  | 1.1                            | *    |

-----  
 QUEUE AT ARM B  
 -----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 08.00                  | 0.6                            | *  |
| 08.15                  | 0.8                            | *  |
| 08.30                  | 1.6                            | ** |
| 08.45                  | 1.6                            | ** |
| 09.00                  | 0.9                            | *  |
| 09.15                  | 0.6                            | *  |

-----  
 QUEUE AT ARM C  
 -----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |  |
|------------------------|--------------------------------|--|
| 08.00                  | 0.0                            |  |
| 08.15                  | 0.1                            |  |
| 08.30                  | 0.1                            |  |
| 08.45                  | 0.1                            |  |
| 09.00                  | 0.1                            |  |
| 09.15                  | 0.0                            |  |

-----  
 QUEUE AT ARM D  
 -----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 08.00                  | 0.7                            | *  |
| 08.15                  | 1.1                            | *  |
| 08.30                  | 2.0                            | ** |
| 08.45                  | 2.0                            | ** |
| 09.00                  | 1.1                            | *  |
| 09.15                  | 0.7                            | *  |

-----  
 QUEUE AT ARM E  
 -----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 08.00                  | 0.5                            | *  |
| 08.15                  | 0.8                            | *  |
| 08.30                  | 1.7                            | ** |
| 08.45                  | 1.8                            | ** |
| 09.00                  | 0.8                            | *  |
| 09.15                  | 0.5                            | *  |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

|   |     |   |              |          |   |              |           |   |                        |           | T75 |
|---|-----|---|--------------|----------|---|--------------|-----------|---|------------------------|-----------|-----|
| I | ARM | I | TOTAL DEMAND |          | I | * QUEUEING * |           | I | * INCLUSIVE QUEUEING * |           | I   |
| I |     | I |              |          | I | * DELAY *    |           | I | * DELAY *              |           | I   |
| I |     | I |              |          | I |              |           | I |                        |           | I   |
| I |     | I | (VEH)        | (VEH/H)  | I | (MIN)        | (MIN/VEH) | I | (MIN)                  | (MIN/VEH) | I   |
| I | A   | I | 1669.6       | I 1113.1 | I | 185.2        | I 0.11    | I | 185.3                  | I 0.11    | I   |
| I | B   | I | 808.0        | I 538.6  | I | 87.9         | I 0.11    | I | 87.9                   | I 0.11    | I   |
| I | C   | I | 75.7         | I 50.5   | I | 6.3          | I 0.08    | I | 6.3                    | I 0.08    | I   |
| I | D   | I | 897.4        | I 598.3  | I | 113.9        | I 0.13    | I | 113.9                  | I 0.13    | I   |
| I | E   | I | 521.7        | I 347.8  | I | 90.4         | I 0.17    | I | 90.4                   | I 0.17    | I   |
| I | ALL | I | 3972.4       | I 2648.2 | I | 483.7        | I 0.12    | I | 483.7                  | I 0.12    | I   |

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

END OF JOB

===== end of file =====

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_NorthHydeRd PM Sen.vai"  
(drive-on-the-left ) at 11:24:14 on Sunday, 5 August 2012

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Base Model - Roundabout 1  
LOCATION: North Hyde Road/Dawley Road  
DATE: 23/04/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - Dawley Road (N)  
ARM B - North Hyde Road  
ARM C - Millington Road  
ARM D - Daweley Road (S)  
ARM E - Bourne Avenue

GEOMETRIC DATA  
-----

| I | ARM   | I | V (M) | I | E (M) | I | L (M) | I | R (M) | I | D (M) | I | PHI (DEG) | I | SLOPE | I | INTERCEPT (PCU/MIN) | I | T5 |
|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-----------|---|-------|---|---------------------|---|----|
| I | ARM A | I | 3.65  | I | 9.50  | I | 13.00 | I | 22.00 | I | 75.00 | I | 20.0      | I | 0.526 | I | 31.736              | I |    |
| I | ARM B | I | 3.50  | I | 8.00  | I | 16.00 | I | 10.00 | I | 72.00 | I | 40.0      | I | 0.467 | I | 27.158              | I |    |
| I | ARM C | I | 4.00  | I | 6.00  | I | 8.00  | I | 22.00 | I | 54.00 | I | 36.0      | I | 0.553 | I | 25.388              | I |    |
| I | ARM D | I | 3.50  | I | 5.50  | I | 12.00 | I | 20.00 | I | 76.00 | I | 46.0      | I | 0.422 | I | 22.915              | I |    |
| I | ARM E | I | 3.65  | I | 4.50  | I | 3.00  | I | 32.00 | I | 56.00 | I | 35.0      | I | 0.497 | I | 20.704              | I |    |

V = approach half-width L = effective flare length D = inscribed circle diameter  
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA  
-----

Only sets included in the current run are shown

SCALING FACTORS

----- T13

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

-----

TIME PERIOD BEGINS(17.00)AND ENDS(18.30)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com 2014

| T15 |       |   |                                   |   |             |   |                        |   |        |   |         |   |       |   |
|-----|-------|---|-----------------------------------|---|-------------|---|------------------------|---|--------|---|---------|---|-------|---|
| I   | I     | I | NUMBER OF MINUTES FROM START WHEN | I | I           | I | RATE OF FLOW (VEH/MIN) | I | I      |   |         |   |       |   |
| I   | ARM   | I | FLOW STARTS                       | I | TOP OF PEAK | I | FLOW STOPS             | I | BEFORE | I | AT TOP  | I | AFTER | I |
| I   |       | I |                                   | I |             | I |                        | I |        | I |         | I |       | I |
| I   |       | I | TO RISE                           | I | IS REACHED  | I | FALLING                | I | PEAK   | I | OF PEAK | I | PEAK  | I |
| I   | ARM A | I | 15.00                             | I | 45.00       | I | 75.00                  | I | 14.14  | I | 21.21   | I | 14.14 | I |
| I   | ARM B | I | 15.00                             | I | 45.00       | I | 75.00                  | I | 7.05   | I | 10.58   | I | 7.05  | I |
| I   | ARM C | I | 15.00                             | I | 45.00       | I | 75.00                  | I | 3.94   | I | 5.91    | I | 3.94  | I |
| I   | ARM D | I | 15.00                             | I | 45.00       | I | 75.00                  | I | 8.71   | I | 13.07   | I | 8.71  | I |
| I   | ARM E | I | 15.00                             | I | 45.00       | I | 75.00                  | I | 3.33   | I | 4.99    | I | 3.33  | I |

DEMAND SET TITLE: Base+Com 2014

| ----- T33 |               |   |                       |   |        |   |        |   |        |   |        |   |        |   |
|-----------|---------------|---|-----------------------|---|--------|---|--------|---|--------|---|--------|---|--------|---|
| I         |               | I | TURNING PROPORTIONS   |   |        |   |        |   | I      |   |        |   |        |   |
| I         |               | I | TURNING COUNTS        |   |        |   |        |   | I      |   |        |   |        |   |
| I         |               | I | (PERCENTAGE OF H.V.S) |   |        |   |        |   | I      |   |        |   |        |   |
| I         |               | I | -----                 |   |        |   |        |   | I      |   |        |   |        |   |
| I         | TIME          | I | FROM/T                | I | ARM A  | I | ARM B  | I | ARM C  | I | ARM D  | I | ARM E  | I |
| I         | 17.00 - 18.30 | I |                       | I |        | I |        | I |        | I |        | I |        | I |
| I         |               | I | ARM A                 | I | 0.002  | I | 0.251  | I | 0.061  | I | 0.542  | I | 0.144  | I |
| I         |               | I |                       | I | 2.0    | I | 284.0  | I | 69.0   | I | 613.0  | I | 163.0  | I |
| I         |               | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I |
| I         |               | I |                       | I |        | I |        | I |        | I |        | I |        | I |
| I         |               | I | ARM B                 | I | 0.658  | I | 0.002  | I | 0.002  | I | 0.241  | I | 0.098  | I |
| I         |               | I |                       | I | 371.0  | I | 1.0    | I | 1.0    | I | 136.0  | I | 55.0   | I |
| I         |               | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I |
| I         |               | I |                       | I |        | I |        | I |        | I |        | I |        | I |
| I         |               | I | ARM C                 | I | 0.365  | I | 0.044  | I | 0.000  | I | 0.470  | I | 0.121  | I |
| I         |               | I |                       | I | 115.0  | I | 14.0   | I | 0.0    | I | 148.0  | I | 38.0   | I |
| I         |               | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I |
| I         |               | I |                       | I |        | I |        | I |        | I |        | I |        | I |
| I         |               | I | ARM D                 | I | 0.714  | I | 0.139  | I | 0.050  | I | 0.004  | I | 0.092  | I |
| I         |               | I |                       | I | 498.0  | I | 97.0   | I | 35.0   | I | 3.0    | I | 64.0   | I |
| I         |               | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I |
| I         |               | I |                       | I |        | I |        | I |        | I |        | I |        | I |
| I         |               | I | ARM E                 | I | 0.436  | I | 0.117  | I | 0.120  | I | 0.323  | I | 0.004  | I |
| I         |               | I |                       | I | 116.0  | I | 31.0   | I | 32.0   | I | 86.0   | I | 1.0    | I |
| I         |               | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I |
| I         |               | I |                       | I |        | I |        | I |        | I |        | I |        | I |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

|   | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 17.00-17.15 |                     |                       |                              | - -                              | 0.0                      | 0.9                    | 13.2                                | -                                             | 0.064                                          | I |
| I | ARM A       | 14.19               | 29.77                 | 0.477                        | - -                              | 0.0                      | 0.9                    | 13.2                                | -                                             | 0.064                                          | I |
| I | ARM B       | 7.08                | 21.31                 | 0.332                        | - -                              | 0.0                      | 0.5                    | 7.2                                 | -                                             | 0.070                                          | I |
| I | ARM C       | 3.95                | 15.51                 | 0.255                        | - -                              | 0.0                      | 0.3                    | 4.9                                 | -                                             | 0.086                                          | I |
| I | ARM D       | 8.75                | 18.91                 | 0.462                        | - -                              | 0.0                      | 0.8                    | 12.2                                | -                                             | 0.097                                          | I |
| I | ARM E       | 3.34                | 13.66                 | 0.244                        | - -                              | 0.0                      | 0.3                    | 4.7                                 | -                                             | 0.096                                          | I |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.15-17.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| ARM A       | 16.95               | 29.38                 | 0.577                        | -                                | 0.9                      | 1.3                    | 19.6                                | -                                             | 0.080                                          |
| ARM B       | 8.45                | 20.15                 | 0.419                        | -                                | 0.5                      | 0.7                    | 10.5                                | -                                             | 0.085                                          |
| ARM C       | 4.72                | 13.56                 | 0.348                        | -                                | 0.3                      | 0.5                    | 7.7                                 | -                                             | 0.113                                          |
| ARM D       | 10.44               | 18.12                 | 0.576                        | -                                | 0.8                      | 1.3                    | 19.2                                | -                                             | 0.129                                          |
| ARM E       | 3.99                | 12.27                 | 0.325                        | -                                | 0.3                      | 0.5                    | 6.9                                 | -                                             | 0.120                                          |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|--|
| 17.30-17.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |  |
| ARM A       | 20.75               | 28.86                 | 0.719                        | -                                | 1.3                      | 2.5                    | 35.3                                | -                                             | 0.121                                          |  |
| ARM B       | 10.35               | 18.59                 | 0.557                        | -                                | 0.7                      | 1.2                    | 17.7                                | -                                             | 0.120                                          |  |
| ARM C       | 5.78                | 10.93                 | 0.529                        | -                                | 0.5                      | 1.1                    | 15.5                                | -                                             | 0.191                                          |  |
| ARM D       | 12.79               | 17.06                 | 0.750                        | -                                | 1.3                      | 2.8                    | 38.8                                | -                                             | 0.224                                          |  |
| ARM E       | 4.88                | 10.41                 | 0.469                        | -                                | 0.5                      | 0.9                    | 12.3                                | -                                             | 0.179                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|--|
| 17.45-18.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |  |
| ARM A       | 20.75               | 28.84                 | 0.720                        | -                                | 2.5                      | 2.5                    | 37.7                                | -                                             | 0.124                                          |  |
| ARM B       | 10.35               | 18.56                 | 0.558                        | -                                | 1.2                      | 1.2                    | 18.6                                | -                                             | 0.122                                          |  |
| ARM C       | 5.78                | 10.88                 | 0.531                        | -                                | 1.1                      | 1.1                    | 16.6                                | -                                             | 0.196                                          |  |
| ARM D       | 12.79               | 17.04                 | 0.751                        | -                                | 2.8                      | 2.9                    | 43.3                                | -                                             | 0.234                                          |  |
| ARM E       | 4.88                | 10.35                 | 0.472                        | -                                | 0.9                      | 0.9                    | 13.1                                | -                                             | 0.183                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|--|
| 18.00-18.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |  |
| ARM A       | 16.95               | 29.35                 | 0.577                        | -                                | 2.5                      | 1.4                    | 21.5                                | -                                             | 0.082                                          |  |
| ARM B       | 8.45                | 20.10                 | 0.420                        | -                                | 1.2                      | 0.7                    | 11.3                                | -                                             | 0.086                                          |  |
| ARM C       | 4.72                | 13.49                 | 0.350                        | -                                | 1.1                      | 0.5                    | 8.5                                 | -                                             | 0.115                                          |  |
| ARM D       | 10.44               | 18.09                 | 0.577                        | -                                | 2.9                      | 1.4                    | 22.1                                | -                                             | 0.134                                          |  |
| ARM E       | 3.99                | 12.18                 | 0.327                        | -                                | 0.9                      | 0.5                    | 7.7                                 | -                                             | 0.123                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|--|
| 18.15-18.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |  |
| ARM A       | 14.19               | 29.75                 | 0.477                        | -                                | 1.4                      | 0.9                    | 14.1                                | -                                             | 0.065                                          |  |
| ARM B       | 7.08                | 21.26                 | 0.333                        | -                                | 0.7                      | 0.5                    | 7.7                                 | -                                             | 0.071                                          |  |
| ARM C       | 3.95                | 15.44                 | 0.256                        | -                                | 0.5                      | 0.3                    | 5.3                                 | -                                             | 0.087                                          |  |
| ARM D       | 8.75                | 18.88                 | 0.463                        | -                                | 1.4                      | 0.9                    | 13.5                                | -                                             | 0.099                                          |  |
| ARM E       | 3.34                | 13.60                 | 0.245                        | -                                | 0.5                      | 0.3                    | 5.1                                 | -                                             | 0.098                                          |  |

-----  
 QUEUE AT ARM A  
 -----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |     |
|------------------------|--------------------------------|-----|
| 17.15                  | 0.9                            | *   |
| 17.30                  | 1.3                            | *   |
| 17.45                  | 2.5                            | **  |
| 18.00                  | 2.5                            | *** |
| 18.15                  | 1.4                            | *   |
| 18.30                  | 0.9                            | *   |

-----  
 QUEUE AT ARM B  
 -----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|------------------------|--------------------------------|---|
| 17.15                  | 0.5                            |   |
| 17.30                  | 0.7                            | * |
| 17.45                  | 1.2                            | * |
| 18.00                  | 1.2                            | * |
| 18.15                  | 0.7                            | * |
| 18.30                  | 0.5                            | * |

-----  
 QUEUE AT ARM C  
 -----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|------------------------|--------------------------------|---|
| 17.15                  | 0.3                            |   |
| 17.30                  | 0.5                            | * |
| 17.45                  | 1.1                            | * |
| 18.00                  | 1.1                            | * |
| 18.15                  | 0.5                            | * |
| 18.30                  | 0.3                            |   |

-----  
 QUEUE AT ARM D  
 -----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |     |
|------------------------|--------------------------------|-----|
| 17.15                  | 0.8                            | *   |
| 17.30                  | 1.3                            | *   |
| 17.45                  | 2.8                            | *** |
| 18.00                  | 2.9                            | *** |
| 18.15                  | 1.4                            | *   |
| 18.30                  | 0.9                            | *   |

-----  
 QUEUE AT ARM E  
 -----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|------------------------|--------------------------------|---|
| 17.15                  | 0.3                            |   |
| 17.30                  | 0.5                            |   |
| 17.45                  | 0.9                            | * |
| 18.00                  | 0.9                            | * |
| 18.15                  | 0.5                            |   |
| 18.30                  | 0.3                            |   |



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

|   |     |   |              |          |   |              |           |   |                        |           | T75 |
|---|-----|---|--------------|----------|---|--------------|-----------|---|------------------------|-----------|-----|
| I | ARM | I | TOTAL DEMAND |          | I | * QUEUEING * |           | I | * INCLUSIVE QUEUEING * |           | I   |
| I |     | I |              |          | I | * DELAY *    |           | I | * DELAY *              |           | I   |
| I |     | I |              |          | I |              |           | I |                        |           | I   |
| I |     | I | (VEH)        | (VEH/H)  | I | (MIN)        | (MIN/VEH) | I | (MIN)                  | (MIN/VEH) | I   |
| I | A   | I | 1556.7       | I 1037.8 | I | 141.4        | I 0.09    | I | 141.4                  | I 0.09    | I   |
| I | B   | I | 776.3        | I 517.5  | I | 73.1         | I 0.09    | I | 73.1                   | I 0.09    | I   |
| I | C   | I | 433.6        | I 289.0  | I | 58.5         | I 0.13    | I | 58.5                   | I 0.13    | I   |
| I | D   | I | 959.4        | I 639.6  | I | 149.1        | I 0.16    | I | 149.1                  | I 0.16    | I   |
| I | E   | I | 366.1        | I 244.1  | I | 49.7         | I 0.14    | I | 49.7                   | I 0.14    | I   |
| I | ALL | I | 4092.1       | I 2728.1 | I | 471.9        | I 0.12    | I | 471.9                  | I 0.12    | I   |

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

END OF JOB

===== end of file =====

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_StationRd AM\_Int Sen.vai"  
(drive-on-the-left ) at 10:18:06 on Sunday, 12 August 2012

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Dawley Road Station Road Site 2 Base Model  
LOCATION: Dawley Road/Station Road  
DATE: 16/07/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - Dawley Road (N)  
ARM B - Station Road (E)  
ARM C - Shepiston Lane (S)

MINI-ROUNDABOUT GEOMETRIC DATA

JUNCTION IN LONDON  
LIGHTING CONDITIONS : NORMAL  
ROAD SURFACE CONDITION: NORMAL  
ARM \*HAS A CENTRAL ISLAND

ARM \* HAS A ZEBRA CROSSING  
ARM \* HAS A ZEBRA CROSSING

| I | ARM   | I | V (M) | I | E (M) | I | Lm(M) | I | Vm(M) | I | A (M) | I | K (M) | I | G (%) | I | SLOPE | I | INTERCEPT | I |
|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-----------|---|
| I |       | I |       | I |       | I |       | I |       | I |       | I |       | I |       | I |       | I | (PCU/MIN) | I |
| I | ARM A | I | 3.75  | I | 6.10  | I | 6.00  | I | 3.75  | I | 11.00 | I | 7.00  | I | 0.00  | I | 0.595 | I | 28.234*   | I |
| I | ARM B | I | 3.85  | I | 5.50  | I | 5.50  | I | 3.85  | I | 11.70 | I | 5.90  | I | 0.00  | I | 0.589 | I | 20.216*   | I |
| I | ARM C | I | 4.69  | I | 6.50  | I | 31.00 | I | 4.69  | I | 16.00 | I | 11.00 | I | 0.00  | I | 0.539 | I | 21.366    | I |

V = approach half-width Lm = effective flare length A = distance between arms  
E = entry width Vm = minimum approach half-width K= entry corner kerb line G=gradient over 50 m  
\*\*WARNING\*\* One or more intercept values (flagged \* in the table)  
have been adjusted according to local input values  
from a previous run and listed below -

|       |   |   |                     |    |
|-------|---|---|---------------------|----|
| ----- |   |   |                     | T6 |
| I     |   | I | ADJUSTMENT TO       | I  |
| I     |   | I | INTERCEPT (PCU/MIN) | I  |
| ----- |   |   |                     |    |
| IARM  | A | I | 11.000              | I  |
| IARM  | B | I | 5.000               | I  |

# TRAFFIC DEMAND DATA

Only sets included in the current run are shown

## SCALING FACTORS

| T13   |   |               |   |
|-------|---|---------------|---|
| I ARM | I | FLOW SCALE(%) | I |
| I A   | I | 100           | I |
| I B   | I | 100           | I |
| I C   | I | 100           | I |

TIME PERIOD BEGINS(07.30)AND ENDS(09.00)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com 2014

| DEMAND SET TYPE: Basic-COM 2014 |       |                                   |             |   |             |                        |            |   |        | T15 |         |   |       |   |
|---------------------------------|-------|-----------------------------------|-------------|---|-------------|------------------------|------------|---|--------|-----|---------|---|-------|---|
| I                               | I     | NUMBER OF MINUTES FROM START WHEN |             |   | I           | RATE OF FLOW (VEH/MIN) |            |   | I      |     |         |   |       |   |
| I                               | ARM   | I                                 | FLOW STARTS | I | TOP OF PEAK | I                      | FLOW STOPS | I | BEFORE | I   | AT TOP  | I | AFTER | I |
| I                               | I     | I                                 | TO RISE     | I | IS REACHED  | I                      | FALLING    | I | PEAK   | I   | OF PEAK | I | PEAK  | I |
| I                               | ARM A | I                                 | 15.00       | I | 45.00       | I                      | 75.00      | I | 10.06  | I   | 15.09   | I | 10.06 | I |
| I                               | ARM B | I                                 | 15.00       | I | 45.00       | I                      | 75.00      | I | 5.70   | I   | 8.55    | I | 5.70  | I |
| I                               | ARM C | I                                 | 15.00       | I | 45.00       | I                      | 75.00      | I | 7.19   | I   | 10.78   | I | 7.19  | I |

DEMAND SET TITLE: Base+Com 2014

| T33 |               |                       |        |   |        |   |        |   |        |
|-----|---------------|-----------------------|--------|---|--------|---|--------|---|--------|
|     |               | TURNING PROPORTIONS   |        |   |        |   |        |   |        |
|     |               | TURNING COUNTS        |        |   |        |   |        |   |        |
|     |               | (PERCENTAGE OF H.V.S) |        |   |        |   |        |   |        |
| I   | TIME          | I                     | FROM/T | I | ARM A  | I | ARM B  | I | ARM C  |
| I   | 07.30 - 09.00 | I                     |        | I |        | I |        | I |        |
| I   |               | I                     | ARM A  | I | 0.001  | I | 0.292  | I | 0.707  |
| I   |               | I                     |        | I | 1.0    | I | 235.0  | I | 569.0  |
| I   |               | I                     |        | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) |
| I   |               | I                     |        | I |        | I |        | I |        |
| I   |               | I                     | ARM B  | I | 0.458  | I | 0.000  | I | 0.542  |
| I   |               | I                     |        | I | 209.0  | I | 0.0    | I | 247.0  |
| I   |               | I                     |        | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) |
| I   |               | I                     |        | I |        | I |        | I |        |
| I   |               | I                     | ARM C  | I | 0.661  | I | 0.339  | I | 0.000  |
| I   |               | I                     |        | I | 380.0  | I | 195.0  | I | 0.0    |
| I   |               | I                     |        | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) |
| I   |               | I                     |        | I |        | I |        | I |        |

## PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING USE:

ARM A: Frequency of use is distributed throughout the period  
in the s 90.0y as vehicular demand on the link. (= times per hour)

ARM B: Frequency of use is distributed throughout the period  
in the s 30.0y as vehicular demand on the link. (= times per hour)

## ZEBRA CROSSINGS

| T40 |     |   |                    |   |                        |   |                        |
|-----|-----|---|--------------------|---|------------------------|---|------------------------|
| I   | ARM | I | LENGTH OF CROSSING | I | QUEUEING SPACE BETWEEN | I | QUEUEING SPACE WITHOUT |
| I   | I   | I | (M)                | I | CROSSING AND JUNCTION  | I | BLOCKING BACK INTO     |
| I   | I   | I | (ENTRY)            | I | (EXIT) ENTRY (VEHS)    | I | JUNCTION (VEHS)        |
| I   | A   | I | 4.50               | I | 0.0                    | I | 3.5                    |
| I   | B   | I | 3.70               | I | 3.8                    | I | 2.0                    |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | T70 |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|-----|
| 07.30-07.45 |                     |                       |                              |                                  |                          |                        |                                     |                                                |     |
| ARM A       | 10.10               | 23.48                 | 0.430                        | -                                | 1.2                      | 0.0                    | 10.9                                | 0.074                                          |     |
| ARM B       | 5.72                | 16.02                 | 0.357                        | -                                | 0.4                      | 0.0                    | 8.0                                 | 0.096                                          |     |
| ARM C       | 7.21                | 19.93                 | 0.362                        | -                                | -                        | 0.0                    | 8.2                                 | 0.078                                          |     |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|--|
| 07.45-08.00 |                     |                       |                              |                                  |                          |                        |                                     |                                                |  |
| ARM A       | 12.06               | 22.70                 | 0.531                        | -                                | 1.5                      | 0.7                    | 16.3                                | 0.093                                          |  |
| ARM B       | 6.83                | 15.20                 | 0.450                        | -                                | 0.5                      | 0.8                    | 11.7                                | 0.119                                          |  |
| ARM C       | 8.62                | 19.63                 | 0.439                        | -                                | -                        | 0.6                    | 11.3                                | 0.091                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|--|
| 08.00-08.15 |                     |                       |                              |                                  |                          |                        |                                     |                                                |  |
| ARM A       | 14.77               | 21.69                 | 0.681                        | -                                | 1.8                      | 1.1                    | 29.4                                | 0.142                                          |  |
| ARM B       | 8.37                | 14.08                 | 0.594                        | -                                | 0.6                      | 0.8                    | 20.2                                | 0.172                                          |  |
| ARM C       | 10.55               | 19.17                 | 0.550                        | -                                | -                        | 0.8                    | 17.4                                | 0.115                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|--|
| 08.15-08.30 |                     |                       |                              |                                  |                          |                        |                                     |                                                |  |
| ARM A       | 14.77               | 21.68                 | 0.681                        | -                                | 1.8                      | 2.1                    | 31.4                                | 0.145                                          |  |
| ARM B       | 8.37                | 14.06                 | 0.595                        | -                                | 0.6                      | 1.4                    | 21.6                                | 0.175                                          |  |
| ARM C       | 10.55               | 19.16                 | 0.551                        | -                                | -                        | 1.2                    | 18.2                                | 0.116                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|--|
| 08.30-08.45 |                     |                       |                              |                                  |                          |                        |                                     |                                                |  |
| ARM A       | 12.06               | 22.70                 | 0.531                        | -                                | 1.5                      | 2.1                    | 17.9                                | 0.095                                          |  |
| ARM B       | 6.83                | 15.16                 | 0.451                        | -                                | 0.5                      | 1.4                    | 13.0                                | 0.121                                          |  |
| ARM C       | 8.62                | 19.61                 | 0.439                        | -                                | -                        | 1.2                    | 12.2                                | 0.091                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|--|
| 08.45-09.00 |                     |                       |                              |                                  |                          |                        |                                     |                                                |  |
| ARM A       | 10.10               | 23.47                 | 0.430                        | -                                | 1.2                      | 1.1                    | 11.7                                | 0.075                                          |  |
| ARM B       | 5.72                | 15.99                 | 0.358                        | -                                | 0.4                      | 0.8                    | 8.7                                 | 0.098                                          |  |
| ARM C       | 7.21                | 19.92                 | 0.362                        | -                                | -                        | 0.8                    | 8.8                                 | 0.079                                          |  |

#### QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|------------------------|--------------------------------|
| 07.45                  | 0.7 *                          |
| 08.00                  | 1.1 *                          |
| 08.15                  | 2.1 **                         |
| 08.30                  | 2.1 **                         |
| 08.45                  | 1.1 *                          |
| 09.00                  | 0.8 *                          |

QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|------------------------|--------------------------------|---|
| 07.45                  | 0.5                            | * |
| 08.00                  | 0.8                            | * |
| 08.15                  | 1.4                            | * |
| 08.30                  | 1.4                            | * |
| 08.45                  | 0.8                            | * |
| 09.00                  | 0.6                            | * |

QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|------------------------|--------------------------------|---|
| 07.45                  | 0.6                            | * |
| 08.00                  | 0.8                            | * |
| 08.15                  | 1.2                            | * |
| 08.30                  | 1.2                            | * |
| 08.45                  | 0.8                            | * |
| 09.00                  | 0.6                            | * |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

|   |     |   |              |   |              |   |                        |   |       | T75 |
|---|-----|---|--------------|---|--------------|---|------------------------|---|-------|-----|
| I | ARM | I | TOTAL DEMAND | I | * QUEUEING * | I | * INCLUSIVE QUEUEING * | I |       |     |
| I | I   | I |              | I | * DELAY *    | I | * DELAY *              | I |       | I   |
| I | I   | I | (VEH)        | I | (MIN)        | I | (MIN/VEH)              | I | (MIN) | I   |
| I | I   | I | (VEH/H)      | I | (MIN)        | I | (MIN/VEH)              | I | (MIN) | I   |
| I | A   | I | 1108.0       | I | 738.7        | I | 117.6                  | I | 0.11  | I   |
| I | B   | I | 627.7        | I | 418.4        | I | 83.2                   | I | 0.13  | I   |
| I | C   | I | 791.4        | I | 527.6        | I | 76.1                   | I | 0.10  | I   |
| I | ALL | I | 2527.1       | I | 1684.7       | I | 276.9                  | I | 0.11  | I   |

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

END OF JOB

===== end of file =====

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_StationRd PM\_Int Sen.vai"  
(drive-on-the-left ) at 13:32:58 on Sunday, 5 August 2012

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Dawley Road Station Road Site 2 Base Model  
LOCATION: Dawley Road/Station Road  
DATE: 16/07/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - Dawley Road (N)  
ARM B - Station Road (E)  
ARM C - Shepiston Lane (S)

MINI-ROUNDABOUT GEOMETRIC DATA

JUNCTION IN LONDON  
LIGHTING CONDITIONS : NORMAL  
ROAD SURFACE CONDITION: NORMAL  
ARM \*HAS A CENTRAL ISLAND

ARM \* HAS A ZEBRA CROSSING  
ARM \* HAS A ZEBRA CROSSING

| I | ARM   | I | V (M) | I | E (M) | I | Lm(M) | I | Vm(M) | I | A (M) | I | K (M) | I | G (%) | I | SLOPE | I | INTERCEPT | I |
|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-----------|---|
| I |       | I |       | I |       | I |       | I |       | I |       | I |       | I |       | I |       | I | (PCU/MIN) | I |
| I | ARM A | I | 3.75  | I | 6.10  | I | 6.00  | I | 3.75  | I | 11.00 | I | 7.00  | I | 0.00  | I | 0.595 | I | 31.934*   | I |
| I | ARM B | I | 3.85  | I | 5.50  | I | 5.50  | I | 3.85  | I | 11.70 | I | 5.90  | I | 0.00  | I | 0.589 | I | 24.016*   | I |
| I | ARM C | I | 4.69  | I | 6.50  | I | 31.00 | I | 4.69  | I | 16.00 | I | 11.00 | I | 0.00  | I | 0.539 | I | 21.366    | I |

V = approach half-width Lm = effective flare length A = distance between arms  
E = entry width Vm = minimum approach half-width K= entry corner kerb line G=gradient over 50 m  
\*\*WARNING\*\* One or more intercept values (flagged \* in the table)  
have been adjusted according to local input values  
from a previous run and listed below -

T6

| I |       | I | ADJUSTMENT TO       | I |
|---|-------|---|---------------------|---|
| I |       | I | INTERCEPT (PCU/MIN) | I |
| I | ARM A | I | 14.700              | I |
| I | ARM B | I | 8.800               | I |

# TRAFFIC DEMAND DATA

Only sets included in the current run are shown

## SCALING FACTORS

| T13   |   |               |   |
|-------|---|---------------|---|
| I ARM | I | FLOW SCALE(%) | I |
| I A   | I | 100           | I |
| I B   | I | 100           | I |
| I C   | I | 100           | I |

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com 2014

| DEMAND SET TYPE: Basic Cell 2014 |       |                                   |             |   |             |   |                        |   |        |   | T15     |   |       |   |
|----------------------------------|-------|-----------------------------------|-------------|---|-------------|---|------------------------|---|--------|---|---------|---|-------|---|
| I                                | I     | NUMBER OF MINUTES FROM START WHEN |             |   |             | I | RATE OF FLOW (VEH/MIN) |   |        |   | I       |   |       |   |
| I                                | ARM   | I                                 | FLOW STARTS | I | TOP OF PEAK | I | FLOW STOPS             | I | BEFORE | I | AT TOP  | I | AFTER | I |
| I                                |       | I                                 |             | I |             | I |                        | I |        | I |         | I |       | I |
| I                                |       | I                                 | TO RISE     | I | IS REACHED  | I | FALLING                | I | PEAK   | I | OF PEAK | I | PEAK  | I |
| I                                | ARM A | I                                 | 15.00       | I | 45.00       | I | 75.00                  | I | 10.66  | I | 15.99   | I | 10.66 | I |
| I                                | ARM B | I                                 | 15.00       | I | 45.00       | I | 75.00                  | I | 6.34   | I | 9.51    | I | 6.34  | I |
| I                                | ARM C | I                                 | 15.00       | I | 45.00       | I | 75.00                  | I | 8.20   | I | 12.30   | I | 8.20  | I |

DEMAND SET TITLE: Base+Com 2014

| T33  |                       |   |        |   |        |   |        |   |        |   |
|------|-----------------------|---|--------|---|--------|---|--------|---|--------|---|
| I    | I                     |   |        |   |        |   |        |   |        |   |
| I    | TURNING PROPORTIONS   |   |        |   |        |   |        |   |        |   |
| I    | I                     |   |        |   |        |   |        |   |        |   |
| I    | TURNING COUNTS        |   |        |   |        |   |        |   |        |   |
| I    | I                     |   |        |   |        |   |        |   |        |   |
| I    | (PERCENTAGE OF H.V.S) |   |        |   |        |   |        |   |        |   |
| I    | I                     |   |        |   |        |   |        |   |        |   |
| TIME |                       | I | FROM/T | I | ARM A  | I | ARM B  | I | ARM C  | I |
| I    | 16.45 - 18.15         | I |        | I |        | I |        | I |        | I |
| I    |                       | I | ARM A  | I | 0.000  | I | 0.301  | I | 0.699  | I |
| I    |                       | I |        | I | 0.0    | I | 257.0  | I | 596.0  | I |
| I    |                       | I |        | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I |
| I    |                       | I |        | I |        | I |        | I |        | I |
| I    |                       | I | ARM B  | I | 0.564  | I | 0.000  | I | 0.436  | I |
| I    |                       | I |        | I | 286.0  | I | 0.0    | I | 221.0  | I |
| I    |                       | I |        | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I |
| I    |                       | I |        | I |        | I |        | I |        | I |
| I    |                       | I | ARM C  | I | 0.735  | I | 0.264  | I | 0.002  | I |
| I    |                       | I |        | I | 482.0  | I | 173.0  | I | 1.0    | I |
| I    |                       | I |        | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I |
| I    |                       | I |        | I |        | I |        | I |        | I |

## PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING USE:

ARM A: Frequency of use is distributed throughout the period  
in the s 90.0y as vehicular demand on the link. (= times per hour)

ARM B: Frequency of use is distributed throughout the period  
in the s 30.0y as vehicular demand on the link. (= times per hour)

## ZEBRA CROSSINGS

| T40 |     |   |                    |      |                        |     |                        |     |   |
|-----|-----|---|--------------------|------|------------------------|-----|------------------------|-----|---|
| I   | ARM | I | LENGTH OF CROSSING | I    | QUEUEING SPACE BETWEEN | I   | QUEUEING SPACE WITHOUT | I   |   |
| I   | I   | I | (M)                | I    | CROSSING AND JUNCTION  | I   | BLOCKING BACK INTO     | I   |   |
| I   | I   | I | (ENTRY)            | I    | (EXIT) ENTRY (VEHS)    | I   | JUNCTION (VEHS)        | I   |   |
| I   | A   | I | 4.50               | 4.30 | I                      | 0.0 | I                      | 3.5 | I |
| I   | B   | I | 3.70               | 4.00 | I                      | 3.8 | I                      | 2.0 | I |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

|   |             |           |           |          |            |        |        |               |      |               | T70   |   |
|---|-------------|-----------|-----------|----------|------------|--------|--------|---------------|------|---------------|-------|---|
| I | TIME        | DEMAND    | CAPACITY  | DEMAND/  | PEDESTRIAN | START  | END    | DELAY         |      | AVERAGE DELAY | I     |   |
| I |             | (VEH/MIN) | (VEH/MIN) | CAPACITY | FLOW       | QUEUE  | QUEUE  | (VEH.MIN/     |      | PER ARRIVING  | I     |   |
| I |             |           |           | (RFC)    | (PEDS/MIN) | (VEHS) | (VEHS) | TIME SEGMENT) |      | VEHICLE (MIN) | I     |   |
| - |             |           |           |          |            |        |        |               |      |               | -     |   |
| I | 16.45-17.00 |           |           |          |            |        |        |               |      |               | I     |   |
| I | ARM A       | 10.70     | 26.40     | 0.405    | - -        | 1.2    | 0.0    | 0.7           | 9.9  | -             | 0.063 | I |
| I | ARM B       | 6.36      | 19.62     | 0.324    | - -        | 0.4    | 0.0    | 0.5           | 6.9  | -             | 0.075 | I |
| I | ARM C       | 8.23      | 19.38     | 0.425    | - -        | -      | 0.0    | 0.7           | 10.6 | -             | 0.089 | I |
| I |             |           |           |          |            |        |        |               |      |               |       | I |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) |      | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------|------------------------------------------------|--|
| 17.00-17.15 |                     |                       |                              |                                  |                          |                        |                                     |      |                                                |  |
| ARM A       | 12.78               | 25.51                 | 0.501                        | - -                              | 1.5                      | 0.7                    | 1.0                                 | 14.5 | 0.078                                          |  |
| ARM B       | 7.60                | 18.76                 | 0.405                        | - -                              | 0.5                      | 0.5                    | 0.7                                 | 9.9  | 0.089                                          |  |
| ARM C       | 9.83                | 18.90                 | 0.520                        | - -                              | -                        | 0.7                    | 1.1                                 | 15.5 | 0.110                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) |      | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------|------------------------------------------------|--|
| 17.15-17.30 |                     |                       |                              |                                  |                          |                        |                                     |      |                                                |  |
| ARM A       | 15.65               | 24.36                 | 0.643                        | - -                              | 1.8                      | 1.0                    | 1.8                                 | 25.2 | 0.114                                          |  |
| ARM B       | 9.30                | 17.58                 | 0.529                        | - -                              | 0.6                      | 0.7                    | 1.1                                 | 15.9 | 0.120                                          |  |
| ARM C       | 12.04               | 18.09                 | 0.665                        | - -                              | -                        | 1.1                    | 1.9                                 | 27.2 | 0.162                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) |      | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------|------------------------------------------------|--|
| 17.30-17.45 |                     |                       |                              |                                  |                          |                        |                                     |      |                                                |  |
| ARM A       | 15.65               | 24.35                 | 0.643                        | - -                              | 1.8                      | 1.8                    | 1.8                                 | 26.6 | 0.115                                          |  |
| ARM B       | 9.30                | 17.56                 | 0.530                        | - -                              | 0.6                      | 1.1                    | 1.1                                 | 16.7 | 0.121                                          |  |
| ARM C       | 12.04               | 18.08                 | 0.666                        | - -                              | -                        | 1.9                    | 2.0                                 | 29.2 | 0.165                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) |      | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------|------------------------------------------------|--|
| 17.45-18.00 |                     |                       |                              |                                  |                          |                        |                                     |      |                                                |  |
| ARM A       | 12.78               | 25.50                 | 0.501                        | - -                              | 1.5                      | 1.8                    | 1.0                                 | 15.7 | 0.079                                          |  |
| ARM B       | 7.60                | 18.73                 | 0.406                        | - -                              | 0.5                      | 1.1                    | 0.7                                 | 10.7 | 0.090                                          |  |
| ARM C       | 9.83                | 18.88                 | 0.521                        | - -                              | -                        | 2.0                    | 1.1                                 | 17.2 | 0.112                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) |      | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------|------------------------------------------------|--|
| 18.00-18.15 |                     |                       |                              |                                  |                          |                        |                                     |      |                                                |  |
| ARM A       | 10.70               | 26.39                 | 0.406                        | - -                              | 1.2                      | 1.0                    | 0.7                                 | 10.5 | 0.064                                          |  |
| ARM B       | 6.36                | 19.59                 | 0.325                        | - -                              | 0.4                      | 0.7                    | 0.5                                 | 7.4  | 0.076                                          |  |
| ARM C       | 8.23                | 19.36                 | 0.425                        | - -                              | -                        | 1.1                    | 0.7                                 | 11.5 | 0.090                                          |  |

QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|------------------------|--------------------------------|
| 17.00                  | 0.7 *                          |
| 17.15                  | 1.0 *                          |
| 17.30                  | 1.8 **                         |
| 17.45                  | 1.8 **                         |
| 18.00                  | 1.0 *                          |
| 18.15                  | 0.7 *                          |



QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|------------------------|--------------------------------|---|
| 17.00                  | 0.5                            |   |
| 17.15                  | 0.7                            | * |
| 17.30                  | 1.1                            | * |
| 17.45                  | 1.1                            | * |
| 18.00                  | 0.7                            | * |
| 18.15                  | 0.5                            |   |

QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 17.00                  | 0.7                            | *  |
| 17.15                  | 1.1                            | *  |
| 17.30                  | 1.9                            | ** |
| 17.45                  | 2.0                            | ** |
| 18.00                  | 1.1                            | *  |
| 18.15                  | 0.7                            | *  |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

|   |     |   |              |   |              |   |                        |   |           | T75 |
|---|-----|---|--------------|---|--------------|---|------------------------|---|-----------|-----|
| I | ARM | I | TOTAL DEMAND | I | * QUEUEING * | I | * INCLUSIVE QUEUEING * | I |           |     |
| I | I   | I |              | I | * DELAY *    | I | * DELAY *              | I |           | I   |
| I | I   | I |              | I |              | I |                        | I |           | I   |
| I | I   | I | (VEH)        | I | (MIN)        | I | (MIN)                  | I | (MIN/VEH) | I   |
| I | A   | I | 1174.1       | I | 782.7        | I | 102.5                  | I | 0.09      | I   |
| I | B   | I | 697.8        | I | 465.2        | I | 67.5                   | I | 0.10      | I   |
| I | C   | I | 902.9        | I | 602.0        | I | 111.3                  | I | 0.12      | I   |
| I | ALL | I | 2774.9       | I | 1849.9       | I | 281.3                  | I | 0.10      | I   |

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

END OF JOB

===== end of file =====

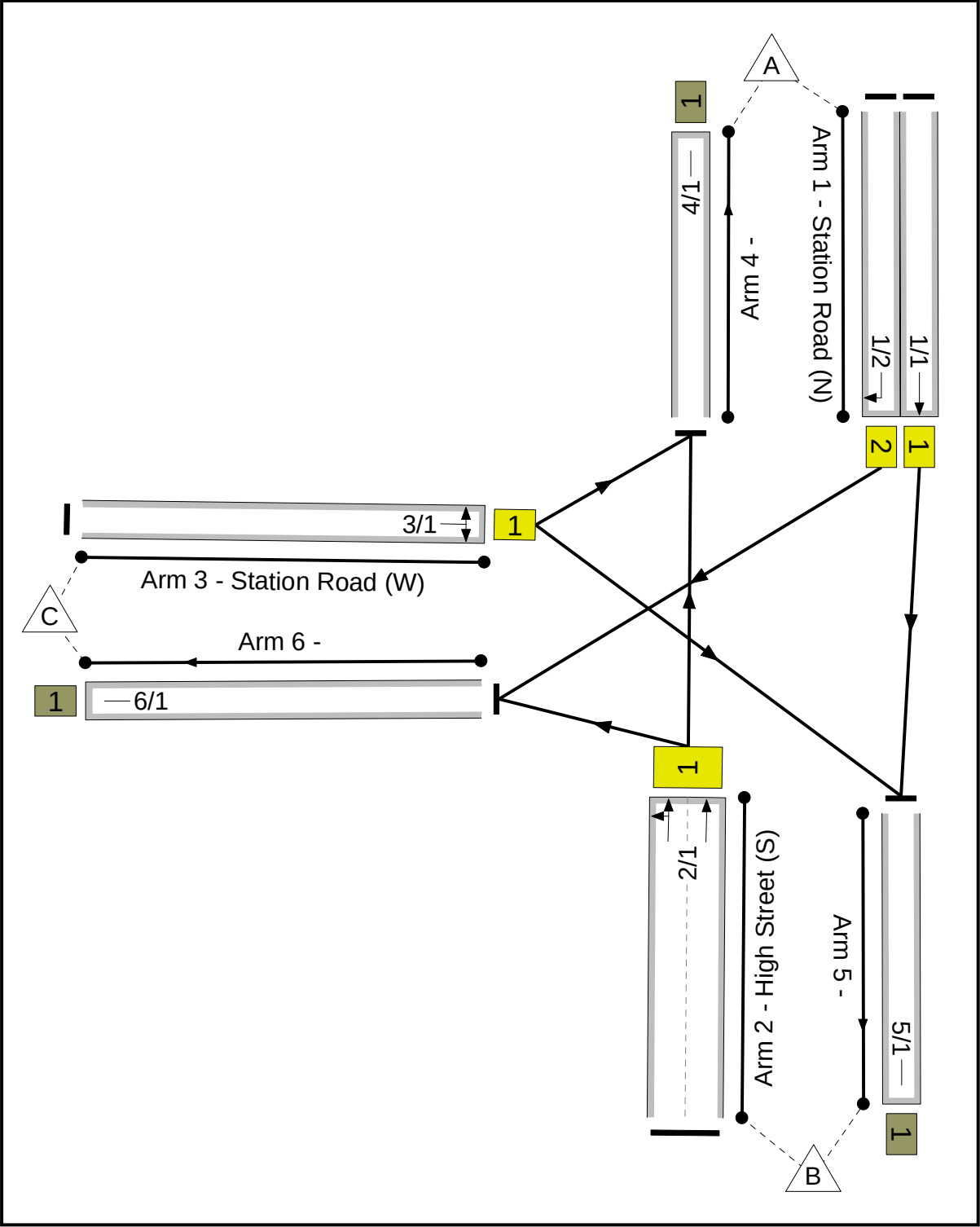
Printed at 13:33:40 on 05/08/2012]

## Full Input Data And Results

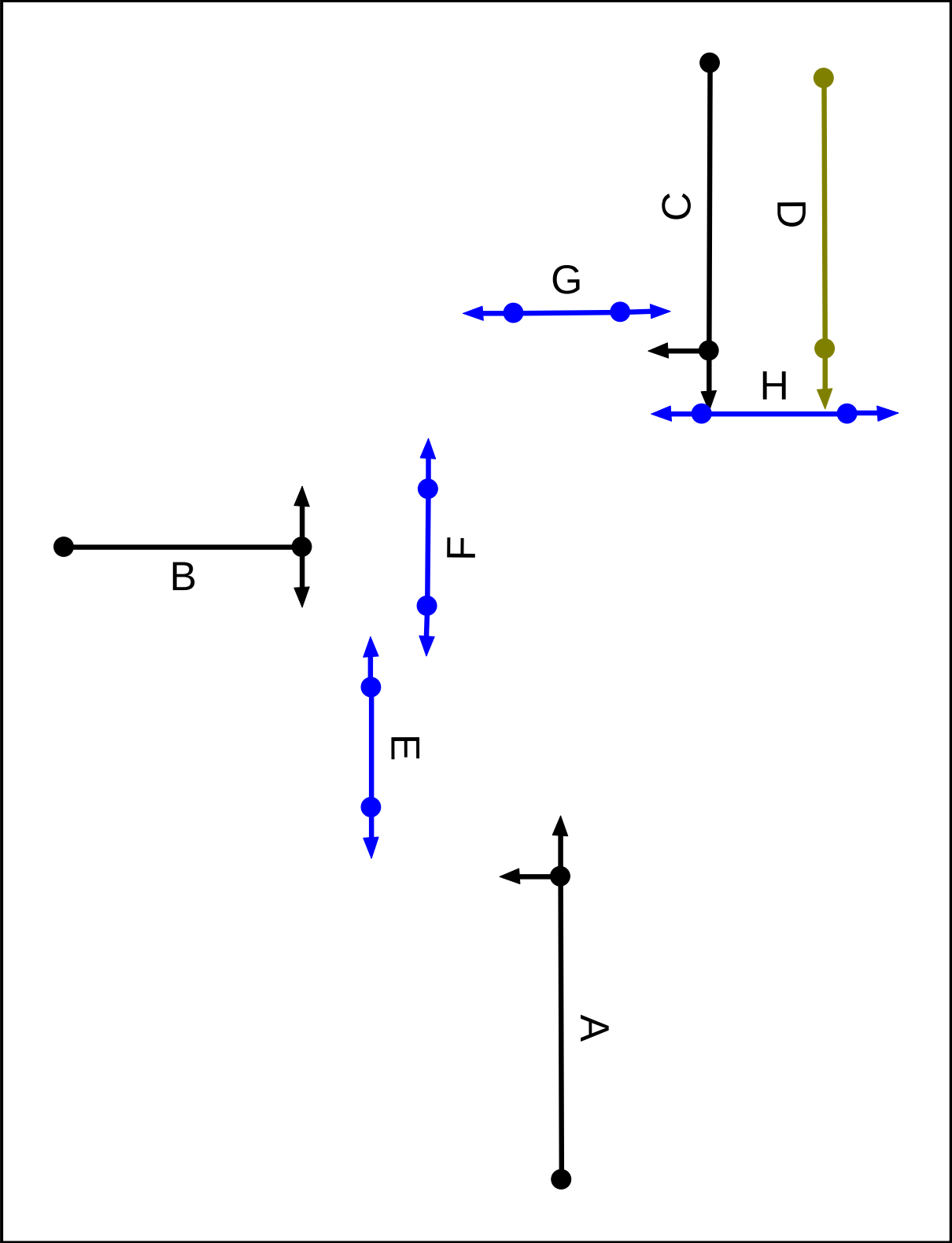
### User and Project Details

|                    |                             |
|--------------------|-----------------------------|
| <b>Project:</b>    |                             |
| <b>Title:</b>      |                             |
| <b>Location:</b>   |                             |
| <b>File name:</b>  |                             |
| <b>Author:</b>     | Station Rd_High Street.lsgx |
| <b>Company:</b>    |                             |
| <b>Address:</b>    | Generic                     |
| <b>Controller:</b> |                             |
| <b>SCN:</b>        |                             |
| <b>Notes:</b>      |                             |

Junction Layout Diagram



Phase Diagram



**Phase Input Data**

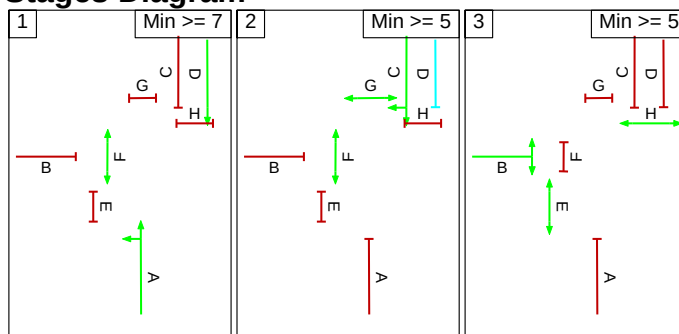
| Phase Name | Phase type | Assoc Phase | Street Min | Cont Min |
|------------|------------|-------------|------------|----------|
| A          | Traffic    |             | 7          | 7        |
| B          | Traffic    |             | 7          | 7        |
| C          | Traffic    |             | 7          | 7        |
| D          | Filter     | C           | 4          | 0        |
| E          | Pedestrian |             | 5          | 5        |
| F          | Pedestrian |             | 5          | 5        |
| G          | Pedestrian |             | 5          | 5        |
| H          | Pedestrian |             | 5          | 5        |

**Phase Intergreens Matrix**

| Terminating Phase | Starting Phase |   |   |   |   |    |   |   |   |
|-------------------|----------------|---|---|---|---|----|---|---|---|
|                   |                | A | B | C | D | E  | F | G | H |
|                   | A              |   | 5 | 5 | - | 7  | - | 8 | - |
|                   | B              | 5 |   | 5 | 5 | -  | 5 | 8 | - |
|                   | C              | 8 | 5 |   | - | 10 | - | - | 5 |
|                   | D              | - | 5 | - |   | -  | - | - | 5 |
|                   | E              | 8 | - | 8 | - |    | - | - | - |
|                   | F              | - | 8 | - | - | -  |   | - | - |
|                   | G              | 8 | 8 | - | - | -  | - |   | - |
|                   | H              | - | - | 8 | 8 | -  | - | - |   |

**Phases in Stage**

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

**Stages Diagram**

Phase Delays

| Term. Stage | Start Stage | Phase | Type   | Value | Cont value |
|-------------|-------------|-------|--------|-------|------------|
| 2           | 3           | C     | Losing | 3     | 3          |
| 3           | 1           | B     | Losing | 3     | 3          |

Prohibited Stage Changes

| From Stage | To Stage |   |   |    |
|------------|----------|---|---|----|
|            | 1        | 2 | 3 |    |
|            | 1        |   | 8 | X  |
|            | 2        | 8 |   | 13 |
|            | 3        | 8 | 8 |    |

Link Input Data

| Arm/ Link | Link Name                   | Link Type | Num Lanes | Phases | Start Disp. | End Disp. |
|-----------|-----------------------------|-----------|-----------|--------|-------------|-----------|
| 1/1       | Station Road (N) Ahead      | U         | 1         | C D    | 2           | 3         |
| 1/2       | Station Road (N) Right      | U         | 1         | C      | 2           | 3         |
| 2/1       | High Street (S) Ahead Left  | U         | 2         | A      | 2           | 3         |
| 3/1       | Station Road (W) Left Right | U         | 1         | B      | 2           | 3         |
| 4/1       |                             | U         | 1         |        | 2           | 3         |
| 5/1       |                             | U         | 1         |        | 2           | 3         |
| 6/1       |                             | U         | 1         |        | 2           | 3         |

Full Input Data And Results

**Give-Way Link Input Data**

**Lane Input Data**

| Arm/<br>Lane                                 | Link<br>Num                                         | Physical<br>Length<br>(PCU) | Expected<br>Usage<br>(PCU) | Sat<br>Flow<br>Type | User<br>Saturation<br>Flow<br>(PCU/Hr) | Lane<br>Width<br>(m) | Gradient | Nearside<br>Lane | Allowed<br>Turns                    | Turning<br>Radius<br>(m) |
|----------------------------------------------|-----------------------------------------------------|-----------------------------|----------------------------|---------------------|----------------------------------------|----------------------|----------|------------------|-------------------------------------|--------------------------|
| 1/1<br>(Station<br>Road<br>(N)<br>Lane<br>1) | Link 1<br>(Station<br>Road<br>(N)<br>Ahead<br>)     | Inf                         | Inf                        | User                | 1766                                   | 3.25                 | 0.00     | Y                | Arm 5<br>Ahead                      | Inf                      |
| 1/2<br>(Station<br>Road<br>(N)<br>Lane<br>2) | Link 2<br>(Station<br>Road<br>(N)<br>Right)         | Inf                         | Inf                        | User                | 1929                                   | 3.25                 | 0.00     | Y                | Arm 6<br>Right                      | Inf                      |
| 2/1<br>(High<br>Street<br>(S)<br>Lane<br>1)  | Link 1<br>(High<br>Street<br>(S)<br>Ahead<br>Left)  | Inf                         | Inf                        | User                | 1763                                   | 3.25                 | 0.00     | Y                | Arm 4<br>Ahead<br><br>Arm 6<br>Left | Inf<br><br>Inf           |
| 2/2<br>(High<br>Street<br>(S)<br>Lane<br>2)  | Link 1<br>(High<br>Street<br>(S)<br>Ahead<br>Left)  | Inf                         | Inf                        | User                | 1877                                   | 3.25                 | 0.00     | Y                | Arm 4<br>Ahead                      | Inf                      |
| 3/1<br>(Station<br>Road<br>(W)<br>Lane<br>1) | Link 1<br>(Station<br>Road<br>(W)<br>Left<br>Right) | Inf                         | Inf                        | User                | 1691                                   | 3.25                 | 0.00     | Y                | Arm 4<br>Left<br><br>Arm 5<br>Right | Inf<br><br>Inf           |
| 4/1                                          | Link 1                                              | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |
| 5/1                                          | Link 1                                              | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |
| 6/1                                          | Link 1                                              | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |

**Traffic Flow Groups**

| Flow Group                           | Start Time | End Time | Duration | Formula |
|--------------------------------------|------------|----------|----------|---------|
| 19: 'Base + Com 2014 AM Sensitivity' | 08:00      | 09:00    | 01:00    |         |
| 20: 'Base + Com 2014 PM Sensitivity' | 17:00      | 18:00    | 01:00    |         |



**Scenario 19: 'Base + Com 2014 AM Sen'**

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 19: 'Base + Com 2014 AM Sensitivity'

**Traffic Flow Matrix****Desired Flow :**

|  | Destination |     |     |     |      |
|--|-------------|-----|-----|-----|------|
|  |             | A   | B   | C   | Tot. |
|  | A           | 0   | 590 | 239 | 829  |
|  | B           | 396 | 0   | 178 | 574  |
|  | C           | 225 | 259 | 0   | 484  |
|  | Tot.        | 621 | 849 | 417 | 1887 |

**Link Traffic Flows**

| Arm/Link | Flow Group 19: Base + Com 2014 AM Sensitivity |
|----------|-----------------------------------------------|
| 1/1      | 590                                           |
| 1/2      | 239                                           |
| 2/1      | 574                                           |
| 3/1      | 484                                           |
| 4/1      | 621                                           |
| 5/1      | 849                                           |
| 6/1      | 417                                           |

**Lane Saturation Flows**

| Arm/<br>Lane                     | Lane<br>Width<br>(m) | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|----------------------------------|----------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Road (N) Lane 1) |                      |          |                  |                  |                          |                  | 1766                 |
| 1/2<br>(Station Road (N) Lane 2) |                      |          |                  |                  |                          |                  | 1929                 |
| 2/1<br>(High Street (S) Lane 1)  |                      |          |                  |                  |                          |                  | 1763                 |
| 2/2<br>(High Street (S) Lane 2)  |                      |          |                  |                  |                          |                  | 1877                 |
| 3/1<br>(Station Road (W) Lane 1) |                      |          |                  |                  |                          |                  | 1691                 |
| 4/1                              |                      |          |                  |                  |                          |                  | 1800                 |
| 5/1                              |                      |          |                  |                  |                          |                  | 1800                 |
| 6/1                              |                      |          |                  |                  |                          |                  | 1800                 |

**Scenario 20: 'Base + Com 2014 PM Sen'**

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 20: 'Base + Com 2014 PM Sensitivity'

**Traffic Flow Matrix****Desired Flow :**

|        | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
|        | A           | 0   | 446 | 232 | 678  |
|        | B           | 456 | 0   | 279 | 735  |
|        | C           | 186 | 250 | 0   | 436  |
| Origin | Tot.        | 642 | 696 | 511 | 1849 |

**Link Traffic Flows**

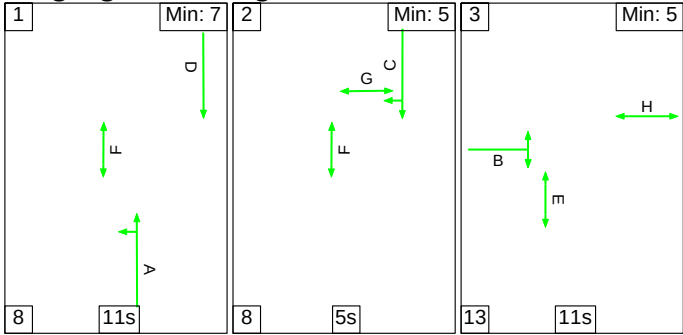
| Arm/Link | Flow Group 20: Base + Com 2014 PM Sensitivity |
|----------|-----------------------------------------------|
| 1/1      | 446                                           |
| 1/2      | 232                                           |
| 2/1      | 735                                           |
| 3/1      | 436                                           |
| 4/1      | 642                                           |
| 5/1      | 696                                           |
| 6/1      | 511                                           |

**Lane Saturation Flows**

| Arm/Lane                         | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat flow (PCU/Hr) |
|----------------------------------|----------------|----------|---------------|---------------|--------------------|---------------|-------------------|
| 1/1<br>(Station Road (N) Lane 1) |                |          |               |               |                    |               | 1766              |
| 1/2<br>(Station Road (N) Lane 2) |                |          |               |               |                    |               | 1929              |
| 2/1<br>(High Street (S) Lane 1)  |                |          |               |               |                    |               | 1763              |
| 2/2<br>(High Street (S) Lane 2)  |                |          |               |               |                    |               | 1877              |
| 3/1<br>(Station Road (W) Lane 1) |                |          |               |               |                    |               | 1691              |
| 4/1                              |                |          |               |               |                    |               | 1800              |
| 5/1                              |                |          |               |               |                    |               | 1800              |
| 6/1                              |                |          |               |               |                    |               | 1800              |

Scenario 19: 'Base + Com 2014 AM Sen'  
Staging Plan 1: 'Staging Plan No. 1'  
Flow Group 19: 'Base + Com 2014 AM Sensitivity'

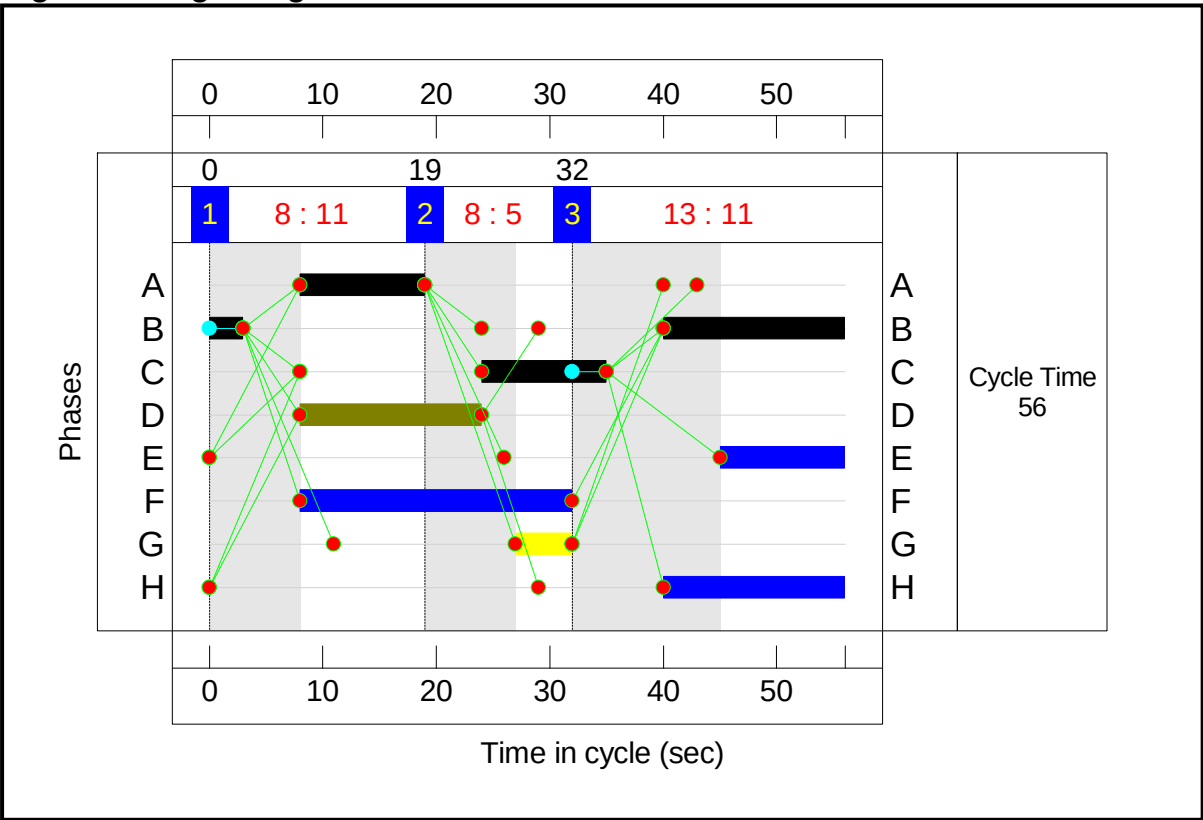
Staging Plan Diagram



Stage Timings

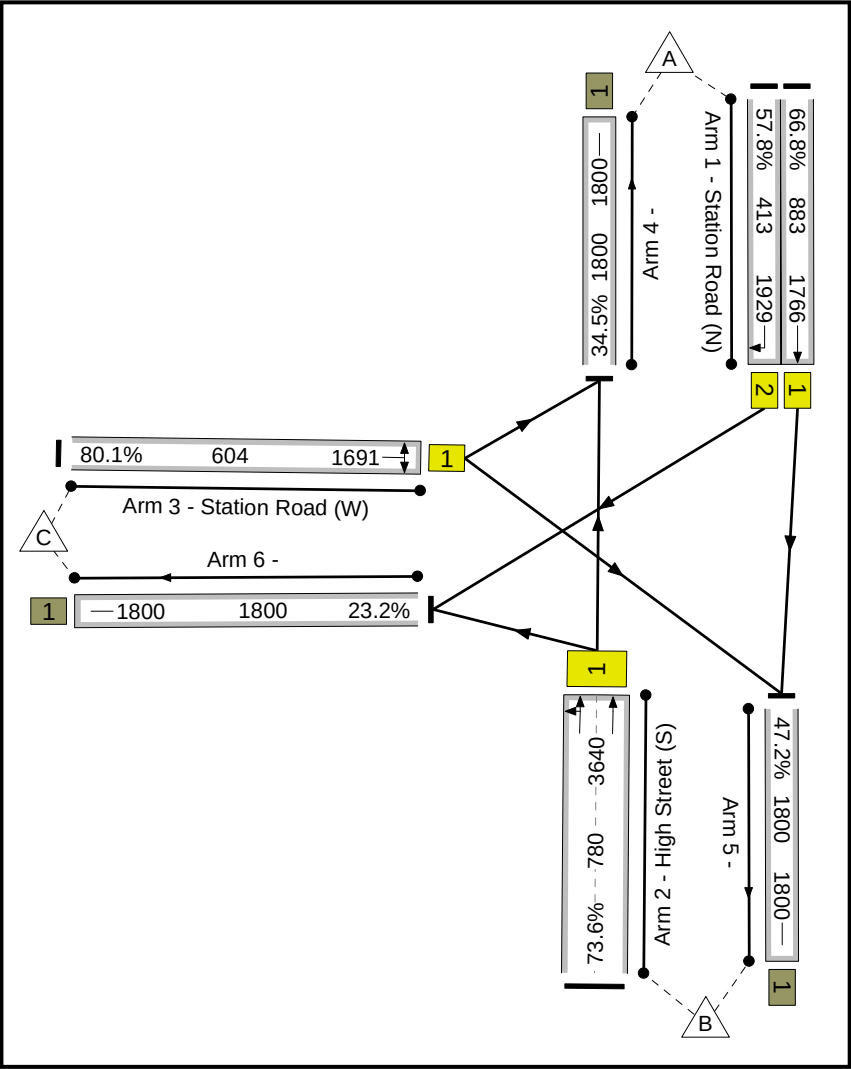
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 11 | 5  | 11 |
| Change Point | 0  | 19 | 32 |

Signal Timings Diagram



Full Input Data And Results

**Junction Layout Diagram**

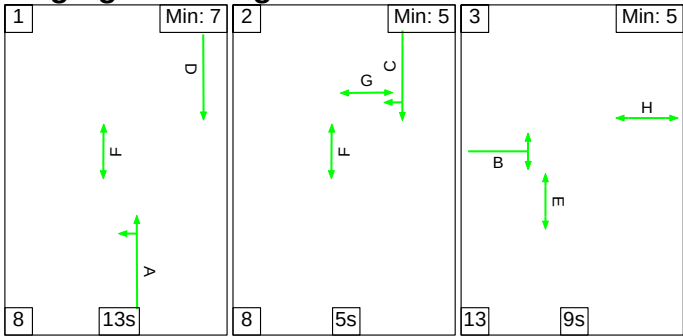


# Full Input Data And Results

## Link Results

| Link Num                     | Link Desc                   | Link Type     | Stage Stream          | Position In Filtered Route   | Full Phase                               | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Max Sat Flow (pcu/Hr)            | Ave Sat Flow (pcu/Hr)      | Capacity (pcu)       | Deg Sat (%) |
|------------------------------|-----------------------------|---------------|-----------------------|------------------------------|------------------------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|-------------|
| 1/1                          | Station Road (N) Ahead      | U             | N/A                   | N/A                          | C                                        | D                     | 1                            | 27                                 | 16                  | 590                       | 1766                             | 1766                       | 883                  | 66.8        |
| 1/2                          | Station Road (N) Right      | U             | N/A                   | N/A                          | C                                        |                       | 1                            | 11                                 | -                   | 239                       | 1929                             | 1929                       | 413                  | 57.8        |
| 2/1                          | High Street (S) Ahead Left  | U             | N/A                   | N/A                          | A                                        |                       | 1                            | 11                                 | -                   | 574                       | 3640                             | 3640                       | 780                  | 73.6        |
| 3/1                          | Station Road (W) Left Right | U             | N/A                   | N/A                          | B                                        |                       | 1                            | 19                                 | -                   | 484                       | 1691                             | 1691                       | 604                  | 80.1        |
| 4/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 621                       | 1800                             | 1800                       | 1800                 | 34.5        |
| 5/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 849                       | 1800                             | 1800                       | 1800                 | 47.2        |
| 6/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 417                       | 1800                             | 1800                       | 1800                 | 23.2        |
| Link Num                     | Entering (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 Veh (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |             |
| 1/1                          | 590                         | 590           | -                     | -                            | -                                        | 1.7                   | 1.0                          | -                                  | 2.7                 | 16.6                      | 6.9                              | 1.0                        | 7.9                  |             |
| 1/2                          | 239                         | 239           | -                     | -                            | -                                        | 1.3                   | 0.7                          | -                                  | 2.0                 | 30.0                      | 3.3                              | 0.7                        | 4.0                  |             |
| 2/1                          | 574                         | 574           | -                     | -                            | -                                        | 3.3                   | 1.4                          | -                                  | 4.6                 | 29.2                      | 8.3                              | 1.4                        | 9.7                  |             |
| 3/1                          | 484                         | 484           | -                     | -                            | -                                        | 2.2                   | 2.0                          | -                                  | 4.1                 | 30.8                      | 6.7                              | 2.0                        | 8.7                  |             |
| 4/1                          | 621                         | 621           | -                     | -                            | -                                        | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.7                       | 3.7                              | 0.3                        | 4.0                  |             |
| 5/1                          | 849                         | 849           | -                     | -                            | -                                        | 0.0                   | 0.4                          | -                                  | 0.4                 | 1.9                       | 0.0                              | 0.4                        | 0.4                  |             |
| 6/1                          | 417                         | 417           | -                     | -                            | -                                        | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.3                       | 0.0                              | 0.2                        | 0.2                  |             |
| PRC for Signalled Links (%): |                             |               |                       | 12.3                         | Total Delay for Signalled Links (pcuHr): |                       |                              |                                    | 13.50               |                           |                                  |                            |                      |             |
| PRC Over All Links (%):      |                             |               |                       | 12.3                         | Total Delay Over All Links (pcuHr):      |                       |                              |                                    | 14.39               | Cycle Time (s): 56        |                                  |                            |                      |             |

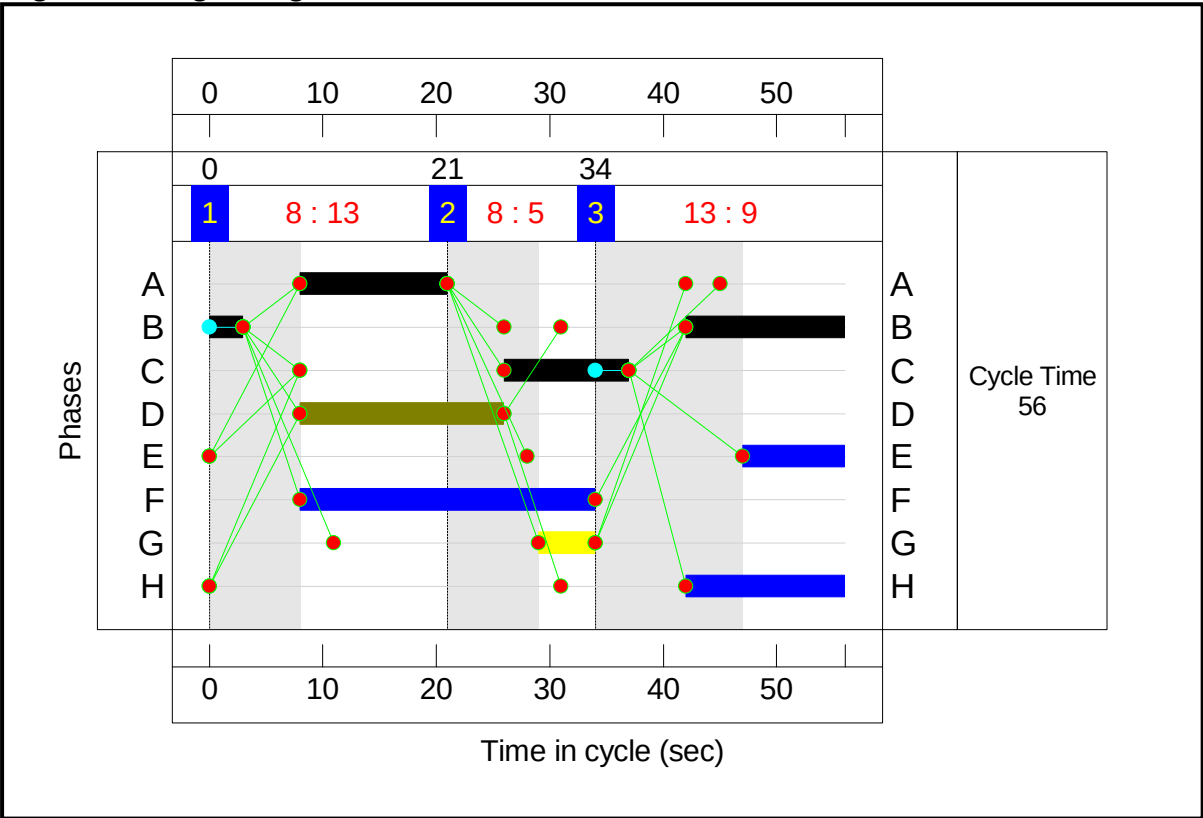
**Scenario 20: 'Base + Com 2014 PM Sen'**  
Staging Plan 1: 'Staging Plan No. 1'  
Flow Group 20: 'Base + Com 2014 PM Sensitivity'  
**Staging Plan Diagram**



**Stage Timings**

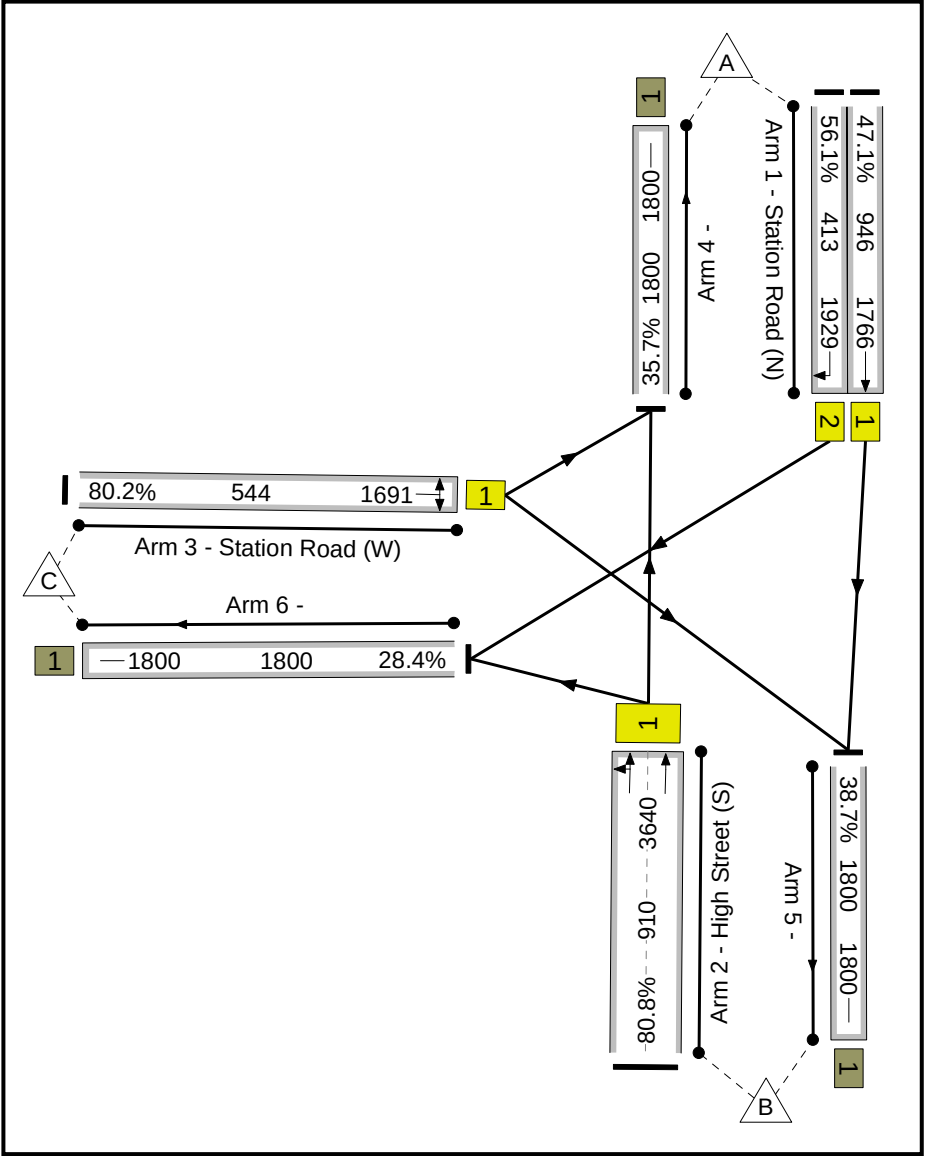
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 13 | 5  | 9  |
| Change Point | 0  | 21 | 34 |

**Signal Timings Diagram**



Full Input Data And Results

**Junction Layout Diagram**



# Full Input Data And Results

## Link Results

| Link Num                      | Link Desc                   | Link Type     | Stage Stream          | Position In Filtered Route   | Full Phase                                | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Max Sat Flow (pcu/Hr)            | Ave Sat Flow (pcu/Hr)      | Capacity (pcu)       | Deg Sat (%) |
|-------------------------------|-----------------------------|---------------|-----------------------|------------------------------|-------------------------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|-------------|
| 1/1                           | Station Road (N) Ahead      | U             | N/A                   | N/A                          | C                                         | D                     | 1                            | 29                                 | 18                  | 446                       | 1766                             | 1766                       | 946                  | 47.1        |
| 1/2                           | Station Road (N) Right      | U             | N/A                   | N/A                          | C                                         |                       | 1                            | 11                                 | -                   | 232                       | 1929                             | 1929                       | 413                  | 56.1        |
| 2/1                           | High Street (S) Ahead Left  | U             | N/A                   | N/A                          | A                                         |                       | 1                            | 13                                 | -                   | 735                       | 3640                             | 3640                       | 910                  | 80.8        |
| 3/1                           | Station Road (W) Left Right | U             | N/A                   | N/A                          | B                                         |                       | 1                            | 17                                 | -                   | 436                       | 1691                             | 1691                       | 544                  | 80.2        |
| 4/1                           |                             | U             | N/A                   | N/A                          | -                                         |                       | -                            | -                                  | -                   | 642                       | 1800                             | 1800                       | 1800                 | 35.7        |
| 5/1                           |                             | U             | N/A                   | N/A                          | -                                         |                       | -                            | -                                  | -                   | 696                       | 1800                             | 1800                       | 1800                 | 38.7        |
| 6/1                           |                             | U             | N/A                   | N/A                          | -                                         |                       | -                            | -                                  | -                   | 511                       | 1800                             | 1800                       | 1800                 | 28.4        |
| Link Num                      | Entering (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 Veh (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |             |
| 1/1                           | 446                         | 446           | -                     | -                            | -                                         | 1.0                   | 0.4                          | -                                  | 1.4                 | 11.7                      | 4.2                              | 0.4                        | 4.7                  |             |
| 1/2                           | 232                         | 232           | -                     | -                            | -                                         | 1.3                   | 0.6                          | -                                  | 1.9                 | 29.5                      | 3.2                              | 0.6                        | 3.9                  |             |
| 2/1                           | 735                         | 735           | -                     | -                            | -                                         | 4.0                   | 2.1                          | -                                  | 6.1                 | 29.8                      | 10.6                             | 2.1                        | 12.7                 |             |
| 3/1                           | 436                         | 436           | -                     | -                            | -                                         | 2.1                   | 2.0                          | -                                  | 4.1                 | 33.5                      | 6.2                              | 2.0                        | 8.1                  |             |
| 4/1                           | 642                         | 642           | -                     | -                            | -                                         | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.7                       | 4.5                              | 0.3                        | 4.8                  |             |
| 5/1                           | 696                         | 696           | -                     | -                            | -                                         | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.6                       | 0.0                              | 0.3                        | 0.3                  |             |
| 6/1                           | 511                         | 511           | -                     | -                            | -                                         | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 0.0                              | 0.2                        | 0.2                  |             |
| PRC for Signalised Links (%): |                             |               |                       | 11.4                         | Total Delay for Signalised Links (pcuHr): |                       |                              |                                    | 13.49               |                           |                                  |                            |                      |             |
| PRC Over All Links (%):       |                             |               |                       | 11.4                         | Total Delay Over All Links(pcuHr):        |                       |                              |                                    | 14.31               | Cycle Time (s): 56        |                                  |                            |                      |             |



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

PICADY 5.1 ANALYSIS PROGRAM  
RELEASE 5.0 (JUNE 2010)

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TRL SOFTWARE SALES  
TEL: CROWTHORNE (01344) 770758, FAX: 770356  
EMAIL: software@trl.co.uk

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IN NO WAY RELIEVED OF HIS/HER RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-  
"I:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\NorthHydeRd\_MillingtonRd AM Sen.vpi"  
(drive-on-the-left) at 11:57:26 on Sunday, 5 August 2012

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Base Model Junction 2  
LOCATION : North Hyde Road/Millington Road  
DATE : 23/04/12  
CLIENT :  
ENUMERATOR : rhussain [IE-D00135]  
JOB NUMBER : VN50026  
STATUS : Draft 1  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----

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

ARM A IS North Hyde Road (E)  
ARM B IS Millington Road  
ARM C IS North Hyde Road (W)

STREAM LABELLING CONVENTION  
-----

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

## GEOMETRIC DATA

| I | DATA ITEM                          | I | MINOR ROAD B    | I |
|---|------------------------------------|---|-----------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | ( W ) 7.64 M.   | I |
| I | CENTRAL RESERVE WIDTH              | I | (WCR) 0.00 M.   | I |
| I |                                    | I |                 | I |
| I | MAJOR ROAD RIGHT TURN - WIDTH      | I | (WC-B) 2.20 M.  | I |
| I | - VISIBILITY                       | I | (VC-B)119.00 M. | I |
| I | - BLOCKS TRAFFIC (SPACES)          | I | NO ( 0 )        | I |
| I |                                    | I |                 | I |
| I | MINOR ROAD - VISIBILITY TO LEFT    | I | (VB-C) 23.0 M.  | I |
| I | - VISIBILITY TO RIGHT              | I | (VB-A) 19.0 M.  | I |
| I | - LANE 1 WIDTH                     | I | (WB-C) 3.00 M.  | I |
| I | - LANE 2 WIDTH                     | I | (WB-A) 0.00 M.  | I |

## .SLOPES AND INTERCEPT

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

| I | Intercept  | For | Slope  | For | Opposing | Slope  | For | Opposing | I |
|---|------------|-----|--------|-----|----------|--------|-----|----------|---|
| I | STREAM B-C |     | STREAM | A-C |          | STREAM | A-B |          | I |
| I | 635.90     |     | 0.23   |     |          | 0.09   |     |          | I |

| I | Intercept  | For | Slope  | For | Opposing | Slope  | For | Opposing | Slope  | For | Opposing | I |
|---|------------|-----|--------|-----|----------|--------|-----|----------|--------|-----|----------|---|
| I | STREAM B-A |     | STREAM | A-C |          | STREAM | A-B |          | STREAM | C-A |          | I |
| I | 494.40     |     | 0.21   |     |          | 0.08   |     |          | 0.13   |     | 0.30     | I |

| I | Intercept  | For | Slope  | For | Opposing | Slope  | For | Opposing | I |
|---|------------|-----|--------|-----|----------|--------|-----|----------|---|
| I | STREAM C-B |     | STREAM | A-C |          | STREAM | A-B |          | I |
| I | 642.88     |     | 0.23   |     |          | 0.23   |     |          | I |

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

## TRAFFIC DEMAND DATA

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

Demand set: Base+Com 2014

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN | I | RATE OF FLOW (VEH/MIN) | I |
|---|-------|---|-----------------------------------|---|------------------------|---|
| I |       | I | FLOW STARTS                       | I | BEFORE                 | I |
| I |       | I | TOP OF PEAK                       | I | AT TOP                 | I |
| I |       | I | TO RISE                           | I | PEAK                   | I |
| I |       | I | IS REACHED                        | I | OF PEAK                | I |
| I |       | I | FALLING                           | I | PEAK                   | I |
| I | ARM A | I | 15.00                             | I | 7.25                   | I |
| I | ARM B | I | 15.00                             | I | 0.09                   | I |
| I | ARM C | I | 15.00                             | I | 5.64                   | I |

Demand set: Base+Com 2014

| TIME          | TURNING PROPORTIONS   |     |        |     |        |     |        |  |  |  |
|---------------|-----------------------|-----|--------|-----|--------|-----|--------|--|--|--|
|               | TURNING COUNTS        |     |        |     |        |     |        |  |  |  |
|               | (PERCENTAGE OF H.V.S) |     |        |     |        |     |        |  |  |  |
|               | FROM/TO               | ARM | A      | ARM | B      | ARM | C      |  |  |  |
| 07.45 - 09.15 | ARM A                 |     | 0.000  |     | 0.071  |     | 0.929  |  |  |  |
|               |                       |     | 0.0    |     | 41.0   |     | 539.0  |  |  |  |
|               |                       |     | ( 0.0) |     | ( 0.0) |     | ( 0.0) |  |  |  |
|               | ARM B                 |     | 0.571  |     | 0.000  |     | 0.429  |  |  |  |
|               |                       |     | 4.0    |     | 0.0    |     | 3.0    |  |  |  |
|               |                       |     | ( 0.0) |     | ( 0.0) |     | ( 0.0) |  |  |  |
|               | ARM C                 |     | 0.989  |     | 0.011  |     | 0.000  |  |  |  |
|               |                       |     | 446.0  |     | 5.0    |     | 0.0    |  |  |  |
|               |                       |     | ( 0.0) |     | ( 0.0) |     | ( 0.0) |  |  |  |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET Base+Com 2014  
AND FOR TIME PERIOD 1

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 07.45-08.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.09                | 7.00                  | 0.013                        |                                  | 0.00                     | 0.01                   | 0.2                                 |                                               | 0.14                                           |
| C-A         | 5.60                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.06                | 9.03                  | 0.007                        |                                  | 0.00                     | 0.01                   | 0.1                                 |                                               | 0.11                                           |
| A-B         | 0.51                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 6.76                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.00-08.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.10                | 6.58                  | 0.016                        |                                  | 0.01                     | 0.02                   | 0.2                                 |                                               | 0.15                                           |
| C-A         | 6.68                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.07                | 8.70                  | 0.009                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.12                                           |
| A-B         | 0.61                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 8.08                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.15-08.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.13                | 5.99                  | 0.021                        |                                  | 0.02                     | 0.02                   | 0.3                                 |                                               | 0.17                                           |
| C-A         | 8.18                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.09                | 8.25                  | 0.011                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.75                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 9.89                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.30-08.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.13                | 5.99                  | 0.021                        |                                  | 0.02                     | 0.02                   | 0.3                                 |                                               | 0.17                                           |
| C-A         | 8.18                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.09                | 8.25                  | 0.011                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.75                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 9.89                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.45-09.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.10                | 6.58                  | 0.016                        |                                  | 0.02                     | 0.02                   | 0.3                                 |                                               | 0.15                                           |
| C-A         | 6.68                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.07                | 8.70                  | 0.009                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.12                                           |
| A-B         | 0.61                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 8.08                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 09.00-09.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.09                | 7.00                  | 0.013                        |                                  | 0.02                     | 0.01                   | 0.2                                 |                                               | 0.14                                           |
| C-A         | 5.60                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.06                | 9.03                  | 0.007                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.11                                           |
| A-B         | 0.51                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 6.76                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

## QUEUE FOR STREAM B-AC

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

## QUEUE FOR STREAM C-B

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

## QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND<br>(VEH) | DEMAND<br>(VEH/H) | * QUEUEING *<br>DELAY (MIN) | * INCLUSIVE QUEUEING *<br>DELAY (MIN/VEH) |
|--------|-----------------------|-------------------|-----------------------------|-------------------------------------------|
| B-AC   | 9.6                   | 6.4               | 1.5                         | 0.16                                      |
| C-A    | 613.9                 | 409.3             |                             |                                           |
| C-B    | 6.9                   | 4.6               | 0.8                         | 0.12                                      |
| A-B    | 56.4                  | 37.6              |                             |                                           |
| A-C    | 741.9                 | 494.6             |                             |                                           |
| ALL    | 1428.7                | 952.5             | 2.3                         | 0.00                                      |

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

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

===== end of file =====

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

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Run with file:-  
"I:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\NorthHydeRd\_MillingtonRd PM Sen.vpi"  
(drive-on-the-left) at 10:32:50 on Sunday, 12 August 2012

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Base Model Junction 2  
LOCATION : North Hyde Road/Millington Road  
DATE : 23/04/12  
CLIENT :  
ENUMERATOR : rhussain [IE-D00135]  
JOB NUMBER : VN50026  
STATUS : Draft 1  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

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I  
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MINOR ROAD (ARM B)

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ARM B IS Millington Road  
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-----

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

## GEOMETRIC DATA

| I | DATA ITEM                          | I | MINOR ROAD B    | I |
|---|------------------------------------|---|-----------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | ( W ) 7.64 M.   | I |
| I | CENTRAL RESERVE WIDTH              | I | (WCR ) 0.00 M.  | I |
| I |                                    | I |                 | I |
| I | MAJOR ROAD RIGHT TURN - WIDTH      | I | (WC-B) 2.20 M.  | I |
| I | - VISIBILITY                       | I | (VC-B)119.00 M. | I |
| I | - BLOCKS TRAFFIC (SPACES)          | I | NO ( 0 )        | I |
| I |                                    | I |                 | I |
| I | MINOR ROAD - VISIBILITY TO LEFT    | I | (VB-C) 23.0 M.  | I |
| I | - VISIBILITY TO RIGHT              | I | (VB-A) 19.0 M.  | I |
| I | - LANE 1 WIDTH                     | I | (WB-C) 3.00 M.  | I |
| I | - LANE 2 WIDTH                     | I | (WB-A) 0.00 M.  | I |

## .SLOPES AND INTERCEPT

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

| I | Intercept  | For | Slope  | For | Opposing | Slope  | For | Opposing | I |
|---|------------|-----|--------|-----|----------|--------|-----|----------|---|
| I | STREAM B-C |     | STREAM | A-C |          | STREAM | A-B |          | I |
| I | 635.90     |     | 0.23   |     |          | 0.09   |     |          | I |

| I | Intercept  | For | Slope  | For | Opposing | Slope  | For | Opposing | Slope  | For | Opposing | I |
|---|------------|-----|--------|-----|----------|--------|-----|----------|--------|-----|----------|---|
| I | STREAM B-A |     | STREAM | A-C |          | STREAM | A-B |          | STREAM | C-A |          | I |
| I | 494.40     |     | 0.21   |     |          | 0.08   |     |          | 0.13   |     | 0.30     | I |

| I | Intercept  | For | Slope  | For | Opposing | Slope  | For | Opposing | I |
|---|------------|-----|--------|-----|----------|--------|-----|----------|---|
| I | STREAM C-B |     | STREAM | A-C |          | STREAM | A-B |          | I |
| I | 642.88     |     | 0.23   |     |          | 0.23   |     |          | I |

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

## TRAFFIC DEMAND DATA

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

Demand set: Base+Com 2014

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN | I | RATE OF FLOW (VEH/MIN) | I |
|---|-------|---|-----------------------------------|---|------------------------|---|
| I |       | I | FLOW STARTS                       | I | BEFORE                 | I |
| I |       | I | TOP OF PEAK                       | I | AT TOP                 | I |
| I |       | I | TO RISE                           | I | PEAK                   | I |
| I |       | I | IS REACHED                        | I | OF PEAK                | I |
| I |       | I | FALLING                           | I | PEAK                   | I |
| I | ARM A | I | 15.00                             | I | 6.26                   | I |
| I | ARM B | I | 15.00                             | I | 0.60                   | I |
| I | ARM C | I | 15.00                             | I | 5.45                   | I |

Demand set: Base+Com 2014

| TIME          | TURNING PROPORTIONS   |     |        |     |        |     |        |  |  |  |
|---------------|-----------------------|-----|--------|-----|--------|-----|--------|--|--|--|
|               | TURNING COUNTS        |     |        |     |        |     |        |  |  |  |
|               | (PERCENTAGE OF H.V.S) |     |        |     |        |     |        |  |  |  |
|               | FROM/TO               | ARM | A      | ARM | B      | ARM | C      |  |  |  |
| 17.00 - 18.30 | ARM A                 |     | 0.000  |     | 0.014  |     | 0.986  |  |  |  |
|               |                       |     | 0.0    |     | 7.0    |     | 494.0  |  |  |  |
|               |                       |     | ( 0.0) |     | ( 0.0) |     | ( 0.0) |  |  |  |
|               | ARM B                 |     | 0.438  |     | 0.000  |     | 0.563  |  |  |  |
|               |                       |     | 21.0   |     | 0.0    |     | 27.0   |  |  |  |
|               |                       |     | ( 0.0) |     | ( 0.0) |     | ( 0.0) |  |  |  |
|               | ARM C                 |     | 0.989  |     | 0.011  |     | 0.000  |  |  |  |
|               |                       |     | 431.0  |     | 5.0    |     | 0.0    |  |  |  |
|               |                       |     | ( 0.0) |     | ( 0.0) |     | ( 0.0) |  |  |  |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET Base+Com 2014  
AND FOR TIME PERIOD 1

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.00-17.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.60                | 7.57                  | 0.080                        |                                  | 0.00                     | 0.09                   | 1.2                                 |                                               | 0.14                                           |
| C-A         | 5.41                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.06                | 9.26                  | 0.007                        |                                  | 0.00                     | 0.01                   | 0.1                                 |                                               | 0.11                                           |
| A-B         | 0.09                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 6.20                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.15-17.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.72                | 7.20                  | 0.100                        |                                  | 0.09                     | 0.11                   | 1.6                                 |                                               | 0.15                                           |
| C-A         | 6.46                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.07                | 8.98                  | 0.008                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.11                                           |
| A-B         | 0.10                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.40                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.30-17.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.88                | 6.68                  | 0.132                        |                                  | 0.11                     | 0.15                   | 2.2                                 |                                               | 0.17                                           |
| C-A         | 7.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.09                | 8.59                  | 0.011                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.13                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 9.07                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.45-18.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.88                | 6.68                  | 0.132                        |                                  | 0.15                     | 0.15                   | 2.3                                 |                                               | 0.17                                           |
| C-A         | 7.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.09                | 8.59                  | 0.011                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.13                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 9.07                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 18.00-18.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.72                | 7.20                  | 0.100                        |                                  | 0.15                     | 0.11                   | 1.7                                 |                                               | 0.15                                           |
| C-A         | 6.46                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.07                | 8.98                  | 0.008                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.11                                           |
| A-B         | 0.10                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.40                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 18.15-18.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.60                | 7.57                  | 0.080                        |                                  | 0.11                     | 0.09                   | 1.3                                 |                                               | 0.14                                           |
| C-A         | 5.41                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.06                | 9.26                  | 0.007                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.11                                           |
| A-B         | 0.09                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 6.20                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

#### QUEUE FOR STREAM B-AC

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.15                     | 0.1                            |
| 17.30                     | 0.1                            |
| 17.45                     | 0.1                            |
| 18.00                     | 0.2                            |
| 18.15                     | 0.1                            |
| 18.30                     | 0.1                            |

#### QUEUE FOR STREAM C-B

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.15                     | 0.0                            |
| 17.30                     | 0.0                            |
| 17.45                     | 0.0                            |
| 18.00                     | 0.0                            |
| 18.15                     | 0.0                            |
| 18.30                     | 0.0                            |

#### QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND<br>(VEH) | DEMAND<br>(VEH/H) | * QUEUEING *<br>DELAY *<br>(MIN) | * INCLUSIVE QUEUEING *<br>DELAY *<br>(MIN/VEH) |
|--------|-----------------------|-------------------|----------------------------------|------------------------------------------------|
| B-AC   | 66.1                  | 44.0              | 10.4                             | 0.16                                           |
| C-A    | 593.2                 | 395.5             |                                  |                                                |
| C-B    | 6.9                   | 4.6               | 0.8                              | 0.11                                           |
| A-B    | 9.6                   | 6.4               |                                  |                                                |
| A-C    | 680.0                 | 453.3             |                                  |                                                |
| ALL    | 1355.8                | 903.9             | 11.1                             | 0.01                                           |

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

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

===== end of file =====



TRL LIMITED

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

PICADY 5.1 ANALYSIS PROGRAM  
RELEASE 5.0 (JUNE 2010)

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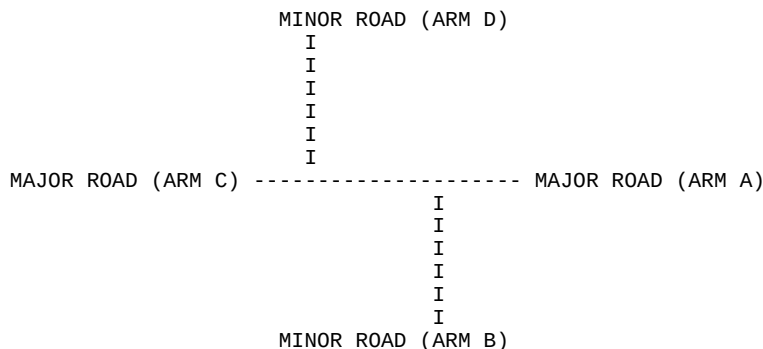
Run with file:-  
"I:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\StationRd\_MillingtonRd AM Sen.vpi"  
(drive-on-the-left) at 12:46:23 on Sunday, 5 August 2012

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Base Model Junction 4  
LOCATION : Station Road/Millington Road  
DATE : 23/04/12  
CLIENT :  
ENUMERATOR : rhussain [IE-D00135]  
JOB NUMBER : VN50026  
STATUS : Draft 1  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----



ARM A IS Station Road (S)  
ARM B IS Millington Road  
ARM C IS Station Road (N)  
ARM D IS Bedwell Gardens

STREAM LABELLING CONVENTION  
-----

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

## GEOMETRIC DATA

| I | DATA ITEM                          | I | MINOR ROAD B    | I | MINOR ROAD D    | I |
|---|------------------------------------|---|-----------------|---|-----------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | ( W ) 8.25 M.   | I | ( W ) 8.25 M.   | I |
| I | CENTRAL RESERVE WIDTH              | I | ( WCR ) 0.00 M. | I | ( WCR ) 0.00 M. | I |
| I |                                    | I |                 | I |                 | I |
| I | MAJOR ROAD RIGHT TURN - WIDTH      | I | (WC-B) 2.20 M.  | I | (WA-D) 2.20 M.  | I |
| I | - VISIBILITY                       | I | (VC-B) 60.00 M. | I | (VA-D) 80.00 M. | I |
| I | - BLOCKS TRAFFIC (SPACES)          | I | YES ( 2)        | I | YES ( 2)        | I |
| I |                                    | I |                 | I |                 | I |
| I | MINOR ROAD - VISIBILITY TO LEFT    | I | (VB-C) 29.0 M.  | I | (VD-A) 31.0 M.  | I |
| I | - VISIBILITY TO RIGHT              | I | (VB-A) 41.0 M.  | I | (VD-C) 26.0 M.  | I |
| I | - LANE 1 WIDTH                     | I | (WB-C) 5.00 M.  | I | (WD-A) 3.52 M.  | I |
| I | - LANE 2 WIDTH                     | I | (WB-A) 0.00 M.  | I | (WD-C) 0.00 M.  | I |

## .SLOPES AND INTERCEPT

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

## STREAM B-A

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-A    | STREAM A-C         | STREAM A-D         | STREAM A-B         | STREAM C-A         | I |
| I | 608.68        | 0.25               | 0.25               | 0.10               | 0.16               | I |

| I |  | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|--|--------------------|--------------------|--------------------|--------------------|---|
| I |  | STREAM D-A         | STREAM C-B         | STREAM D-B         |                    | I |
| I |  | 0.16               | 0.36               | 0.36               |                    | I |

## STREAM D-C

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-C    | STREAM C-A         | STREAM C-B         | STREAM C-D         | STREAM A-C         | I |
| I | 526.46        | 0.22               | 0.22               | 0.09               | 0.14               | I |

| I |  | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|--|--------------------|--------------------|--------------------|--------------------|---|
| I |  | STREAM B-C         | STREAM A-D         | STREAM B-D         |                    | I |
| I |  | 0.14               | 0.31               | 0.31               |                    | I |

## STREAM CD-B

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM CD-B   | STREAM A-B         | STREAM A-C         | STREAM A-D         |                    | I |
| I | 620.29        | 0.21               | 0.21               | 0.25               |                    | I |

## STREAM AB-D

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM AB-D   | STREAM C-D         | STREAM C-A         | STREAM C-B         |                    | I |
| I | 620.29        | 0.22               | 0.22               | 0.22               |                    | I |

## STREAM B-CD

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-CD   | STREAM A-C         | STREAM A-D         | STREAM A-B         |                    | I |
| I | 779.85        | 0.27               | 0.27               | 0.11               |                    | I |

## STREAM D-AB

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-AB   | STREAM C-A         | STREAM C-B         | STREAM C-D         |                    | I |
| I | 673.64        | 0.24               | 0.24               | 0.09               |                    | I |

TRAFFIC DEMAND DATA

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

Demand set: Base+Com 2014

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | I | TOP OF PEAK IS REACHED | I | FLOW STOPS FALLING | I | RATE OF FLOW (VEH/MIN) BEFORE PEAK | I | AT TOP OF PEAK | I | AFTER PEAK | I |
|---|-------|---|-------------------------------------------------------|---|------------------------|---|--------------------|---|------------------------------------|---|----------------|---|------------|---|
| I | ARM A | I | 15.00                                                 | I | 45.00                  | I | 75.00              | I | 6.65                               | I | 9.98           | I | 6.65       | I |
| I | ARM B | I | 15.00                                                 | I | 45.00                  | I | 75.00              | I | 1.21                               | I | 1.82           | I | 1.21       | I |
| I | ARM C | I | 15.00                                                 | I | 45.00                  | I | 75.00              | I | 10.20                              | I | 15.30          | I | 10.20      | I |
| I | ARM D | I | 15.00                                                 | I | 45.00                  | I | 75.00              | I | 1.33                               | I | 1.99           | I | 1.33       | I |

Demand set: Base+Com 2014

| I | TIME          | I | FROM/TO | I | ARM    | A | I      | ARM | B      | I | ARM    | C | I | ARM | D | I |
|---|---------------|---|---------|---|--------|---|--------|-----|--------|---|--------|---|---|-----|---|---|
| I | 07.45 - 09.15 | I | ARM A   | I | 0.000  | I | 0.269  | I   | 0.692  | I | 0.039  | I |   |     |   | I |
| I |               | I |         | I | 0.0    | I | 143.0  | I   | 368.0  | I | 21.0   | I |   |     |   | I |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |   |     |   | I |
| I |               | I | ARM B   | I | 0.433  | I | 0.000  | I   | 0.567  | I | 0.000  | I |   |     |   | I |
| I |               | I |         | I | 42.0   | I | 0.0    | I   | 55.0   | I | 0.0    | I |   |     |   | I |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |   |     |   | I |
| I |               | I | ARM C   | I | 0.695  | I | 0.186  | I   | 0.000  | I | 0.119  | I |   |     |   | I |
| I |               | I |         | I | 567.0  | I | 152.0  | I   | 0.0    | I | 97.0   | I |   |     |   | I |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |   |     |   | I |
| I |               | I | ARM D   | I | 0.160  | I | 0.000  | I   | 0.840  | I | 0.000  | I |   |     |   | I |
| I |               | I |         | I | 17.0   | I | 0.0    | I   | 89.0   | I | 0.0    | I |   |     |   | I |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |   |     |   | I |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS  
AND FOR TIME PERIOD 1

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 07.45-08.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.22                | 8.90                  | 0.137                        |                                  | 0.00                     | 0.16                   | 2.3                                 |                                               | 0.13                                           |
| A-B         | 1.79                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 4.62                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.26                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD (     | 0.26)               | 8.12                  | 0.032                        |                                  | 0.00                     | 0.03                   | 0.5                                 |                                               | 0.13                                           |
| AB-C (      | 5.30)               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.33                | 6.23                  | 0.214                        |                                  | 0.00                     | 0.27                   | 3.8                                 |                                               | 0.20                                           |
| C-D         | 1.22                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 7.11                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 1.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB (     | 1.91)               | 8.72                  | 0.219                        |                                  | 0.00                     | 0.22                   | 3.2                                 |                                               | 0.15                                           |
| CD-A (      | 7.32)               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.00-08.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.45                | 8.33                  | 0.175                        |                                  | 0.16                     | 0.21                   | 3.1                                 |                                               | 0.15                                           |
| A-B         | 2.14                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 5.51                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.31                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD (     | 0.31)               | 7.69                  | 0.041                        |                                  | 0.03                     | 0.04                   | 0.6                                 |                                               | 0.14                                           |
| AB-C (      | 6.34)               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.59                | 5.67                  | 0.280                        |                                  | 0.27                     | 0.38                   | 5.5                                 |                                               | 0.24                                           |
| C-D         | 1.45                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 8.50                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 2.28                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB (     | 2.28)               | 8.45                  | 0.270                        |                                  | 0.22                     | 0.27                   | 4.0                                 |                                               | 0.16                                           |
| CD-A (      | 8.75)               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.15-08.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.78                | 7.50                  | 0.237                        |                                  | 0.21                     | 0.31                   | 4.4                                 |                                               | 0.17                                           |
| A-B         | 2.62                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 6.75                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.39                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD (     | 0.39)               | 7.09                  | 0.054                        |                                  | 0.04                     | 0.05                   | 0.8                                 |                                               | 0.15                                           |
| AB-C (      | 7.76)               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.95                | 4.88                  | 0.398                        |                                  | 0.38                     | 0.64                   | 9.0                                 |                                               | 0.34                                           |
| C-D         | 1.78                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 10.40               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 2.79                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB (     | 2.79)               | 8.07                  | 0.346                        |                                  | 0.27                     | 0.34                   | 5.2                                 |                                               | 0.19                                           |
| CD-A (      | 10.71)              |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.30-08.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.78                | 7.50                  | 0.237                        |                                  | 0.31                     | 0.31                   | 4.6                                 |                                               | 0.17                                           |
| A-B         | 2.62                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 6.75                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.39                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD (     | 0.39)               | 7.09                  | 0.054                        |                                  | 0.05                     | 0.05                   | 0.8                                 |                                               | 0.15                                           |
| AB-C (      | 7.76)               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.95                | 4.88                  | 0.399                        |                                  | 0.64                     | 0.65                   | 9.7                                 |                                               | 0.34                                           |
| C-D         | 1.78                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 10.40               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 2.79                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB (     | 2.79)               | 8.07                  | 0.346                        |                                  | 0.34                     | 0.34                   | 5.2                                 |                                               | 0.19                                           |
| CD-A (      | 10.72)              |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| I | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 08.45-09.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | B-ACD       | 1.45                | 8.32                  | 0.175                        |                                  | 0.31                     | 0.21                   | 3.3                                 |                                               | 0.15                                           | I |
| I | A-B         | 2.14                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-C         | 5.51                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-D         | 0.31                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | AB-CD (     | 0.31)               | 7.69                  | 0.041                        |                                  | 0.05                     | 0.04                   | 0.6                                 |                                               | 0.14                                           | I |
| I | AB-C (      | 6.34)               |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | D-ABC       | 1.59                | 5.66                  | 0.280                        |                                  | 0.65                     | 0.40                   | 6.3                                 |                                               | 0.25                                           | I |
| I | C-D         | 1.45                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-A         | 8.50                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-B         | 2.28                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | CD-AB (     | 2.28)               | 8.45                  | 0.270                        |                                  | 0.34                     | 0.27                   | 4.1                                 |                                               | 0.16                                           | I |
| I | CD-A (      | 8.75)               |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I |             |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

| I | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 09.00-09.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | B-ACD       | 1.22                | 8.90                  | 0.137                        |                                  | 0.21                     | 0.16                   | 2.5                                 |                                               | 0.13                                           | I |
| I | A-B         | 1.79                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-C         | 4.62                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-D         | 0.26                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | AB-CD (     | 0.26)               | 8.12                  | 0.032                        |                                  | 0.04                     | 0.03                   | 0.5                                 |                                               | 0.13                                           | I |
| I | AB-C (      | 5.31)               |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | D-ABC       | 1.33                | 6.23                  | 0.214                        |                                  | 0.40                     | 0.28                   | 4.3                                 |                                               | 0.20                                           | I |
| I | C-D         | 1.22                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-A         | 7.11                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-B         | 1.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | CD-AB (     | 1.91)               | 8.72                  | 0.219                        |                                  | 0.27                     | 0.22                   | 3.3                                 |                                               | 0.15                                           | I |
| I | CD-A (      | 7.33)               |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I |             |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

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

#### QUEUE FOR STREAM B-ACD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 08.00                     | 0.2                            |
| 08.15                     | 0.2                            |
| 08.30                     | 0.3                            |
| 08.45                     | 0.3                            |
| 09.00                     | 0.2                            |
| 09.15                     | 0.2                            |

#### QUEUE FOR STREAM AB-CD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 08.00                     | 0.0                            |
| 08.15                     | 0.0                            |
| 08.30                     | 0.1                            |
| 08.45                     | 0.1                            |
| 09.00                     | 0.0                            |
| 09.15                     | 0.0                            |

#### QUEUE FOR STREAM D-ABC

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|---------------------------|--------------------------------|---|
| 08.00                     | 0.3                            |   |
| 08.15                     | 0.4                            |   |
| 08.30                     | 0.6                            | * |
| 08.45                     | 0.7                            | * |
| 09.00                     | 0.4                            |   |
| 09.15                     | 0.3                            |   |

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 08.00                     | 0.2                            |
| 08.15                     | 0.3                            |
| 08.30                     | 0.3                            |
| 08.45                     | 0.3                            |
| 09.00                     | 0.3                            |
| 09.15                     | 0.2                            |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL DEMAND | I         | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I         |
|---|--------|---|--------------|-----------|--------------|-----------|------------------------|-----------|
| I | I      | I | I            | I         | * DELAY *    | I         | * DELAY *              | I         |
| I | I      | I | I            | I         | I            | I         | I                      | I         |
| I | I      | I | (VEH)        | (VEH/H)   | (MIN)        | (MIN/VEH) | (MIN)                  | (MIN/VEH) |
| I | B-ACD  | I | 133.5        | I 89.0    | I 20.2       | I 0.15    | I 20.2                 | I 0.15    |
| I | A-B    | I | 196.8        | I 131.2   | I            | I         | I                      | I         |
| I | A-C    | I | 506.5        | I 337.7   | I            | I         | I                      | I         |
| I | A-D    | I | 28.9         | I 19.3    | I            | I         | I                      | I         |
| I | AB-CD  | I | ( 28.9)      | I( 19.3)  | I 3.8        | I 0.13    | I 3.8                  | I 0.13    |
| I | AB-C   | I | ( 582.1)     | I( 388.1) | I            | I         | I                      | I         |
| I | D-ABC  | I | 145.9        | I 97.3    | I 38.6       | I 0.26    | I 38.6                 | I 0.26    |
| I | C-D    | I | 133.5        | I 89.0    | I            | I         | I                      | I         |
| I | C-A    | I | 780.4        | I 520.3   | I            | I         | I                      | I         |
| I | C-B    | I | 209.2        | I 139.5   | I            | I         | I                      | I         |
| I | CD-AB  | I | ( 209.2)     | I( 139.5) | I 25.0       | I 0.12    | I 25.0                 | I 0.12    |
| I | CD-A   | I | ( 803.8)     | I( 535.9) | I            | I         | I                      | I         |
| I | ALL    | I | 2134.8       | I 1423.2  | I 87.5       | I 0.04    | I 87.5                 | I 0.04    |

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

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

===== end of file =====

Printed at 12:48:50 on 05/08/2012]

TRL LIMITED

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

PICADY 5.1 ANALYSIS PROGRAM  
RELEASE 5.0 (JUNE 2010)

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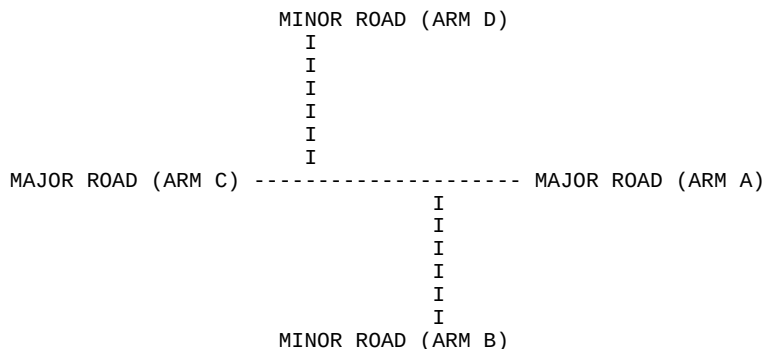
Run with file:-  
"I:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\StationRd\_MillingtonRd PM Sen.vpi"  
(drive-on-the-left) at 12:48:59 on Sunday, 5 August 2012

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Base Model Junction 4  
LOCATION : Station Road/Millington Road  
DATE : 23/04/12  
CLIENT :  
ENUMERATOR : rhussain [IE-D00135]  
JOB NUMBER : VN50026  
STATUS : Draft 1  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----



ARM A IS Station Road (S)  
ARM B IS Millington Road  
ARM C IS Station Road (N)  
ARM D IS Bedwell Gardens

STREAM LABELLING CONVENTION  
-----

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

## GEOMETRIC DATA

| I | DATA ITEM                          | I | MINOR ROAD B      | I | MINOR ROAD D      | I |
|---|------------------------------------|---|-------------------|---|-------------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | ( W ) 8.25 M.     | I | ( W ) 8.25 M.     | I |
| I | CENTRAL RESERVE WIDTH              | I | ( WCR ) 0.00 M.   | I | ( WCR ) 0.00 M.   | I |
| I |                                    | I |                   | I |                   | I |
| I | MAJOR ROAD RIGHT TURN - WIDTH      | I | ( WC-B ) 2.20 M.  | I | ( WA-D ) 2.20 M.  | I |
| I | - VISIBILITY                       | I | ( VC-B ) 60.00 M. | I | ( VA-D ) 80.00 M. | I |
| I | - BLOCKS TRAFFIC (SPACES)          | I | YES ( 2 )         | I | YES ( 2 )         | I |
| I |                                    | I |                   | I |                   | I |
| I | MINOR ROAD - VISIBILITY TO LEFT    | I | ( VB-C ) 29.0 M.  | I | ( VD-A ) 31.0 M.  | I |
| I | - VISIBILITY TO RIGHT              | I | ( VB-A ) 41.0 M.  | I | ( VD-C ) 26.0 M.  | I |
| I | - LANE 1 WIDTH                     | I | ( WB-C ) 5.00 M.  | I | ( WD-A ) 3.52 M.  | I |
| I | - LANE 2 WIDTH                     | I | ( WB-A ) 0.00 M.  | I | ( WD-C ) 0.00 M.  | I |

## .SLOPES AND INTERCEPT

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

## STREAM B-A

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-A    | STREAM A-C         | STREAM A-D         | STREAM A-B         | STREAM C-A         | I |
| I | 608.68        | 0.25               | 0.25               | 0.10               | 0.16               | I |

| I | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-A         | STREAM C-B         | STREAM D-B         | STREAM C-A         | I |
| I | 0.16               | 0.36               | 0.36               |                    | I |

## STREAM D-C

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-C    | STREAM C-A         | STREAM C-B         | STREAM C-D         | STREAM A-C         | I |
| I | 526.46        | 0.22               | 0.22               | 0.09               | 0.14               | I |

| I | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-C         | STREAM A-D         | STREAM B-D         | STREAM C-D         | I |
| I | 0.14               | 0.31               | 0.31               |                    | I |

## STREAM CD-B

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM CD-B   | STREAM A-B         | STREAM A-C         | STREAM A-D         | STREAM C-B         | I |
| I | 620.29        | 0.21               | 0.21               | 0.25               |                    | I |

## STREAM AB-D

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM AB-D   | STREAM C-D         | STREAM C-A         | STREAM C-B         | STREAM A-B         | I |
| I | 620.29        | 0.22               | 0.22               | 0.22               |                    | I |

## STREAM B-CD

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-CD   | STREAM A-C         | STREAM A-D         | STREAM A-B         | STREAM C-D         | I |
| I | 779.85        | 0.27               | 0.27               | 0.11               |                    | I |

## STREAM D-AB

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-AB   | STREAM C-A         | STREAM C-B         | STREAM C-D         | STREAM A-B         | I |
| I | 673.64        | 0.24               | 0.24               | 0.09               |                    | I |



TRAFFIC DEMAND DATA

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

Demand set: Base+Com 2014

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | I | TOP OF PEAK IS REACHED | I | FLOW STOPS FALLING | I | RATE OF FLOW (VEH/MIN) BEFORE PEAK | I | AT TOP OF PEAK | I | AFTER PEAK | I |
|---|-------|---|-------------------------------------------------------|---|------------------------|---|--------------------|---|------------------------------------|---|----------------|---|------------|---|
| I | ARM A | I | 15.00                                                 | I | 45.00                  | I | 75.00              | I | 7.70                               | I | 11.55          | I | 7.70       | I |
| I | ARM B | I | 15.00                                                 | I | 45.00                  | I | 75.00              | I | 4.09                               | I | 6.13           | I | 4.09       | I |
| I | ARM C | I | 15.00                                                 | I | 45.00                  | I | 75.00              | I | 8.74                               | I | 13.11          | I | 8.74       | I |
| I | ARM D | I | 15.00                                                 | I | 45.00                  | I | 75.00              | I | 0.71                               | I | 1.07           | I | 0.71       | I |

Demand set: Base+Com 2014

| I | TIME          | I | FROM/TO | I | ARM    | A | I      | ARM | B      | I | ARM    | C | I | ARM | D | I |
|---|---------------|---|---------|---|--------|---|--------|-----|--------|---|--------|---|---|-----|---|---|
| I | 16.45 - 18.15 | I | ARM A   | I | 0.000  | I | 0.167  | I   | 0.800  | I | 0.032  | I |   |     |   | I |
| I |               | I |         | I | 0.0    | I | 103.0  | I   | 493.0  | I | 20.0   | I |   |     |   | I |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |   |     |   | I |
| I |               | I | ARM B   | I | 0.391  | I | 0.000  | I   | 0.609  | I | 0.000  | I |   |     |   | I |
| I |               | I |         | I | 128.0  | I | 0.0    | I   | 199.0  | I | 0.0    | I |   |     |   | I |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |   |     |   | I |
| I |               | I | ARM C   | I | 0.654  | I | 0.223  | I   | 0.000  | I | 0.123  | I |   |     |   | I |
| I |               | I |         | I | 457.0  | I | 156.0  | I   | 0.0    | I | 86.0   | I |   |     |   | I |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |   |     |   | I |
| I |               | I | ARM D   | I | 0.193  | I | 0.000  | I   | 0.807  | I | 0.000  | I |   |     |   | I |
| I |               | I |         | I | 11.0   | I | 0.0    | I   | 46.0   | I | 0.0    | I |   |     |   | I |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |   |     |   | I |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS  
AND FOR TIME PERIOD 1

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 16.45-17.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 4.10                | 8.86                  | 0.463                        |                                  | 0.00                     | 0.84                   | 11.8                                |                                               | 0.21                                           |
| A-B         | 1.29                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 6.19                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.25                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.25)             | 8.44                  | 0.030                        |                                  | 0.00                     | 0.03                   | 0.4                                 |                                               | 0.12                                           |
| AB-C        | ( 8.65)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 0.72                | 6.19                  | 0.116                        |                                  | 0.00                     | 0.13                   | 1.8                                 |                                               | 0.18                                           |
| C-D         | 1.08                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 5.73                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 1.96                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 1.96)             | 8.50                  | 0.230                        |                                  | 0.00                     | 0.23                   | 3.4                                 |                                               | 0.15                                           |
| CD-A        | ( 5.87)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.00-17.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 4.90                | 8.26                  | 0.593                        |                                  | 0.84                     | 1.39                   | 19.5                                |                                               | 0.29                                           |
| A-B         | 1.54                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.39                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.30                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.30)             | 8.07                  | 0.037                        |                                  | 0.03                     | 0.04                   | 0.6                                 |                                               | 0.13                                           |
| AB-C        | ( 10.35)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 0.85                | 5.59                  | 0.153                        |                                  | 0.13                     | 0.18                   | 2.6                                 |                                               | 0.21                                           |
| C-D         | 1.29                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 6.85                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 2.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 2.34)             | 8.18                  | 0.286                        |                                  | 0.23                     | 0.28                   | 4.3                                 |                                               | 0.17                                           |
| CD-A        | ( 7.01)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.15-17.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 6.00                | 7.40                  | 0.811                        |                                  | 1.39                     | 3.56                   | 44.9                                |                                               | 0.60                                           |
| A-B         | 1.89                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 9.05                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.37                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.37)             | 7.56                  | 0.049                        |                                  | 0.04                     | 0.05                   | 0.7                                 |                                               | 0.14                                           |
| AB-C        | ( 12.61)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.05                | 4.76                  | 0.220                        |                                  | 0.18                     | 0.28                   | 4.0                                 |                                               | 0.27                                           |
| C-D         | 1.58                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 8.39                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 2.86                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 2.86)             | 7.74                  | 0.370                        |                                  | 0.28                     | 0.37                   | 5.5                                 |                                               | 0.20                                           |
| CD-A        | ( 8.59)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.30-17.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 6.00                | 7.40                  | 0.811                        |                                  | 3.56                     | 3.86                   | 56.0                                |                                               | 0.68                                           |
| A-B         | 1.89                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 9.05                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.37                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.37)             | 7.56                  | 0.049                        |                                  | 0.05                     | 0.05                   | 0.7                                 |                                               | 0.14                                           |
| AB-C        | ( 12.69)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.05                | 4.75                  | 0.220                        |                                  | 0.28                     | 0.28                   | 4.2                                 |                                               | 0.27                                           |
| C-D         | 1.58                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 8.39                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 2.86                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 2.86)             | 7.74                  | 0.370                        |                                  | 0.37                     | 0.37                   | 5.5                                 |                                               | 0.20                                           |
| CD-A        | ( 8.59)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.45-18.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 4.90                | 8.26                  | 0.593                        |                                  | 3.86                     | 1.53                   | 25.9                                |                                               | 0.33                                           |
| A-B         | 1.54                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.39                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.30                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.30)             | 8.07                  | 0.037                        |                                  | 0.05                     | 0.04                   | 0.6                                 |                                               | 0.13                                           |
| AB-C        | ( 10.46)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 0.85                | 5.57                  | 0.153                        |                                  | 0.28                     | 0.18                   | 2.9                                 |                                               | 0.21                                           |
| C-D         | 1.29                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 6.85                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 2.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 2.34)             | 8.18                  | 0.286                        |                                  | 0.37                     | 0.29                   | 4.3                                 |                                               | 0.17                                           |
| CD-A        | ( 7.01)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 18.00-18.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 4.10                | 8.86                  | 0.463                        |                                  | 1.53                     | 0.88                   | 14.0                                |                                               | 0.21                                           |
| A-B         | 1.29                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 6.19                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.25                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.25)             | 8.44                  | 0.030                        |                                  | 0.04                     | 0.03                   | 0.4                                 |                                               | 0.12                                           |
| AB-C        | ( 8.71)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 0.72                | 6.18                  | 0.116                        |                                  | 0.18                     | 0.13                   | 2.1                                 |                                               | 0.18                                           |
| C-D         | 1.08                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 5.73                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 1.96                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 1.96)             | 8.50                  | 0.230                        |                                  | 0.29                     | 0.23                   | 3.5                                 |                                               | 0.15                                           |
| CD-A        | ( 5.87)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

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

#### QUEUE FOR STREAM B-ACD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |      |
|---------------------------|--------------------------------|------|
| 17.00                     | 0.8                            | *    |
| 17.15                     | 1.4                            | *    |
| 17.30                     | 3.6                            | **** |
| 17.45                     | 3.9                            | **** |
| 18.00                     | 1.5                            | **   |
| 18.15                     | 0.9                            | *    |

#### QUEUE FOR STREAM AB-CD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.00                     | 0.0                            |
| 17.15                     | 0.0                            |
| 17.30                     | 0.0                            |
| 17.45                     | 0.0                            |
| 18.00                     | 0.0                            |
| 18.15                     | 0.0                            |

#### QUEUE FOR STREAM D-ABC

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.00                     | 0.1                            |
| 17.15                     | 0.2                            |
| 17.30                     | 0.3                            |
| 17.45                     | 0.3                            |
| 18.00                     | 0.2                            |
| 18.15                     | 0.1                            |

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.00                     | 0.2                            |
| 17.15                     | 0.3                            |
| 17.30                     | 0.4                            |
| 17.45                     | 0.4                            |
| 18.00                     | 0.3                            |
| 18.15                     | 0.2                            |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL DEMAND |           | I | * QUEUEING * |           | I | * INCLUSIVE QUEUEING * |           | I |
|---|--------|---|--------------|-----------|---|--------------|-----------|---|------------------------|-----------|---|
| I |        | I |              |           | I | * DELAY *    |           | I | * DELAY *              |           | I |
| I |        | I | (VEH)        | (VEH/H)   | I | (MIN)        | (MIN/VEH) | I | (MIN)                  | (MIN/VEH) | I |
| I | B-ACD  | I | 450.1        | I 300.1   | I | 172.1        | I 0.38    | I | 172.1                  | I 0.38    | I |
| I | A-B    | I | 141.8        | I 94.5    | I |              | I         | I |                        | I         | I |
| I | A-C    | I | 678.6        | I 452.4   | I |              | I         | I |                        | I         | I |
| I | A-D    | I | 27.5         | I 18.4    | I |              | I         | I |                        | I         | I |
| I | AB-CD  | I | ( 27.5)      | I( 18.4)  | I | 3.5          | I 0.13    | I | 3.5                    | I 0.13    | I |
| I | AB-C   | I | ( 951.9)     | I( 634.6) | I |              | I         | I |                        | I         | I |
| I | D-ABC  | I | 78.5         | I 52.3    | I | 17.5         | I 0.22    | I | 17.5                   | I 0.22    | I |
| I | C-D    | I | 118.4        | I 78.9    | I |              | I         | I |                        | I         | I |
| I | C-A    | I | 629.0        | I 419.4   | I |              | I         | I |                        | I         | I |
| I | C-B    | I | 214.7        | I 143.1   | I |              | I         | I |                        | I         | I |
| I | CD-AB  | I | ( 214.7)     | I( 143.1) | I | 26.5         | I 0.12    | I | 26.5                   | I 0.12    | I |
| I | CD-A   | I | ( 644.1)     | I( 429.4) | I |              | I         | I |                        | I         | I |
| I | ALL    | I | 2338.5       | I 1559.0  | I | 219.5        | I 0.09    | I | 219.6                  | I 0.09    | I |

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

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

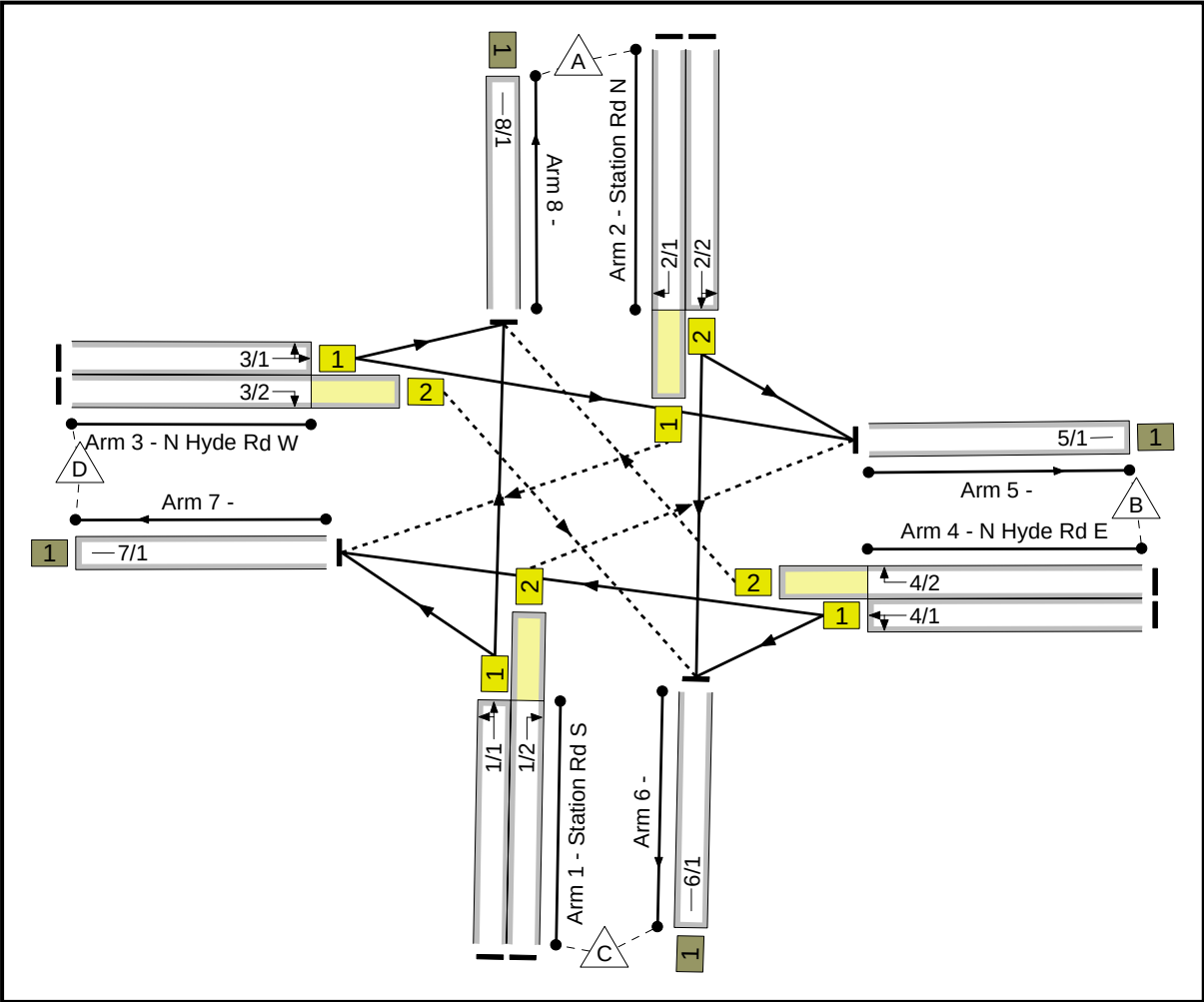
===== end of file =====

Full Input Data And Results

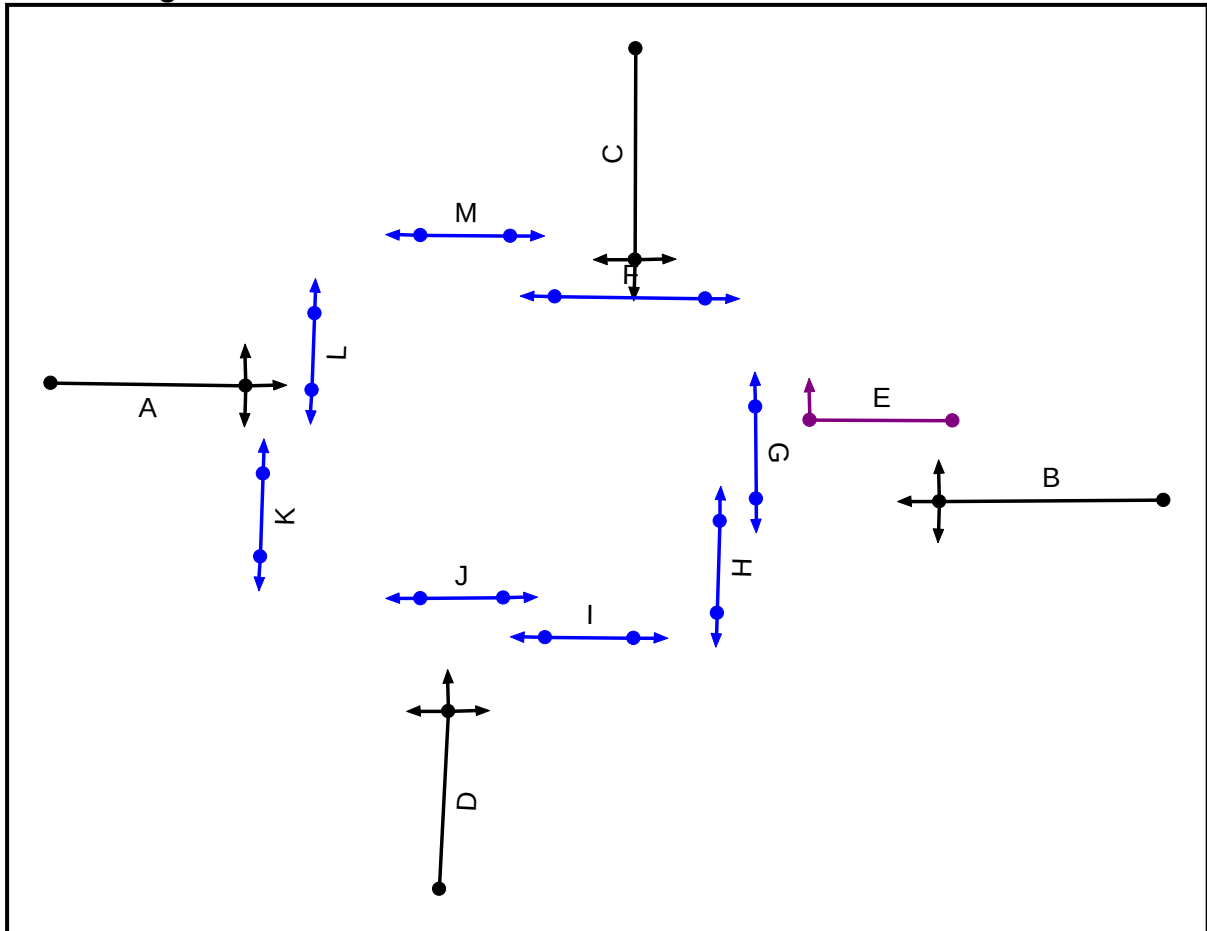
User and Project Details

|             |                 |
|-------------|-----------------|
| Project:    |                 |
| Title:      |                 |
| Location:   |                 |
| File name:  | 26_10AM_LL.lsgx |
| Author:     |                 |
| Company:    |                 |
| Address:    |                 |
| Controller: | Generic         |
| SCN:        |                 |
| Notes:      |                 |

Junction 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          | Ind. Arrow | B           | 4          | 4        |
| F          | Pedestrian |             | 1          | 1        |
| G          | Pedestrian |             | 1          | 1        |
| H          | Pedestrian |             | 1          | 1        |
| I          | Pedestrian |             | 4          | 4        |
| J          | Pedestrian |             | 1          | 1        |
| K          | Pedestrian |             | 4          | 4        |
| L          | Pedestrian |             | 1          | 1        |
| M          | Pedestrian |             | 4          | 4        |

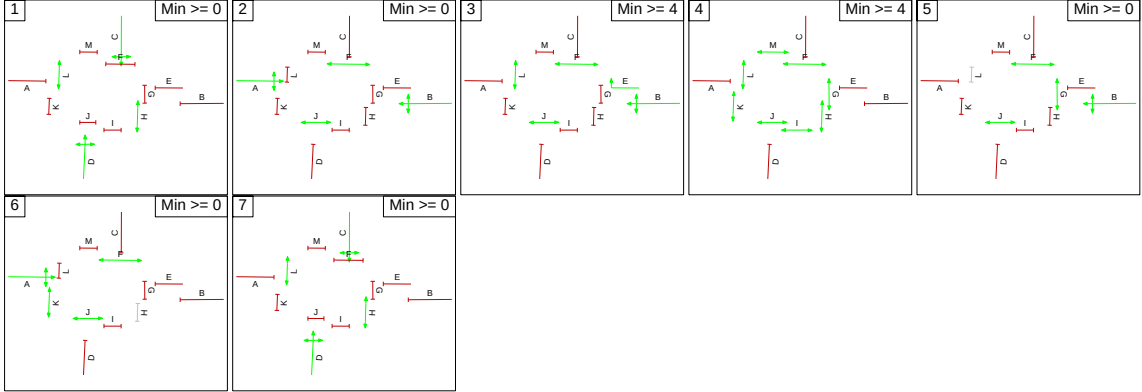
Phase Intergreens Matrix

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

Phases in Stage

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1         | C D H L         |
| 2         | A B F J         |
| 3         | B E F J L       |
| 4         | F G H I J K L M |
| 5         | B F G J         |
| 6         | A F J K         |
| 7         | C D H L         |

Stages Diagram



## Full Input Data And Results

### Phase Delays

| Term. Stage | Start Stage | Phase | Type   | Value | Cont value |
|-------------|-------------|-------|--------|-------|------------|
| 1           | 2           | C     | Losing | 3     | 3          |
| 1           | 2           | D     | Losing | 3     | 3          |
| 2           | 1           | A     | Losing | 3     | 3          |
| 2           | 1           | B     | Losing | 3     | 3          |

### Prohibited Stage Changes

| From Stage | To Stage |    |    |    |    |    |    |
|------------|----------|----|----|----|----|----|----|
|            | 1        | 2  | 3  | 4  | 5  | 6  | 7  |
|            | 1        | 10 | 10 | 10 | 10 | 10 | 0  |
|            | 2        | 9  | 5  | 10 | 9  | 10 | 9  |
|            | 3        | 9  | 10 | 5  | 10 | 9  | 9  |
|            | 4        | 9  | 10 | 10 | 9  | 9  | 9  |
|            | 5        | 9  | 8  | 10 | 10 | 9  | 9  |
|            | 6        | 9  | 10 | 9  | 10 | 9  | 9  |
|            | 7        | 0  | 10 | 10 | 10 | 10 | 10 |

### Link Input Data

| Arm/ Link | Link Name               | Link Type | Num Lanes | Phases | Start Disp. | End Disp. |
|-----------|-------------------------|-----------|-----------|--------|-------------|-----------|
| 1/1       | Station Rd S Left Ahead | U         | 1         | D      | 2           | 3         |
| 1/2       | Station Rd S Right      | O         | 1         | D      | 2           | 3         |
| 2/1       | Station Rd N Right      | O         | 1         | C      | 2           | 3         |
| 2/2       | Station Rd N Left Ahead | U         | 1         | C      | 2           | 3         |
| 3/1       | N Hyde Rd W Ahead Left  | U         | 1         | A      | 2           | 3         |
| 3/2       | N Hyde Rd W Right       | O         | 1         | A      | 2           | 3         |
| 4/1       | N Hyde Rd E Left Ahead  | U         | 1         | B      | 2           | 3         |
| 4/2       | N Hyde Rd E Right       | O         | 1         | B E    | 2           | 3         |
| 5/1       |                         | U         | 1         |        | 2           | 3         |
| 6/1       |                         | U         | 1         |        | 2           | 3         |
| 7/1       |                         | U         | 1         |        | 2           | 3         |
| 8/1       |                         | U         | 1         |        | 2           | 3         |



# Full Input Data And Results

## Give-Way Link Input Data

| Arm/<br>Link | Link Name             | Movement   | Max Flow when<br>Giving Way<br>(PCU/Hr) | Opposing<br>Link | Opp. Link<br>Coeff. | Opp.<br>Mvmnts. | Right Turn<br>Storage (PCU) | RTF  | Right Turn<br>Move up time<br>(s) | Max Turns in<br>Intergreen (PCU) |
|--------------|-----------------------|------------|-----------------------------------------|------------------|---------------------|-----------------|-----------------------------|------|-----------------------------------|----------------------------------|
| 1/2          | Station Rd<br>S Right | 1/2 to 5/1 | 1440                                    | 2/2              | 1.09                | 2/2             | 4.00                        | 0.50 | 4                                 | 4.00                             |
| 2/1          | Station Rd<br>N Right | 2/1 to 7/1 | 1440                                    | 1/1              | 1.09                | 1/1             | 4.00                        | 0.50 | 4                                 | 2.00                             |
| 3/2          | N Hyde Rd<br>W Right  | 3/2 to 6/1 | 1440                                    | 4/1              | 1.09                | 4/1             | 4.00                        | 0.50 | 4                                 | 4.00                             |
| 4/2          | N Hyde Rd<br>E Right  | 4/2 to 8/1 | 1440                                    | 3/1              | 1.09                | 3/1             | 4.00                        | 0.50 | 4                                 | 4.00                             |

## Lane Input Data

| Arm/<br>Lane                    | Link<br>Num                            | Physical<br>Length<br>(PCU) | Expected<br>Usage<br>(PCU) | Sat<br>Flow<br>Type | User<br>Saturation<br>Flow<br>(PCU/Hr) | Lane<br>Width<br>(m) | Gradient | Nearside<br>Lane | Allowed<br>Turns                    | Turning<br>Radius<br>(m) |
|---------------------------------|----------------------------------------|-----------------------------|----------------------------|---------------------|----------------------------------------|----------------------|----------|------------------|-------------------------------------|--------------------------|
| 1/1<br>(Station Rd S<br>Lane 1) | Link 1<br>(Station Rd S<br>Left Ahead) | Inf                         | Inf                        | User                | 1833                                   | 3.25                 | 0.00     | Y                | Arm 7<br>Left<br><br>Arm 8<br>Ahead | Inf<br><br>Inf           |
| 1/2<br>(Station Rd S<br>Lane 2) | Link 2<br>(Station Rd S<br>Right)      | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 5<br>Right                      | 15.00                    |
| 2/1<br>(Station Rd N<br>Lane 1) | Link 2<br>(Station Rd N<br>Left Ahead) | Inf                         | Inf                        | User                | 1919                                   | 3.25                 | 0.00     | Y                | Arm 5<br>Left<br><br>Arm 6<br>Ahead | Inf<br><br>Inf           |
| 2/2<br>(Station Rd N<br>Lane 2) | Link 1<br>(Station Rd N<br>Right)      | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 7<br>Right                      | 14.00                    |
| 3/1<br>(N Hyde Rd W<br>Lane 1)  | Link 1<br>(N Hyde Rd W<br>Ahead Left)  | Inf                         | Inf                        | User                | 1818                                   | 3.25                 | 0.00     | Y                | Arm 5<br>Ahead<br><br>Arm 8<br>Left | Inf<br><br>Inf           |
| 3/2<br>(N Hyde Rd W<br>Lane 2)  | Link 2<br>(N Hyde Rd W<br>Right)       | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 6<br>Right                      | 17.00                    |
| 4/1<br>(N Hyde Rd E<br>Lane 1)  | Link 1<br>(N Hyde Rd E<br>Left Ahead)  | Inf                         | Inf                        | User                | 1821                                   | 3.25                 | 0.00     | Y                | Arm 6<br>Left<br><br>Arm 7<br>Ahead | Inf<br><br>Inf           |
| 4/2<br>(N Hyde Rd E<br>Lane 2)  | Link 2<br>(N Hyde Rd E<br>Right)       | Inf                         | Inf                        | Geom                | 1800                                   | 3.60                 | 0.00     | Y                | Arm 8<br>Right                      | 17.00                    |
| 5/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |
| 6/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |
| 7/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |

## Full Input Data And Results

|     |        |     |     |      |      |      |      |   |  |  |
|-----|--------|-----|-----|------|------|------|------|---|--|--|
| 8/1 | Link 1 | Inf | Inf | User | 1800 | 3.25 | 0.00 | Y |  |  |
|-----|--------|-----|-----|------|------|------|------|---|--|--|

### Traffic Flow Groups

| Flow Group                   | Start Time | End Time | Duration | Formula |
|------------------------------|------------|----------|----------|---------|
| 23: 'Base + Com 2014 AM Sen' | 08:00      | 09:00    | 01:00    |         |

### Scenario 16: 'Base + Com 2014 AM Sen'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 23: 'Base + Com 2014 AM Sen'

### Traffic Flow Matrix

Desired Flow :

|        | Destination |     |     |     |     |      |
|--------|-------------|-----|-----|-----|-----|------|
|        |             | A   | B   | C   | D   | Tot. |
| Origin | A           | 0   | 138 | 402 | 130 | 670  |
|        | B           | 118 | 0   | 342 | 377 | 837  |
|        | C           | 264 | 142 | 0   | 106 | 512  |
|        | D           | 98  | 212 | 71  | 0   | 381  |
|        | Tot.        | 480 | 492 | 815 | 613 | 2400 |

### Link Traffic Flows

| Arm/Link | Flow Group 23:<br>Base +<br>Com 2014<br>AM Sen |
|----------|------------------------------------------------|
| 1/1      | 370                                            |
| 1/2      | 142                                            |
| 2/1      | 130                                            |
| 2/2      | 540                                            |
| 3/1      | 310                                            |
| 3/2      | 71                                             |
| 4/1      | 719                                            |
| 4/2      | 118                                            |
| 5/1      | 492                                            |
| 6/1      | 815                                            |
| 7/1      | 613                                            |
| 8/1      | 480                                            |

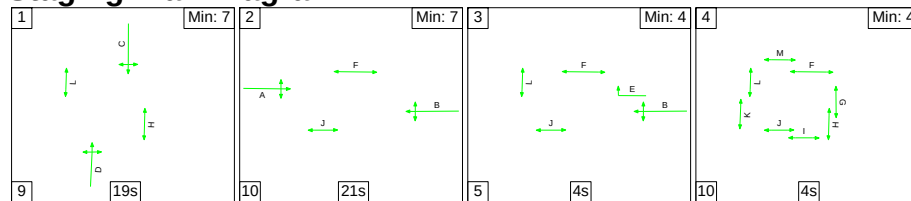
**Lane Saturation Flows**

| Arm/<br>Lane                 | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Rd S Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1833                 |
| 1/2<br>(Station Rd S Lane 2) | 3.00                                              | 0.00     | Y                | Arm 5 Right      | 15.00                    | 100.0 %          | 1741                 |
| 2/1<br>(Station Rd N Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1919                 |
| 2/2<br>(Station Rd N Lane 2) | 3.00                                              | 0.00     | Y                | Arm 7 Right      | 14.00                    | 100.0 %          | 1730                 |
| 3/1<br>(N Hyde Rd W Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1818                 |
| 3/2<br>(N Hyde Rd W Lane 2)  | 3.00                                              | 0.00     | Y                | Arm 6 Right      | 17.00                    | 100.0 %          | 1760                 |
| 4/1<br>(N Hyde Rd E Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1821                 |
| 4/2<br>(N Hyde Rd E Lane 2)  | 3.60                                              | 0.00     | Y                | Arm 8 Right      | 17.00                    | 100.0 %          | 1815                 |
| 5/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 7/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 8/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

**Scenario 16: 'Base + Com 2014 AM Sen'**

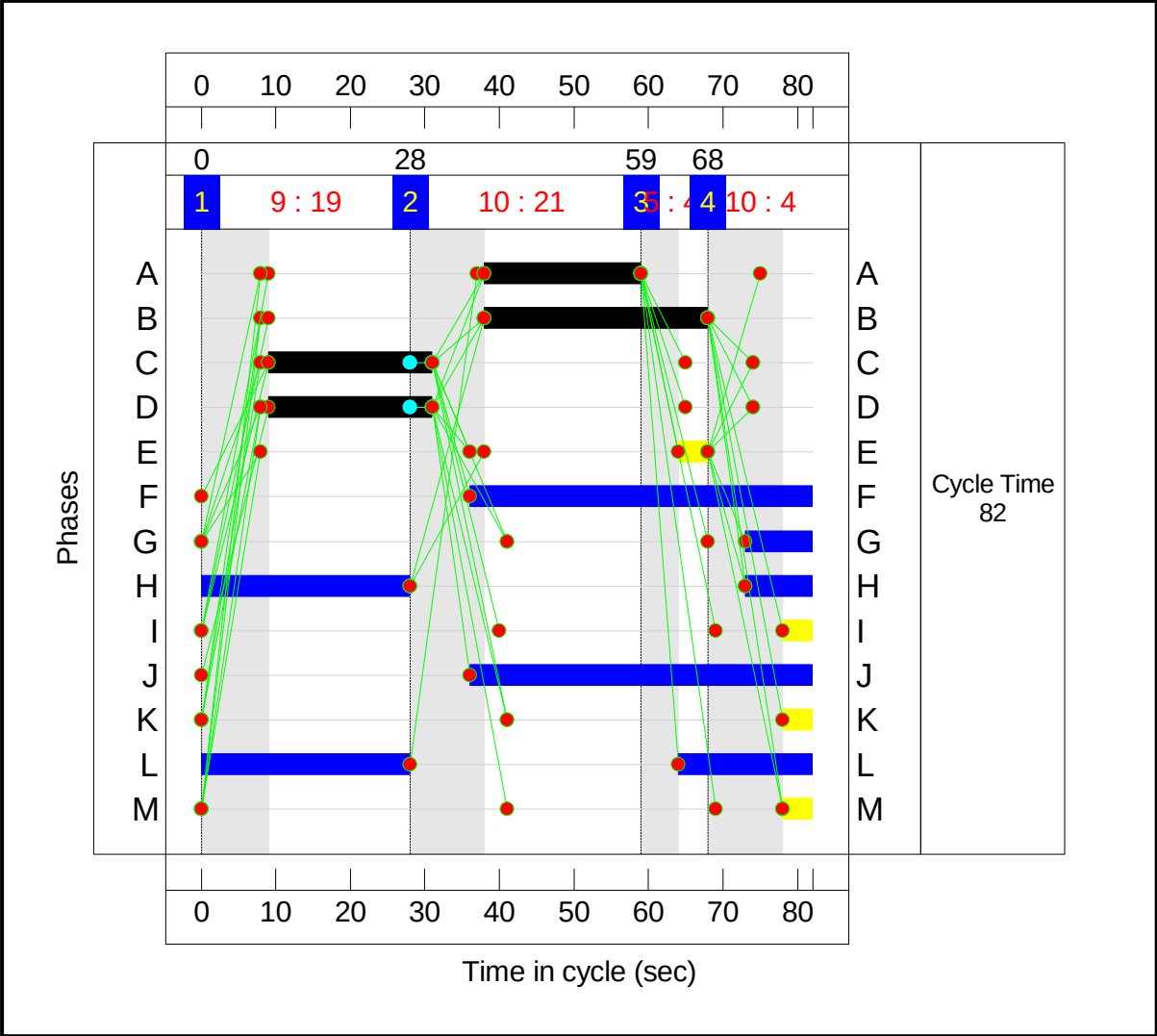
Staging Plan 1: 'Staging Plan No. 1'

Flow Group 23: 'Base + Com 2014 AM Sen'

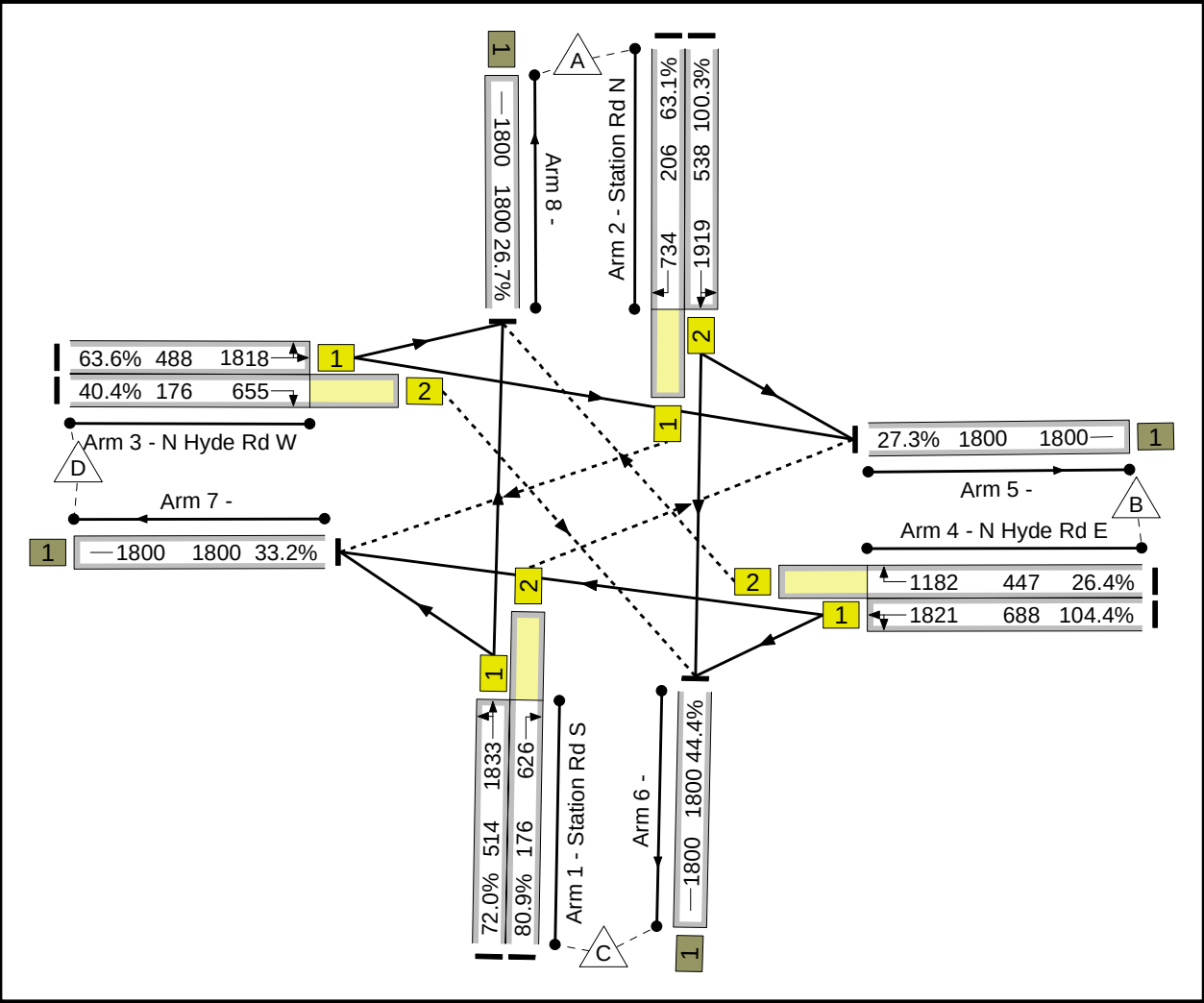
**Staging Plan Diagram****Stage Timings**

| Stage        | 1  | 2  | 3  | 4  |
|--------------|----|----|----|----|
| Duration     | 19 | 21 | 4  | 4  |
| Change Point | 0  | 28 | 59 | 68 |

Signal Timings Diagram



Junction Layout Diagram



## Full Input Data And Results

### Link Results

| Link Num | Link Desc               | Link Type | Stage Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Max Sat Flow (pcu/Hr) | Ave Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|----------|-------------------------|-----------|--------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-----------------------|-----------------------|----------------|-------------|
| 1/1      | Station Rd S Left Ahead | U         | N/A          | N/A                        | D          |             | 1          | 22              | -               | 370               | 1833                  | 1833                  | 514            | 72.0        |
| 1/2      | Station Rd S Right      | O         | N/A          | N/A                        | D          |             | 1          | 22              | -               | 142               | 1741                  | 626                   | 176            | 80.9        |
| 2/1      | Station Rd N Right      | O         | N/A          | N/A                        | C          |             | 1          | 22              | -               | 130               | 1730                  | 734                   | 206            | 63.1        |
| 2/2      | Station Rd N Left Ahead | U         | N/A          | N/A                        | C          |             | 1          | 22              | -               | 540               | 1919                  | 1919                  | 538            | 100.3       |
| 3/1      | N Hyde Rd W Ahead Left  | U         | N/A          | N/A                        | A          |             | 1          | 21              | -               | 310               | 1818                  | 1818                  | 488            | 63.6        |
| 3/2      | N Hyde Rd W Right       | O         | N/A          | N/A                        | A          |             | 1          | 21              | -               | 71                | 1760                  | 655                   | 176            | 40.4        |
| 4/1      | N Hyde Rd E Left Ahead  | U         | N/A          | N/A                        | B          |             | 1          | 30              | -               | 719               | 1821                  | 1821                  | 688            | 104.4       |
| 4/2      | N Hyde Rd E Right       | O         | N/A          | N/A                        | B          | E           | 1          | 30              | 4               | 118               | 1815                  | 1182                  | 447            | 26.4        |
| 5/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 492               | 1800                  | 1800                  | 1800           | 27.3        |
| 6/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 815               | 1800                  | 1800                  | 1800           | 44.4        |
| 7/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 613               | 1800                  | 1800                  | 1800           | 33.2        |
| 8/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 480               | 1800                  | 1800                  | 1800           | 26.7        |

## Full Input Data And Results

| Link Num                     | Entering (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 Veh (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |  |
|------------------------------|----------------|---------------|-----------------------|------------------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|--|
| 1/1                          | 370            | 370           | -                     | -                                        | -                           | 2.7                   | 1.3                          | -                                  | 4.0                 | 38.9                      | 7.5                              | 1.3                        | 8.8                  |  |
| 1/2                          | 142            | 142           | 0                     | 0                                        | 142                         | 0.9                   | 1.9                          | 0.8                                | 3.6                 | 90.5                      | 2.5                              | 1.9                        | 4.4                  |  |
| 2/1                          | 130            | 130           | 101                   | 0                                        | 29                          | 0.8                   | 0.8                          | 0.5                                | 2.1                 | 59.3                      | 2.3                              | 0.8                        | 3.1                  |  |
| 2/2                          | 540            | 538           | -                     | -                                        | -                           | 4.5                   | 12.1                         | -                                  | 16.6                | 110.4                     | 12.3                             | 12.1                       | 24.4                 |  |
| 3/1                          | 310            | 310           | -                     | -                                        | -                           | 2.3                   | 0.9                          | -                                  | 3.1                 | 36.5                      | 6.2                              | 0.9                        | 7.1                  |  |
| 3/2                          | 71             | 71            | 0                     | 0                                        | 71                          | 0.5                   | 0.3                          | 0.5                                | 1.3                 | 66.8                      | 1.2                              | 0.3                        | 1.6                  |  |
| 4/1                          | 719            | 688           | -                     | -                                        | -                           | 6.0                   | 23.1                         | -                                  | 29.1                | 145.7                     | 17.1                             | 23.1                       | 40.1                 |  |
| 4/2                          | 118            | 118           | 102                   | 10                                       | 6                           | 0.6                   | 0.2                          | 0.3                                | 1.0                 | 31.3                      | 1.8                              | 0.2                        | 1.9                  |  |
| 5/1                          | 492            | 492           | -                     | -                                        | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.5                       | 3.1                              | 0.2                        | 3.3                  |  |
| 6/1                          | 799            | 799           | -                     | -                                        | -                           | 0.0                   | 0.4                          | -                                  | 0.4                 | 1.8                       | 0.0                              | 0.4                        | 0.4                  |  |
| 7/1                          | 597            | 597           | -                     | -                                        | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.5                       | 0.0                              | 0.2                        | 0.2                  |  |
| 8/1                          | 480            | 480           | -                     | -                                        | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 0.0                              | 0.2                        | 0.2                  |  |
| PRC for Signalled Links (%): |                |               | -16.0                 | Total Delay for Signalled Links (pcuHr): |                             |                       | 60.84                        |                                    |                     |                           |                                  |                            |                      |  |
| PRC Over All Links (%):      |                |               | -16.0                 | Total Delay Over All Links(pcuHr):       |                             |                       | 61.87                        | Cycle Time (s):                    | 82                  |                           |                                  |                            |                      |  |

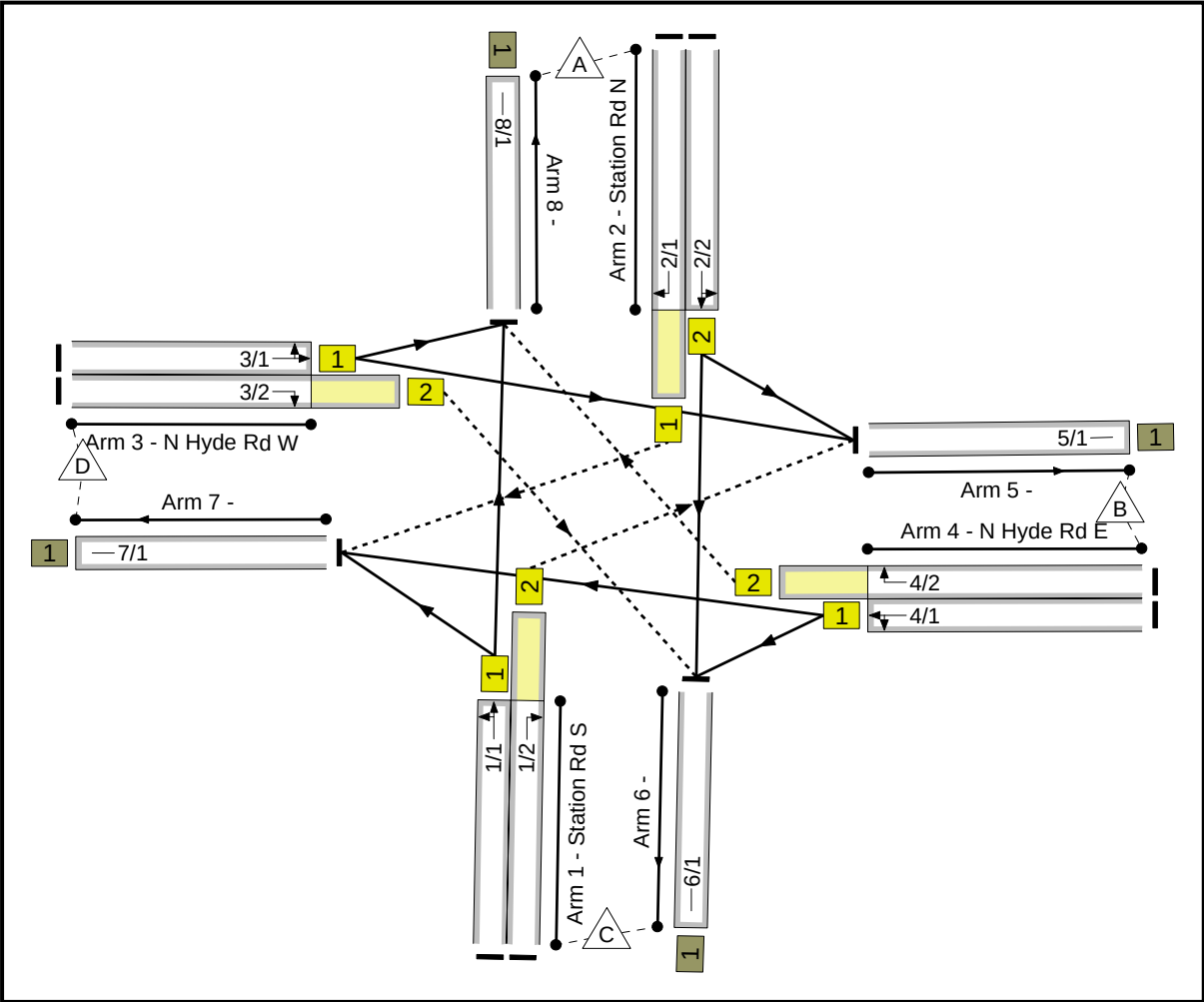


Full Input Data And Results

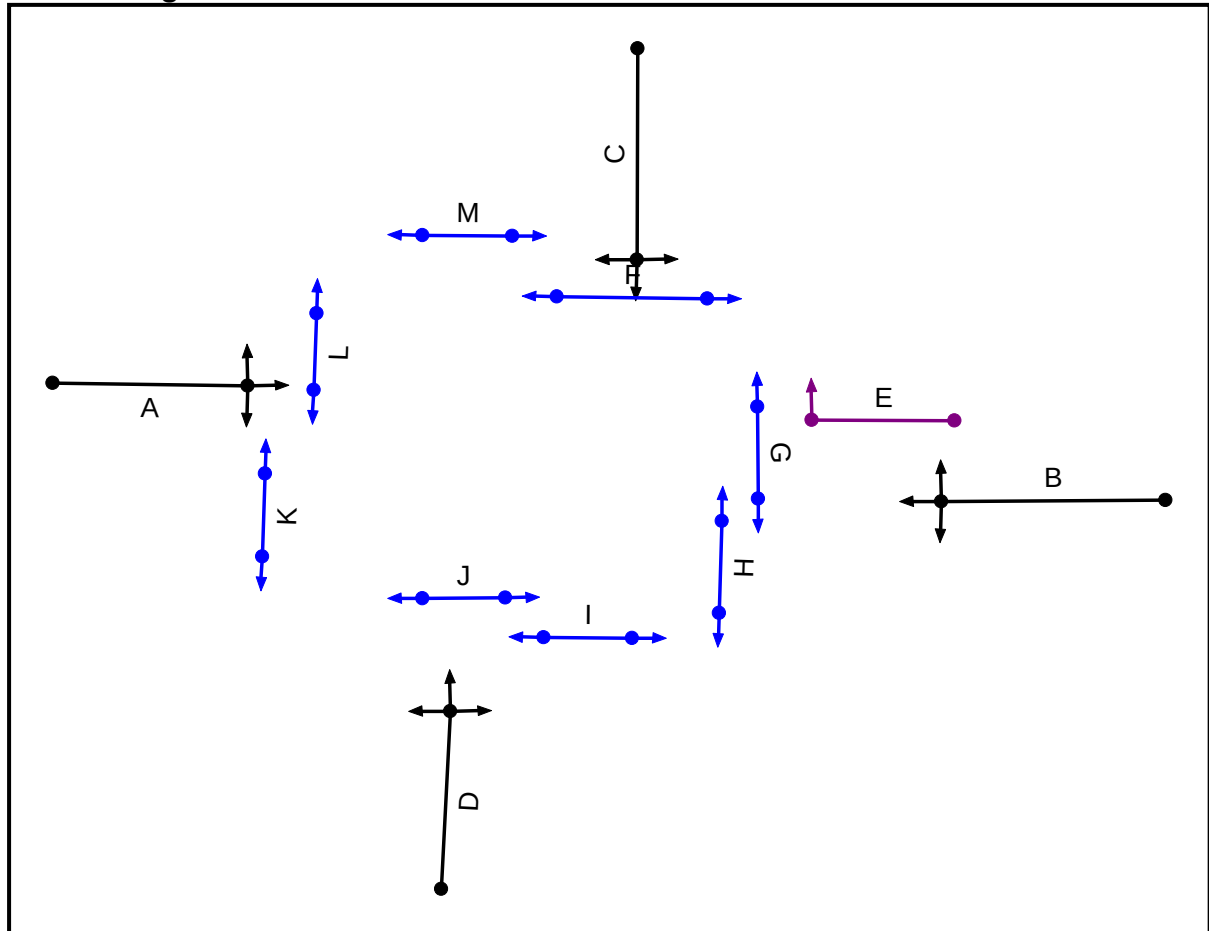
User and Project Details

|             |                 |
|-------------|-----------------|
| Project:    |                 |
| Title:      |                 |
| Location:   |                 |
| File name:  | 26_10PM_LL.lsgx |
| Author:     |                 |
| Company:    |                 |
| Address:    |                 |
| Controller: | Generic         |
| SCN:        |                 |
| Notes:      |                 |

Junction 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          | Ind. Arrow | B           | 4          | 4        |
| F          | Pedestrian |             | 5          | 5        |
| G          | Pedestrian |             | 5          | 5        |
| H          | Pedestrian |             | 5          | 5        |
| I          | Pedestrian |             | 5          | 5        |
| J          | Pedestrian |             | 5          | 5        |
| K          | Pedestrian |             | 5          | 5        |
| L          | Pedestrian |             | 5          | 5        |
| M          | Pedestrian |             | 5          | 5        |

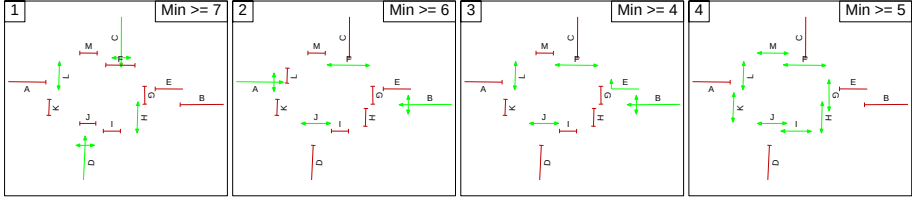
Phase Intergreens Matrix

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

Phases in Stage

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1         | C D H L         |
| 2         | A B F J         |
| 3         | B E F J L       |
| 4         | F G H I J K L M |

Stages Diagram



Phase Delays

| Term. Stage | Start Stage | Phase | Type   | Value | Cont value |
|-------------|-------------|-------|--------|-------|------------|
| 1           | 2           | C     | Losing | 3     | 3          |
| 1           | 2           | D     | Losing | 3     | 3          |
| 2           | 1           | A     | Losing | 3     | 3          |
| 2           | 1           | B     | Losing | 3     | 3          |

**Prohibited Stage Changes**

|            | To Stage |   |    |    |    |
|------------|----------|---|----|----|----|
| From Stage |          | 1 | 2  | 3  | 4  |
|            | 1        |   | 10 | 10 | 10 |
|            | 2        | 9 |    | 5  | 10 |
|            | 3        | 9 | 9  |    | 10 |
|            | 4        | 9 | 10 | 10 |    |

**Link Input Data**

| Arm/ Link | Link Name               | Link Type | Num Lanes | Phases | Start Disp. | End Disp. |
|-----------|-------------------------|-----------|-----------|--------|-------------|-----------|
| 1/1       | Station Rd S Left Ahead | U         | 1         | D      | 2           | 3         |
| 1/2       | Station Rd S Right      | O         | 1         | D      | 2           | 3         |
| 2/1       | Station Rd N Right      | O         | 1         | C      | 2           | 3         |
| 2/2       | Station Rd N Left Ahead | U         | 1         | C      | 2           | 3         |
| 3/1       | N Hyde Rd W Ahead Left  | U         | 1         | A      | 2           | 3         |
| 3/2       | N Hyde Rd W Right       | O         | 1         | A      | 2           | 3         |
| 4/1       | N Hyde Rd E Left Ahead  | U         | 1         | B      | 2           | 3         |
| 4/2       | N Hyde Rd E Right       | O         | 1         | B E    | 2           | 3         |
| 5/1       |                         | U         | 1         |        | 2           | 3         |
| 6/1       |                         | U         | 1         |        | 2           | 3         |
| 7/1       |                         | U         | 1         |        | 2           | 3         |
| 8/1       |                         | U         | 1         |        | 2           | 3         |

# Full Input Data And Results

## Give-Way Link Input Data

| Arm/<br>Link | Link Name             | Movement   | Max Flow when<br>Giving Way<br>(PCU/Hr) | Opposing<br>Link | Opp. Link<br>Coeff. | Opp.<br>Mvmnts. | Right Turn<br>Storage (PCU) | RTF  | Right Turn<br>Move up time<br>(s) | Max Turns in<br>Intergreen (PCU) |
|--------------|-----------------------|------------|-----------------------------------------|------------------|---------------------|-----------------|-----------------------------|------|-----------------------------------|----------------------------------|
| 1/2          | Station Rd<br>S Right | 1/2 to 5/1 | 1440                                    | 2/2              | 1.09                | 2/2             | 4.00                        | 0.50 | 4                                 | 4.00                             |
| 2/1          | Station Rd<br>N Right | 2/1 to 7/1 | 1440                                    | 1/1              | 1.09                | 1/1             | 4.00                        | 0.50 | 4                                 | 2.00                             |
| 3/2          | N Hyde Rd<br>W Right  | 3/2 to 6/1 | 1440                                    | 4/1              | 1.09                | 4/1             | 4.00                        | 0.50 | 4                                 | 4.00                             |
| 4/2          | N Hyde Rd<br>E Right  | 4/2 to 8/1 | 1440                                    | 3/1              | 1.09                | 3/1             | 4.00                        | 0.50 | 4                                 | 4.00                             |

## Lane Input Data

| Arm/<br>Lane                    | Link<br>Num                            | Physical<br>Length<br>(PCU) | Expected<br>Usage<br>(PCU) | Sat<br>Flow<br>Type | User<br>Saturation<br>Flow<br>(PCU/Hr) | Lane<br>Width<br>(m) | Gradient | Nearside<br>Lane | Allowed<br>Turns                    | Turning<br>Radius<br>(m) |
|---------------------------------|----------------------------------------|-----------------------------|----------------------------|---------------------|----------------------------------------|----------------------|----------|------------------|-------------------------------------|--------------------------|
| 1/1<br>(Station Rd S<br>Lane 1) | Link 1<br>(Station Rd S<br>Left Ahead) | Inf                         | Inf                        | User                | 1833                                   | 3.25                 | 0.00     | Y                | Arm 7<br>Left<br><br>Arm 8<br>Ahead | Inf<br><br>Inf           |
| 1/2<br>(Station Rd S<br>Lane 2) | Link 2<br>(Station Rd S<br>Right)      | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 5<br>Right                      | 15.00                    |
| 2/1<br>(Station Rd N<br>Lane 1) | Link 2<br>(Station Rd N<br>Left Ahead) | Inf                         | Inf                        | User                | 1919                                   | 3.25                 | 0.00     | Y                | Arm 5<br>Left<br><br>Arm 6<br>Ahead | Inf<br><br>Inf           |
| 2/2<br>(Station Rd N<br>Lane 2) | Link 1<br>(Station Rd N<br>Right)      | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 7<br>Right                      | 14.00                    |
| 3/1<br>(N Hyde Rd W<br>Lane 1)  | Link 1<br>(N Hyde Rd W<br>Ahead Left)  | Inf                         | Inf                        | User                | 1818                                   | 3.25                 | 0.00     | Y                | Arm 5<br>Ahead<br><br>Arm 8<br>Left | Inf<br><br>Inf           |
| 3/2<br>(N Hyde Rd W<br>Lane 2)  | Link 2<br>(N Hyde Rd W<br>Right)       | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 6<br>Right                      | 17.00                    |
| 4/1<br>(N Hyde Rd E<br>Lane 1)  | Link 1<br>(N Hyde Rd E<br>Left Ahead)  | Inf                         | Inf                        | User                | 1821                                   | 3.25                 | 0.00     | Y                | Arm 6<br>Left<br><br>Arm 7<br>Ahead | Inf<br><br>Inf           |
| 4/2<br>(N Hyde Rd E<br>Lane 2)  | Link 2<br>(N Hyde Rd E<br>Right)       | Inf                         | Inf                        | Geom                | 1800                                   | 3.60                 | 0.00     | Y                | Arm 8<br>Right                      | 17.00                    |
| 5/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |
| 6/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |
| 7/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |

## Full Input Data And Results

|     |        |     |     |      |      |      |      |   |  |  |
|-----|--------|-----|-----|------|------|------|------|---|--|--|
| 8/1 | Link 1 | Inf | Inf | User | 1800 | 3.25 | 0.00 | Y |  |  |
|-----|--------|-----|-----|------|------|------|------|---|--|--|

### Traffic Flow Groups

| Flow Group                   | Start Time | End Time | Duration | Formula |
|------------------------------|------------|----------|----------|---------|
| 23: 'Base + Com 2014 PM Sen' | 17:30      | 18:30    | 01:00    |         |

### Scenario 16: 'Base + Com 2014 PM Sen'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 23: 'Base + Com 2014 PM Sen'

### Traffic Flow Matrix

Desired Flow :

|        | Destination |     |     |     |     |      |
|--------|-------------|-----|-----|-----|-----|------|
|        |             | A   | B   | C   | D   | Tot. |
| Origin | A           | 0   | 134 | 283 | 114 | 531  |
|        | B           | 200 | 0   | 287 | 313 | 800  |
|        | C           | 323 | 292 | 0   | 90  | 705  |
|        | D           | 106 | 233 | 62  | 0   | 401  |
|        | Tot.        | 629 | 659 | 632 | 517 | 2437 |

### Link Traffic Flows

| Arm/Link | Flow Group 23:<br>Base +<br>Com 2014<br>PM Sen |
|----------|------------------------------------------------|
| 1/1      | 413                                            |
| 1/2      | 292                                            |
| 2/1      | 114                                            |
| 2/2      | 417                                            |
| 3/1      | 339                                            |
| 3/2      | 62                                             |
| 4/1      | 600                                            |
| 4/2      | 200                                            |
| 5/1      | 659                                            |
| 6/1      | 632                                            |
| 7/1      | 517                                            |
| 8/1      | 629                                            |

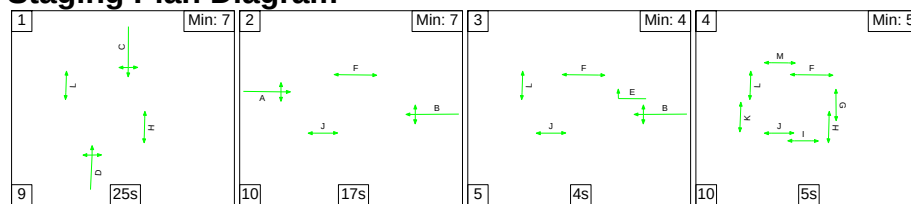
**Lane Saturation Flows**

| Arm/<br>Lane                 | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Rd S Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1833                 |
| 1/2<br>(Station Rd S Lane 2) | 3.00                                              | 0.00     | Y                | Arm 5 Right      | 15.00                    | 100.0 %          | 1741                 |
| 2/1<br>(Station Rd N Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1919                 |
| 2/2<br>(Station Rd N Lane 2) | 3.00                                              | 0.00     | Y                | Arm 7 Right      | 14.00                    | 100.0 %          | 1730                 |
| 3/1<br>(N Hyde Rd W Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1818                 |
| 3/2<br>(N Hyde Rd W Lane 2)  | 3.00                                              | 0.00     | Y                | Arm 6 Right      | 17.00                    | 100.0 %          | 1760                 |
| 4/1<br>(N Hyde Rd E Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1821                 |
| 4/2<br>(N Hyde Rd E Lane 2)  | 3.60                                              | 0.00     | Y                | Arm 8 Right      | 17.00                    | 100.0 %          | 1815                 |
| 5/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 7/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 8/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

**Scenario 16: 'Base + Com 2014 PM Sen'**

Staging Plan 1: 'Staging Plan No. 1'

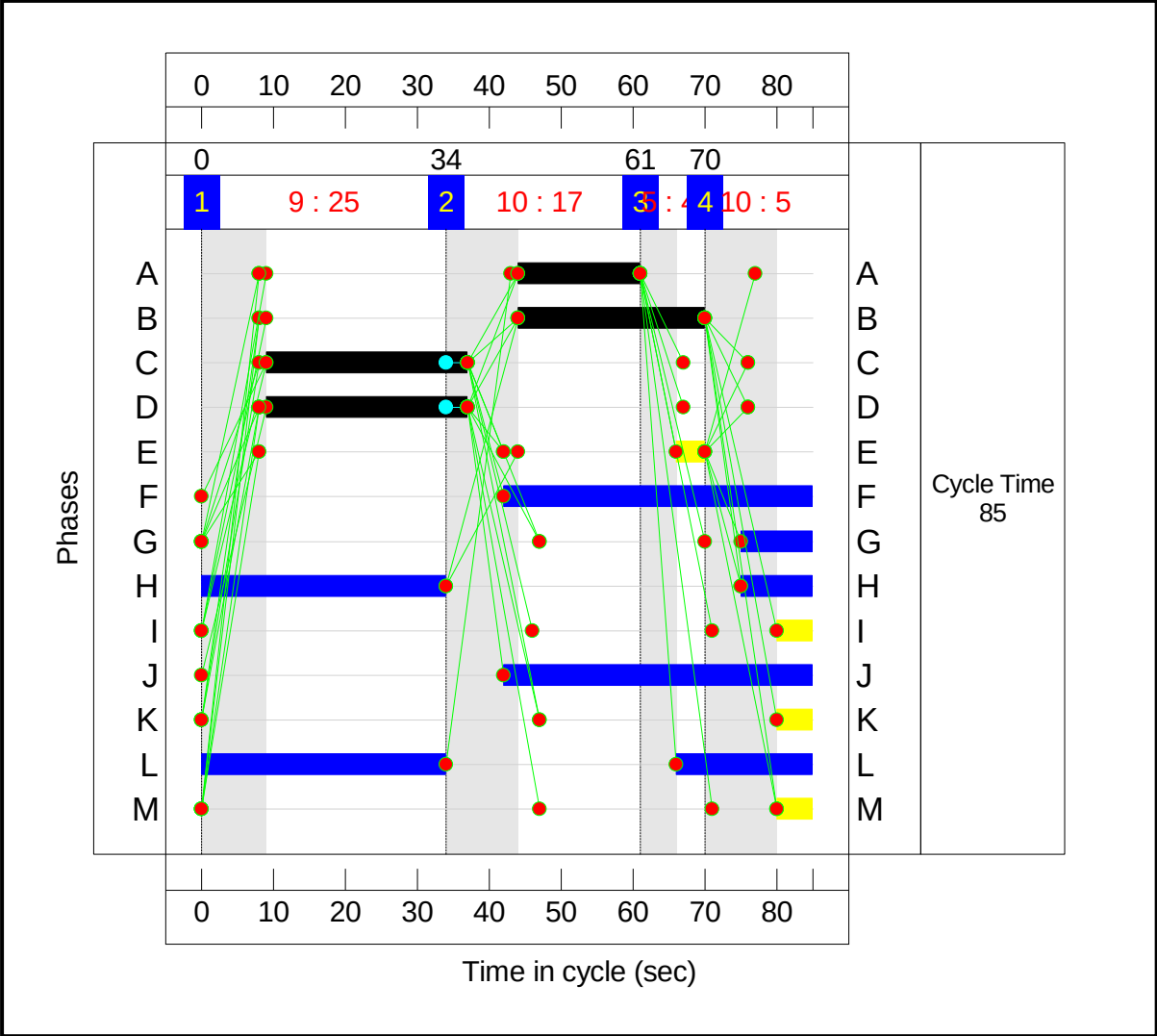
Flow Group 23: 'Base + Com 2014 PM Sen'

**Staging Plan Diagram****Stage Timings**

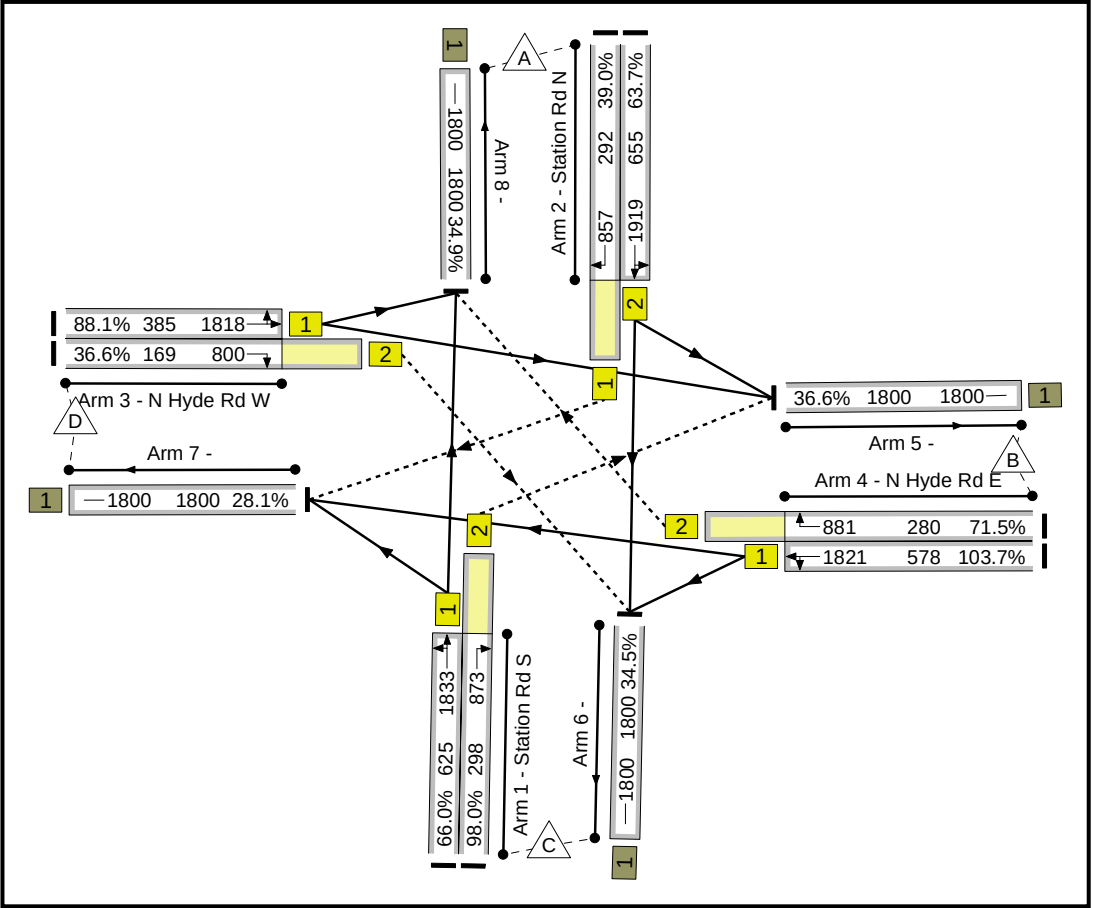
| Stage        | 1  | 2  | 3  | 4  |
|--------------|----|----|----|----|
| Duration     | 25 | 17 | 4  | 5  |
| Change Point | 0  | 34 | 61 | 70 |



Signal Timings Diagram



Junction Layout Diagram



## Full Input Data And Results

### Link Results

| Link Num | Link Desc               | Link Type | Stage Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Max Sat Flow (pcu/Hr) | Ave Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|----------|-------------------------|-----------|--------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-----------------------|-----------------------|----------------|-------------|
| 1/1      | Station Rd S Left Ahead | U         | N/A          | N/A                        | D          |             | 1          | 28              | -               | 413               | 1833                  | 1833                  | 625            | 66.0        |
| 1/2      | Station Rd S Right      | O         | N/A          | N/A                        | D          |             | 1          | 28              | -               | 292               | 1741                  | 873                   | 298            | 98.0        |
| 2/1      | Station Rd N Right      | O         | N/A          | N/A                        | C          |             | 1          | 28              | -               | 114               | 1730                  | 857                   | 292            | 39.0        |
| 2/2      | Station Rd N Left Ahead | U         | N/A          | N/A                        | C          |             | 1          | 28              | -               | 417               | 1919                  | 1919                  | 655            | 63.7        |
| 3/1      | N Hyde Rd W Ahead Left  | U         | N/A          | N/A                        | A          |             | 1          | 17              | -               | 339               | 1818                  | 1818                  | 385            | 88.1        |
| 3/2      | N Hyde Rd W Right       | O         | N/A          | N/A                        | A          |             | 1          | 17              | -               | 62                | 1760                  | 800                   | 169            | 36.6        |
| 4/1      | N Hyde Rd E Left Ahead  | U         | N/A          | N/A                        | B          |             | 1          | 26              | -               | 600               | 1821                  | 1821                  | 578            | 103.7       |
| 4/2      | N Hyde Rd E Right       | O         | N/A          | N/A                        | B          | E           | 1          | 26              | 4               | 200               | 1815                  | 881                   | 280            | 71.5        |
| 5/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 659               | 1800                  | 1800                  | 1800           | 36.6        |
| 6/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 632               | 1800                  | 1800                  | 1800           | 34.5        |
| 7/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 517               | 1800                  | 1800                  | 1800           | 28.1        |
| 8/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 629               | 1800                  | 1800                  | 1800           | 34.9        |

## Full Input Data And Results

[illegible]

## APPENDIX Q

## 2024 Baseline Sensitivity

As requested by LBH Highways, each of the junction assessed in Section 2 of this report have been re-assessed using the 2024 Baseline Sensitivity traffic flows. The following paragraphs describe the results of these models under 2024 Baseline Sensitivity flows.

### Dawley Road/Blyth Road/Kestral Way/Betam Road Roundabout

| ARM             | AM Peak |       | PM Peak |       |
|-----------------|---------|-------|---------|-------|
|                 | RFC     | Queue | RFC     | Queue |
| Dawley Road (N) | 0.769   | 3     | 0.604   | 2     |
| Blyth Road      | 1.140   | 44    | 0.785   | 3     |
| Dawley Road (S) | 0.798   | 4     | 0.815   | 4     |
| Kestral Way     | 0.105   | 0     | 0.306   | 0     |
| Betam Road      | 0.064   | 0     | 0.163   | 0     |

In the morning peak, this junction would have capacity problems under 2024 Baseline Sensitivity flows, the Blyth Road approach would be over-capacity. Whilst in the evening peak the junction operates within capacity.

### Dawley Road/North Hyde Road/Millington Road/Bourne Avenue Roundabout

| ARM             | AM Peak |       | PM Peak |       |
|-----------------|---------|-------|---------|-------|
|                 | RFC     | Queue | RFC     | Queue |
| Dawley Road (N) | 0.913   | 9     | 0.843   | 5     |
| North Hyde Road | 0.754   | 3     | 0.690   | 2     |
| Millington Road | 0.123   | 0     | 0.734   | 3     |
| Dawley Road (S) | 0.825   | 4     | 0.906   | 8     |
| Bourne Avenue   | 0.859   | 5     | 0.629   | 2     |

During the AM and PM peak, this junction would have capacity problems under 2024 Baseline Sensitivity flows.

In the morning peak the Dawley Road North and Bourne Avenue operate at above capacity. In the evening peak, Dawley Road South approach operates above capacity.

### Dawley Road/Station Road/Shepiston Lane mini-roundabout

| ARM             | AM Peak |       | PM Peak |       |
|-----------------|---------|-------|---------|-------|
|                 | RFC     | Queue | RFC     | Queue |
| Dawley Road (N) | 0.793   | 4     | 0.757   | 3     |
| Station Road    | 0.733   | 3     | 0.654   | 2     |
| Shepiston Lane  | 0.662   | 2     | 0.807   | 4     |

This junction operates within capacity under anticipated 2024 Baseline Sensitivity traffic flows.

#### North Hyde Road/Millington Road priority junction

| ARM                            | AM Peak |       | PM Peak |       |
|--------------------------------|---------|-------|---------|-------|
|                                | RFC     | Queue | RFC     | Queue |
| Millington Road right turn     | 0.027   | 0     | 0.195   | 0     |
| North Hyde Road (W) right turn | 0.014   | 0     | 0.015   | 0     |

This junction operates within capacity under anticipated 2024 Baseline Sensitivity traffic flows.

#### Station Road /Millington Road/ Bedwell Gardens priority junction

| ARM                         | AM Peak |       | PM Peak |       |
|-----------------------------|---------|-------|---------|-------|
|                             | RFC     | Queue | RFC     | Queue |
| Millington Road right turn  | 0.258   | 0     | 0.891   | 6     |
| Station Road (S) right turn | 0.066   | 0     | 0.059   | 0     |
| Bedwell Gardens right turn  | 0.520   | 1     | 0.292   | 0     |
| Station Road (N) right turn | 0.357   | 0     | 0.387   | 0     |

In the morning peak, this junction operates within capacity. In the evening peak the junction operates above capacity within Millington Road North arm at above 0.85 RFC.

#### North Hyde Road / Station Road signals junction

| LINK | ARM                     | AM Peak |       | PM Peak |       |
|------|-------------------------|---------|-------|---------|-------|
|      |                         | DoS     | Queue | DoS     | Queue |
| 1/1  | Station Rd S Left Ahead | 83.1    | 11.3  | 67.9    | 9.8   |
| 1/2  | Station Rd S Right      | 92.8    | 6.9   | 125.9   | 45.1  |
| 2/1  | Station Rd N Right      | 80.9    | 4.5   | 44.4    | 2.5   |
| 2/2  | Station Rd N Left Ahead | 113.5   | 55.7  | 72.8    | 11.5  |
| 3/1  | N Hyde Rd W Ahead Left  | 72.4    | 8.5   | 105.9   | 26.1  |
| 3/2  | N Hyde Rd W Right       | 46.1    | 1.8   | 41.3    | 1.7   |
| 4/1  | N Hyde Rd E Left Ahead  | 118.5   | 88.7  | 123.3   | 87.6  |
| 4/2  | N Hyde Rd E Right       | 36.1    | 2.5   | 96.5    | 11.0  |
| PRC  |                         | -31.7%  |       | -39.9%  |       |

This junction operates at above capacity in both the morning and evening peak. With the practical reserve capacity at -31.7% in the morning and -39.9% in the evening.

### High Street / Station Road signals junction

| LINK | ARM                         | AM Peak |       | PM Peak |       |
|------|-----------------------------|---------|-------|---------|-------|
|      |                             | DoS     | Queue | DoS     | Queue |
| 1/1  | Station Road (N) Ahead      | 79.0    | 10.4  | 53.8    | 5.7   |
| 1/2  | Station Road (N) Right      | 66.5    | 4.9   | 64.6    | 4.7   |
| 2/1  | High Street (S) Ahead Left  | 91.7    | 14.6  | 92.7    | 18.1  |
| 3/1  | Station Road (W) Left Right | 88.2    | 11.5  | 92.9    | 12.7  |
| PRC  |                             | -1.9%   |       | -3.2    |       |

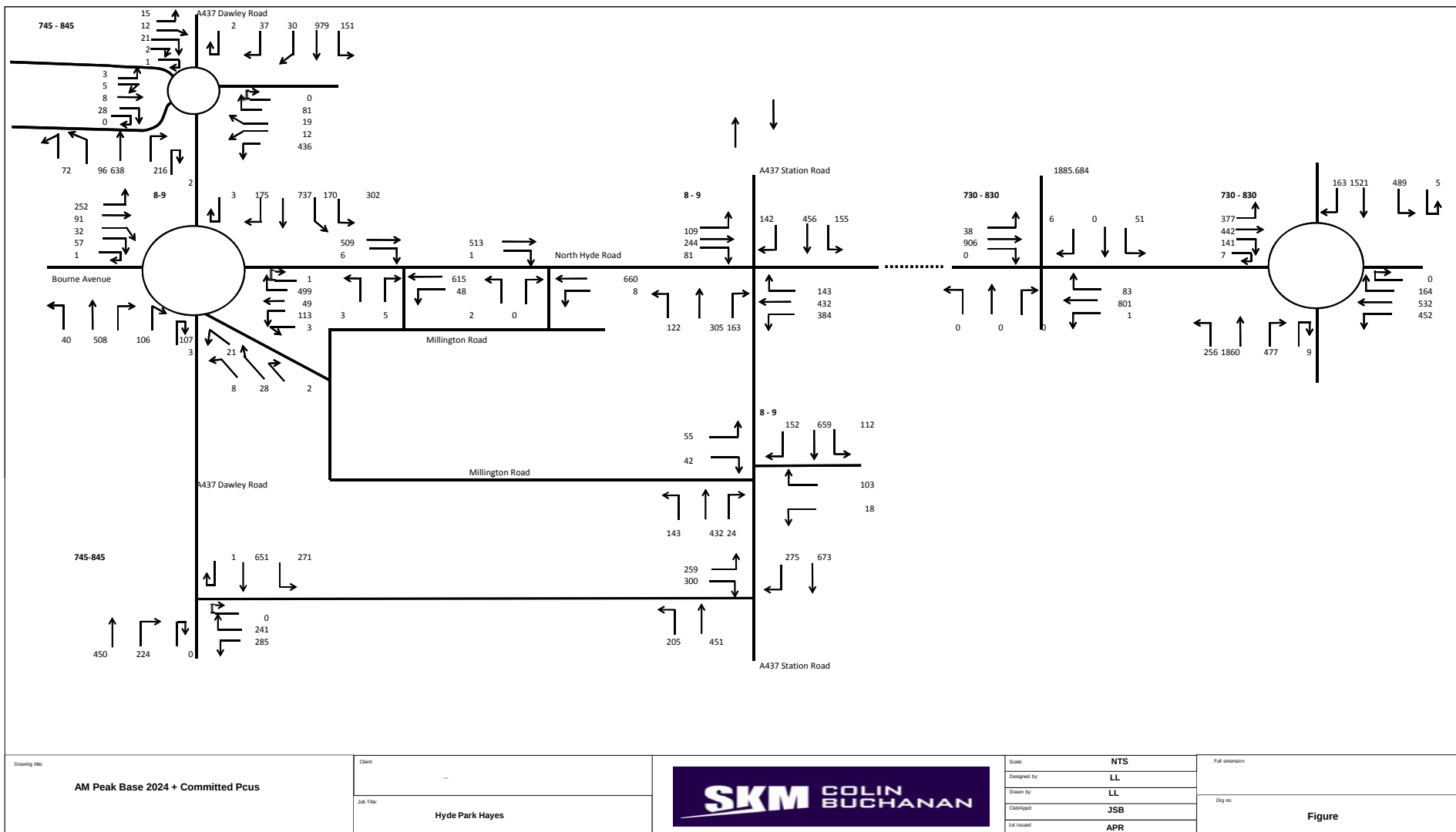
This junction operates above capacity under anticipated 2024 Baseline Sensitivity traffic flows during the morning and evening peak.

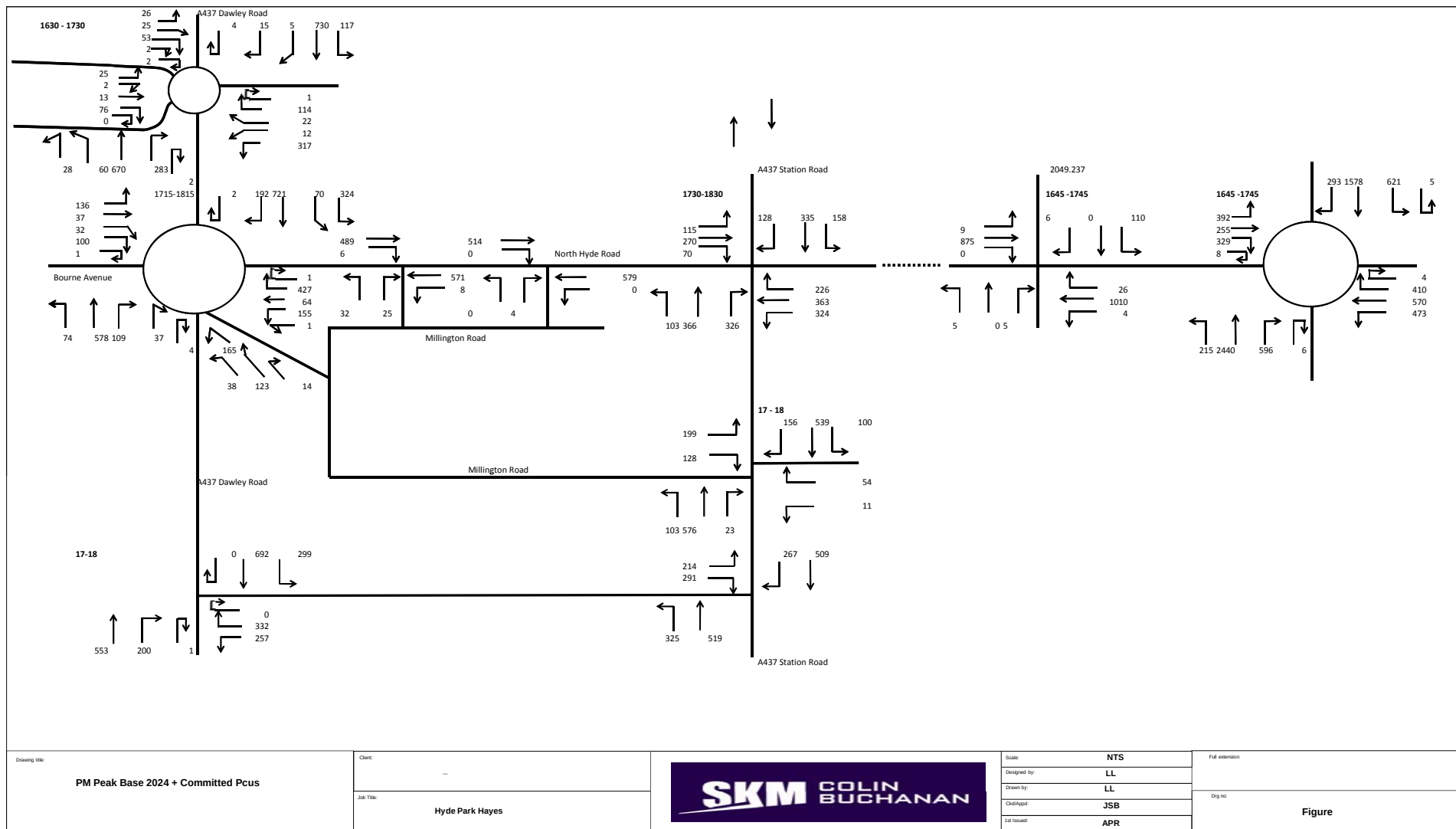


## Transyt Results –North Hyde Gardens/North Hyde Road/Watersplash Lane & North Hyde Road / Hayes Bypass / Hayes Road signalised roundabout

During the AM peak the network operates within capacity for the 2024 Baseline traffic flow. During the PM peak the network experiences capacity problems in the Base 2024. The degree of saturation exceeds 90% on numerous approaches and internal queues on the Bulls Bridge Roundabout exceed 5PCUs on more than one approach.

| Approach                                 | AM Peak |       | PM Peak |       |
|------------------------------------------|---------|-------|---------|-------|
|                                          | DoS %   | Queue | DoS%    | Queue |
| <b>Bulls Bridge Roundabout</b>           |         |       |         |       |
| Hayes Road Eastbound nearside            | 76      | 10    | 89      | 11    |
| Hayes Road Eastbound lane 2              | 51      | 4     | 92      | 11    |
| Hayes Road Eastbound lane 3              | 13      | 1     | 37      | 2     |
| The Parkway Southbound nearside          | 88      | 16    | 89      | 18    |
| The Parkway Southbound lane 2            | 83      | 13    | 91      | 18    |
| The Parkway Southbound lane 3            | 88      | 15    | 92      | 19    |
| Hayes Road Westbound nearside            | 78      | 6     | 86      | 11    |
| Hayes Road Westbound lane 2              | 86      | 8     | 70      | 7     |
| Hayes Road Westbound lane 3              | 86      | 8     | 62      | 6     |
| Hayes Road Westbound lane 4              | 39      | 2     | 52      | 4     |
| The Parkway Northbound nearside          | 29      | 3     | 98      | 27    |
| The Parkway Northbound lane 2            | 88      | 15    | 100     | 30    |
| The Parkway Northbound lane 3            | 86      | 16    | 95      | 23    |
| The Parkway Northbound lane 4            | 87      | 16    | 66      | 9     |
| <b>North Hyde Rd/ North Hyde Gardens</b> |         |       |         |       |
| North Hyde Gardens Southbound            | 12      | 1     | 24      | 2     |
| Watersplash Lane                         | 9       | 0     | 9       | 0     |
| North Hyde Rd Eastbound                  | 86      | 17    | 76      | 13    |
| North Hyde Rd Westbound nearside         | 55      | 11    | 63      | 7     |
| North Hyde Rd Westbound Right turn       | 17      | 1     | 5       | 0     |
| <b>Internal Links</b>                    |         |       |         |       |
| Internal Eastbound nearside              | 42      | 4     | 38      | 4     |
| Internal Eastbound lane 2                | 34      | 3     | 53      | 4     |
| Internal Eastbound lane 3                | 43      | 3     | 49      | 4     |
| Internal Eastbound lane 4                | 12      | 0     | 25      | 0     |
| Internal southbound nearside             | 38      | 1     | 52      | 2     |
| Internal southbound lane 2               | 47      | 1     | 66      | 4     |
| Internal southbound lane 3               | 47      | 1     | 58      | 3     |
| Internal southbound lane 4               | 14      | 0     | 30      | 0     |
| Internal westbound nearside              | 48      | 3     | 89      | 11    |
| Internal westbound lane 2                | 44      | 1     | 44      | 1     |
| Internal westbound lane 3                | 21      | 0     | 39      | 1     |
| Internal northbound nearside             | 88      | 5     | 68      | 3     |
| Internal northbound lane 2               | 82      | 5     | 87      | 7     |
| Internal northbound lane 3               | 58      | 4     | 88      | 6     |
| Internal northbound lane 4               | 59      | 1     | 55      | 4     |





# <Enter Report 1 Title Here>

## PRT File

## AM Base B24+Com

1 T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 3 (March 2004)  
(c) Copyright TRL Limited, 2004

For sales and distribution information,  
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770018  
Old Wokingham road Fax: +44 (0) 1344 770864  
Crowthorne, Berks. Email: softwarebureau@trl.co.uk  
RG45 6AU, UK. Web: www.trlsoftware.co.uk

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

Run with file:- "BULLS BRIDGE RABOUT\_AM\_ST.DAT" at 19:04 on 06/08/12

TRANSYT 12.0

### PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES = 8  
NUMBER OF LINKS = 70  
NUMBER OF OPTIMISED NODES = 8  
MAXIMUM NUMBER OF GRAPHIC PLOTS = 0  
NUMBER OF STEPS IN CYCLE = 65  
MAXIMUM NUMBER OF SHARED STOPLINES = 2  
MAXIMUM NUMBER OF TIMING POINTS = 3  
MAXIMUM LINKS AT ANY NODE = 12

CORE REQUESTED = 14800 WORDS  
CORE AVAILABLE = 72000 WORDS

### DATA INPUT :-

CARD NO. CARD TYPE  
( 1)= TITLE:-  
CARD NO. CARD TYPE CYCLE TIME NO. OF STEPS PERIOD DISPLACEMENTS SETTINGS CYCLE SCALE SCALE CARD32 0=NONE COPIES CLIMB VALUE VALUE  
(SEC) PER 1-1200 START END 0=NO 1=EQUAL 10-200 50-200 0=TIMES 1=0/SET FINAL OUTPUT P PER P PER  
CYCLE MINS. (SEC) (SEC) 1=YES CYCLE % % 1=SPEEDS 2=FULL OUTPUT 1=FULL PCU-H 100  
2)= 1 65 65 60 2 3 0 1 100 100 0 0 0 0 1420 260 100  
CARD NO. CARD TYPE  
3)= 2 146 126 127 128 129 130 131 132 0 0 0 0 0 0 0

LINKS HAVING SHARED STOPLINES  
CARD NO. CARD TYPE FIRST SET..... SECOND SET..... THIRD SET.....  
4)= 7 29 12602 0 0 0 0 0 0 0 0 0 0 0 0 0  
5)= 7 31 58 0 0 0 0 0 0 0 0 0 0 0 0 0  
6)= 7 36 37 0 0 0 0 0 0 0 0 0 0 0 0 0  
7)= 7 38 39 0 0 0 0 0 0 0 0 0 0 0 0 0  
8)= 7 40 41 0 0 0 0 0 0 0 0 0 0 0 0 0  
9)= 7 42 62 0 0 0 0 0 0 0 0 0 0 0 0 0  
10)= 7 52 53 0 0 0 0 0 0 0 0 0 0 0 0 0  
11)= 7 54 56 0 0 0 0 0 0 0 0 0 0 0 0 0  
12)= 7 1262 1261 0 0 0 0 0 0 0 0 0 0 0 0 0  
13)= 7 1264 1263 0 0 0 0 0 0 0 0 0 0 0 0 0  
14)= 7 1267 1266 0 0 0 0 0 0 0 0 0 0 0 0 0  
15)= 7 1272 1271 0 0 0 0 0 0 0 0 0 0 0 0 0  
16)= 7 1274 1273 0 0 0 0 0 0 0 0 0 0 0 0 0  
17)= 7 1276 1275 0 0 0 0 0 0 0 0 0 0 0 0 0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
18)= 10 126 7 7  
19)= 10 127 7 7  
20)= 10 128 7 7  
21)= 10 129 7 7  
22)= 10 130 7 7  
23)= 10 131 7 7  
24)= 10 132 7 7  
25)= 10 146 7 7 7

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
26)= 11 126 6 6  
27)= 11 127 5 5  
28)= 11 128 6 6  
29)= 11 129 5 5  
30)= 11 130 6 6  
31)= 11 131 5 5  
32)= 11 132 5 6  
33)= 11 146 7 8 8

NODE CARDS: STAGE CHANGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. Sgl/Db1 Cycled S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
34)= 12 126 1 0 33  
35)= 12 127 1 0 34  
36)= 12 128 1 20 7  
37)= 12 129 1 39 59  
38)= 12 130 1 37 24

|          |           | PRIORITY LINKS |           |           | LINK1 GIVEWAY COEFFS. |         | LINK2 GIVEWAY COEFFS. |   | LINK3 GIVEWAY COEFFS. |   | GIVEWAY DATA |   |
|----------|-----------|----------------|-----------|-----------|-----------------------|---------|-----------------------|---|-----------------------|---|--------------|---|
| CARD NO. | CARD TYPE | LINK NO.       | LINK1 NO. | LINK2 NO. | ONLY % FLOW           | A1 X100 | A2 X100               |   |                       |   |              |   |
| 42)=     | 30        | 1462           | 1465      | 0         | 0                     | 50      | 0                     | 0 | 0                     | 0 | 0            | 0 |
| 43)=     | 30        | 1466           | 1462      | 0         | 0                     | 22      | 0                     | 0 | 0                     | 0 | 0            | 0 |

[illegible]

| LINK<br>NUMBER | FLOW<br>INTO<br>LINK | SAT<br>FLOW | DEGREE<br>OF<br>SAT | MEAN<br>PER<br>CRUISE | -----DELAY-----                                             |                                      |                                 |                               | ---STOPS---                |                                                     | ---QUEUE--- |                         | PERFORMANCE |    | EXIT<br>NODE | GREEN<br>START |
|----------------|----------------------|-------------|---------------------|-----------------------|-------------------------------------------------------------|--------------------------------------|---------------------------------|-------------------------------|----------------------------|-----------------------------------------------------|-------------|-------------------------|-------------|----|--------------|----------------|
|                |                      |             |                     |                       | TIMES<br>PER<br>CPU<br>DELAY<br>(U+R+O=MEAN Q)<br>(PCU-H/H) | RANDOM+<br>OVERSAT<br>O<br>(PCU-H/H) | COST<br>STOPS<br>/PCU<br>(\$/H) | MEAN<br>OF<br>STOPS<br>(\$/H) | AVERAGE<br>EXCESS<br>(PCU) | INDEX<br>WEIGHTED<br>SUM<br>( )<br>VALUES<br>(\$/H) | 1ST<br>END  | 2ND<br>END<br>(SECONDS) |             |    |              |                |
|                |                      |             |                     |                       |                                                             |                                      |                                 |                               |                            |                                                     |             |                         |             |    |              |                |
|                |                      |             |                     |                       |                                                             |                                      |                                 |                               |                            |                                                     |             |                         |             |    |              |                |
| (PCU/H)        | (PCU/H)              | (%)         | (SEC)               | (SEC)                 |                                                             |                                      |                                 | (%)                           |                            | (PCU)                                               |             |                         |             |    |              |                |
| 1266           | 116                  | 1267L       | 58                  | 7.5                   | 16.7                                                        | 0.4 + 0.2                            | ( 7.4)                          | 98                            | ( 1.2)                     | 4                                                   |             | 8.6                     | 126         | 6  | 34           |                |
| 1267           | 410                  | 2019S       | 58                  | 5.5                   | 8.4                                                         | 0.4 + 0.5                            | ( 12.8)                         | 20                            | ( 1.8)                     | 4                                                   |             | 14.6                    | 126         | 6  | 34           |                |
| 1269           | 478                  | 1824        | 59                  | 5.5                   | 8.9                                                         | 0.4 + 0.7                            | ( 15.8)                         | 17                            | ( 1.7)                     | 1                                                   |             | 17.5                    | 126         | 6  | 34           |                |
| 1271           | 160                  | 1272L       | 42                  | 8.5                   | 18.4                                                        | 0.6 + 0.2                            | ( 11.3)                         | 98                            | ( 2.0)                     | 4                                                   |             | 13.3                    | 127         | 39 | 0            |                |
| 1272           | 171                  | 1876S       | 42                  | 6.5                   | 7.5                                                         | 0.1 + 0.2                            | ( 4.7)                          | 15                            | ( 0.6)                     | 4                                                   |             | 5.3                     | 127         | 39 | 0            |                |
| 1273           | 160                  | 1274L       | 34                  | 8.5                   | 17.2                                                        | 0.6 + 0.1                            | ( 10.6)                         | 95                            | ( 1.9)                     | 3                                                   |             | 12.5                    | 127         | 39 | 0            |                |
| 1274           | 130                  | 2046S       | 34                  | 6.5                   | 6.4                                                         | 0.1 + 0.1                            | ( 3.0)                          | 12                            | ( 0.4)                     | 3                                                   |             | 3.4                     | 127         | 39 | 0            |                |
| 1275           | 158                  | 1276L       | 43                  | 8.5                   | 18.0                                                        | 0.6 + 0.2                            | ( 10.9)                         | 97                            | ( 1.9)                     | 3                                                   |             | 12.8                    | 127         | 39 | 0            |                |
| 1276           | 191                  | 1973S       | 43                  | 6.5                   | 7.0                                                         | 0.1 + 0.2                            | ( 4.9)                          | 13                            | ( 0.6)                     | 3                                                   |             | 5.5                     | 127         | 39 | 0            |                |
| 1278           | 87                   | 1770        | 12                  | 6.5                   | 5.9                                                         | 0.1 + 0.1                            | ( 1.9)                          | 12                            | ( 0.2)                     | 0                                                   |             | 2.1                     | 127         | 39 | 0            |                |

|       |      |       |    |      |      |                   |             |    |       |     |    |    |
|-------|------|-------|----|------|------|-------------------|-------------|----|-------|-----|----|----|
| 1461  | 51   | 1860  | 12 | 18.5 | 25.1 | 0.3 + 0.1 ( 4.9)  | 81 ( 0.9)   | 1  | 5.8   | 146 | 41 | 55 |
| 1462  | 83   | 1774  | 17 | 13.5 | 20.8 | 0.4 + 0.1 ( 6.7)  | 94 ( 1.3)   | 1  | 8.0   | 146 | 5  | 55 |
| 1463  | 877  | 1833  | 55 | 13.5 | 5.5  | 0.6 + 0.6 ( 17.4) | 49 ( 7.4)   | 11 | 24.8  | 146 | 5  | 61 |
| 1464  | 20   | 1833  | 9  | 18.5 | 34.7 | 0.1 + 0.0 ( 2.7)  | 96 ( 0.4)   | 0  | 3.1   | 146 | 63 | 5  |
| 1465  | 944  | 1926  | 86 | 18.5 | 23.7 | 3.1 + 3.0 ( 86.4) | 91 ( 18.3)  | 17 | 104.7 | 146 | 5  | 41 |
| 1466  | 38   | 715   | 5  | 2.5  | 3.2  | 0.0 + 0.0 ( 0.4)  | 0 ( 0.0)    | 0  | 0.4   |     |    |    |
| 1467  | 121  | 2000  | 6  | 18.5 | 1.5  | 0.0 + 0.0 ( 0.5)  | 1 ( 0.0)    | 0  | 0.5   |     |    |    |
| 1468  | 20   | 2000  | 1  | 18.5 | 1.4  | 0.0 + 0.0 ( 0.1)  | 1 ( 0.0)    | 0  | 0.1   |     |    |    |
| 1469  | 876  | 2000  | 44 | 18.5 | 2.1  | 0.0 + 0.4 ( 5.5)  | 2 ( 0.5)    | 0  | 6.0   |     |    |    |
| 12601 | 961  | 1800  | 53 | 18.3 | 2.6  | 0.0 + 0.6 ( 8.1)  | 3 ( 0.7)    | 1  | 8.9   |     |    |    |
| 12602 | 164  | 29L   | 60 | 18.5 | 1.7  | 0.0 + 0.1 ( 0.8)  | 6 ( 0.2)    | 27 | 1.0   |     |    |    |
| 12603 | 10   | 10000 | 0  | 4.5  | 11.7 | 0.0 + 0.0 ( 0.4)  | 57 ( 0.0)   | 0  | 0.4   | 126 | 6  | 33 |
| 12604 | 10   | 10000 | 0  | 4.5  | 11.7 | 0.0 + 0.0 ( 0.4)  | 57 ( 0.0)   | 0  | 0.4   | 126 | 6  | 33 |
| 12605 | 321  | 1522  | 51 | 2.5  | 12.1 | 0.5 + 0.5 ( 14.6) | 62 ( 3.4)   | 4  | 18.0  | 126 | 39 | 0  |
| 12606 | 87   | 1640  | 13 | 2.5  | 7.7  | 0.1 + 0.1 ( 2.5)  | 40 ( 0.6)   | 1  | 3.1   | 126 | 39 | 0  |
| 12607 | 554  | 1757  | 76 | 2.5  | 18.4 | 1.2 + 1.5 ( 39.1) | 87 ( 8.2)   | 10 | 47.3  | 126 | 39 | 0  |
| 12701 | 687  | 1777  | 84 | 2.5  | 28.8 | 2.9 + 2.5 ( 76.8) | 99 ( 15.9)  | 13 | 92.7  | 127 | 5  | 34 |
| 12702 | 717  | 1775  | 88 | 2.5  | 32.9 | 3.1 + 3.3 ( 91.5) | 106 ( 17.8) | 15 | 109.3 | 127 | 5  | 34 |
| 12703 | 2173 | 3600  | 60 | 18.5 | 1.8  | 0.0 + 0.8 ( 10.8) | 2 ( 0.9)    | 1  | 11.7  |     |    |    |
| 12704 | 774  | 1907  | 88 | 2.5  | 32.2 | 3.4 + 3.4 ( 96.8) | 105 ( 19.1) | 16 | 115.9 | 127 | 5  | 34 |

| TOTAL<br>DISTANCE<br>TRAVELLED | TOTAL<br>TIME<br>SPENT | MEAN<br>JOURNEY<br>SPEED | TOTAL<br>UNIFORM<br>DELAY | TOTAL<br>RANDOM+<br>OVERSAT<br>DELAY | TOTAL<br>COST<br>OF<br>STOPS | TOTAL<br>COST<br>OF<br>QUEUES | PENALTY<br>FOR<br>EXCESS | TOTAL<br>PERFORMANCE<br>INDEX |
|--------------------------------|------------------------|--------------------------|---------------------------|--------------------------------------|------------------------------|-------------------------------|--------------------------|-------------------------------|
| (PCU-KM/H)                     | (PCU-H/H)              | (KM/H)                   | (PCU-H/H)                 | (PCU-H/H)                            | (\$/H)                       | (\$/H)                        | (\$/H)                   | (\$/H)                        |
| 3835.3                         | 189.0                  | 20.3                     | 41.4                      | 48.9                                 | (1282.1) + ( 223.3) + ( 0.0) | =                             | 1505.4                   | TOTALS                        |

ROUTE

\*\*\*\*\*

|                              | CRUISE<br>LITRES PER HOUR | DELAY<br>LITRES PER HOUR | STOPS<br>LITRES PER HOUR | TOTALS<br>LITRES PER HOUR |
|------------------------------|---------------------------|--------------------------|--------------------------|---------------------------|
| FUEL CONSUMPTION PREDICTIONS | 213.8                     | +                        | 103.8                    | +                         |
|                              |                           |                          | 101.7                    | =                         |
|                              |                           |                          |                          | 419.3                     |

NO. OF ENTRIES TO SUBPT = 1  
NO. OF LINKS RECALCULATED= 70

PROGRAM TRANSYT FINISHED

# <Enter Report 1 Title Here>

## PRT File

## PM Base B24+Com

1 T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 3 (March 2004)  
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Old Wokingham road Fax: +44 (0) 1344 770864  
Crowthorne, Berks. Email: softwarebureau@trl.co.uk  
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IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:- "BULLS BRIDGE RABOUT\_PM\_MC\_ST.DAT" at 19:05 on 06/08/12

TRANSYT 12.0

### PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES = 8  
NUMBER OF LINKS = 70  
NUMBER OF OPTIMISED NODES = 8  
MAXIMUM NUMBER OF GRAPHIC PLOTS = 8  
NUMBER OF STEPS IN CYCLE = 66  
MAXIMUM NUMBER OF SHARED STOPLINES = 2  
MAXIMUM NUMBER OF TIMING POINTS = 3  
MAXIMUM LINKS AT ANY NODE = 12

CORE REQUESTED = 14914 WORDS  
CORE AVAILABLE = 72000 WORDS

### DATA INPUT :-

CARD NO. CARD TYPE  
( 1)= TITLE:-  
CARD NO. CARD TYPE CYCLE TIME NO. OF STEPS PERIOD DISPLACEMENTS SETTINGS CYCLE SCALE SCALE CARD32 0=NONE COPIES CLIMB VALUE VALUE  
(SEC) PER 1-1200 START END 0=NO 1=EQUAL 10-200 50-200 0=TIMES 1=0/SET FINAL OUTPUT P PER P PER  
CYCLE CYCLE MINS. (SEC) (SEC) 1=YES CYCLE % % 1=SPEEDS 2=FULL OUTPUT 1=FULL PCU-H 100  
2)= 1 66 66 60 2 3 0 1 100 100 0 0 0 0 1420 260 100  
CARD NO. CARD TYPE  
3)= 2 146 126 127 128 129 130 131 132 0 0 0 0 0 0 0

LINKS HAVING SHARED STOPLINES  
CARD NO. CARD TYPE FIRST SET..... SECOND SET..... THIRD SET.....  
4)= 7 29 12602 0 0 0 0 0 0 0 0 0 0 0 0 0  
5)= 7 31 58 0 0 0 0 0 0 0 0 0 0 0 0 0  
6)= 7 36 37 0 0 0 0 0 0 0 0 0 0 0 0 0  
7)= 7 38 39 0 0 0 0 0 0 0 0 0 0 0 0 0  
8)= 7 40 41 0 0 0 0 0 0 0 0 0 0 0 0 0  
9)= 7 42 62 0 0 0 0 0 0 0 0 0 0 0 0 0  
10)= 7 52 53 0 0 0 0 0 0 0 0 0 0 0 0 0  
11)= 7 54 56 0 0 0 0 0 0 0 0 0 0 0 0 0  
12)= 7 1262 1261 0 0 0 0 0 0 0 0 0 0 0 0 0  
13)= 7 1264 1263 0 0 0 0 0 0 0 0 0 0 0 0 0  
14)= 7 1267 1266 0 0 0 0 0 0 0 0 0 0 0 0 0  
15)= 7 1272 1271 0 0 0 0 0 0 0 0 0 0 0 0 0  
16)= 7 1274 1273 0 0 0 0 0 0 0 0 0 0 0 0 0  
17)= 7 1276 1275 0 0 0 0 0 0 0 0 0 0 0 0 0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
18)= 10 126 7 7  
19)= 10 127 7 7  
20)= 10 128 7 7  
21)= 10 129 7 7  
22)= 10 130 7 7  
23)= 10 131 7 7  
24)= 10 132 7 7  
25)= 10 146 7 7 7

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
26)= 11 126 6 6  
27)= 11 127 5 5  
28)= 11 128 6 6  
29)= 11 129 5 5  
30)= 11 130 6 6  
31)= 11 131 5 5  
32)= 11 132 5 6  
33)= 11 146 7 8 8

NODE CARDS: STAGE CHANGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. Sgl/Db1 Cycled S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
34)= 12 126 1 30 7  
35)= 12 127 1 34 5  
36)= 12 128 1 53 40  
37)= 12 129 1 9 35  
38)= 12 130 1 3 56



| CARD NO. | CARD TYPE | LINK NO. | PRIORITY LINKS |           | LINK1 LINK2 |         | LINK1 ONLY |   | LINK1 GIVEWAY |   | COEFFS. |   | LINK LENGTH | STOP WT.X100 | MAX FLOW | DELAY WT.X100 | DISPSN X100 |
|----------|-----------|----------|----------------|-----------|-------------|---------|------------|---|---------------|---|---------|---|-------------|--------------|----------|---------------|-------------|
|          |           |          | LINK1 NO.      | LINK2 NO. | % FLOW      | A1 X100 | A2 X100    |   |               |   |         |   |             |              |          |               |             |
| 42)=     | 30        | 1462     | 1465           | 0         | 0           | 22      | 0          | 0 | 0             | 0 | 0       | 0 | 130         | 0            | 1000     | 0             | 0           |
| 43)=     | 30        | 1466     | 1462           | 0         | 0           | 50      | 0          | 0 | 0             | 0 | 0       | 0 | 31          | 0            | 715      | 0             | 0           |

[illegible]

[illegible]

| CARD NO. | CARD TYPE | ROUTE NUMBER | ROUTE DESCRIPTION |
|----------|-----------|--------------|-------------------|
| 184)=    | 41        | 1            | <Route Name>      |
| 185)=    | 41        | 2            | <Route Name>      |
| 186)=    | 41        | 3            | <Route Name>      |
| 187)=    | 41        | 4            | <Route Name>      |

```
*****END OF SUBROUTINE TINPUT*****
```

66 SECOND CYCLE 66 STEPS

| NO  | NUMBER | STAGE | STAGE | STAGE | STAGE | STAGE | STAGE | STAGE | STAGE | STAGE | STAGE |
|-----|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| NO  | OF     | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
| 126 | 2      | 30    | 7     |       |       |       |       |       |       |       |       |
| 127 | 2      | 34    | 5     |       |       |       |       |       |       |       |       |
| 128 | 2      | 53    | 40    |       |       |       |       |       |       |       |       |
| 129 | 2      | 9     | 35    |       |       |       |       |       |       |       |       |
| 130 | 2      | 3     | 56    |       |       |       |       |       |       |       |       |
| 131 | 2      | 34    | 4     |       |       |       |       |       |       |       |       |
| 132 | 2      | 56    | 43    |       |       |       |       |       |       |       |       |
| 146 | 3      | 53    | 23    | 38    |       |       |       |       |       |       |       |

| LINK<br>NUMBER | FLOW<br>INTO<br>LINK | SAT<br>FLOW | DEGREE<br>OF<br>SAT | MEAN<br>PER<br>CRUISE | -----DELAY----- |       |         |          |       | ---STOPS---           |                       |      | ---QUEUE---                  |                                           |     | PERFORMANCE |     | EXIT<br>NODE | GREEN TIMES |           |
|----------------|----------------------|-------------|---------------------|-----------------------|-----------------|-------|---------|----------|-------|-----------------------|-----------------------|------|------------------------------|-------------------------------------------|-----|-------------|-----|--------------|-------------|-----------|
|                |                      |             |                     |                       | UNIFORM         |       | RANDOM+ |          | COST  | MEAN<br>STOPS<br>/PCU | COST<br>STOPS<br>/PCU | MAX. | MEAN<br>AVERAGE<br>EXCESS OF | INDEX<br>WEIGHTED<br>SUM<br>OF (V) VALUES | SUM | 1ST         | 2ND |              |             |           |
|                |                      |             |                     |                       | OVERSAT Q       |       | DELAY   | STOPS    |       |                       |                       |      |                              |                                           |     |             |     |              | STOPS       |           |
|                |                      |             |                     |                       | (U+R+O=MEAN Q)  | DELAY |         |          |       |                       |                       |      |                              |                                           |     |             |     |              |             | (PCU-H/H) |
|                | (PCU/H)              | (PCU/H)     | (%)                 | (SEC)                 | (SEC)           |       |         |          |       |                       |                       |      |                              |                                           |     |             |     |              |             |           |
| 29             | 2444                 | 4000S       | 82                  | 18.5                  | 5.7             | 1.9   | + 1.7   | ( 49.8)  | 54    | ( 28.1)               | 46                    |      | 77.9                         |                                           |     |             |     |              |             |           |
| 31             | 484                  | 5591S       | 37                  | 9.5                   | 2.9             | 0.2   | + 0.1   | ( 4.7)   | 12    | ( 1.1)                | 5                     |      | 5.8                          | 128                                       | 59  | 40          |     |              |             |           |
| 32             | 10                   | 10000       | 1                   | 4.5                   | 27.9            | 0.1   | + 0.0   | ( 1.1)   | 89    | ( 0.0)                | 0                     |      | 1.1                          | 128                                       | 46  | 53          |     |              |             |           |
| 33             | 1504                 | 6000        | 25                  | 18.5                  | 0.9             | 0.0   | + 0.2   | ( 2.4)   | 1     | ( 0.2)                | 0                     |      | 2.6                          |                                           |     |             |     |              |             |           |
| 34             | 293                  | 1806        | 30                  | 5.5                   | 3.8             | 0.1   | + 0.2   | ( 3.8)   | 6     | ( 0.4)                | 0                     |      | 4.1                          | 129                                       | 40  | 9           |     |              |             |           |
| 36             | 525                  | 2047S       | 58                  | 5.5                   | 5.0             | 0.1   | + 0.6   | ( 9.2)   | 9     | ( 0.9)                | 3                     |      | 10.1                         | 129                                       | 40  | 9           |     |              |             |           |
| 37             | 118                  | 261         | 58                  | 7.5                   | 15.1            | 0.4   | + 0.1   | ( 6.8)   | 95    | ( 1.1)                | 3                     |      | 7.9                          | 129                                       | 40  | 9           |     |              |             |           |
| 38             | 604                  | 2028S       | 65                  | 5.5                   | 6.0             | 0.0   | + 0.8   | ( 13.1)  | 11    | ( 0.4)                | 4                     |      | 14.4                         | 129                                       | 40  | 9           |     |              |             |           |
| 39             | 131                  | 38L         | 66                  | 7.5                   | 15.2            | 0.4   | + 0.2   | ( 7.6)   | 93    | ( 1.2)                | 4                     |      | 8.8                          | 129                                       | 40  | 9           |     |              |             |           |
| 40             | 451                  | 1867S       | 52                  | 5.5                   | 4.8             | 0.1   | + 0.5   | ( 7.7)   | 8     | ( 0.7)                | 2                     |      | 8.4                          | 129                                       | 40  | 9           |     |              |             |           |
| 41             | 80                   | 40L         | 52                  | 7.5                   | 12.4            | 0.2   | + 0.1   | ( 3.8)   | 83    | ( 0.7)                | 2                     |      | 4.4                          | 129                                       | 40  | 9           |     |              |             |           |
| 42             | 787                  | 2028S       | 72                  | 5.5                   | 7.2             | 0.5   | + 0.9   | ( 20.8)  | 49    | ( 9.0)                | 11                    |      | 29.8                         | 132                                       | 61  | 43          |     |              |             |           |
| 43             | 10                   | 10000       | 1                   | 4.5                   | 27.9            | 0.1   | + 0.0   | ( 1.1)   | 89    | ( 0.0)                | 0                     |      | 1.1                          | 132                                       | 49  | 56          |     |              |             |           |
| 44             | 462                  | 1612        | 86                  | 4.5                   | 39.3            | 2.1   | + 2.9   | ( 70.8)  | 111   | ( 11.4)               | 11                    | +    | 82.2                         | 129                                       | 14  | 35          |     |              |             |           |
| 45             | 378                  | 1613        | 70                  | 4.5                   | 26.8            | 1.6   | + 1.2   | ( 39.2)  | 86    | ( 7.2)                | 7                     |      | 46.4                         | 129                                       | 14  | 35          |     |              |             |           |
| 46             | 1453                 | 4839        | 41                  | 18.5                  | 4.9             | 1.4   | + 0.4   | ( 25.1)  | 33    | ( 10.2)               | 10                    |      | 35.4                         | 130                                       | 9   | 56          |     |              |             |           |
| 47             | 10                   | 10000       | 1                   | 4.5                   | 27.9            | 0.1   | + 0.0   | ( 1.1)   | 89    | ( 0.0)                | 0                     |      | 1.1                          | 130                                       | 62  | 3           |     |              |             |           |
| 48             | 279                  | 1806        | 39                  | 6.5                   | 9.4             | 0.4   | + 0.3   | ( 9.8)   | 19    | ( 1.0)                | 1                     |      | 10.8                         | 131                                       | 9   | 34          |     |              |             |           |
| 50             | 334                  | 1922        | 44                  | 6.5                   | 9.7             | 0.5   | + 0.4   | ( 12.1)  | 20    | ( 1.3)                | 1                     |      | 13.3                         | 131                                       | 9   | 34          |     |              |             |           |
| 52             | 368                  | 1806S       | 89                  | 6.5                   | 26.1            | 0.6   | + 2.0   | ( 37.2)  | 48    | ( 3.4)                | 11                    |      | 40.6                         | 131                                       | 9   | 34          |     |              |             |           |
| 53             | 293                  | 52L         | 89                  | 8.5                   | 35.6            | 1.2   | + 1.6   | ( 40.5)  | 122   | ( 3.9)                | 11                    |      | 44.4                         | 131                                       | 9   | 34          |     |              |             |           |
| 54             | 2041                 | 6000S       | 40                  | 18.5                  | 1.0             | 0.0   | + 0.3   | ( 4.0)   | 1     | ( 0.3)                | 0                     |      | 4.3                          |                                           |     |             |     |              |             |           |
| 55             | 884                  | 1855        | 98                  | 4.5                   | 64.3            | 0.1   | + 11.6  | ( 222.5) | 149   | ( 22.5)               | 27                    | +    | 245.0                        | 131                                       | 39  | 4           |     |              |             |           |
| 56             | 339                  | 54L         | 40                  | 18.5                  | 1.0             | 0.0   | + 0.0   | ( 0.7)   | 1     | ( 0.1)                | 0                     |      | 0.7                          |                                           |     |             |     |              |             |           |
| 57             | 871                  | 1800        | 100                 | 4.5                   | 77.0            | 0.1   | + 14.4  | ( 262.8) | 163</ |                       |                       |      |                              |                                           |     |             |     |              |             |           |

[illegible]

[illegible][illegible]

## A R C A D Y 6

## ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_BlythRd AM Sen.vai"  
(drive-on-the-left ) at 10:32:40 on Sunday, 5 August 2012

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Site 4 Base Model  
LOCATION: Hayes and Harlington  
DATE: 17/07/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - Dawley Road (N)  
ARM B - Blyth Road (E)  
ARM C - Dawley Road (S)  
ARM D - Kestral Way (SW)  
ARM E - Betam Road (NW)

GEOMETRIC DATA  
-----

| T5 |     |   |       |      |       |      |       |       |       |       |       |       |           |      |       |       |                     |        |   |
|----|-----|---|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-----------|------|-------|-------|---------------------|--------|---|
| I  | ARM | I | V (M) | I    | E (M) | I    | L (M) | I     | R (M) | I     | D (M) | I     | PHI (DEG) | I    | SLOPE | I     | INTERCEPT (PCU/MIN) | I      |   |
| I  | ARM | A | I     | 3.90 | I     | 7.86 | I     | 19.00 | I     | 13.60 | I     | 34.70 | I         | 17.0 | I     | 0.708 | I                   | 32.392 | I |
| I  | ARM | B | I     | 3.29 | I     | 5.65 | I     | 3.60  | I     | 7.00  | I     | 35.00 | I         | 16.5 | I     | 0.531 | I                   | 19.562 | I |
| I  | ARM | C | I     | 4.97 | I     | 9.46 | I     | 13.00 | I     | 3.00  | I     | 34.70 | I         | 36.0 | I     | 0.522 | I                   | 25.183 | I |
| I  | ARM | D | I     | 3.90 | I     | 4.66 | I     | 3.20  | I     | 3.00  | I     | 34.00 | I         | 28.0 | I     | 0.419 | I                   | 15.966 | I |
| I  | ARM | E | I     | 3.60 | I     | 7.70 | I     | 8.00  | I     | 8.20  | I     | 35.00 | I         | 16.5 | I     | 0.609 | I                   | 25.411 | I |

V = approach half-width      L = effective flare length      D = inscribed circle diameter  
E = entry width                R = entry radius                PHI = entry angle

TRAFFIC DEMAND DATA  
-----

Only sets included in the current run are shown

## SCALING FACTORS

|       |        |          |   |
|-------|--------|----------|---|
| T13   |        |          |   |
| I ARM | I FLOW | SCALE(%) | I |
| I A   | I      | 100      | I |
| I B   | I      | 100      | I |
| I C   | I      | 100      | I |
| I D   | I      | 100      | I |
| I E   | I      | 100      | I |

TIME PERIOD BEGINS(07.30)AND ENDS(09.00)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com 2024

|       |        |                                   |              |           |         |                        |           |          |
|-------|--------|-----------------------------------|--------------|-----------|---------|------------------------|-----------|----------|
| T15   |        |                                   |              |           |         |                        |           |          |
| I     | I      | NUMBER OF MINUTES FROM START WHEN |              |           | I       | RATE OF FLOW (VEH/MIN) |           |          |
| I ARM | I FLOW | I STARTS                          | I TOP OF     | I PEAK    | I FLOW  | I STOPS                | I BEFORE  | I AT TOP |
| I     | I      | I                                 | I            | I         | I       | I                      | I         | I        |
| I     | I      | I TO RISE                         | I IS REACHED | I FALLING | I       | I PEAK                 | I OF PEAK | I PEAK   |
| I ARM | A      | I 15.00                           | I 45.00      | I 75.00   | I 14.99 | I 22.48                | I 14.99   | I        |
| I ARM | B      | I 15.00                           | I 45.00      | I 75.00   | I 6.85  | I 10.27                | I 6.85    | I        |
| I ARM | C      | I 15.00                           | I 45.00      | I 75.00   | I 12.80 | I 19.20                | I 12.80   | I        |
| I ARM | D      | I 15.00                           | I 45.00      | I 75.00   | I 0.55  | I 0.83                 | I 0.55    | I        |
| I ARM | E      | I 15.00                           | I 45.00      | I 75.00   | I 0.64  | I 0.96                 | I 0.64    | I        |

DEMAND SET TITLE: Base+Com 2024

|     |               |                       |     |       |          |          |          |          |          |         |   |       |   |
|-----|---------------|-----------------------|-----|-------|----------|----------|----------|----------|----------|---------|---|-------|---|
| T33 |               |                       |     |       |          |          |          |          |          |         |   |       |   |
| I   | I             | TURNING PROPORTIONS   |     |       |          |          | I        |          |          |         |   |       |   |
| I   | I             | TURNING COUNTS        |     |       |          |          | I        |          |          |         |   |       |   |
| I   | I             | (PERCENTAGE OF H.V.S) |     |       |          |          | I        |          |          |         |   |       |   |
| I   | I             |                       |     |       |          |          |          |          |          |         |   |       |   |
| I   | TIME          | I FROM/T              | I   | ARM A | I        | ARM B    | I        | ARM C    | I        | ARM D   | I | ARM E | I |
| I   | 07.30 - 09.00 | I                     | I   | I     | I        | I        | I        | I        | I        | I       | I | I     | I |
| I   | I             | I                     | ARM | A     | I 0.002  | I 0.126  | I 0.817  | I 0.025  | I 0.031  | I       | I | I     | I |
| I   | I             | I                     | I   | I     | I 2.0    | I 151.0  | I 979.0  | I 30.0   | I 37.0   | I       | I | I     | I |
| I   | I             | I                     | I   | I     | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I       | I | I     | I |
| I   | I             | I                     | I   | I     | I        | I        | I        | I        | I        | I       | I | I     | I |
| I   | I             | I                     | I   | ARM   | B        | I 0.148  | I 0.000  | I 0.796  | I 0.022  | I 0.035 | I | I     | I |
| I   | I             | I                     | I   | I     | I 81.0   | I 0.0    | I 436.0  | I 12.0   | I 19.0   | I       | I | I     | I |
| I   | I             | I                     | I   | I     | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I       | I | I     | I |
| I   | I             | I                     | I   | I     | I        | I        | I        | I        | I        | I       | I | I     | I |
| I   | I             | I                     | I   | ARM   | C        | I 0.623  | I 0.211  | I 0.002  | I 0.070  | I 0.094 | I | I     | I |
| I   | I             | I                     | I   | I     | I 638.0  | I 216.0  | I 2.0    | I 72.0   | I 96.0   | I       | I | I     | I |
| I   | I             | I                     | I   | I     | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I       | I | I     | I |
| I   | I             | I                     | I   | I     | I        | I        | I        | I        | I        | I       | I | I     | I |
| I   | I             | I                     | I   | ARM   | D        | I 0.068  | I 0.182  | I 0.636  | I 0.000  | I 0.114 | I | I     | I |
| I   | I             | I                     | I   | I     | I 3.0    | I 8.0    | I 28.0   | I 0.0    | I 5.0    | I       | I | I     | I |
| I   | I             | I                     | I   | I     | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I       | I | I     | I |
| I   | I             | I                     | I   | I     | I        | I        | I        | I        | I        | I       | I | I     | I |
| I   | I             | I                     | I   | ARM   | E        | I 0.294  | I 0.235  | I 0.412  | I 0.039  | I 0.020 | I | I     | I |
| I   | I             | I                     | I   | I     | I 15.0   | I 12.0   | I 21.0   | I 2.0    | I 1.0    | I       | I | I     | I |
| I   | I             | I                     | I   | I     | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I ( 0.0) | I       | I | I     | I |
| I   | I             | I                     | I   | I     | I        | I        | I        | I        | I        | I       | I | I     | I |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT



QUEUE AT ARM A

-----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |     |
|------------------------|--------------------------------|-----|
| 07.45                  | 1.0                            | *   |
| 08.00                  | 1.6                            | **  |
| 08.15                  | 3.2                            | *** |
| 08.30                  | 3.3                            | *** |
| 08.45                  | 1.6                            | **  |
| 09.00                  | 1.0                            | *   |

QUEUE AT ARM B

-----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 07.45                  | 1.2                            | *     |
| 08.00                  | 2.9                            | ***   |
| 08.15                  | 24.3                           | ***** |
| 08.30                  | 43.6                           | ***** |
| 08.45                  | 9.3                            | ***** |
| 09.00                  | 1.3                            | *     |

QUEUE AT ARM C

-----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |      |
|------------------------|--------------------------------|------|
| 07.45                  | 1.1                            | *    |
| 08.00                  | 1.8                            | **   |
| 08.15                  | 3.7                            | **** |
| 08.30                  | 3.8                            | **** |
| 08.45                  | 1.9                            | **   |
| 09.00                  | 1.2                            | *    |

QUEUE AT ARM D

-----

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

QUEUE AT ARM E

-----

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



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| T75 |     |   |              |          |              |           |                        |           |  |   |
|-----|-----|---|--------------|----------|--------------|-----------|------------------------|-----------|--|---|
| I   | ARM | I | TOTAL DEMAND | I        | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I         |  | I |
| I   |     | I |              | I        | * DELAY *    | I         | * DELAY *              | I         |  | I |
| I   |     | I | (VEH)        | (VEH/H)  | (MIN)        | (MIN/VEH) | (MIN)                  | (MIN/VEH) |  | I |
| I   | A   | I | 1650.3       | I 1100.2 | I 171.0      | I 0.10    | I 171.0                | I 0.10    |  | I |
| I   | B   | I | 754.3        | I 502.9  | I 1206.5     | I 1.60    | I 1206.6               | I 1.60    |  | I |
| I   | C   | I | 1409.5       | I 939.6  | I 197.8      | I 0.14    | I 197.8                | I 0.14    |  | I |
| I   | D   | I | 60.6         | I 40.4   | I 7.5        | I 0.12    | I 7.5                  | I 0.12    |  | I |
| I   | E   | I | 70.2         | I 46.8   | I 4.6        | I 0.07    | I 4.6                  | I 0.07    |  | I |
| I   | ALL | I | 3944.8       | I 2629.9 | I 1587.4     | I 0.40    | I 1587.5               | I 0.40    |  | I |

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

END OF JOB

===== end of file =====

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_BlythRd PM Sen.vai"  
(drive-on-the-left ) at 10:33:15 on Sunday, 5 August 2012

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Site 4 Base Model  
LOCATION: Hayes and Harlington  
DATE: 17/07/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - Dawley Road (N)  
ARM B - Blyth Road (E)  
ARM C - Dawley Road (S)  
ARM D - Kestral Way (SW)  
ARM E - Betam Road (NW)

GEOMETRIC DATA  
-----

| T5 |     |   |       |      |       |      |       |       |       |       |       |       |           |      |       |       |                     |        |   |
|----|-----|---|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-----------|------|-------|-------|---------------------|--------|---|
| I  | ARM | I | V (M) | I    | E (M) | I    | L (M) | I     | R (M) | I     | D (M) | I     | PHI (DEG) | I    | SLOPE | I     | INTERCEPT (PCU/MIN) | I      |   |
| I  | ARM | A | I     | 3.90 | I     | 7.86 | I     | 19.00 | I     | 13.60 | I     | 34.70 | I         | 17.0 | I     | 0.708 | I                   | 32.392 | I |
| I  | ARM | B | I     | 3.29 | I     | 5.65 | I     | 3.60  | I     | 7.00  | I     | 35.00 | I         | 16.5 | I     | 0.531 | I                   | 19.562 | I |
| I  | ARM | C | I     | 4.97 | I     | 9.46 | I     | 13.00 | I     | 3.00  | I     | 34.70 | I         | 36.0 | I     | 0.522 | I                   | 25.183 | I |
| I  | ARM | D | I     | 3.90 | I     | 4.66 | I     | 3.20  | I     | 3.00  | I     | 34.00 | I         | 28.0 | I     | 0.419 | I                   | 15.966 | I |
| I  | ARM | E | I     | 3.60 | I     | 7.70 | I     | 8.00  | I     | 8.20  | I     | 35.00 | I         | 16.5 | I     | 0.609 | I                   | 25.411 | I |

V = approach half-width L = effective flare length D = inscribed circle diameter  
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA  
-----

Only sets included in the current run are shown

SCALING FACTORS

|           |   |                 |   |
|-----------|---|-----------------|---|
| ----- T13 |   |                 |   |
| I ARM     | I | I FLOW SCALE(%) | I |
| -----     |   |                 |   |
| I A       | I | 100             | I |
| I B       | I | 100             | I |
| I C       | I | 100             | I |
| I D       | I | 100             | I |
| I E       | I | 100             | I |
| -----     |   |                 |   |

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com 2024

|           |   |                                   |               |              |          |                        |         |   |
|-----------|---|-----------------------------------|---------------|--------------|----------|------------------------|---------|---|
| ----- T15 |   |                                   |               |              |          |                        |         |   |
| I         | I | NUMBER OF MINUTES FROM START WHEN |               |              | I        | RATE OF FLOW (VEH/MIN) |         |   |
| I ARM     | I | I FLOW STARTS                     | I TOP OF PEAK | I FLOW STOPS | I BEFORE | I AT TOP               | I AFTER | I |
| I         | I | I                                 | I             | I            | I        | I                      | I       | I |
| I         | I | I TO RISE                         | I IS REACHED  | I FALLING    | I PEAK   | I OF PEAK              | I PEAK  | I |
| -----     |   |                                   |               |              |          |                        |         |   |
| I ARM     | A | I 15.00                           | I 45.00       | I 75.00      | I 10.89  | I 16.33                | I 10.89 | I |
| I ARM     | B | I 15.00                           | I 45.00       | I 75.00      | I 5.82   | I 8.74                 | I 5.82  | I |
| I ARM     | C | I 15.00                           | I 45.00       | I 75.00      | I 13.04  | I 19.56                | I 13.04 | I |
| I ARM     | D | I 15.00                           | I 45.00       | I 75.00      | I 1.45   | I 2.18                 | I 1.45  | I |
| I ARM     | E | I 15.00                           | I 45.00       | I 75.00      | I 1.35   | I 2.03                 | I 1.35  | I |
| -----     |   |                                   |               |              |          |                        |         |   |

DEMAND SET TITLE: Base+Com 2024

|   |               |   |                       |   |        |   |        |   |        |     |        |   |        |   |
|---|---------------|---|-----------------------|---|--------|---|--------|---|--------|-----|--------|---|--------|---|
|   |               |   |                       |   |        |   |        |   |        | T33 |        |   |        |   |
| I |               | I | TURNING PROPORTIONS   |   |        |   |        | I |        |     |        |   |        |   |
| I |               | I | TURNING COUNTS        |   |        |   |        | I |        |     |        |   |        |   |
| I |               | I | (PERCENTAGE OF H.V.S) |   |        |   |        | I |        |     |        |   |        |   |
| I |               |   |                       |   |        |   |        |   |        |     |        |   |        |   |
| I | TIME          | I | FROM/T                | I | ARM A  | I | ARM B  | I | ARM C  | I   | ARM D  | I | ARM E  | I |
|   |               |   |                       |   |        |   |        |   |        |     |        |   |        |   |
| I | 16.15 - 17.45 | I |                       | I |        | I |        | I |        | I   |        | I |        | I |
| I |               | I | ARM A                 | I | 0.005  | I | 0.134  | I | 0.838  | I   | 0.006  | I | 0.017  | I |
| I |               | I |                       | I | 4.0    | I | 117.0  | I | 730.0  | I   | 5.0    | I | 15.0   | I |
| I |               | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |
| I |               | I |                       | I |        | I |        | I |        | I   |        | I |        | I |
| I |               | I | ARM B                 | I | 0.245  | I | 0.002  | I | 0.680  | I   | 0.026  | I | 0.047  | I |
| I |               | I |                       | I | 114.0  | I | 1.0    | I | 317.0  | I   | 12.0   | I | 22.0   | I |
| I |               | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |
| I |               | I |                       | I |        | I |        | I |        | I   |        | I |        | I |
| I |               | I | ARM C                 | I | 0.642  | I | 0.271  | I | 0.002  | I   | 0.027  | I | 0.058  | I |
| I |               | I |                       | I | 670.0  | I | 283.0  | I | 2.0    | I   | 28.0   | I | 60.0   | I |
| I |               | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |
| I |               | I |                       | I |        | I |        | I |        | I   |        | I |        | I |
| I |               | I | ARM D                 | I | 0.216  | I | 0.112  | I | 0.655  | I   | 0.000  | I | 0.017  | I |
| I |               | I |                       | I | 25.0   | I | 13.0   | I | 76.0   | I   | 0.0    | I | 2.0    | I |
| I |               | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |
| I |               | I |                       | I |        | I |        | I |        | I   |        | I |        | I |
| I |               | I | ARM E                 | I | 0.241  | I | 0.231  | I | 0.491  | I   | 0.019  | I | 0.019  | I |
| I |               | I |                       | I | 26.0   | I | 25.0   | I | 53.0   | I   | 2.0    | I | 2.0    | I |
| I |               | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |
| I |               | I |                       | I |        | I |        | I |        | I   |        | I |        | I |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

-----

| I | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 16.45-17.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | ARM A       | 15.98               | 26.49                 | 0.603                        | - -                              | 0.9                      | 1.5                    | 21.6                                | -                                             | 0.094                                          | I |
| I | ARM B       | 8.55                | 10.92                 | 0.783                        | - -                              | 1.2                      | 3.2                    | 42.3                                | -                                             | 0.380                                          | I |
| I | ARM C       | 19.14               | 23.51                 | 0.814                        | - -                              | 1.9                      | 4.1                    | 55.0                                | -                                             | 0.215                                          | I |
| I | ARM D       | 2.13                | 7.02                  | 0.303                        | - -                              | 0.2                      | 0.4                    | 6.1                                 | -                                             | 0.203                                          | I |
| I | ARM E       | 1.98                | 12.25                 | 0.162                        | - -                              | 0.1                      | 0.2                    | 2.8                                 | -                                             | 0.097                                          | I |

[illegible]

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.30-17.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| ARM A       | 10.93               | 28.32                 | 0.386                        | -                                | 0.9                      | 0.6                    | 9.7                                 | -                                             | 0.058                                          |
| ARM B       | 5.85                | 13.62                 | 0.429                        | -                                | 1.3                      | 0.8                    | 11.9                                | -                                             | 0.130                                          |
| ARM C       | 13.09               | 24.02                 | 0.545                        | -                                | 2.0                      | 1.2                    | 18.9                                | -                                             | 0.092                                          |
| ARM D       | 1.46                | 9.77                  | 0.149                        | -                                | 0.3                      | 0.2                    | 2.7                                 | -                                             | 0.121                                          |
| ARM E       | 1.36                | 16.30                 | 0.083                        | -                                | 0.1                      | 0.1                    | 1.4                                 | -                                             | 0.067                                          |

QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 16.30                  | 0.6                            | *  |
| 16.45                  | 0.9                            | *  |
| 17.00                  | 1.5                            | *  |
| 17.15                  | 1.5                            | ** |
| 17.30                  | 0.9                            | *  |
| 17.45                  | 0.6                            | *  |

QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |     |
|------------------------|--------------------------------|-----|
| 16.30                  | 0.7                            | *   |
| 16.45                  | 1.2                            | *   |
| 17.00                  | 3.2                            | *** |
| 17.15                  | 3.4                            | *** |
| 17.30                  | 1.3                            | *   |
| 17.45                  | 0.8                            | *   |

QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |      |
|------------------------|--------------------------------|------|
| 16.30                  | 1.2                            | *    |
| 16.45                  | 1.9                            | **   |
| 17.00                  | 4.1                            | **** |
| 17.15                  | 4.2                            | **** |
| 17.30                  | 2.0                            | **   |
| 17.45                  | 1.2                            | *    |

QUEUE AT ARM D

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |  |
|------------------------|--------------------------------|--|
| 16.30                  | 0.2                            |  |
| 16.45                  | 0.2                            |  |
| 17.00                  | 0.4                            |  |
| 17.15                  | 0.4                            |  |
| 17.30                  | 0.3                            |  |
| 17.45                  | 0.2                            |  |

QUEUE AT ARM E

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |  |
|------------------------|--------------------------------|--|
| 16.30                  | 0.1                            |  |
| 16.45                  | 0.1                            |  |
| 17.00                  | 0.2                            |  |
| 17.15                  | 0.2                            |  |
| 17.30                  | 0.1                            |  |
| 17.45                  | 0.1                            |  |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| T75 |     |   |              |          |   |              |           |                        |       |           |
|-----|-----|---|--------------|----------|---|--------------|-----------|------------------------|-------|-----------|
| I   | ARM | I | TOTAL DEMAND |          | I | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I     |           |
| I   |     | I |              |          | I | * DELAY *    | I         | * DELAY *              | I     |           |
| I   |     | I |              |          | I |              |           | I                      |       |           |
| I   |     | I | (VEH)        | (VEH/H)  | I | (MIN)        | (MIN/VEH) | I                      | (MIN) | (MIN/VEH) |
| I   | A   | I | 1198.9       | I 799.2  | I | 90.2         | I 0.08    | I                      | 90.2  | I 0.08    |
| I   | B   | I | 641.4        | I 427.6  | I | 154.1        | I 0.24    | I                      | 154.2 | I 0.24    |
| I   | C   | I | 1435.6       | I 957.1  | I | 211.5        | I 0.15    | I                      | 211.5 | I 0.15    |
| I   | D   | I | 159.7        | I 106.4  | I | 25.5         | I 0.16    | I                      | 25.5  | I 0.16    |
| I   | E   | I | 148.7        | I 99.1   | I | 12.2         | I 0.08    | I                      | 12.2  | I 0.08    |
| I   | ALL | I | 3584.2       | I 2389.5 | I | 493.5        | I 0.14    | I                      | 493.5 | I 0.14    |

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

END OF JOB

===== end of file =====

Printed at 10:33:33 on 05/08/2012]

# A R C A D Y 6

## ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_NorthHydeRd AM Sen.vai"  
(drive-on-the-left ) at 11:25:10 on Sunday, 5 August 2012

## FILE PROPERTIES

RUN TITLE: Base Model - Roundabout 1  
LOCATION: North Hyde Road/Dawley Road  
DATE: 23/04/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

## INPUT DATA

ARM A - Dawley Road (N)  
ARM B - North Hyde Road  
ARM C - Millington Road  
ARM D - Daweley Road (S)  
ARM E - Bourne Avenue

## GEOMETRIC DATA

| T5 |     |   |       |      |       |      |       |       |       |       |       |       |           |      |       |       |                     |        |   |
|----|-----|---|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-----------|------|-------|-------|---------------------|--------|---|
| I  | ARM | I | V (M) | I    | E (M) | I    | L (M) | I     | R (M) | I     | D (M) | I     | PHI (DEG) | I    | SLOPE | I     | INTERCEPT (PCU/MIN) | I      |   |
| I  | ARM | A | I     | 3.65 | I     | 9.50 | I     | 13.00 | I     | 22.00 | I     | 75.00 | I         | 20.0 | I     | 0.526 | I                   | 31.736 | I |
| I  | ARM | B | I     | 3.50 | I     | 8.00 | I     | 16.00 | I     | 10.00 | I     | 72.00 | I         | 40.0 | I     | 0.467 | I                   | 27.158 | I |
| I  | ARM | C | I     | 4.00 | I     | 6.00 | I     | 8.00  | I     | 22.00 | I     | 54.00 | I         | 36.0 | I     | 0.553 | I                   | 25.388 | I |
| I  | ARM | D | I     | 3.50 | I     | 5.50 | I     | 12.00 | I     | 20.00 | I     | 76.00 | I         | 46.0 | I     | 0.422 | I                   | 22.915 | I |
| I  | ARM | E | I     | 3.65 | I     | 4.50 | I     | 3.00  | I     | 32.00 | I     | 56.00 | I         | 35.0 | I     | 0.497 | I                   | 20.704 | I |

V = approach half-width      L = effective flare length      D = inscribed circle diameter  
E = entry width      R = entry radius      PHI = entry angle

## TRAFFIC DEMAND DATA

Only sets included in the current run are shown

## SCALING FACTORS

|           |   |               |   |
|-----------|---|---------------|---|
| ----- T13 |   |               |   |
| I ARM     | I | FLOW SCALE(%) | I |
| -----     |   |               |   |
| I A       | I | 100           | I |
| I B       | I | 100           | I |
| I C       | I | 100           | I |
| I D       | I | 100           | I |
| I E       | I | 100           | I |
| -----     |   |               |   |

TIME PERIOD BEGINS(07.45)AND ENDS(09.15)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com 2024

|           |                                   |             |       |             |                        |        |       |         |
|-----------|-----------------------------------|-------------|-------|-------------|------------------------|--------|-------|---------|
| ----- T15 |                                   |             |       |             |                        |        |       |         |
| I         | NUMBER OF MINUTES FROM START WHEN |             |       |             | RATE OF FLOW (VEH/MIN) |        |       |         |
| I ARM     | I                                 | FLOW STARTS | I     | TOP OF PEAK | I                      | BEFORE | I     | AT TOP  |
| I         | I                                 | I           | I     | I           | I                      | I      | I     | I       |
| I         | I                                 | TO RISE     | I     | IS REACHED  | I                      | PEAK   | I     | OF PEAK |
| -----     |                                   |             |       |             |                        |        |       |         |
| I ARM     | A                                 | I           | 15.00 | I           | 45.00                  | I      | 17.34 | I       |
| I ARM     | B                                 | I           | 15.00 | I           | 45.00                  | I      | 8.31  | I       |
| I ARM     | C                                 | I           | 15.00 | I           | 45.00                  | I      | 0.74  | I       |
| I ARM     | D                                 | I           | 15.00 | I           | 45.00                  | I      | 9.55  | I       |
| I ARM     | E                                 | I           | 15.00 | I           | 45.00                  | I      | 5.41  | I       |
| -----     |                                   |             |       |             |                        |        |       |         |

DEMAND SET TITLE: Base+Com 2024

|   |               |   |                       |   |        |   |        |   |        |     |        |   |        |   |
|---|---------------|---|-----------------------|---|--------|---|--------|---|--------|-----|--------|---|--------|---|
|   |               |   |                       |   |        |   |        |   |        | T33 |        |   |        |   |
| I |               | I | TURNING PROPORTIONS   |   |        |   |        |   | I      |     |        |   |        |   |
| I |               | I | TURNING COUNTS        |   |        |   |        |   | I      |     |        |   |        |   |
| I |               | I | (PERCENTAGE OF H.V.S) |   |        |   |        |   | I      |     |        |   |        |   |
| I |               |   |                       |   |        |   |        |   |        |     |        |   |        |   |
| I | TIME          | I | FROM/T                | I | ARM A  | I | ARM B  | I | ARM C  | I   | ARM D  | I | ARM E  | I |
|   |               |   |                       |   |        |   |        |   |        |     |        |   |        |   |
| I | 07.45 - 09.15 | I |                       | I |        | I |        | I |        | I   |        | I |        | I |
| I |               | I | ARM A                 | I | 0.002  | I | 0.218  | I | 0.123  | I   | 0.531  | I | 0.126  | I |
| I |               | I |                       | I | 3.0    | I | 302.0  | I | 170.0  | I   | 737.0  | I | 175.0  | I |
| I |               | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |
| I |               | I |                       | I |        | I |        | I |        | I   |        | I |        | I |
| I |               | I | ARM B                 | I | 0.750  | I | 0.002  | I | 0.005  | I   | 0.170  | I | 0.074  | I |
| I |               | I |                       | I | 499.0  | I | 1.0    | I | 3.0    | I   | 113.0  | I | 49.0   | I |
| I |               | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |
| I |               | I |                       | I |        | I |        | I |        | I   |        | I |        | I |
| I |               | I | ARM C                 | I | 0.475  | I | 0.034  | I | 0.000  | I   | 0.356  | I | 0.136  | I |
| I |               | I |                       | I | 28.0   | I | 2.0    | I | 0.0    | I   | 21.0   | I | 8.0    | I |
| I |               | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |
| I |               | I |                       | I |        | I |        | I |        | I   |        | I |        | I |
| I |               | I | ARM D                 | I | 0.665  | I | 0.139  | I | 0.140  | I   | 0.004  | I | 0.052  | I |
| I |               | I |                       | I | 508.0  | I | 106.0  | I | 107.0  | I   | 3.0    | I | 40.0   | I |
| I |               | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |
| I |               | I |                       | I |        | I |        | I |        | I   |        | I |        | I |
| I |               | I | ARM E                 | I | 0.582  | I | 0.210  | I | 0.074  | I   | 0.132  | I | 0.002  | I |
| I |               | I |                       | I | 252.0  | I | 91.0   | I | 32.0   | I   | 57.0   | I | 1.0    | I |
| I |               | I |                       | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |
| I |               | I |                       | I |        | I |        | I |        | I   |        | I |        | I |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT



| T70 |             |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |   |
|-----|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I   | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
| I   | 07.45-08.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I   | ARM A       | 17.40               | 29.12                 | 0.598                        | -                                | 0.0                      | 1.5                    | 21.0                                | -                                             | 0.084                                          | I |
| I   | ARM B       | 8.34                | 19.68                 | 0.424                        | -                                | 0.0                      | 0.7                    | 10.5                                | -                                             | 0.087                                          | I |
| I   | ARM C       | 0.74                | 14.10                 | 0.053                        | -                                | 0.0                      | 0.1                    | 0.8                                 | -                                             | 0.075                                          | I |
| I   | ARM D       | 9.59                | 18.89                 | 0.508                        | -                                | 0.0                      | 1.0                    | 14.6                                | -                                             | 0.106                                          | I |
| I   | ARM E       | 5.43                | 12.92                 | 0.421                        | -                                | 0.0                      | 0.7                    | 10.2                                | -                                             | 0.132                                          | I |
| I   |             |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|--|
| 08.00-08.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |  |
| ARM A       | 20.78               | 28.60                 | 0.727                        | -                                | 1.5                      | 2.6                    | 36.6                                | -                                             | 0.126                                          |  |
| ARM B       | 9.96                | 18.21                 | 0.547                        | -                                | 0.7                      | 1.2                    | 17.1                                | -                                             | 0.120                                          |  |
| ARM C       | 0.88                | 11.88                 | 0.074                        | -                                | 0.1                      | 0.1                    | 1.2                                 | -                                             | 0.091                                          |  |
| ARM D       | 11.45               | 18.09                 | 0.633                        | -                                | 1.0                      | 1.7                    | 23.9                                | -                                             | 0.149                                          |  |
| ARM E       | 6.49                | 11.38                 | 0.570                        | -                                | 0.7                      | 1.3                    | 18.2                                | -                                             | 0.201                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|--|
| 08.15-08.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |  |
| ARM A       | 25.45               | 27.95                 | 0.911                        | -                                | 2.6                      | 8.2                    | 101.9                               | -                                             | 0.315                                          |  |
| ARM B       | 12.20               | 16.32                 | 0.748                        | -                                | 1.2                      | 2.8                    | 38.1                                | -                                             | 0.231                                          |  |
| ARM C       | 1.08                | 8.99                  | 0.120                        | -                                | 0.1                      | 0.1                    | 2.0                                 | -                                             | 0.126                                          |  |
| ARM D       | 14.02               | 17.05                 | 0.822                        | -                                | 1.7                      | 4.2                    | 54.8                                | -                                             | 0.298                                          |  |
| ARM E       | 7.95                | 9.36                  | 0.849                        | -                                | 1.3                      | 4.5                    | 55.0                                | -                                             | 0.556                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|--|
| 08.30-08.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |  |
| ARM A       | 25.45               | 27.89                 | 0.913                        | -                                | 8.2                      | 9.1                    | 131.6                               | -                                             | 0.382                                          |  |
| ARM B       | 12.20               | 16.18                 | 0.754                        | -                                | 2.8                      | 3.0                    | 43.4                                | -                                             | 0.249                                          |  |
| ARM C       | 1.08                | 8.81                  | 0.123                        | -                                | 0.1                      | 0.1                    | 2.1                                 | -                                             | 0.129                                          |  |
| ARM D       | 14.02               | 17.00                 | 0.825                        | -                                | 4.2                      | 4.4                    | 64.9                                | -                                             | 0.330                                          |  |
| ARM E       | 7.95                | 9.25                  | 0.859                        | -                                | 4.5                      | 5.2                    | 73.3                                | -                                             | 0.698                                          |  |

|   | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |   |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 08.45-09.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | ARM A       | 20.78               | 28.50                 | 0.729                        | - - -                            | 9.1                      | 2.8                    | 47.9                                | -                                             | 0.144                                          | I |
| I | ARM B       | 9.96                | 17.98                 | 0.554                        | - - -                            | 3.0                      | 1.3                    | 20.1                                | -                                             | 0.128                                          | I |
| I | ARM C       | 0.88                | 11.59                 | 0.076                        | - - -                            | 0.1                      | 0.1                    | 1.3                                 | -                                             | 0.093                                          | I |
| I | ARM D       | 11.45               | 18.01                 | 0.635                        | - - -                            | 4.4                      | 1.8                    | 29.2                                | -                                             | 0.160                                          | I |
| I | ARM E       | 6.49                | 11.22                 | 0.578                        | - - -                            | 5.2                      | 1.4                    | 24.8                                | -                                             | 0.235                                          | I |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|--|
| 09.00-09.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |  |
| ARM A       | 17.40               | 29.08                 | 0.599                        | -                                | 2.8                      | 1.5                    | 23.6                                | -                                             | 0.087                                          |  |
| ARM B       | 8.34                | 19.59                 | 0.426                        | -                                | 1.3                      | 0.7                    | 11.6                                | -                                             | 0.090                                          |  |
| ARM C       | 0.74                | 13.98                 | 0.053                        | -                                | 0.1                      | 0.1                    | 0.9                                 | -                                             | 0.076                                          |  |
| ARM D       | 9.59                | 18.85                 | 0.509                        | -                                | 1.8                      | 1.1                    | 16.4                                | -                                             | 0.109                                          |  |
| ARM E       | 5.43                | 12.83                 | 0.423                        | -                                | 1.4                      | 0.7                    | 11.7                                | -                                             | 0.137                                          |  |

QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 08.00                  | 1.5                            | *     |
| 08.15                  | 2.6                            | ***   |
| 08.30                  | 8.2                            | ***** |
| 08.45                  | 9.1                            | ***** |
| 09.00                  | 2.8                            | ***   |
| 09.15                  | 1.5                            | **    |

QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |     |
|------------------------|--------------------------------|-----|
| 08.00                  | 0.7                            | *   |
| 08.15                  | 1.2                            | *   |
| 08.30                  | 2.8                            | *** |
| 08.45                  | 3.0                            | *** |
| 09.00                  | 1.3                            | *   |
| 09.15                  | 0.7                            | *   |

QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |  |
|------------------------|--------------------------------|--|
| 08.00                  | 0.1                            |  |
| 08.15                  | 0.1                            |  |
| 08.30                  | 0.1                            |  |
| 08.45                  | 0.1                            |  |
| 09.00                  | 0.1                            |  |
| 09.15                  | 0.1                            |  |

QUEUE AT ARM D

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |      |
|------------------------|--------------------------------|------|
| 08.00                  | 1.0                            | *    |
| 08.15                  | 1.7                            | **   |
| 08.30                  | 4.2                            | **** |
| 08.45                  | 4.4                            | **** |
| 09.00                  | 1.8                            | **   |
| 09.15                  | 1.1                            | *    |

QUEUE AT ARM E

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 08.00                  | 0.7                            | *     |
| 08.15                  | 1.3                            | *     |
| 08.30                  | 4.5                            | ****  |
| 08.45                  | 5.2                            | ***** |
| 09.00                  | 1.4                            | *     |
| 09.15                  | 0.7                            | *     |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| T75 |     |   |              |          |   |              |           |                        |       |           |
|-----|-----|---|--------------|----------|---|--------------|-----------|------------------------|-------|-----------|
| I   | ARM | I | TOTAL DEMAND |          | I | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I     |           |
| I   |     | I |              |          | I | * DELAY *    | I         | * DELAY *              | I     |           |
| I   |     | I |              |          | I |              |           | I                      |       |           |
| I   |     | I | (VEH)        | (VEH/H)  | I | (MIN)        | (MIN/VEH) | I                      | (MIN) | (MIN/VEH) |
| I   | A   | I | 1909.1       | I 1272.7 | I | 362.6        | I 0.19    | I                      | 362.6 | I 0.19    |
| I   | B   | I | 915.3        | I 610.2  | I | 140.9        | I 0.15    | I                      | 140.9 | I 0.15    |
| I   | C   | I | 81.2         | I 54.1   | I | 8.2          | I 0.10    | I                      | 8.2   | I 0.10    |
| I   | D   | I | 1051.6       | I 701.1  | I | 203.8        | I 0.19    | I                      | 203.8 | I 0.19    |
| I   | E   | I | 596.0        | I 397.3  | I | 193.3        | I 0.32    | I                      | 193.3 | I 0.32    |
| I   | ALL | I | 4553.2       | I 3035.5 | I | 908.7        | I 0.20    | I                      | 908.8 | I 0.20    |

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

END OF JOB

===== end of file =====

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_NorthHydeRd PM Sen.vai"  
(drive-on-the-left ) at 11:26:56 on Sunday, 5 August 2012

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Base Model - Roundabout 1  
LOCATION: North Hyde Road/Dawley Road  
DATE: 23/04/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - Dawley Road (N)  
ARM B - North Hyde Road  
ARM C - Millington Road  
ARM D - Daweley Road (S)  
ARM E - Bourne Avenue

GEOMETRIC DATA  
-----

| T5 |     |   |       |      |       |      |       |       |       |       |       |       |           |      |       |       |                     |        |   |
|----|-----|---|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-----------|------|-------|-------|---------------------|--------|---|
| I  | ARM | I | V (M) | I    | E (M) | I    | L (M) | I     | R (M) | I     | D (M) | I     | PHI (DEG) | I    | SLOPE | I     | INTERCEPT (PCU/MIN) | I      |   |
| I  | ARM | A | I     | 3.65 | I     | 9.50 | I     | 13.00 | I     | 22.00 | I     | 75.00 | I         | 20.0 | I     | 0.526 | I                   | 31.736 | I |
| I  | ARM | B | I     | 3.50 | I     | 8.00 | I     | 16.00 | I     | 10.00 | I     | 72.00 | I         | 40.0 | I     | 0.467 | I                   | 27.158 | I |
| I  | ARM | C | I     | 4.00 | I     | 6.00 | I     | 8.00  | I     | 22.00 | I     | 54.00 | I         | 36.0 | I     | 0.553 | I                   | 25.388 | I |
| I  | ARM | D | I     | 3.50 | I     | 5.50 | I     | 12.00 | I     | 20.00 | I     | 76.00 | I         | 46.0 | I     | 0.422 | I                   | 22.915 | I |
| I  | ARM | E | I     | 3.65 | I     | 4.50 | I     | 3.00  | I     | 32.00 | I     | 56.00 | I         | 35.0 | I     | 0.497 | I                   | 20.704 | I |

V = approach half-width L = effective flare length D = inscribed circle diameter  
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA  
-----

Only sets included in the current run are shown

SCALING FACTORS

----- T13

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

-----

TIME PERIOD BEGINS(17.00)AND ENDS(18.30)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com 2024

----- T15

| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN FLOW STARTS | I | TOP OF PEAK | I | FLOW STOPS | I | RATE OF FLOW (VEH/MIN) BEFORE | I | AT TOP  | I | AFTER | I |
|---|-------|---|-----------------------------------------------|---|-------------|---|------------|---|-------------------------------|---|---------|---|-------|---|
| I |       | I | TO RISE                                       | I | IS REACHED  | I | FALLING    | I | PEAK                          | I | OF PEAK | I | PEAK  | I |
| I | ARM A | I | 15.00                                         | I | 45.00       | I | 75.00      | I | 16.36                         | I | 24.54   | I | 16.36 | I |
| I | ARM B | I | 15.00                                         | I | 45.00       | I | 75.00      | I | 8.10                          | I | 12.15   | I | 8.10  | I |
| I | ARM C | I | 15.00                                         | I | 45.00       | I | 75.00      | I | 4.25                          | I | 6.38    | I | 4.25  | I |
| I | ARM D | I | 15.00                                         | I | 45.00       | I | 75.00      | I | 10.02                         | I | 15.04   | I | 10.02 | I |
| I | ARM E | I | 15.00                                         | I | 45.00       | I | 75.00      | I | 3.83                          | I | 5.74    | I | 3.83  | I |

-----

DEMAND SET TITLE: Base+Com 2024

----- T33

| I | TIME          | I | FROM/T | I | ARM A  | I | ARM B  | I | ARM C  | I | ARM D  | I | ARM E  | I |
|---|---------------|---|--------|---|--------|---|--------|---|--------|---|--------|---|--------|---|
| I |               | I |        | I |        | I |        | I |        | I |        | I |        | I |
| I | 17.00 - 18.30 | I | ARM A  | I | 0.002  | I | 0.248  | I | 0.053  | I | 0.551  | I | 0.147  | I |
| I |               | I |        | I | 2.0    | I | 324.0  | I | 70.0   | I | 721.0  | I | 192.0  | I |
| I |               | I |        | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I |
| I |               | I |        | I |        | I |        | I |        | I |        | I |        | I |
| I |               | I | ARM B  | I | 0.659  | I | 0.002  | I | 0.002  | I | 0.239  | I | 0.099  | I |
| I |               | I |        | I | 427.0  | I | 1.0    | I | 1.0    | I | 155.0  | I | 64.0   | I |
| I |               | I |        | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I |
| I |               | I |        | I |        | I |        | I |        | I |        | I |        | I |
| I |               | I | ARM C  | I | 0.362  | I | 0.041  | I | 0.000  | I | 0.485  | I | 0.112  | I |
| I |               | I |        | I | 123.0  | I | 14.0   | I | 0.0    | I | 165.0  | I | 38.0   | I |
| I |               | I |        | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I |
| I |               | I |        | I |        | I |        | I |        | I |        | I |        | I |
| I |               | I | ARM D  | I | 0.721  | I | 0.136  | I | 0.046  | I | 0.005  | I | 0.092  | I |
| I |               | I |        | I | 578.0  | I | 109.0  | I | 37.0   | I | 4.0    | I | 74.0   | I |
| I |               | I |        | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I |
| I |               | I |        | I |        | I |        | I |        | I |        | I |        | I |
| I |               | I | ARM E  | I | 0.444  | I | 0.121  | I | 0.105  | I | 0.327  | I | 0.003  | I |
| I |               | I |        | I | 136.0  | I | 37.0   | I | 32.0   | I | 100.0  | I | 1.0    | I |
| I |               | I |        | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I |
| I |               | I |        | I |        | I |        | I |        | I |        | I |        | I |

-----

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

|   | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 17.00-17.15 |                     |                       |                              | - -                              | 0.0                      | 1.2                    | 17.9                                | -                                             | 0.075                                          | I |
| I | ARM A       | 16.42               | 29.54                 | 0.556                        | - -                              | 0.0                      | 1.2                    | 17.9                                | -                                             | 0.075                                          | I |
| I | ARM B       | 8.13                | 20.41                 | 0.398                        | - -                              | 0.0                      | 0.7                    | 9.5                                 | -                                             | 0.081                                          | I |
| I | ARM C       | 4.27                | 13.89                 | 0.307                        | - -                              | 0.0                      | 0.4                    | 6.4                                 | -                                             | 0.103                                          | I |
| I | ARM D       | 10.06               | 18.38                 | 0.547                        | - -                              | 0.0                      | 1.2                    | 16.9                                | -                                             | 0.118                                          | I |
| I | ARM E       | 3.84                | 12.69                 | 0.303                        | - -                              | 0.0                      | 0.4                    | 6.2                                 | -                                             | 0.112                                          | I |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.15-17.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| ARM A       | 19.61               | 29.11                 | 0.674                        | -                                | 1.2                      | 2.0                    | 29.0                                | -                                             | 0.104                                          |
| ARM B       | 9.71                | 19.08                 | 0.509                        | -                                | 0.7                      | 1.0                    | 14.8                                | -                                             | 0.106                                          |
| ARM C       | 5.09                | 11.62                 | 0.438                        | -                                | 0.4                      | 0.8                    | 11.0                                | -                                             | 0.152                                          |
| ARM D       | 12.02               | 17.49                 | 0.687                        | -                                | 1.2                      | 2.1                    | 29.8                                | -                                             | 0.179                                          |
| ARM E       | 4.58                | 11.10                 | 0.413                        | -                                | 0.4                      | 0.7                    | 10.0                                | -                                             | 0.153                                          |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|--|
| 17.30-17.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |  |
| ARM A       | 24.02               | 28.56                 | 0.841                        | -                                | 2.0                      | 4.9                    | 65.3                                | -                                             | 0.203                                          |  |
| ARM B       | 11.89               | 17.32                 | 0.686                        | -                                | 1.0                      | 2.1                    | 29.5                                | -                                             | 0.179                                          |  |
| ARM C       | 6.24                | 8.62                  | 0.724                        | -                                | 0.8                      | 2.4                    | 31.6                                | -                                             | 0.387                                          |  |
| ARM D       | 14.72               | 16.31                 | 0.902                        | -                                | 2.1                      | 7.0                    | 84.5                                | -                                             | 0.458                                          |  |
| ARM E       | 5.62                | 9.10                  | 0.617                        | -                                | 0.7                      | 1.5                    | 21.2                                | -                                             | 0.278                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|--|
| 17.45-18.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |  |
| ARM A       | 24.02               | 28.51                 | 0.843                        | -                                | 4.9                      | 5.1                    | 75.3                                | -                                             | 0.221                                          |  |
| ARM B       | 11.89               | 17.24                 | 0.690                        | -                                | 2.1                      | 2.2                    | 32.3                                | -                                             | 0.187                                          |  |
| ARM C       | 6.24                | 8.49                  | 0.734                        | -                                | 2.4                      | 2.6                    | 37.9                                | -                                             | 0.435                                          |  |
| ARM D       | 14.72               | 16.25                 | 0.906                        | -                                | 7.0                      | 8.0                    | 113.5                               | -                                             | 0.581                                          |  |
| ARM E       | 5.62                | 8.93                  | 0.629                        | -                                | 1.5                      | 1.6                    | 24.0                                | -                                             | 0.300                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|--|
| 18.00-18.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |  |
| ARM A       | 19.61               | 29.04                 | 0.675                        | -                                | 5.1                      | 2.1                    | 34.1                                | -                                             | 0.110                                          |  |
| ARM B       | 9.71                | 18.96                 | 0.512                        | -                                | 2.2                      | 1.1                    | 16.7                                | -                                             | 0.110                                          |  |
| ARM C       | 5.09                | 11.46                 | 0.445                        | -                                | 2.6                      | 0.8                    | 13.3                                | -                                             | 0.163                                          |  |
| ARM D       | 12.02               | 17.41                 | 0.690                        | -                                | 8.0                      | 2.3                    | 41.3                                | -                                             | 0.213                                          |  |
| ARM E       | 4.58                | 10.85                 | 0.423                        | -                                | 1.6                      | 0.7                    | 11.8                                | -                                             | 0.163                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 18.15-18.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| ARM A       | 16.42               | 29.51                 | 0.557                        | -                                | 2.1                      | 1.3                    | 19.7                                | -                                             | 0.077                                          |
| ARM B       | 8.13                | 20.34                 | 0.400                        | -                                | 1.1                      | 0.7                    | 10.4                                | -                                             | 0.082                                          |
| ARM C       | 4.27                | 13.79                 | 0.309                        | -                                | 0.8                      | 0.5                    | 7.0                                 | -                                             | 0.105                                          |
| ARM D       | 10.06               | 18.34                 | 0.549                        | -                                | 2.3                      | 1.2                    | 19.5                                | -                                             | 0.123                                          |
| ARM E       | 3.84                | 12.58                 | 0.305                        | -                                | 0.7                      | 0.4                    | 6.9                                 | -                                             | 0.115                                          |

QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 17.15                  | 1.2                            | *     |
| 17.30                  | 2.0                            | **    |
| 17.45                  | 4.9                            | ***** |
| 18.00                  | 5.1                            | ***** |
| 18.15                  | 2.1                            | **    |
| 18.30                  | 1.3                            | *     |

QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 17.15                  | 0.7                            | *  |
| 17.30                  | 1.0                            | *  |
| 17.45                  | 2.1                            | ** |
| 18.00                  | 2.2                            | ** |
| 18.15                  | 1.1                            | *  |
| 18.30                  | 0.7                            | *  |

QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |     |
|------------------------|--------------------------------|-----|
| 17.15                  | 0.4                            |     |
| 17.30                  | 0.8                            | *   |
| 17.45                  | 2.4                            | **  |
| 18.00                  | 2.6                            | *** |
| 18.15                  | 0.8                            | *   |
| 18.30                  | 0.5                            |     |

QUEUE AT ARM D

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 17.15                  | 1.2                            | *     |
| 17.30                  | 2.1                            | **    |
| 17.45                  | 7.0                            | ***** |
| 18.00                  | 8.0                            | ***** |
| 18.15                  | 2.3                            | **    |
| 18.30                  | 1.2                            | *     |

QUEUE AT ARM E

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 17.15                  | 0.4                            |    |
| 17.30                  | 0.7                            | *  |
| 17.45                  | 1.5                            | ** |
| 18.00                  | 1.6                            | ** |
| 18.15                  | 0.7                            | *  |
| 18.30                  | 0.4                            |    |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

|   |     |   |              |          |   |              |           |   |                        |           |     |
|---|-----|---|--------------|----------|---|--------------|-----------|---|------------------------|-----------|-----|
|   |     |   |              |          |   |              |           |   |                        |           | T75 |
| I | ARM | I | TOTAL DEMAND |          | I | * QUEUEING * |           | I | * INCLUSIVE QUEUEING * |           | I   |
| I |     | I |              |          | I | * DELAY *    |           | I | * DELAY *              |           | I   |
| I |     | I |              |          | I |              |           | I |                        |           | I   |
| I |     | I | (VEH)        | (VEH/H)  | I | (MIN)        | (MIN/VEH) | I | (MIN)                  | (MIN/VEH) | I   |
| I | A   | I | 1801.7       | I 1201.2 | I | 241.4        | I 0.13    | I | 241.4                  | I 0.13    | I   |
| I | B   | I | 891.9        | I 594.6  | I | 113.2        | I 0.13    | I | 113.2                  | I 0.13    | I   |
| I | C   | I | 468.0        | I 312.0  | I | 107.2        | I 0.23    | I | 107.2                  | I 0.23    | I   |
| I | D   | I | 1103.9       | I 735.9  | I | 305.5        | I 0.28    | I | 305.5                  | I 0.28    | I   |
| I | E   | I | 421.2        | I 280.8  | I | 80.1         | I 0.19    | I | 80.1                   | I 0.19    | I   |
| I | ALL | I | 4686.7       | I 3124.5 | I | 847.3        | I 0.18    | I | 847.4                  | I 0.18    | I   |

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

END OF JOB

===== end of file =====

Printed at 11:27:27 on 05/08/2012]



A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_StationRd AM\_Int Sen.vai"  
(drive-on-the-left ) at 13:33:57 on Sunday, 5 August 2012

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Dawley Road Station Road Site 2 Base Model  
LOCATION: Dawley Road/Station Road  
DATE: 16/07/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - Dawley Road (N)  
ARM B - Station Road (E)  
ARM C - Shepiston Lane (S)

MINI-ROUNDABOUT GEOMETRIC DATA

JUNCTION IN LONDON  
LIGHTING CONDITIONS : NORMAL  
ROAD SURFACE CONDITION: NORMAL  
ARM \*HAS A CENTRAL ISLAND

ARM \* HAS A ZEBRA CROSSING  
ARM \* HAS A ZEBRA CROSSING

| I | ARM   | I | V (M) | I | E (M) | I | Lm(M) | I | Vm(M) | I | A (M) | I | K (M) | I | G (%) | I | SLOPE | I | INTERCEPT | I |
|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-----------|---|
| I |       | I |       | I |       | I |       | I |       | I |       | I |       | I |       | I |       | I | (PCU/MIN) | I |
| I | ARM A | I | 3.75  | I | 6.10  | I | 6.00  | I | 3.75  | I | 11.00 | I | 7.00  | I | 0.00  | I | 0.595 | I | 28.234*   | I |
| I | ARM B | I | 3.85  | I | 5.50  | I | 5.50  | I | 3.85  | I | 11.70 | I | 5.90  | I | 0.00  | I | 0.589 | I | 20.216*   | I |
| I | ARM C | I | 4.69  | I | 6.50  | I | 31.00 | I | 4.69  | I | 16.00 | I | 11.00 | I | 0.00  | I | 0.539 | I | 21.366    | I |

V = approach half-width Lm = effective flare length A = distance between arms  
E = entry width Vm = minimum approach half-width K= entry corner kerb line G=gradient over 50 m  
\*\*WARNING\*\* One or more intercept values (flagged \* in the table)  
have been adjusted according to local input values  
from a previous run and listed below -

|       |   |   |                     |    |
|-------|---|---|---------------------|----|
| ----- |   |   |                     | T6 |
| I     |   | I | ADJUSTMENT TO       | I  |
| I     |   | I | INTERCEPT (PCU/MIN) | I  |
| ----- |   |   |                     |    |
| IARM  | A | I | 11.000              | I  |
| IARM  | B | I | 5.000               | I  |

# TRAFFIC DEMAND DATA

Only sets included in the current run are shown

## SCALING FACTORS

| T13   |   |               |   |
|-------|---|---------------|---|
| I ARM | I | FLOW SCALE(%) | I |
| I A   | I | 100           | I |
| I B   | I | 100           | I |
| I C   | I | 100           | I |

TIME PERIOD BEGINS(07.30)AND ENDS(09.00)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com 2024

| T15 |       |   |                                               |   |             |   |            |   |
|-----|-------|---|-----------------------------------------------|---|-------------|---|------------|---|
| I   | ARM   | I | NUMBER OF MINUTES FROM START WHEN FLOW STARTS | I | TOP OF PEAK | I | FLOW STOPS | I |
| I   |       | I | TO RISE                                       | I | IS REACHED  | I | FALLING    | I |
| I   |       | I |                                               | I |             | I | PEAK       | I |
| I   | ARM A | I | 15.00                                         | I | 45.00       | I | 75.00      | I |
| I   | ARM B | I | 15.00                                         | I | 45.00       | I | 75.00      | I |
| I   | ARM C | I | 15.00                                         | I | 45.00       | I | 75.00      | I |

DEMAND SET TITLE: Base+Com 2024

| T33 |                       |   |        |   |        |   |
|-----|-----------------------|---|--------|---|--------|---|
| I   | TURNING PROPORTIONS   |   |        |   |        | I |
| I   | TURNING COUNTS        |   |        |   |        | I |
| I   | (PERCENTAGE OF H.V.S) |   |        |   |        | I |
| I   | TIME                  | I | FROM/T | I | ARM A  | I |
| I   | 07.30 - 09.00         | I | ARM A  | I | 0.001  | I |
| I   |                       | I |        | I | 0.294  | I |
| I   |                       | I |        | I | 0.705  | I |
| I   |                       | I |        | I | 1.0    | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I | ARM B  | I | 0.458  | I |
| I   |                       | I |        | I | 0.000  | I |
| I   |                       | I |        | I | 0.542  | I |
| I   |                       | I |        | I | 241.0  | I |
| I   |                       | I |        | I | 0.0    | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I | ARM C  | I | 0.668  | I |
| I   |                       | I |        | I | 0.332  | I |
| I   |                       | I |        | I | 0.000  | I |
| I   |                       | I |        | I | 450.0  | I |
| I   |                       | I |        | I | 224.0  | I |
| I   |                       | I |        | I | 0.0    | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I |        | I | ( 0.0) | I |

## PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING USE:

ARM A: Frequency of use is distributed throughout the period in the s 90.0y as vehicular demand on the link. (= times per hour)  
 ARM B: Frequency of use is distributed throughout the period in the s 30.0y as vehicular demand on the link. (= times per hour)

## ZEBRA CROSSINGS

| T40 |     |   |                        |   |                                                     |   |
|-----|-----|---|------------------------|---|-----------------------------------------------------|---|
| I   | ARM | I | LENGTH OF CROSSING (M) | I | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION (VEHS) | I |
| I   |     | I | (ENTRY)                | I | (EXIT)                                              | I |
| I   | A   | I | 4.50                   | I | 4.30                                                | I |
| I   | B   | I | 3.70                   | I | 4.00                                                | I |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | T70 |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|-----|
| 07.30-07.45 |                     |                       |                              |                                  |                          |                        |                                     |                                                |     |
| ARM A       | 11.58               | 23.29                 | 0.497                        | -                                | 1.2                      | 0.0                    | 14.1                                | 0.084                                          |     |
| ARM B       | 6.60                | 15.42                 | 0.428                        | -                                | 0.4                      | 0.0                    | 10.6                                | 0.112                                          |     |
| ARM C       | 8.46                | 19.70                 | 0.429                        | -                                | -                        | 0.0                    | 10.8                                | 0.088                                          |     |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|--|
| 07.45-08.00 |                     |                       |                              |                                  |                          |                        |                                     |                                                |  |
| ARM A       | 13.83               | 22.46                 | 0.616                        | -                                | 1.5                      | 1.0                    | 22.6                                | 0.115                                          |  |
| ARM B       | 7.88                | 14.48                 | 0.544                        | -                                | 0.5                      | 0.7                    | 16.8                                | 0.150                                          |  |
| ARM C       | 10.10               | 19.32                 | 0.523                        | -                                | -                        | 0.7                    | 15.7                                | 0.108                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|--|
| 08.00-08.15 |                     |                       |                              |                                  |                          |                        |                                     |                                                |  |
| ARM A       | 16.94               | 21.37                 | 0.793                        | -                                | 1.8                      | 1.6                    | 48.6                                | 0.213                                          |  |
| ARM B       | 9.65                | 13.22                 | 0.730                        | -                                | 0.6                      | 1.2                    | 34.6                                | 0.267                                          |  |
| ARM C       | 12.37               | 18.72                 | 0.661                        | -                                | -                        | 1.1                    | 26.8                                | 0.155                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|--|
| 08.15-08.30 |                     |                       |                              |                                  |                          |                        |                                     |                                                |  |
| ARM A       | 16.94               | 21.35                 | 0.793                        | -                                | 1.8                      | 3.6                    | 54.8                                | 0.225                                          |  |
| ARM B       | 9.65                | 13.17                 | 0.733                        | -                                | 0.6                      | 2.5                    | 39.1                                | 0.282                                          |  |
| ARM C       | 12.37               | 18.69                 | 0.662                        | -                                | -                        | 1.9                    | 28.7                                | 0.158                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|--|
| 08.30-08.45 |                     |                       |                              |                                  |                          |                        |                                     |                                                |  |
| ARM A       | 13.83               | 22.45                 | 0.616                        | -                                | 1.5                      | 3.7                    | 26.1                                | 0.120                                          |  |
| ARM B       | 7.88                | 14.40                 | 0.547                        | -                                | 0.5                      | 2.6                    | 19.7                                | 0.158                                          |  |
| ARM C       | 10.10               | 19.28                 | 0.524                        | -                                | -                        | 1.9                    | 17.4                                | 0.110                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|--|
| 08.45-09.00 |                     |                       |                              |                                  |                          |                        |                                     |                                                |  |
| ARM A       | 11.58               | 23.27                 | 0.498                        | -                                | 1.2                      | 1.6                    | 15.5                                | 0.086                                          |  |
| ARM B       | 6.60                | 15.38                 | 0.429                        | -                                | 0.4                      | 1.2                    | 11.8                                | 0.115                                          |  |
| ARM C       | 8.46                | 19.68                 | 0.430                        | -                                | -                        | 1.1                    | 11.8                                | 0.090                                          |  |

#### QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|------------------------|--------------------------------|
| 07.45                  | 1.0 *                          |
| 08.00                  | 1.6 **                         |
| 08.15                  | 3.6 ****                       |
| 08.30                  | 3.7 ****                       |
| 08.45                  | 1.6 **                         |
| 09.00                  | 1.0 *                          |

QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |     |
|------------------------|--------------------------------|-----|
| 07.45                  | 0.7                            | *   |
| 08.00                  | 1.2                            | *   |
| 08.15                  | 2.5                            | *** |
| 08.30                  | 2.6                            | *** |
| 08.45                  | 1.2                            | *   |
| 09.00                  | 0.8                            | *   |

QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 07.45                  | 0.7                            | *  |
| 08.00                  | 1.1                            | *  |
| 08.15                  | 1.9                            | ** |
| 08.30                  | 1.9                            | ** |
| 08.45                  | 1.1                            | *  |
| 09.00                  | 0.8                            | *  |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

|   |     |   |              |   |              |   |                        |   |           | T75 |
|---|-----|---|--------------|---|--------------|---|------------------------|---|-----------|-----|
| I | ARM | I | TOTAL DEMAND | I | * QUEUEING * | I | * INCLUSIVE QUEUEING * | I |           |     |
| I | I   | I |              | I | * DELAY *    | I | * DELAY *              | I |           | I   |
| I | I   | I | (VEH)        | I | (MIN)        | I | (MIN)                  | I | (MIN/VEH) | I   |
| I | A   | I | 1270.4       | I | 181.7        | I | 181.8                  | I | 0.14      | I   |
| I | B   | I | 724.0        | I | 132.6        | I | 132.6                  | I | 0.18      | I   |
| I | C   | I | 927.7        | I | 111.1        | I | 111.1                  | I | 0.12      | I   |
| I | ALL | I | 2922.2       | I | 425.4        | I | 425.5                  | I | 0.15      | I   |

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

END OF JOB

===== end of file =====

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_StationRd PM\_Int Sen.vai"  
(drive-on-the-left ) at 13:34:56 on Sunday, 5 August 2012

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Dawley Road Station Road Site 2 Base Model  
LOCATION: Dawley Road/Station Road  
DATE: 16/07/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - Dawley Road (N)  
ARM B - Station Road (E)  
ARM C - Shepiston Lane (S)

MINI-ROUNDABOUT GEOMETRIC DATA

JUNCTION IN LONDON  
LIGHTING CONDITIONS : NORMAL  
ROAD SURFACE CONDITION: NORMAL  
ARM \*HAS A CENTRAL ISLAND

ARM \* HAS A ZEBRA CROSSING  
ARM \* HAS A ZEBRA CROSSING

| I | ARM   | I | V (M) | I | E (M) | I | Lm(M) | I | Vm(M) | I | A (M) | I | K (M) | I | G (%) | I | SLOPE | I | INTERCEPT | I |
|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-----------|---|
| I |       | I |       | I |       | I |       | I |       | I |       | I |       | I |       | I |       | I | (PCU/MIN) | I |
| I | ARM A | I | 3.75  | I | 6.10  | I | 6.00  | I | 3.75  | I | 11.00 | I | 7.00  | I | 0.00  | I | 0.595 | I | 31.934*   | I |
| I | ARM B | I | 3.85  | I | 5.50  | I | 5.50  | I | 3.85  | I | 11.70 | I | 5.90  | I | 0.00  | I | 0.589 | I | 24.016*   | I |
| I | ARM C | I | 4.69  | I | 6.50  | I | 31.00 | I | 4.69  | I | 16.00 | I | 11.00 | I | 0.00  | I | 0.539 | I | 21.366    | I |

V = approach half-width Lm = effective flare length A = distance between arms  
E = entry width Vm = minimum approach half-width K= entry corner kerb line G=gradient over 50 m  
\*\*WARNING\*\* One or more intercept values (flagged \* in the table)  
have been adjusted according to local input values  
from a previous run and listed below -

T6

| I |       | I | ADJUSTMENT TO       | I |
|---|-------|---|---------------------|---|
| I |       | I | INTERCEPT (PCU/MIN) | I |
| I | ARM A | I | 14.700              | I |
| I | ARM B | I | 8.800               | I |

## TRAFFIC DEMAND DATA

Only sets included in the current run are shown

## SCALING FACTORS

| T13   |   |               |   |
|-------|---|---------------|---|
| I ARM | I | FLOW SCALE(%) | I |
| I A   | I | 100           | I |
| I B   | I | 100           | I |
| I C   | I | 100           | I |

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com 2024

| T15 |       |   |                                               |   |             |   |            |   |
|-----|-------|---|-----------------------------------------------|---|-------------|---|------------|---|
| I   | ARM   | I | NUMBER OF MINUTES FROM START WHEN FLOW STARTS | I | TOP OF PEAK | I | FLOW STOPS | I |
| I   |       | I | TO RISE                                       | I | IS REACHED  | I | FALLING    | I |
| I   |       | I | PEAK                                          | I | OF PEAK     | I | PEAK       | I |
| I   | ARM A | I | 15.00                                         | I | 45.00       | I | 75.00      | I |
| I   | ARM B | I | 15.00                                         | I | 45.00       | I | 75.00      | I |
| I   | ARM C | I | 15.00                                         | I | 45.00       | I | 75.00      | I |

DEMAND SET TITLE: Base+Com 2024

| T33 |                       |   |        |   |        |   |
|-----|-----------------------|---|--------|---|--------|---|
| I   | TURNING PROPORTIONS   |   |        |   |        | I |
| I   | TURNING COUNTS        |   |        |   |        | I |
| I   | (PERCENTAGE OF H.V.S) |   |        |   |        | I |
| I   | TIME                  | I | FROM/T | I | ARM A  | I |
| I   | 16.45 - 18.15         | I | ARM A  | I | 0.000  | I |
| I   |                       | I |        | I | 0.302  | I |
| I   |                       | I |        | I | 0.0    | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I | ARM B  | I | 0.564  | I |
| I   |                       | I |        | I | 0.000  | I |
| I   |                       | I |        | I | 0.436  | I |
| I   |                       | I |        | I | 332.0  | I |
| I   |                       | I |        | I | 0.0    | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I | ARM C  | I | 0.733  | I |
| I   |                       | I |        | I | 0.265  | I |
| I   |                       | I |        | I | 0.001  | I |
| I   |                       | I |        | I | 553.0  | I |
| I   |                       | I |        | I | 200.0  | I |
| I   |                       | I |        | I | 1.0    | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I |        | I | ( 0.0) | I |

## PEDESTRIAN CROSSING DATA

## PEDESTRIAN CROSSING USE:

ARM A: Frequency of use is distributed throughout the period in the s 90.0y as vehicular demand on the link. (= times per hour)

ARM B: Frequency of use is distributed throughout the period in the s 30.0y as vehicular demand on the link. (= times per hour)

## ZEBRA CROSSINGS

| T40 |     |   |                        |   |                                                           |   |
|-----|-----|---|------------------------|---|-----------------------------------------------------------|---|
| I   | ARM | I | LENGTH OF CROSSING (M) | I | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION              | I |
| I   |     | I | (ENTRY)                | I | (EXIT) ENTRY (VEHS)                                       | I |
| I   |     | I |                        | I | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) | I |
| I   | A   | I | 4.50                   | I | 4.30                                                      | I |
| I   | B   | I | 3.70                   | I | 4.00                                                      | I |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | T70   |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|-------|
| 16.45-17.00 |                     |                       |                              |                                  |                          |                        |                                     |                                                |       |
| ARM A       | 12.43               | 26.22                 | 0.474                        | -                                | 1.2                      | 0.0                    | 0.9                                 | 13.0                                           | 0.072 |
| ARM B       | 7.39                | 18.92                 | 0.391                        | -                                | 0.4                      | 0.0                    | 0.6                                 | 9.2                                            | 0.086 |
| ARM C       | 9.46                | 19.01                 | 0.498                        | -                                | -                        | 0.0                    | 1.0                                 | 14.0                                           | 0.103 |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |       |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|-------|
| 17.00-17.15 |                     |                       |                              |                                  |                          |                        |                                     |                                                |       |
| ARM A       | 14.85               | 25.28                 | 0.587                        | -                                | 1.5                      | 0.9                    | 1.4                                 | 20.3                                           | 0.095 |
| ARM B       | 8.82                | 17.91                 | 0.493                        | -                                | 0.5                      | 0.6                    | 1.0                                 | 13.9                                           | 0.110 |
| ARM C       | 11.30               | 18.38                 | 0.615                        | -                                | -                        | 1.0                    | 1.6                                 | 22.3                                           | 0.140 |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |       |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|-------|
| 17.15-17.30 |                     |                       |                              |                                  |                          |                        |                                     |                                                |       |
| ARM A       | 18.19               | 24.05                 | 0.756                        | -                                | 1.8                      | 1.4                    | 3.0                                 | 41.2                                           | 0.165 |
| ARM B       | 10.81               | 16.57                 | 0.652                        | -                                | 0.6                      | 1.0                    | 1.8                                 | 25.6                                           | 0.170 |
| ARM C       | 13.84               | 17.21                 | 0.804                        | -                                | -                        | 1.6                    | 3.8                                 | 50.1                                           | 0.274 |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |       |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|-------|
| 17.30-17.45 |                     |                       |                              |                                  |                          |                        |                                     |                                                |       |
| ARM A       | 18.19               | 24.03                 | 0.757                        | -                                | 1.8                      | 3.0                    | 3.0                                 | 45.2                                           | 0.171 |
| ARM B       | 10.81               | 16.53                 | 0.654                        | -                                | 0.6                      | 1.8                    | 1.9                                 | 27.6                                           | 0.175 |
| ARM C       | 13.84               | 17.15                 | 0.807                        | -                                | -                        | 3.8                    | 4.0                                 | 58.2                                           | 0.298 |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |       |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|-------|
| 17.45-18.00 |                     |                       |                              |                                  |                          |                        |                                     |                                                |       |
| ARM A       | 14.85               | 25.25                 | 0.588                        | -                                | 1.5                      | 3.0                    | 1.4                                 | 22.8                                           | 0.098 |
| ARM B       | 8.82                | 17.86                 | 0.494                        | -                                | 0.5                      | 1.9                    | 1.0                                 | 15.5                                           | 0.112 |
| ARM C       | 11.30               | 18.33                 | 0.616                        | -                                | -                        | 4.0                    | 1.6                                 | 26.6                                           | 0.148 |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |       |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|-------|
| 18.00-18.15 |                     |                       |                              |                                  |                          |                        |                                     |                                                |       |
| ARM A       | 12.43               | 26.20                 | 0.475                        | -                                | 1.2                      | 1.4                    | 0.9                                 | 14.1                                           | 0.073 |
| ARM B       | 7.39                | 18.88                 | 0.391                        | -                                | 0.4                      | 1.0                    | 0.6                                 | 10.0                                           | 0.087 |
| ARM C       | 9.46                | 18.98                 | 0.498                        | -                                | -                        | 1.6                    | 1.0                                 | 15.7                                           | 0.106 |

# QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|------------------------|--------------------------------|
| 17.00                  | 0.9 *                          |
| 17.15                  | 1.4 *                          |
| 17.30                  | 3.0 ***                        |
| 17.45                  | 3.0 ***                        |
| 18.00                  | 1.4 *                          |
| 18.15                  | 0.9 *                          |

QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 17.00                  | 0.6                            | *  |
| 17.15                  | 1.0                            | *  |
| 17.30                  | 1.8                            | ** |
| 17.45                  | 1.9                            | ** |
| 18.00                  | 1.0                            | *  |
| 18.15                  | 0.6                            | *  |

QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |      |
|------------------------|--------------------------------|------|
| 17.00                  | 1.0                            | *    |
| 17.15                  | 1.6                            | **   |
| 17.30                  | 3.8                            | **** |
| 17.45                  | 4.0                            | **** |
| 18.00                  | 1.6                            | **   |
| 18.15                  | 1.0                            | *    |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

|   |     |   |              |          |              |           |                        |           |   | T75 |
|---|-----|---|--------------|----------|--------------|-----------|------------------------|-----------|---|-----|
| I | ARM | I | TOTAL DEMAND | I        | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I         |   |     |
| I | I   | I | I            | I        | * DELAY *    | I         | * DELAY *              | I         |   | I   |
| I | I   | I | I            | I        | I            | I         | I                      | I         | I | I   |
| I | I   | I | (VEH)        | (VEH/H)  | (MIN)        | (MIN/VEH) | (MIN)                  | (MIN/VEH) | I |     |
| I | A   | I | 1364.0       | I 909.4  | I 156.4      | I 0.11    | I 156.5                | I 0.11    | I |     |
| I | B   | I | 810.7        | I 540.5  | I 101.9      | I 0.13    | I 101.9                | I 0.13    | I |     |
| I | C   | I | 1037.8       | I 691.9  | I 186.9      | I 0.18    | I 186.9                | I 0.18    | I |     |
| I | ALL | I | 3212.6       | I 2141.7 | I 445.2      | I 0.14    | I 445.2                | I 0.14    | I |     |

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

END OF JOB

===== end of file =====

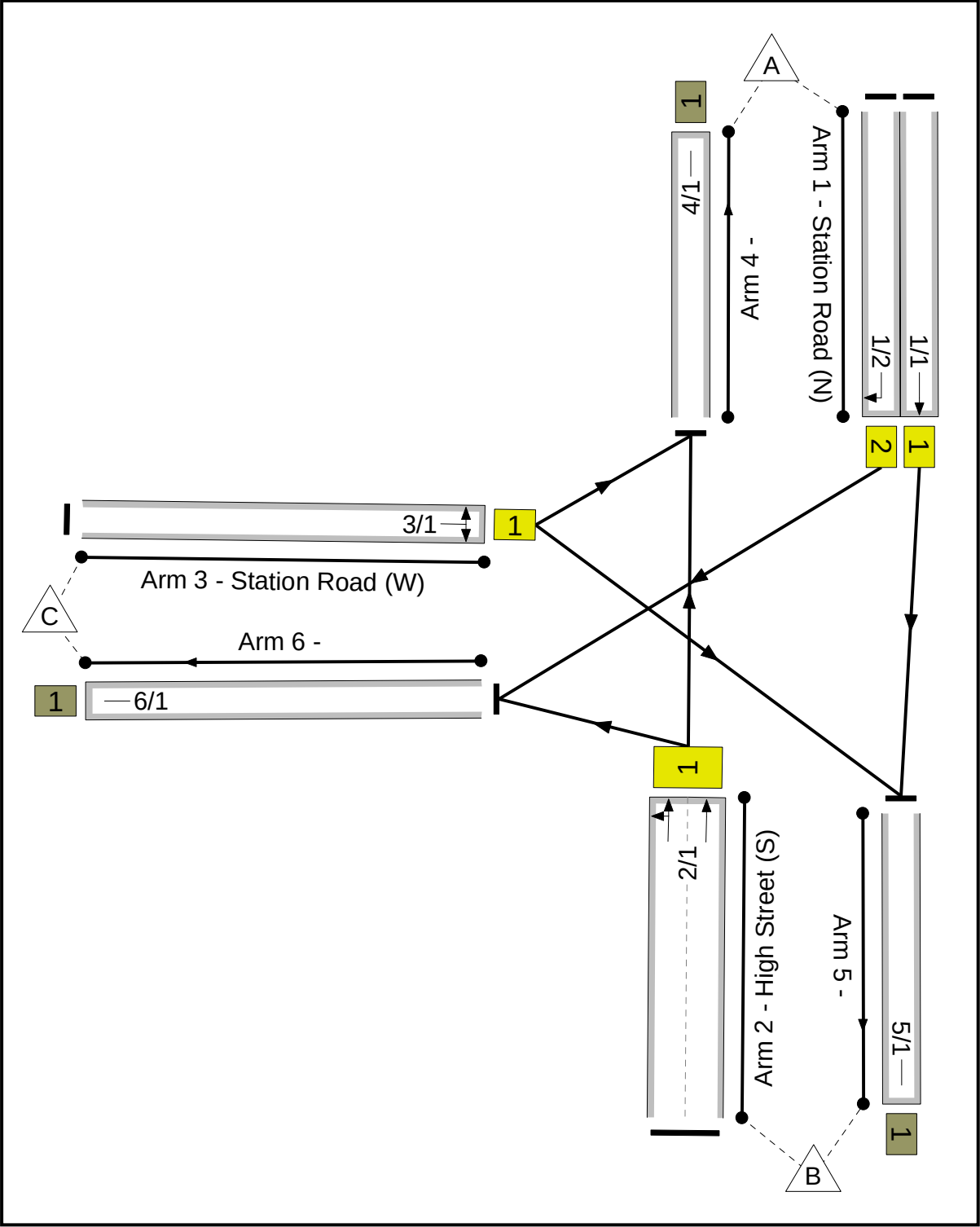


## Full Input Data And Results

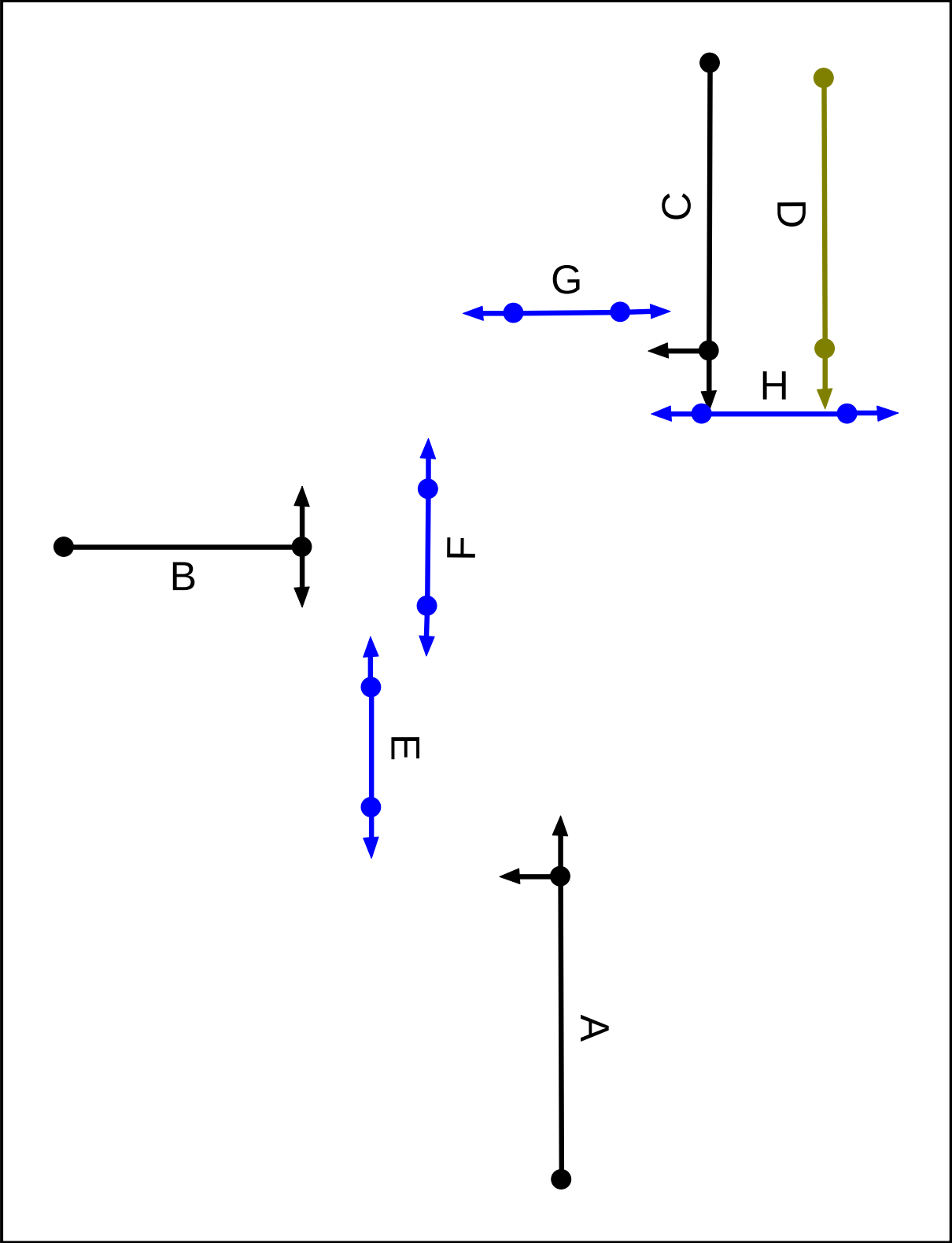
### User and Project Details

|                    |                             |
|--------------------|-----------------------------|
| <b>Project:</b>    |                             |
| <b>Title:</b>      |                             |
| <b>Location:</b>   |                             |
| <b>File name:</b>  |                             |
| <b>Author:</b>     | Station Rd_High Street.lsgx |
| <b>Company:</b>    |                             |
| <b>Address:</b>    | Generic                     |
| <b>Controller:</b> |                             |
| <b>SCN:</b>        |                             |
| <b>Notes:</b>      |                             |

Junction Layout Diagram



Phase Diagram



**Phase Input Data**

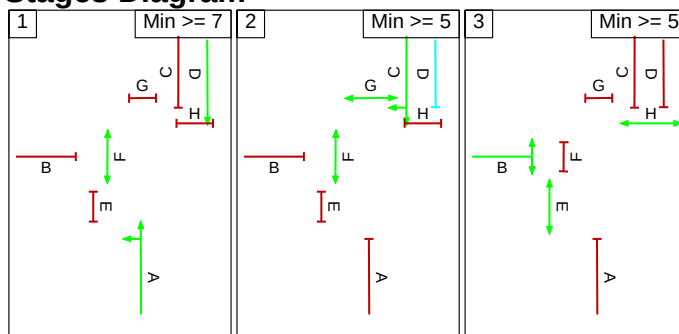
| Phase Name | Phase type | Assoc Phase | Street Min | Cont Min |
|------------|------------|-------------|------------|----------|
| A          | Traffic    |             | 7          | 7        |
| B          | Traffic    |             | 7          | 7        |
| C          | Traffic    |             | 7          | 7        |
| D          | Filter     | C           | 4          | 0        |
| E          | Pedestrian |             | 5          | 5        |
| F          | Pedestrian |             | 5          | 5        |
| G          | Pedestrian |             | 5          | 5        |
| H          | Pedestrian |             | 5          | 5        |

**Phase Intergreens Matrix**

| Terminating Phase | Starting Phase |   |   |   |   |    |   |   |   |
|-------------------|----------------|---|---|---|---|----|---|---|---|
|                   |                | A | B | C | D | E  | F | G | H |
|                   | A              |   | 5 | 5 | - | 7  | - | 8 | - |
|                   | B              | 5 |   | 5 | 5 | -  | 5 | 8 | - |
|                   | C              | 8 | 5 |   | - | 10 | - | - | 5 |
|                   | D              | - | 5 | - |   | -  | - | - | 5 |
|                   | E              | 8 | - | 8 | - |    | - | - | - |
|                   | F              | - | 8 | - | - | -  |   | - | - |
|                   | G              | 8 | 8 | - | - | -  | - |   | - |
|                   | H              | - | - | 8 | 8 | -  | - | - |   |

**Phases in Stage**

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

**Stages Diagram**

**Phase Delays**

| Term. Stage | Start Stage | Phase | Type   | Value | Cont value |
|-------------|-------------|-------|--------|-------|------------|
| 2           | 3           | C     | Losing | 3     | 3          |
| 3           | 1           | B     | Losing | 3     | 3          |

**Prohibited Stage Changes**

| From Stage | To Stage |   |   |
|------------|----------|---|---|
|            | 1        | 2 | 3 |
|            | 1        |   | 8 |
|            | 2        | 8 |   |
|            | 3        | 8 | 8 |

**Link Input Data**

| Arm/ Link | Link Name                   | Link Type | Num Lanes | Phases | Start Disp. | End Disp. |
|-----------|-----------------------------|-----------|-----------|--------|-------------|-----------|
| 1/1       | Station Road (N) Ahead      | U         | 1         | C D    | 2           | 3         |
| 1/2       | Station Road (N) Right      | U         | 1         | C      | 2           | 3         |
| 2/1       | High Street (S) Ahead Left  | U         | 2         | A      | 2           | 3         |
| 3/1       | Station Road (W) Left Right | U         | 1         | B      | 2           | 3         |
| 4/1       |                             | U         | 1         |        | 2           | 3         |
| 5/1       |                             | U         | 1         |        | 2           | 3         |
| 6/1       |                             | U         | 1         |        | 2           | 3         |

Lane Input Data

| Arm/<br>Lane                                     | Link<br>Num                                             | Physic<br>al<br>Length<br>(PCU) | Expecte<br>d<br>Usage<br>(PCU) | Sat<br>Flo<br>w<br>Typ<br>e | User<br>Saturatio<br>n<br>Flow<br>(PCU/Hr) | Lane<br>Widt<br>h<br>(m) | Gradie<br>nt | Nearsid<br>e<br>Lane | Allowe<br>d<br>Turns                | Turnin<br>g<br>Radius<br>(m) |
|--------------------------------------------------|---------------------------------------------------------|---------------------------------|--------------------------------|-----------------------------|--------------------------------------------|--------------------------|--------------|----------------------|-------------------------------------|------------------------------|
| 1/1<br>(Statio<br>n<br>Road<br>(N)<br>Lane<br>1) | Link 1<br>(Statio<br>n<br>Road<br>(N)<br>Ahead<br>)     | Inf                             | Inf                            | User                        | 1766                                       | 3.25                     | 0.00         | Y                    | Arm 5<br>Ahead                      | Inf                          |
| 1/2<br>(Statio<br>n<br>Road<br>(N)<br>Lane<br>2) | Link 2<br>(Statio<br>n<br>Road<br>(N)<br>Right)         | Inf                             | Inf                            | User                        | 1929                                       | 3.25                     | 0.00         | Y                    | Arm 6<br>Right                      | Inf                          |
| 2/1<br>(High<br>Street<br>(S)<br>Lane<br>1)      | Link 1<br>(High<br>Street<br>(S)<br>Ahead<br>Left)      | Inf                             | Inf                            | User                        | 1763                                       | 3.25                     | 0.00         | Y                    | Arm 4<br>Ahead<br><br>Arm 6<br>Left | Inf<br><br>Inf               |
| 2/2<br>(High<br>Street<br>(S)<br>Lane<br>2)      | Link 1<br>(High<br>Street<br>(S)<br>Ahead<br>Left)      | Inf                             | Inf                            | User                        | 1877                                       | 3.25                     | 0.00         | Y                    | Arm 4<br>Ahead                      | Inf                          |
| 3/1<br>(Statio<br>n<br>Road<br>(W)<br>Lane<br>1) | Link 1<br>(Statio<br>n<br>Road<br>(W)<br>Left<br>Right) | Inf                             | Inf                            | User                        | 1691                                       | 3.25                     | 0.00         | Y                    | Arm 4<br>Left<br><br>Arm 5<br>Right | Inf<br><br>Inf               |
| 4/1                                              | Link 1                                                  | Inf                             | Inf                            | User                        | 1800                                       | 3.25                     | 0.00         | Y                    |                                     |                              |
| 5/1                                              | Link 1                                                  | Inf                             | Inf                            | User                        | 1800                                       | 3.25                     | 0.00         | Y                    |                                     |                              |
| 6/1                                              | Link 1                                                  | Inf                             | Inf                            | User                        | 1800                                       | 3.25                     | 0.00         | Y                    |                                     |                              |

Traffic Flow Groups

| Flow Group                           | Start Time | End Time | Duration | Formula |
|--------------------------------------|------------|----------|----------|---------|
| 23: 'Base + Com 2024 AM Sensitivity' | 08:00      | 09:00    | 01:00    |         |
| 24: 'Base + Com 2024 PM Sensitivity' | 17:00      | 18:00    | 01:00    |         |

**Scenario 25: 'Base + Com 2024 AM Sen'**  
Staging Plan 1: 'Staging Plan No. 1'  
Flow Group 23: 'Base + Com 2024 AM Sensitivity'

**Traffic Flow Matrix**

**Desired Flow :**

| Origin | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
|        | A           | 0   | 673 | 275 | 948  |
|        | B           | 451 | 0   | 205 | 656  |
|        | C           | 259 | 300 | 0   | 559  |
|        | Tot.        | 710 | 973 | 480 | 2163 |

**Link Traffic Flows**

| Arm/Link | Flow Group 23:<br>Base + Com 2024 AM Sensitivity |
|----------|--------------------------------------------------|
| 1/1      | 673                                              |
| 1/2      | 275                                              |
| 2/1      | 656                                              |
| 3/1      | 559                                              |
| 4/1      | 710                                              |
| 5/1      | 973                                              |
| 6/1      | 480                                              |

**Lane Saturation Flows**

| Arm/<br>Lane                     | Lane Width<br>(m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius<br>(m) | Turning Prop. | Sat flow<br>(PCU/Hr) |
|----------------------------------|-------------------|----------|---------------|---------------|-----------------------|---------------|----------------------|
| 1/1<br>(Station Road (N) Lane 1) |                   |          |               |               |                       |               | 1766                 |
| 1/2<br>(Station Road (N) Lane 2) |                   |          |               |               |                       |               | 1929                 |
| 2/1<br>(High Street (S) Lane 1)  |                   |          |               |               |                       |               | 1763                 |
| 2/2<br>(High Street (S) Lane 2)  |                   |          |               |               |                       |               | 1877                 |
| 3/1<br>(Station Road (W) Lane 1) |                   |          |               |               |                       |               | 1691                 |
| 4/1                              |                   |          |               |               |                       |               | 1800                 |
| 5/1                              |                   |          |               |               |                       |               | 1800                 |
| 6/1                              |                   |          |               |               |                       |               | 1800                 |

Scenario 26: 'Base + Com 2024 PM Sen'  
Staging Plan 1: 'Staging Plan No. 1'  
Flow Group 24: 'Base + Com 2024 PM Sensitivity'

Traffic Flow Matrix

Desired Flow :

| Origin | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
|        | A           | 0   | 509 | 267 | 776  |
|        | B           | 519 | 0   | 325 | 844  |
|        | C           | 214 | 291 | 0   | 505  |
|        | Tot.        | 733 | 800 | 592 | 2125 |

Link Traffic Flows

| Arm/Link | Flow Group 24: Base + Com 2024 PM Sensitivity |
|----------|-----------------------------------------------|
| 1/1      | 509                                           |
| 1/2      | 267                                           |
| 2/1      | 844                                           |
| 3/1      | 505                                           |
| 4/1      | 733                                           |
| 5/1      | 800                                           |
| 6/1      | 592                                           |

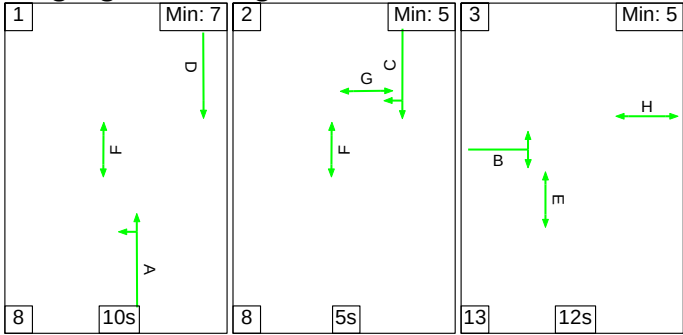
Lane Saturation Flows

| Arm/ Lane                        | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat flow (PCU/Hr) |
|----------------------------------|---------------------------------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|
| 1/1<br>(Station Road (N) Lane 1) | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1766              |
| 1/2<br>(Station Road (N) Lane 2) | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1929              |
| 2/1<br>(High Street (S) Lane 1)  | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1763              |
| 2/2<br>(High Street (S) Lane 2)  | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1877              |
| 3/1<br>(Station Road (W) Lane 1) | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1691              |
| 4/1                              | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1800              |
| 5/1                              | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1800              |
| 6/1                              | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1800              |



Scenario 25: 'Base + Com 2024 AM Sen'  
Staging Plan 1: 'Staging Plan No. 1'  
Flow Group 23: 'Base + Com 2024 AM Sensitivity'

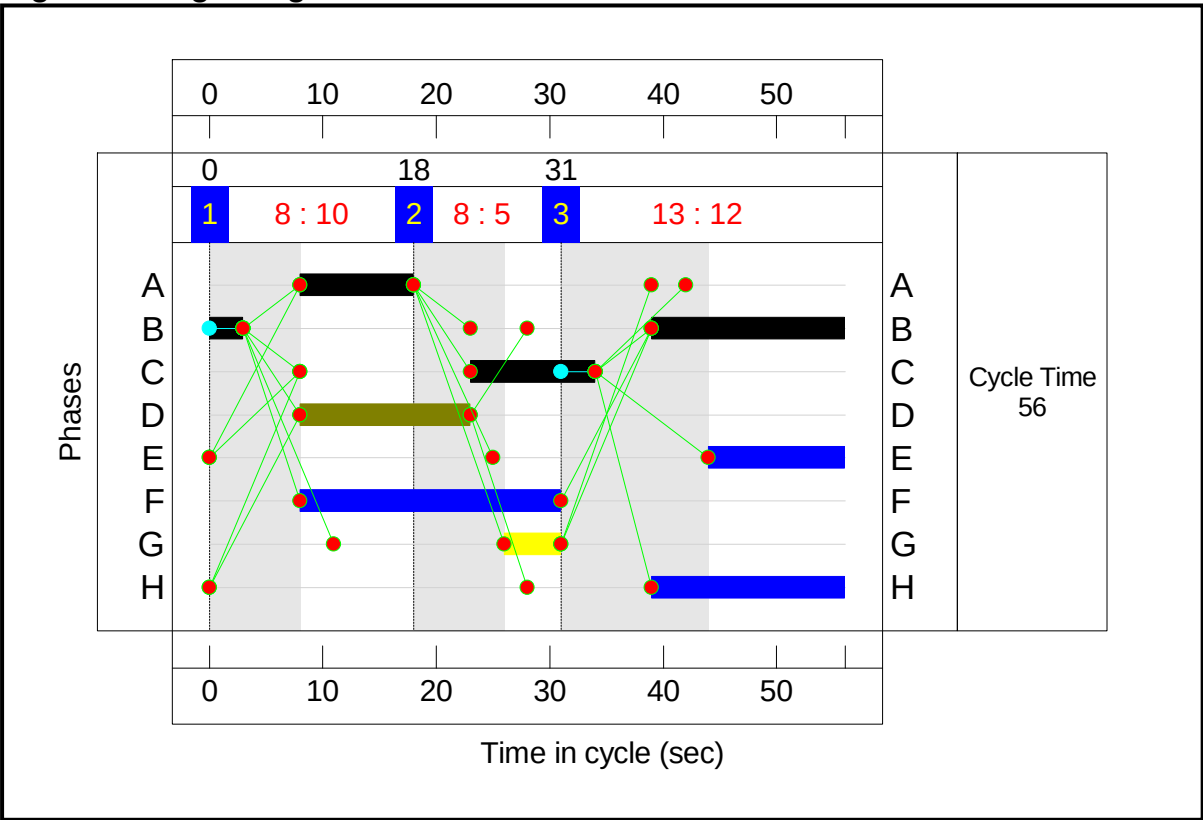
Staging Plan Diagram



Stage Timings

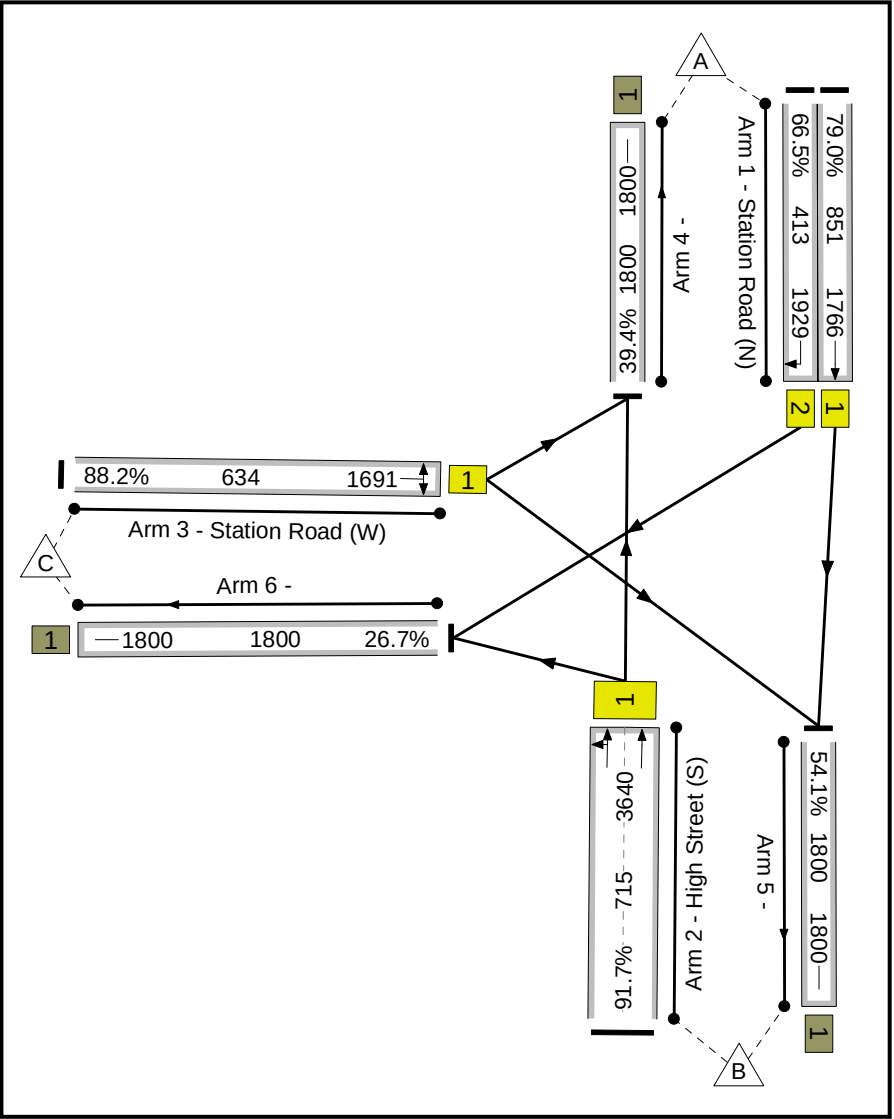
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 10 | 5  | 12 |
| Change Point | 0  | 18 | 31 |

Signal Timings Diagram



Full Input Data And Results

**Junction Layout Diagram**



# Full Input Data And Results

## Link Results

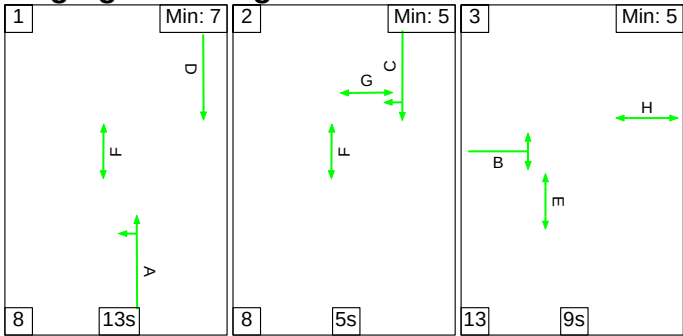
| Link Num                     | Link Desc                   | Link Type     | Stage Stream          | Position In Filtered Route   | Full Phase                               | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Max Sat Flow (pcu/Hr)            | Ave Sat Flow (pcu/Hr)      | Capacity (pcu)       | Deg Sat (%) |
|------------------------------|-----------------------------|---------------|-----------------------|------------------------------|------------------------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|-------------|
| 1/1                          | Station Road (N) Ahead      | U             | N/A                   | N/A                          | C                                        | D                     | 1                            | 26                                 | 15                  | 673                       | 1766                             | 1766                       | 851                  | 79.0        |
| 1/2                          | Station Road (N) Right      | U             | N/A                   | N/A                          | C                                        |                       | 1                            | 11                                 | -                   | 275                       | 1929                             | 1929                       | 413                  | 66.5        |
| 2/1                          | High Street (S) Ahead Left  | U             | N/A                   | N/A                          | A                                        |                       | 1                            | 10                                 | -                   | 656                       | 3640                             | 3640                       | 715                  | 91.7        |
| 3/1                          | Station Road (W) Left Right | U             | N/A                   | N/A                          | B                                        |                       | 1                            | 20                                 | -                   | 559                       | 1691                             | 1691                       | 634                  | 88.2        |
| 4/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 710                       | 1800                             | 1800                       | 1800                 | 39.4        |
| 5/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 973                       | 1800                             | 1800                       | 1800                 | 54.1        |
| 6/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 480                       | 1800                             | 1800                       | 1800                 | 26.7        |
| Link Num                     | Entering (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 Veh (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |             |
| 1/1                          | 673                         | 673           | -                     | -                            | -                                        | 2.3                   | 1.8                          | -                                  | 4.1                 | 22.0                      | 8.6                              | 1.8                        | 10.4                 |             |
| 1/2                          | 275                         | 275           | -                     | -                            | -                                        | 1.5                   | 1.0                          | -                                  | 2.5                 | 33.0                      | 3.9                              | 1.0                        | 4.9                  |             |
| 2/1                          | 656                         | 656           | -                     | -                            | -                                        | 4.0                   | 4.8                          | -                                  | 8.8                 | 48.3                      | 9.8                              | 4.8                        | 14.6                 |             |
| 3/1                          | 559                         | 559           | -                     | -                            | -                                        | 2.5                   | 3.4                          | -                                  | 5.9                 | 38.3                      | 8.1                              | 3.4                        | 11.5                 |             |
| 4/1                          | 710                         | 710           | -                     | -                            | -                                        | 0.1                   | 0.3                          | -                                  | 0.4                 | 2.0                       | 5.6                              | 0.3                        | 5.9                  |             |
| 5/1                          | 973                         | 973           | -                     | -                            | -                                        | 0.0                   | 0.6                          | -                                  | 0.6                 | 2.2                       | 0.0                              | 0.6                        | 0.6                  |             |
| 6/1                          | 480                         | 480           | -                     | -                            | -                                        | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 0.0                              | 0.2                        | 0.2                  |             |
| PRC for Signalled Links (%): |                             |               |                       | -1.9                         | Total Delay for Signalled Links (pcuHr): |                       |                              | 21.39                              |                     |                           |                                  |                            |                      |             |
| PRC Over All Links (%):      |                             |               |                       | -1.9                         | Total Delay Over All Links (pcuHr):      |                       |                              | 22.55                              | Cycle Time (s): 56  |                           |                                  |                            |                      |             |

Scenario 26: 'Base + Com 2024 PM Sen'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 24: 'Base + Com 2024 PM Sensitivity'

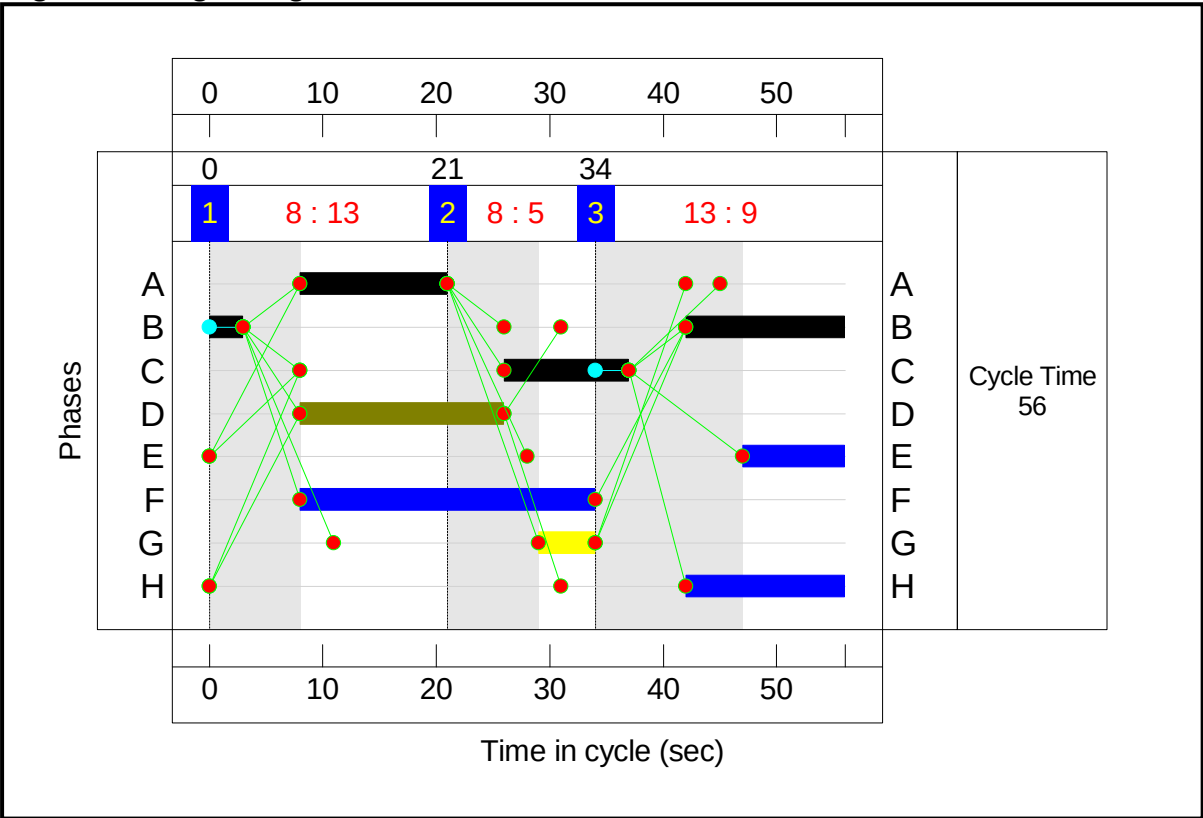
Staging Plan Diagram



Stage Timings

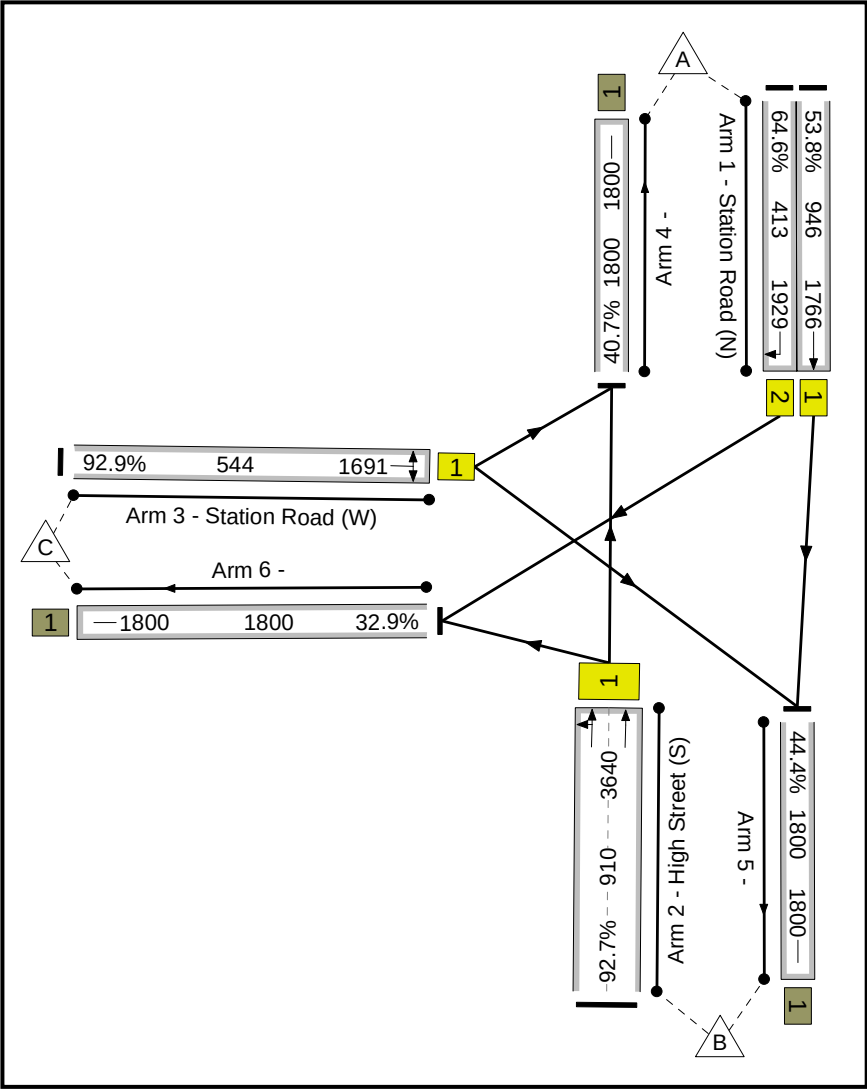
| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 13 | 5  | 9  |
| Change Point | 0  | 21 | 34 |

Signal Timings Diagram



Full Input Data And Results

**Junction Layout Diagram**



## Link Results

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

PICADY 5.1 ANALYSIS PROGRAM  
RELEASE 5.0 (JUNE 2010)

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Run with file:-  
"I:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\NorthHydeRd\_MillingtonRd AM Sen.vpi"  
(drive-on-the-left) at 11:58:50 on Sunday, 5 August 2012

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Base Model Junction 2  
LOCATION : North Hyde Road/Millington Road  
DATE : 23/04/12  
CLIENT :  
ENUMERATOR : rhussain [IE-D00135]  
JOB NUMBER : VN50026  
STATUS : Draft 1  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----

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

ARM A IS North Hyde Road (E)  
ARM B IS Millington Road  
ARM C IS North Hyde Road (W)

STREAM LABELLING CONVENTION  
-----

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

## GEOMETRIC DATA

| I | DATA ITEM                          | I | MINOR ROAD B    | I |
|---|------------------------------------|---|-----------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | ( W ) 7.64 M.   | I |
| I | CENTRAL RESERVE WIDTH              | I | (WCR) 0.00 M.   | I |
| I |                                    | I |                 | I |
| I | MAJOR ROAD RIGHT TURN - WIDTH      | I | (WC-B) 2.20 M.  | I |
| I | - VISIBILITY                       | I | (VC-B)119.00 M. | I |
| I | - BLOCKS TRAFFIC (SPACES)          | I | NO ( 0 )        | I |
| I |                                    | I |                 | I |
| I | MINOR ROAD - VISIBILITY TO LEFT    | I | (VB-C) 23.0 M.  | I |
| I | - VISIBILITY TO RIGHT              | I | (VB-A) 19.0 M.  | I |
| I | - LANE 1 WIDTH                     | I | (WB-C) 3.00 M.  | I |
| I | - LANE 2 WIDTH                     | I | (WB-A) 0.00 M.  | I |

## .SLOPES AND INTERCEPT

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

| I | Intercept  | For | Slope  | For | Opposing | Slope  | For | Opposing | I |
|---|------------|-----|--------|-----|----------|--------|-----|----------|---|
| I | STREAM B-C |     | STREAM | A-C |          | STREAM | A-B |          | I |
| I | 635.90     |     | 0.23   |     |          | 0.09   |     |          | I |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|---|
| I | STREAM B-A    | STREAM    | A-C      | STREAM    | A-B      | STREAM    | C-A      | STREAM    | C-B      | I |
| I | 494.40        |           | 0.21     |           | 0.08     |           | 0.13     |           | 0.30     | I |

| I | Intercept  | For | Slope  | For | Opposing | Slope  | For | Opposing | I |
|---|------------|-----|--------|-----|----------|--------|-----|----------|---|
| I | STREAM C-B |     | STREAM | A-C |          | STREAM | A-B |          | I |
| I | 642.88     |     | 0.23   |     |          | 0.23   |     |          | I |

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

## TRAFFIC DEMAND DATA

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

Demand set: Base+Com 2024

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN | I | RATE OF FLOW (VEH/MIN) | I |
|---|-------|---|-----------------------------------|---|------------------------|---|
| I |       | I | FLOW STARTS                       | I | BEFORE                 | I |
| I |       | I | TOP OF PEAK                       | I | AT TOP                 | I |
| I |       | I | TO RISE                           | I | PEAK                   | I |
| I |       | I | IS REACHED                        | I | OF PEAK                | I |
| I |       | I | FALLING                           | I | PEAK                   | I |
| I | ARM A | I | 15.00                             | I | 8.29                   | I |
| I | ARM B | I | 15.00                             | I | 0.10                   | I |
| I | ARM C | I | 15.00                             | I | 6.44                   | I |



Demand set: Base+Com 2024

| TIME          | TURNING PROPORTIONS   |     |        |     |        |     |        |  |  |  |
|---------------|-----------------------|-----|--------|-----|--------|-----|--------|--|--|--|
|               | TURNING COUNTS        |     |        |     |        |     |        |  |  |  |
|               | (PERCENTAGE OF H.V.S) |     |        |     |        |     |        |  |  |  |
|               | FROM/TO               | ARM | A      | ARM | B      | ARM | C      |  |  |  |
| 07.45 - 09.15 | ARM A                 |     | 0.000  |     | 0.072  |     | 0.928  |  |  |  |
|               |                       |     | 0.0    |     | 48.0   |     | 615.0  |  |  |  |
|               |                       |     | ( 0.0) |     | ( 0.0) |     | ( 0.0) |  |  |  |
|               | ARM B                 |     | 0.625  |     | 0.000  |     | 0.375  |  |  |  |
|               |                       |     | 5.0    |     | 0.0    |     | 3.0    |  |  |  |
|               |                       |     | ( 0.0) |     | ( 0.0) |     | ( 0.0) |  |  |  |
|               | ARM C                 |     | 0.988  |     | 0.012  |     | 0.000  |  |  |  |
|               |                       |     | 509.0  |     | 6.0    |     | 0.0    |  |  |  |
|               |                       |     | ( 0.0) |     | ( 0.0) |     | ( 0.0) |  |  |  |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

## QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET Base+Com 2024  
AND FOR TIME PERIOD 1

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 07.45-08.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.10                | 6.55                  | 0.015                        |                                  | 0.00                     | 0.02                   | 0.2                                 |                                               | 0.15                                           |
| C-A         | 6.39                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.08                | 8.79                  | 0.009                        |                                  | 0.00                     | 0.01                   | 0.1                                 |                                               | 0.11                                           |
| A-B         | 0.60                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.72                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.00-08.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.12                | 6.06                  | 0.020                        |                                  | 0.02                     | 0.02                   | 0.3                                 |                                               | 0.17                                           |
| C-A         | 7.63                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.09                | 8.42                  | 0.011                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.72                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 9.21                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.15-08.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.15                | 5.38                  | 0.027                        |                                  | 0.02                     | 0.03                   | 0.4                                 |                                               | 0.19                                           |
| C-A         | 9.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.11                | 7.90                  | 0.014                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.13                                           |
| A-B         | 0.88                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 11.29               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.30-08.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.15                | 5.38                  | 0.027                        |                                  | 0.03                     | 0.03                   | 0.4                                 |                                               | 0.19                                           |
| C-A         | 9.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.11                | 7.90                  | 0.014                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.13                                           |
| A-B         | 0.88                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 11.29               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.45-09.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.12                | 6.06                  | 0.020                        |                                  | 0.03                     | 0.02                   | 0.3                                 |                                               | 0.17                                           |
| C-A         | 7.63                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.09                | 8.42                  | 0.011                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.72                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 9.21                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 09.00-09.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.10                | 6.55                  | 0.015                        |                                  | 0.02                     | 0.02                   | 0.2                                 |                                               | 0.16                                           |
| C-A         | 6.39                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.08                | 8.79                  | 0.009                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.11                                           |
| A-B         | 0.60                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.72                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

#### QUEUE FOR STREAM B-AC

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

#### QUEUE FOR STREAM C-B

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

#### QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND<br>(VEH) | DEMAND<br>(VEH/H) | * QUEUEING *<br>DELAY (MIN) | * INCLUSIVE QUEUEING *<br>DELAY (MIN/VEH) |
|--------|-----------------------|-------------------|-----------------------------|-------------------------------------------|
| B-AC   | 11.0                  | 7.3               | 1.9                         | 0.17                                      |
| C-A    | 700.6                 | 467.1             |                             |                                           |
| C-B    | 8.3                   | 5.5               | 1.0                         | 0.12                                      |
| A-B    | 66.1                  | 44.0              |                             |                                           |
| A-C    | 846.5                 | 564.3             |                             |                                           |
| ALL    | 1632.4                | 1088.3            | 2.9                         | 0.00                                      |

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

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

===== end of file =====

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

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Run with file:-  
"I:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\NorthHydeRd\_MillingtonRd PM Sen.vpi"  
(drive-on-the-left) at 11:11:24 on Sunday, 12 August 2012

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Base Model Junction 2  
LOCATION : North Hyde Road/Millington Road  
DATE : 23/04/12  
CLIENT :  
ENUMERATOR : rhussain [IE-D00135]  
JOB NUMBER : VN50026  
STATUS : Draft 1  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----

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

ARM A IS North Hyde Road (E)  
ARM B IS Millington Road  
ARM C IS North Hyde Road (W)

STREAM LABELLING CONVENTION  
-----

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

## GEOMETRIC DATA

| I | DATA ITEM                          | I | MINOR ROAD B    | I |
|---|------------------------------------|---|-----------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | ( W ) 7.64 M.   | I |
| I | CENTRAL RESERVE WIDTH              | I | (WCR) 0.00 M.   | I |
| I |                                    | I |                 | I |
| I | MAJOR ROAD RIGHT TURN - WIDTH      | I | (WC-B) 2.20 M.  | I |
| I | - VISIBILITY                       | I | (VC-B)119.00 M. | I |
| I | - BLOCKS TRAFFIC (SPACES)          | I | NO ( 0 )        | I |
| I |                                    | I |                 | I |
| I | MINOR ROAD - VISIBILITY TO LEFT    | I | (VB-C) 23.0 M.  | I |
| I | - VISIBILITY TO RIGHT              | I | (VB-A) 19.0 M.  | I |
| I | - LANE 1 WIDTH                     | I | (WB-C) 3.00 M.  | I |
| I | - LANE 2 WIDTH                     | I | (WB-A) 0.00 M.  | I |

## .SLOPES AND INTERCEPT

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

| I | Intercept  | For Slope | For Opposing | Slope For Opposing | I |
|---|------------|-----------|--------------|--------------------|---|
| I | STREAM B-C | STREAM    | A-C          | STREAM A-B         | I |
| I | 635.90     |           | 0.23         | 0.09               | I |

| I | Intercept  | For Slope | For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|------------|-----------|--------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-A | STREAM    | A-C          | STREAM A-B         | STREAM C-A         | STREAM C-B         | I |
| I | 494.40     |           | 0.21         | 0.08               | 0.13               | 0.30               | I |

| I | Intercept  | For Slope | For Opposing | Slope For Opposing | I |
|---|------------|-----------|--------------|--------------------|---|
| I | STREAM C-B | STREAM    | A-C          | STREAM A-B         | I |
| I | 642.88     |           | 0.23         | 0.23               | I |

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

## TRAFFIC DEMAND DATA

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

Demand set: Base+Com 2024

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN | I | RATE OF FLOW (VEH/MIN) | I |
|---|-------|---|-----------------------------------|---|------------------------|---|
| I |       | I | FLOW STARTS                       | I | BEFORE                 | I |
| I |       | I | TOP OF PEAK                       | I | AT TOP                 | I |
| I |       | I | TO RISE                           | I | PEAK                   | I |
| I |       | I | IS REACHED                        | I | OF PEAK                | I |
| I |       | I | FALLING                           | I | PEAK                   | I |
| I | ARM A | I | 15.00                             | I | 7.24                   | I |
| I | ARM B | I | 15.00                             | I | 0.71                   | I |
| I | ARM C | I | 15.00                             | I | 6.19                   | I |

Demand set: Base+Com 2024

| TIME          | TURNING PROPORTIONS   |     |        |        |        |     |   |  |
|---------------|-----------------------|-----|--------|--------|--------|-----|---|--|
|               | TURNING COUNTS        |     |        |        |        |     |   |  |
|               | (PERCENTAGE OF H.V.S) |     |        |        |        |     |   |  |
|               | FROM/TO               | ARM | A      | ARM    | B      | ARM | C |  |
| 17.00 - 18.30 | ARM A                 |     | 0.000  | 0.014  | 0.986  |     |   |  |
|               |                       |     | 0.0    | 8.0    | 571.0  |     |   |  |
|               |                       |     | ( 0.0) | ( 0.0) | ( 0.0) |     |   |  |
|               | ARM B                 |     | 0.439  | 0.000  | 0.561  |     |   |  |
|               |                       |     | 25.0   | 0.0    | 32.0   |     |   |  |
|               |                       |     | ( 0.0) | ( 0.0) | ( 0.0) |     |   |  |
|               | ARM C                 |     | 0.988  | 0.012  | 0.000  |     |   |  |
|               |                       |     | 489.0  | 6.0    | 0.0    |     |   |  |
|               |                       |     | ( 0.0) | ( 0.0) | ( 0.0) |     |   |  |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

## QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET Base+Com 2024  
AND FOR TIME PERIOD 1

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.00-17.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.72                | 7.28                  | 0.098                        |                                  | 0.00                     | 0.11                   | 1.6                                 |                                               | 0.15                                           |
| C-A         | 6.14                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.08                | 9.03                  | 0.008                        |                                  | 0.00                     | 0.01                   | 0.1                                 |                                               | 0.11                                           |
| A-B         | 0.10                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.16                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.15-17.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.85                | 6.85                  | 0.125                        |                                  | 0.11                     | 0.14                   | 2.1                                 |                                               | 0.17                                           |
| C-A         | 7.33                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.09                | 8.71                  | 0.010                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.12                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 8.56                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.30-17.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 1.05                | 6.24                  | 0.168                        |                                  | 0.14                     | 0.20                   | 2.9                                 |                                               | 0.19                                           |
| C-A         | 8.97                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.11                | 8.26                  | 0.013                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.15                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 10.48               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.45-18.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 1.05                | 6.24                  | 0.168                        |                                  | 0.20                     | 0.20                   | 3.0                                 |                                               | 0.19                                           |
| C-A         | 8.97                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.11                | 8.26                  | 0.013                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.15                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 10.48               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 18.00-18.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.85                | 6.85                  | 0.125                        |                                  | 0.20                     | 0.14                   | 2.2                                 |                                               | 0.17                                           |
| C-A         | 7.33                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.09                | 8.71                  | 0.010                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.12                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 8.56                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 18.15-18.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.72                | 7.28                  | 0.098                        |                                  | 0.14                     | 0.11                   | 1.7                                 |                                               | 0.15                                           |
| C-A         | 6.14                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.08                | 9.03                  | 0.008                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.11                                           |
| A-B         | 0.10                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.16                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

## QUEUE FOR STREAM B-AC

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.15                     | 0.1                            |
| 17.30                     | 0.1                            |
| 17.45                     | 0.2                            |
| 18.00                     | 0.2                            |
| 18.15                     | 0.1                            |
| 18.30                     | 0.1                            |

## QUEUE FOR STREAM C-B

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.15                     | 0.0                            |
| 17.30                     | 0.0                            |
| 17.45                     | 0.0                            |
| 18.00                     | 0.0                            |
| 18.15                     | 0.0                            |
| 18.30                     | 0.0                            |

## QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND<br>(VEH) | DEMAND<br>(VEH/H) | QUEUEING<br>DELAY<br>(MIN) | QUEUEING<br>DELAY<br>(MIN/VEH) | INCLUSIVE QUEUEING<br>DELAY<br>(MIN) | INCLUSIVE QUEUEING<br>DELAY<br>(MIN/VEH) |
|--------|-----------------------|-------------------|----------------------------|--------------------------------|--------------------------------------|------------------------------------------|
| B-AC   | 78.5                  | 52.3              | 13.4                       | 0.17                           | 13.4                                 | 0.17                                     |
| C-A    | 673.1                 | 448.7             |                            |                                |                                      |                                          |
| C-B    | 8.3                   | 5.5               | 1.0                        | 0.12                           | 1.0                                  | 0.12                                     |
| A-B    | 11.0                  | 7.3               |                            |                                |                                      |                                          |
| A-C    | 785.9                 | 524.0             |                            |                                |                                      |                                          |
| ALL    | 1556.7                | 1037.8            | 14.4                       | 0.01                           | 14.4                                 | 0.01                                     |

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

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

===== end of file =====

TRL LIMITED

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

PICADY 5.1 ANALYSIS PROGRAM  
RELEASE 5.0 (JUNE 2010)

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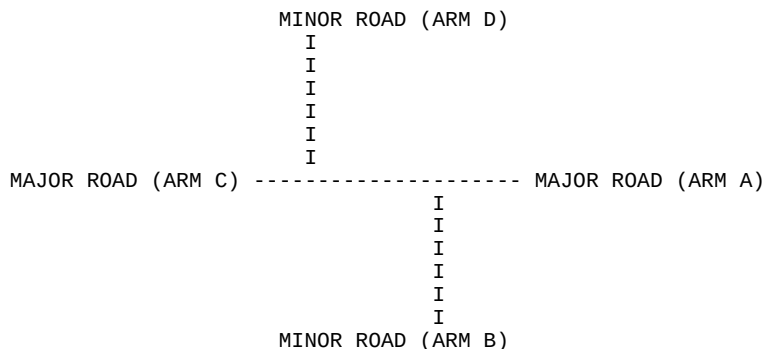
Run with file:-  
"I:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\StationRd\_MillingtonRd AM Sen.vpi"  
(drive-on-the-left) at 12:49:43 on Sunday, 5 August 2012

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Base Model Junction 4  
LOCATION : Station Road/Millington Road  
DATE : 23/04/12  
CLIENT :  
ENUMERATOR : rhussain [IE-D00135]  
JOB NUMBER : VN50026  
STATUS : Draft 1  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----



ARM A IS Station Road (S)  
ARM B IS Millington Road  
ARM C IS Station Road (N)  
ARM D IS Bedwell Gardens

STREAM LABELLING CONVENTION  
-----

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

## GEOMETRIC DATA

| I | DATA ITEM                          | I | MINOR ROAD B      | I | MINOR ROAD D      | I |
|---|------------------------------------|---|-------------------|---|-------------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | ( W ) 8.25 M.     | I | ( W ) 8.25 M.     | I |
| I | CENTRAL RESERVE WIDTH              | I | ( WCR ) 0.00 M.   | I | ( WCR ) 0.00 M.   | I |
| I |                                    | I |                   | I |                   | I |
| I | MAJOR ROAD RIGHT TURN - WIDTH      | I | ( WC-B ) 2.20 M.  | I | ( WA-D ) 2.20 M.  | I |
| I | - VISIBILITY                       | I | ( VC-B ) 60.00 M. | I | ( VA-D ) 80.00 M. | I |
| I | - BLOCKS TRAFFIC (SPACES)          | I | YES ( 2 )         | I | YES ( 2 )         | I |
| I |                                    | I |                   | I |                   | I |
| I | MINOR ROAD - VISIBILITY TO LEFT    | I | ( VB-C ) 29.0 M.  | I | ( VD-A ) 31.0 M.  | I |
| I | - VISIBILITY TO RIGHT              | I | ( VB-A ) 41.0 M.  | I | ( VD-C ) 26.0 M.  | I |
| I | - LANE 1 WIDTH                     | I | ( WB-C ) 5.00 M.  | I | ( WD-A ) 3.52 M.  | I |
| I | - LANE 2 WIDTH                     | I | ( WB-A ) 0.00 M.  | I | ( WD-C ) 0.00 M.  | I |

## .SLOPES AND INTERCEPT

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

## STREAM B-A

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-A    | STREAM A-C         | STREAM A-D         | STREAM A-B         | STREAM C-A         | I |
| I | 608.68        | 0.25               | 0.25               | 0.10               | 0.16               | I |

| I | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-A         | STREAM C-B         | STREAM D-B         | STREAM C-A         | I |
| I | 0.16               | 0.36               | 0.36               |                    | I |

## STREAM D-C

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-C    | STREAM C-A         | STREAM C-B         | STREAM C-D         | STREAM A-C         | I |
| I | 526.46        | 0.22               | 0.22               | 0.09               | 0.14               | I |

| I | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-C         | STREAM A-D         | STREAM B-D         | STREAM C-D         | I |
| I | 0.14               | 0.31               | 0.31               |                    | I |

## STREAM CD-B

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM CD-B   | STREAM A-B         | STREAM A-C         | STREAM A-D         | STREAM C-B         | I |
| I | 620.29        | 0.21               | 0.21               | 0.25               |                    | I |

## STREAM AB-D

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM AB-D   | STREAM C-D         | STREAM C-A         | STREAM C-B         | STREAM A-B         | I |
| I | 620.29        | 0.22               | 0.22               | 0.22               |                    | I |

## STREAM B-CD

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-CD   | STREAM A-C         | STREAM A-D         | STREAM A-B         | STREAM C-D         | I |
| I | 779.85        | 0.27               | 0.27               | 0.11               |                    | I |

## STREAM D-AB

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-AB   | STREAM C-A         | STREAM C-B         | STREAM C-D         | STREAM A-B         | I |
| I | 673.64        | 0.24               | 0.24               | 0.09               |                    | I |



TRAFFIC DEMAND DATA

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

Demand set: Base+Com 2024

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| NUMBER OF MINUTES FROM START WHEN |       |   |             |   |             |   |            |   |        |
|-----------------------------------|-------|---|-------------|---|-------------|---|------------|---|--------|
| RATE OF FLOW (VEH/MIN)            |       |   |             |   |             |   |            |   |        |
| I                                 | ARM   | I | FLOW STARTS | I | TOP OF PEAK | I | FLOW STOPS | I | BEFORE |
| I                                 |       | I | TO RISE     | I | IS REACHED  | I | FALLING    | I | AT TOP |
| I                                 |       | I |             | I |             | I |            | I | AFTER  |
| I                                 |       | I |             | I |             | I |            | I | PEAK   |
| I                                 | ARM A | I | 15.00       | I | 45.00       | I | 75.00      | I | 7.49   |
| I                                 | ARM B | I | 15.00       | I | 45.00       | I | 75.00      | I | 1.21   |
| I                                 | ARM C | I | 15.00       | I | 45.00       | I | 75.00      | I | 11.54  |
| I                                 | ARM D | I | 15.00       | I | 45.00       | I | 75.00      | I | 1.51   |

Demand set: Base+Com 2024

| TURNING PROPORTIONS   |               |   |         |   |        |   |        |     |        |
|-----------------------|---------------|---|---------|---|--------|---|--------|-----|--------|
| TURNING COUNTS        |               |   |         |   |        |   |        |     |        |
| (PERCENTAGE OF H.V.S) |               |   |         |   |        |   |        |     |        |
|                       |               |   |         |   |        |   |        |     |        |
| I                     | TIME          | I | FROM/TO | I | ARM    | A | I      | ARM | B      |
| I                     |               | I |         | I |        | I | I      | ARM | C      |
| I                     |               | I |         | I |        | I | I      | ARM | D      |
| I                     | 07.45 - 09.15 | I |         | I |        | I |        | I   |        |
| I                     |               | I | ARM A   | I | 0.000  | I | 0.239  | I   | 0.721  |
| I                     |               | I |         | I | 0.0    | I | 143.0  | I   | 432.0  |
| I                     |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) |
| I                     |               | I |         | I |        | I |        | I   |        |
| I                     |               | I | ARM B   | I | 0.433  | I | 0.000  | I   | 0.567  |
| I                     |               | I |         | I | 42.0   | I | 0.0    | I   | 55.0   |
| I                     |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) |
| I                     |               | I |         | I |        | I |        | I   |        |
| I                     |               | I | ARM C   | I | 0.714  | I | 0.165  | I   | 0.000  |
| I                     |               | I |         | I | 659.0  | I | 152.0  | I   | 0.0    |
| I                     |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) |
| I                     |               | I |         | I |        | I |        | I   |        |
| I                     |               | I | ARM D   | I | 0.149  | I | 0.000  | I   | 0.851  |
| I                     |               | I |         | I | 18.0   | I | 0.0    | I   | 103.0  |
| I                     |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) |
| I                     |               | I |         | I |        | I |        | I   |        |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS  
AND FOR TIME PERIOD 1

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 07.45-08.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.22                | 8.53                  | 0.143                        |                                  | 0.00                     | 0.16                   | 2.4                                 |                                               | 0.14                                           |
| A-B         | 1.79                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 5.42                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.30                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.30)             | 7.83                  | 0.038                        |                                  | 0.00                     | 0.04                   | 0.6                                 |                                               | 0.13                                           |
| AB-C        | ( 6.10)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.52                | 5.81                  | 0.261                        |                                  | 0.00                     | 0.35                   | 4.9                                 |                                               | 0.23                                           |
| C-D         | 1.41                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 8.27                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 1.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 1.91)             | 8.55                  | 0.223                        |                                  | 0.00                     | 0.22                   | 3.3                                 |                                               | 0.15                                           |
| CD-A        | ( 8.49)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.00-08.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.45                | 7.87                  | 0.185                        |                                  | 0.16                     | 0.22                   | 3.3                                 |                                               | 0.16                                           |
| A-B         | 2.14                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 6.47                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.36                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.36)             | 7.34                  | 0.049                        |                                  | 0.04                     | 0.05                   | 0.7                                 |                                               | 0.14                                           |
| AB-C        | ( 7.29)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.81                | 5.17                  | 0.351                        |                                  | 0.35                     | 0.52                   | 7.5                                 |                                               | 0.30                                           |
| C-D         | 1.68                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 9.87                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 2.28                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 2.28)             | 8.24                  | 0.277                        |                                  | 0.22                     | 0.27                   | 4.1                                 |                                               | 0.17                                           |
| CD-A        | ( 10.14)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.15-08.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.78                | 6.90                  | 0.258                        |                                  | 0.22                     | 0.34                   | 4.9                                 |                                               | 0.19                                           |
| A-B         | 2.62                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.93                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.44                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.44)             | 6.67                  | 0.066                        |                                  | 0.05                     | 0.07                   | 1.0                                 |                                               | 0.16                                           |
| AB-C        | ( 8.93)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 2.22                | 4.27                  | 0.519                        |                                  | 0.52                     | 1.02                   | 13.9                                |                                               | 0.47                                           |
| C-D         | 2.06                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 12.09               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 2.79                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 2.79)             | 7.81                  | 0.357                        |                                  | 0.27                     | 0.35                   | 5.3                                 |                                               | 0.20                                           |
| CD-A        | ( 12.42)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.30-08.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.78                | 6.90                  | 0.258                        |                                  | 0.34                     | 0.34                   | 5.2                                 |                                               | 0.20                                           |
| A-B         | 2.62                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.93                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.44                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.44)             | 6.67                  | 0.066                        |                                  | 0.07                     | 0.07                   | 1.0                                 |                                               | 0.16                                           |
| AB-C        | ( 8.94)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 2.22                | 4.27                  | 0.520                        |                                  | 1.02                     | 1.05                   | 15.5                                |                                               | 0.49                                           |
| C-D         | 2.06                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 12.09               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 2.79                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 2.79)             | 7.81                  | 0.357                        |                                  | 0.35                     | 0.36                   | 5.4                                 |                                               | 0.20                                           |
| CD-A        | ( 12.42)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| I | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 08.45-09.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | B-ACD       | 1.45                | 7.87                  | 0.185                        |                                  | 0.34                     | 0.23                   | 3.6                                 |                                               | 0.16                                           | I |
| I | A-B         | 2.14                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-C         | 6.47                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-D         | 0.36                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | AB-CD       | ( 0.36)             | 7.34                  | 0.049                        |                                  | 0.07                     | 0.05                   | 0.7                                 |                                               | 0.14                                           | I |
| I | AB-C        | ( 7.30)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | D-ABC       | 1.81                | 5.17                  | 0.351                        |                                  | 1.05                     | 0.56                   | 8.9                                 |                                               | 0.30                                           | I |
| I | C-D         | 1.68                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-A         | 9.87                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-B         | 2.28                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | CD-AB       | ( 2.28)             | 8.24                  | 0.277                        |                                  | 0.36                     | 0.28                   | 4.2                                 |                                               | 0.17                                           | I |
| I | CD-A        | ( 10.15)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

| I | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 09.00-09.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | B-ACD       | 1.22                | 8.53                  | 0.143                        |                                  | 0.23                     | 0.17                   | 2.6                                 |                                               | 0.14                                           | I |
| I | A-B         | 1.79                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-C         | 5.42                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-D         | 0.30                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | AB-CD       | ( 0.30)             | 7.83                  | 0.038                        |                                  | 0.05                     | 0.04                   | 0.6                                 |                                               | 0.13                                           | I |
| I | AB-C        | ( 6.11)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | D-ABC       | 1.52                | 5.81                  | 0.261                        |                                  | 0.56                     | 0.36                   | 5.7                                 |                                               | 0.23                                           | I |
| I | C-D         | 1.41                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-A         | 8.27                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-B         | 1.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | CD-AB       | ( 1.91)             | 8.55                  | 0.223                        |                                  | 0.28                     | 0.22                   | 3.4                                 |                                               | 0.15                                           | I |
| I | CD-A        | ( 8.50)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

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

QUEUE FOR STREAM B-ACD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 08.00                     | 0.2                            |
| 08.15                     | 0.2                            |
| 08.30                     | 0.3                            |
| 08.45                     | 0.3                            |
| 09.00                     | 0.2                            |
| 09.15                     | 0.2                            |

QUEUE FOR STREAM AB-CD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 08.00                     | 0.0                            |
| 08.15                     | 0.0                            |
| 08.30                     | 0.1                            |
| 08.45                     | 0.1                            |
| 09.00                     | 0.0                            |
| 09.15                     | 0.0                            |

QUEUE FOR STREAM D-ABC

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|---------------------------|--------------------------------|---|
| 08.00                     | 0.3                            |   |
| 08.15                     | 0.5                            | * |
| 08.30                     | 1.0                            | * |
| 08.45                     | 1.0                            | * |
| 09.00                     | 0.6                            | * |
| 09.15                     | 0.4                            |   |

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 08.00                     | 0.2                            |
| 08.15                     | 0.3                            |
| 08.30                     | 0.4                            |
| 08.45                     | 0.4                            |
| 09.00                     | 0.3                            |
| 09.15                     | 0.2                            |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL DEMAND | I         | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I         |
|---|--------|---|--------------|-----------|--------------|-----------|------------------------|-----------|
| I | I      | I | I            | I         | * DELAY *    | I         | * DELAY *              | I         |
| I | I      | I | I            | I         | I            | I         | I                      | I         |
| I | I      | I | (VEH)        | (VEH/H)   | (MIN)        | (MIN/VEH) | (MIN)                  | (MIN/VEH) |
| I | B-ACD  | I | 133.5        | I 89.0    | I 21.9       | I 0.16    | I 21.9                 | I 0.16    |
| I | A-B    | I | 196.8        | I 131.2   | I            | I         | I                      | I         |
| I | A-C    | I | 594.6        | I 396.4   | I            | I         | I                      | I         |
| I | A-D    | I | 33.0         | I 22.0    | I            | I         | I                      | I         |
| I | AB-CD  | I | ( 33.0)      | I( 22.0)  | I 4.6        | I 0.14    | I 4.6                  | I 0.14    |
| I | AB-C   | I | ( 670.2)     | I( 446.8) | I            | I         | I                      | I         |
| I | D-ABC  | I | 166.5        | I 111.0   | I 56.4       | I 0.34    | I 56.4                 | I 0.34    |
| I | C-D    | I | 154.2        | I 102.8   | I            | I         | I                      | I         |
| I | C-A    | I | 907.1        | I 604.7   | I            | I         | I                      | I         |
| I | C-B    | I | 209.2        | I 139.5   | I            | I         | I                      | I         |
| I | CD-AB  | I | ( 209.2)     | I( 139.5) | I 25.7       | I 0.12    | I 25.7                 | I 0.12    |
| I | CD-A   | I | ( 931.8)     | I( 621.2) | I            | I         | I                      | I         |
| I | ALL    | I | 2395.0       | I 1596.7  | I 108.5      | I 0.05    | I 108.6                | I 0.05    |

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

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

===== end of file =====

TRL LIMITED

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

PICADY 5.1 ANALYSIS PROGRAM  
RELEASE 5.0 (JUNE 2010)

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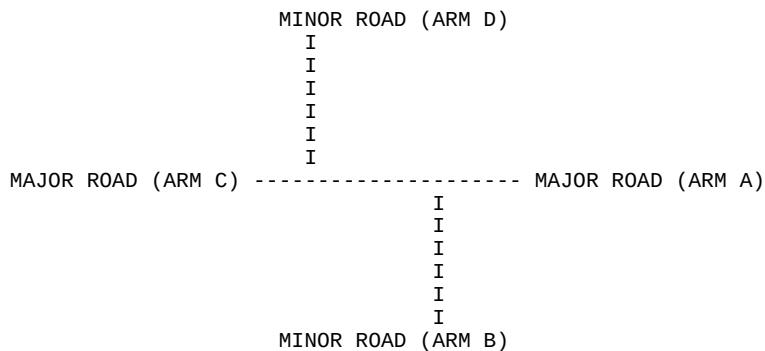
Run with file:-  
"I:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\StationRd\_MillingtonRd PM Sen.vpi"  
(drive-on-the-left) at 12:51:11 on Sunday, 5 August 2012

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Base Model Junction 4  
LOCATION : Station Road/Millington Road  
DATE : 23/04/12  
CLIENT :  
ENUMERATOR : rhussain [IE-D00135]  
JOB NUMBER : VN50026  
STATUS : Draft 1  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----



ARM A IS Station Road (S)  
ARM B IS Millington Road  
ARM C IS Station Road (N)  
ARM D IS Bedwell Gardens

STREAM LABELLING CONVENTION  
-----

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

## GEOMETRIC DATA

| I | DATA ITEM                          | I | MINOR ROAD B      | I | MINOR ROAD D      | I |
|---|------------------------------------|---|-------------------|---|-------------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | ( W ) 8.25 M.     | I | ( W ) 8.25 M.     | I |
| I | CENTRAL RESERVE WIDTH              | I | ( WCR ) 0.00 M.   | I | ( WCR ) 0.00 M.   | I |
| I |                                    | I |                   | I |                   | I |
| I | MAJOR ROAD RIGHT TURN - WIDTH      | I | ( WC-B ) 2.20 M.  | I | ( WA-D ) 2.20 M.  | I |
| I | - VISIBILITY                       | I | ( VC-B ) 60.00 M. | I | ( VA-D ) 80.00 M. | I |
| I | - BLOCKS TRAFFIC (SPACES)          | I | YES ( 2 )         | I | YES ( 2 )         | I |
| I |                                    | I |                   | I |                   | I |
| I | MINOR ROAD - VISIBILITY TO LEFT    | I | ( VB-C ) 29.0 M.  | I | ( VD-A ) 31.0 M.  | I |
| I | - VISIBILITY TO RIGHT              | I | ( VB-A ) 41.0 M.  | I | ( VD-C ) 26.0 M.  | I |
| I | - LANE 1 WIDTH                     | I | ( WB-C ) 5.00 M.  | I | ( WD-A ) 3.52 M.  | I |
| I | - LANE 2 WIDTH                     | I | ( WB-A ) 0.00 M.  | I | ( WD-C ) 0.00 M.  | I |

## .SLOPES AND INTERCEPT

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

## STREAM B-A

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-A    | STREAM A-C         | STREAM A-D         | STREAM A-B         | STREAM C-A         | I |
| I | 608.68        | 0.25               | 0.25               | 0.10               | 0.16               | I |

| I | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-A         | STREAM C-B         | STREAM D-B         | STREAM C-A         | I |
| I | 0.16               | 0.36               | 0.36               |                    | I |

## STREAM D-C

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-C    | STREAM C-A         | STREAM C-B         | STREAM C-D         | STREAM A-C         | I |
| I | 526.46        | 0.22               | 0.22               | 0.09               | 0.14               | I |

| I | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-C         | STREAM A-D         | STREAM B-D         | STREAM C-D         | I |
| I | 0.14               | 0.31               | 0.31               |                    | I |

## STREAM CD-B

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM CD-B   | STREAM A-B         | STREAM A-C         | STREAM A-D         | STREAM C-B         | I |
| I | 620.29        | 0.21               | 0.21               | 0.25               |                    | I |

## STREAM AB-D

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM AB-D   | STREAM C-D         | STREAM C-A         | STREAM C-B         | STREAM A-B         | I |
| I | 620.29        | 0.22               | 0.22               | 0.22               |                    | I |

## STREAM B-CD

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-CD   | STREAM A-C         | STREAM A-D         | STREAM A-B         | STREAM C-D         | I |
| I | 779.85        | 0.27               | 0.27               | 0.11               |                    | I |

## STREAM D-AB

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-AB   | STREAM C-A         | STREAM C-B         | STREAM C-D         | STREAM A-B         | I |
| I | 673.64        | 0.24               | 0.24               | 0.09               |                    | I |

TRAFFIC DEMAND DATA

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

Demand set: Base+Com 2024

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | I | TOP OF PEAK IS REACHED | I | FLOW STOPS FALLING | I | RATE OF FLOW (VEH/MIN) BEFORE PEAK | I | AT TOP OF PEAK | I | AFTER PEAK | I |
|---|-------|---|-------------------------------------------------------|---|------------------------|---|--------------------|---|------------------------------------|---|----------------|---|------------|---|
| I | ARM A | I | 15.00                                                 | I | 45.00                  | I | 75.00              | I | 8.77                               | I | 13.16          | I | 8.77       | I |
| I | ARM B | I | 15.00                                                 | I | 45.00                  | I | 75.00              | I | 4.09                               | I | 6.13           | I | 4.09       | I |
| I | ARM C | I | 15.00                                                 | I | 45.00                  | I | 75.00              | I | 9.94                               | I | 14.91          | I | 9.94       | I |
| I | ARM D | I | 15.00                                                 | I | 45.00                  | I | 75.00              | I | 0.81                               | I | 1.22           | I | 0.81       | I |

Demand set: Base+Com 2024

| I | TIME          | I | FROM/TO | I | ARM    | A | I      | ARM | B      | I | ARM    | C | I   | ARM | D     | I |
|---|---------------|---|---------|---|--------|---|--------|-----|--------|---|--------|---|-----|-----|-------|---|
| I | 16.45 - 18.15 | I | ARM A   | I | 0.000  | I | 0.147  | I   | 0.821  | I | 0.033  | I | 0.0 | I   | 103.0 | I |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I | I   | I   | I     | I |
| I |               | I | ARM B   | I | 0.391  | I | 0.000  | I   | 0.609  | I | 0.000  | I | I   | I   | I     | I |
| I |               | I |         | I | 128.0  | I | 0.0    | I   | 199.0  | I | 0.0    | I | I   | I   | I     | I |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I | I   | I   | I     | I |
| I |               | I | ARM C   | I | 0.678  | I | 0.196  | I   | 0.000  | I | 0.126  | I | I   | I   | I     | I |
| I |               | I |         | I | 539.0  | I | 156.0  | I   | 0.0    | I | 100.0  | I | I   | I   | I     | I |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I | I   | I   | I     | I |
| I |               | I | ARM D   | I | 0.169  | I | 0.000  | I   | 0.831  | I | 0.000  | I | I   | I   | I     | I |
| I |               | I |         | I | 11.0   | I | 0.0    | I   | 54.0   | I | 0.0    | I | I   | I   | I     | I |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I | I   | I   | I     | I |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS  
AND FOR TIME PERIOD 1

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 16.45-17.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 4.10                | 8.45                  | 0.485                        |                                  | 0.00                     | 0.92                   | 12.8                                |                                               | 0.22                                           |
| A-B         | 1.29                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.23                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.29                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.29)             | 8.18                  | 0.035                        |                                  | 0.00                     | 0.04                   | 0.5                                 |                                               | 0.13                                           |
| AB-C        | ( 9.69)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 0.82                | 5.73                  | 0.142                        |                                  | 0.00                     | 0.16                   | 2.3                                 |                                               | 0.20                                           |
| C-D         | 1.25                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 6.76                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 1.96                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 1.96)             | 8.27                  | 0.237                        |                                  | 0.00                     | 0.23                   | 3.5                                 |                                               | 0.16                                           |
| CD-A        | ( 6.90)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.00-17.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 4.90                | 7.75                  | 0.632                        |                                  | 0.92                     | 1.62                   | 22.4                                |                                               | 0.34                                           |
| A-B         | 1.54                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 8.63                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.34)             | 7.76                  | 0.044                        |                                  | 0.04                     | 0.04                   | 0.7                                 |                                               | 0.13                                           |
| AB-C        | ( 11.58)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 0.97                | 5.05                  | 0.193                        |                                  | 0.16                     | 0.23                   | 3.4                                 |                                               | 0.24                                           |
| C-D         | 1.50                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 8.08                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 2.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 2.34)             | 7.91                  | 0.296                        |                                  | 0.23                     | 0.29                   | 4.4                                 |                                               | 0.18                                           |
| CD-A        | ( 8.24)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.15-17.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 6.00                | 6.74                  | 0.891                        |                                  | 1.62                     | 5.30                   | 61.8                                |                                               | 0.86                                           |
| A-B         | 1.89                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 10.57               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.42                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.42)             | 7.18                  | 0.059                        |                                  | 0.04                     | 0.06                   | 0.9                                 |                                               | 0.15                                           |
| AB-C        | ( 14.07)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.19                | 4.10                  | 0.291                        |                                  | 0.23                     | 0.40                   | 5.6                                 |                                               | 0.34                                           |
| C-D         | 1.84                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 9.89                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 2.86                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 2.86)             | 7.40                  | 0.387                        |                                  | 0.29                     | 0.38                   | 5.8                                 |                                               | 0.22                                           |
| CD-A        | ( 10.09)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.30-17.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 6.00                | 6.74                  | 0.891                        |                                  | 5.30                     | 6.20                   | 87.1                                |                                               | 1.12                                           |
| A-B         | 1.89                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 10.57               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.42                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.42)             | 7.18                  | 0.059                        |                                  | 0.06                     | 0.06                   | 0.9                                 |                                               | 0.15                                           |
| AB-C        | ( 14.19)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.19                | 4.08                  | 0.292                        |                                  | 0.40                     | 0.41                   | 6.0                                 |                                               | 0.35                                           |
| C-D         | 1.84                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 9.89                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 2.86                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 2.86)             | 7.40                  | 0.387                        |                                  | 0.38                     | 0.38                   | 5.8                                 |                                               | 0.22                                           |
| CD-A        | ( 10.09)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |



| I | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 17.45-18.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | B-ACD       | 4.90                | 7.75                  | 0.632                        |                                  | 6.20                     | 1.83                   | 34.6                                |                                               | 0.43                                           | I |
| I | A-B         | 1.54                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-C         | 8.63                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-D         | 0.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | AB-CD       | ( 0.34)             | 7.76                  | 0.044                        |                                  | 0.06                     | 0.04                   | 0.7                                 |                                               | 0.13                                           | I |
| I | AB-C        | ( 11.79)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | D-ABC       | 0.97                | 5.02                  | 0.194                        |                                  | 0.41                     | 0.25                   | 3.9                                 |                                               | 0.25                                           | I |
| I | C-D         | 1.50                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-A         | 8.08                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-B         | 2.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | CD-AB       | ( 2.34)             | 7.91                  | 0.296                        |                                  | 0.38                     | 0.30                   | 4.5                                 |                                               | 0.18                                           | I |
| I | CD-A        | ( 8.24)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

| I | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 18.00-18.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | B-ACD       | 4.10                | 8.45                  | 0.486                        |                                  | 1.83                     | 0.97                   | 15.5                                |                                               | 0.24                                           | I |
| I | A-B         | 1.29                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-C         | 7.23                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-D         | 0.29                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | AB-CD       | ( 0.29)             | 8.18                  | 0.035                        |                                  | 0.04                     | 0.04                   | 0.5                                 |                                               | 0.13                                           | I |
| I | AB-C        | ( 9.76)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | D-ABC       | 0.82                | 5.72                  | 0.143                        |                                  | 0.25                     | 0.17                   | 2.6                                 |                                               | 0.20                                           | I |
| I | C-D         | 1.25                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-A         | 6.76                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-B         | 1.96                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | CD-AB       | ( 1.96)             | 8.27                  | 0.237                        |                                  | 0.30                     | 0.24                   | 3.6                                 |                                               | 0.16                                           | I |
| I | CD-A        | ( 6.90)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

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

QUEUE FOR STREAM B-ACD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|---------------------------|--------------------------------|-------|
| 17.00                     | 0.9                            | *     |
| 17.15                     | 1.6                            | **    |
| 17.30                     | 5.3                            | ***** |
| 17.45                     | 6.2                            | ***** |
| 18.00                     | 1.8                            | **    |
| 18.15                     | 1.0                            | *     |

QUEUE FOR STREAM AB-CD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.00                     | 0.0                            |
| 17.15                     | 0.0                            |
| 17.30                     | 0.1                            |
| 17.45                     | 0.1                            |
| 18.00                     | 0.0                            |
| 18.15                     | 0.0                            |

QUEUE FOR STREAM D-ABC

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.00                     | 0.2                            |
| 17.15                     | 0.2                            |
| 17.30                     | 0.4                            |
| 17.45                     | 0.4                            |
| 18.00                     | 0.2                            |
| 18.15                     | 0.2                            |

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.00                     | 0.2                            |
| 17.15                     | 0.3                            |
| 17.30                     | 0.4                            |
| 17.45                     | 0.4                            |
| 18.00                     | 0.3                            |
| 18.15                     | 0.2                            |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL DEMAND | I       | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I         |      |   |       |   |      |   |
|---|--------|---|--------------|---------|--------------|-----------|------------------------|-----------|------|---|-------|---|------|---|
| I | I      | I | I            | I       | * DELAY *    | I         | * DELAY *              | I         |      |   |       |   |      |   |
| I | I      | I | (VEH)        | (VEH/H) | (MIN)        | (MIN/VEH) | (MIN)                  | (MIN/VEH) |      |   |       |   |      |   |
| I | B-ACD  | I | 450.1        | I       | 300.1        | I         | 234.1                  | I         | 0.52 | I | 234.2 | I | 0.52 | I |
| I | A-B    | I | 141.8        | I       | 94.5         | I         |                        | I         |      | I |       | I |      | I |
| I | A-C    | I | 792.8        | I       | 528.5        | I         |                        | I         |      | I |       | I |      | I |
| I | A-D    | I | 31.7         | I       | 21.1         | I         |                        | I         |      | I |       | I |      | I |
| I | AB-CD  | I | (31.7)       | I       | (21.1)       | I         | 4.1                    | I         | 0.13 | I | 4.1   | I | 0.13 | I |
| I | AB-C   | I | (1066.1)     | I       | (710.8)      | I         |                        | I         |      | I |       | I |      | I |
| I | D-ABC  | I | 89.5         | I       | 59.6         | I         | 23.9                   | I         | 0.27 | I | 23.9  | I | 0.27 | I |
| I | C-D    | I | 137.6        | I       | 91.8         | I         |                        | I         |      | I |       | I |      | I |
| I | C-A    | I | 741.9        | I       | 494.6        | I         |                        | I         |      | I |       | I |      | I |
| I | C-B    | I | 214.7        | I       | 143.1        | I         |                        | I         |      | I |       | I |      | I |
| I | CD-AB  | I | (214.7)      | I       | (143.1)      | I         | 27.5                   | I         | 0.13 | I | 27.5  | I | 0.13 | I |
| I | CD-A   | I | (757.0)      | I       | (504.7)      | I         |                        | I         |      | I |       | I |      | I |
| I | ALL    | I | 2600.1       | I       | 1733.4       | I         | 289.6                  | I         | 0.11 | I | 289.7 | I | 0.11 | I |

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

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

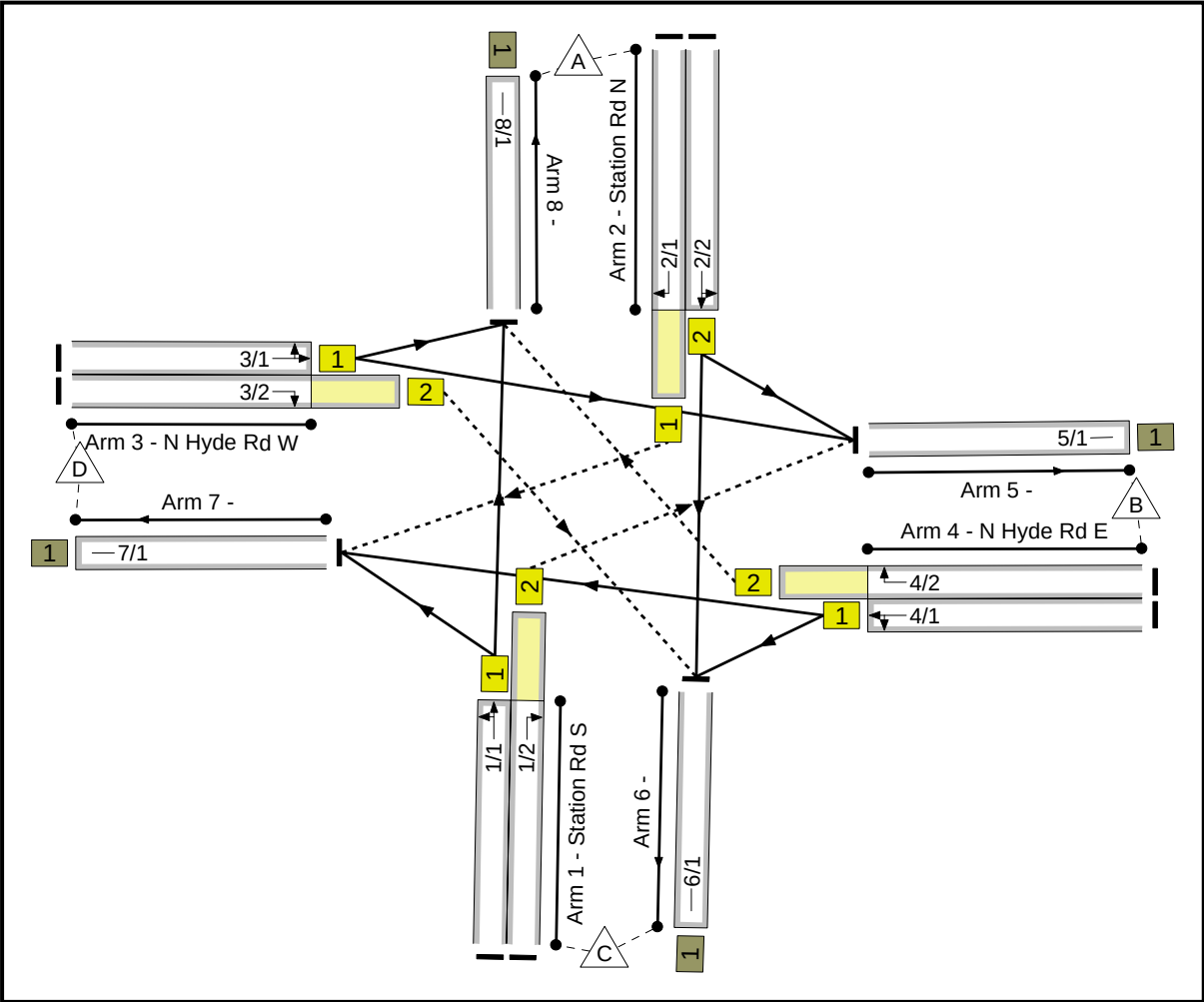
===== end of file =====

Full Input Data And Results

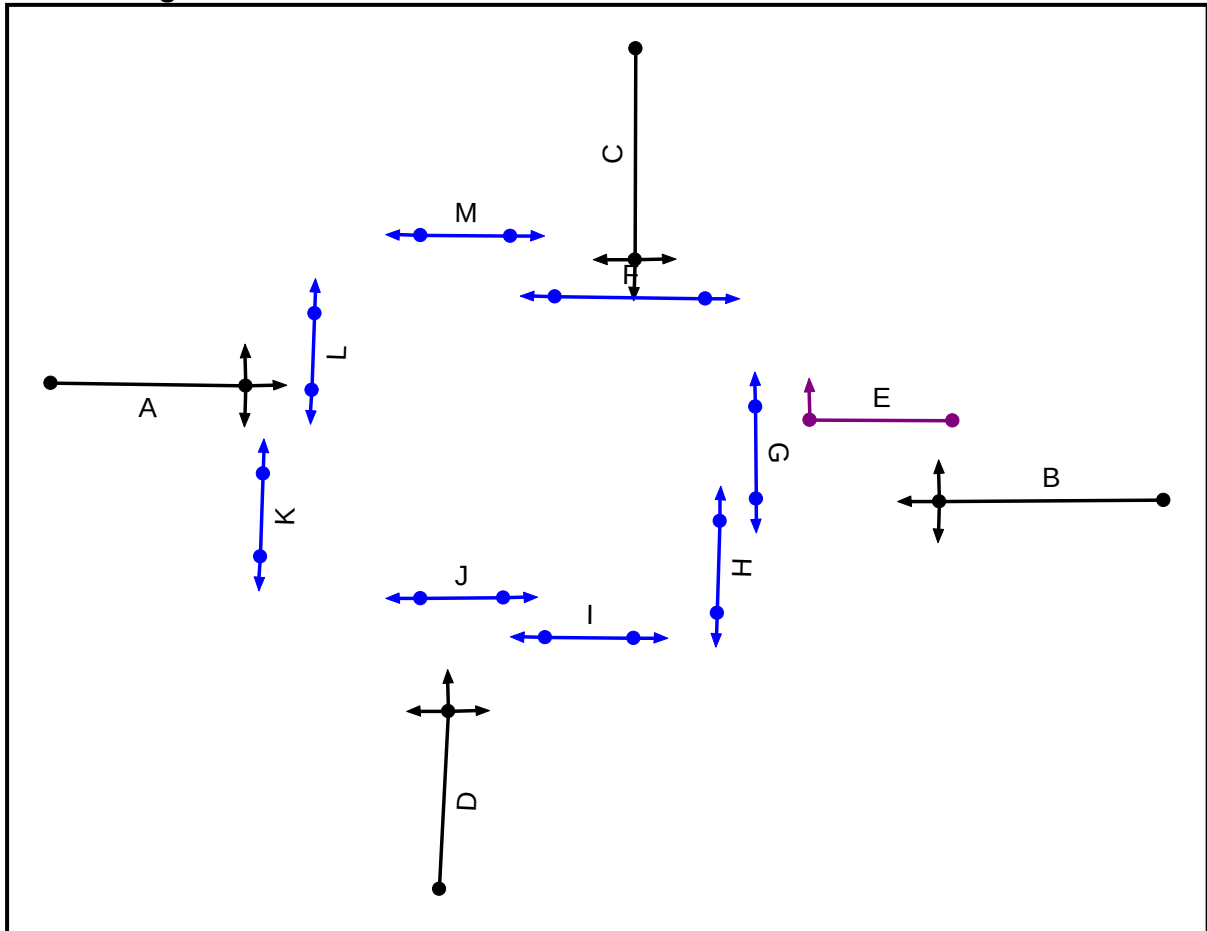
User and Project Details

|             |                 |
|-------------|-----------------|
| Project:    |                 |
| Title:      |                 |
| Location:   |                 |
| File name:  | 26_10AM_LL.lsgx |
| Author:     |                 |
| Company:    |                 |
| Address:    |                 |
| Controller: | Generic         |
| SCN:        |                 |
| Notes:      |                 |

Junction 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          | Ind. Arrow | B           | 4          | 4        |
| F          | Pedestrian |             | 1          | 1        |
| G          | Pedestrian |             | 1          | 1        |
| H          | Pedestrian |             | 1          | 1        |
| I          | Pedestrian |             | 4          | 4        |
| J          | Pedestrian |             | 1          | 1        |
| K          | Pedestrian |             | 4          | 4        |
| L          | Pedestrian |             | 1          | 1        |
| M          | Pedestrian |             | 4          | 4        |

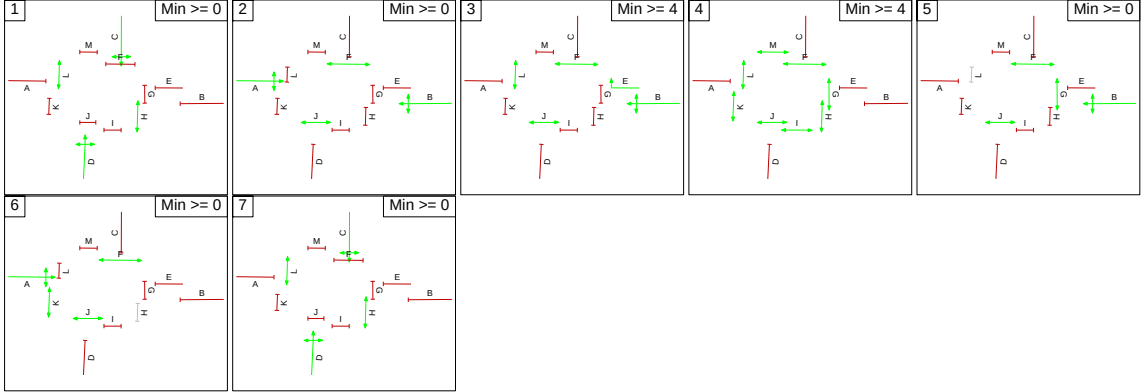
Phase Intergreens Matrix

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

Phases in Stage

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1         | C D H L         |
| 2         | A B F J         |
| 3         | B E F J L       |
| 4         | F G H I J K L M |
| 5         | B F G J         |
| 6         | A F J K         |
| 7         | C D H L         |

Stages Diagram



**Phase Delays**

| Term. Stage | Start Stage | Phase | Type   | Value | Cont value |
|-------------|-------------|-------|--------|-------|------------|
| 1           | 2           | C     | Losing | 3     | 3          |
| 1           | 2           | D     | Losing | 3     | 3          |
| 2           | 1           | A     | Losing | 3     | 3          |
| 2           | 1           | B     | Losing | 3     | 3          |

**Prohibited Stage Changes**

| From Stage | To Stage |    |    |    |    |    |    |
|------------|----------|----|----|----|----|----|----|
|            | 1        | 2  | 3  | 4  | 5  | 6  | 7  |
|            | 1        | 10 | 10 | 10 | 10 | 10 | 0  |
|            | 2        | 9  | 10 | 5  | 10 | 9  | 10 |
|            | 3        | 9  | 9  | 10 | 5  | 10 | 9  |
|            | 4        | 9  | 10 | 10 | 10 | 9  | 9  |
|            | 5        | 9  | 8  | 8  | 10 | 10 | 9  |
|            | 6        | 9  | 8  | 10 | 9  | 10 | 9  |
|            | 7        | 0  | 10 | 10 | 10 | 10 | 10 |

**Link Input Data**

| Arm/ Link | Link Name               | Link Type | Num Lanes | Phases | Start Disp. | End Disp. |
|-----------|-------------------------|-----------|-----------|--------|-------------|-----------|
| 1/1       | Station Rd S Left Ahead | U         | 1         | D      | 2           | 3         |
| 1/2       | Station Rd S Right      | O         | 1         | D      | 2           | 3         |
| 2/1       | Station Rd N Right      | O         | 1         | C      | 2           | 3         |
| 2/2       | Station Rd N Left Ahead | U         | 1         | C      | 2           | 3         |
| 3/1       | N Hyde Rd W Ahead Left  | U         | 1         | A      | 2           | 3         |
| 3/2       | N Hyde Rd W Right       | O         | 1         | A      | 2           | 3         |
| 4/1       | N Hyde Rd E Left Ahead  | U         | 1         | B      | 2           | 3         |
| 4/2       | N Hyde Rd E Right       | O         | 1         | B E    | 2           | 3         |
| 5/1       |                         | U         | 1         |        | 2           | 3         |
| 6/1       |                         | U         | 1         |        | 2           | 3         |
| 7/1       |                         | U         | 1         |        | 2           | 3         |
| 8/1       |                         | U         | 1         |        | 2           | 3         |

# Full Input Data And Results

## Give-Way Link Input Data

| Arm/<br>Link | Link Name             | Movement   | Max Flow when<br>Giving Way<br>(PCU/Hr) | Opposing<br>Link | Opp. Link<br>Coeff. | Opp.<br>Mvmnts. | Right Turn<br>Storage (PCU) | RTF  | Right Turn<br>Move up time<br>(s) | Max Turns in<br>Intergreen (PCU) |
|--------------|-----------------------|------------|-----------------------------------------|------------------|---------------------|-----------------|-----------------------------|------|-----------------------------------|----------------------------------|
| 1/2          | Station Rd<br>S Right | 1/2 to 5/1 | 1440                                    | 2/2              | 1.09                | 2/2             | 4.00                        | 0.50 | 4                                 | 4.00                             |
| 2/1          | Station Rd<br>N Right | 2/1 to 7/1 | 1440                                    | 1/1              | 1.09                | 1/1             | 4.00                        | 0.50 | 4                                 | 2.00                             |
| 3/2          | N Hyde Rd<br>W Right  | 3/2 to 6/1 | 1440                                    | 4/1              | 1.09                | 4/1             | 4.00                        | 0.50 | 4                                 | 4.00                             |
| 4/2          | N Hyde Rd<br>E Right  | 4/2 to 8/1 | 1440                                    | 3/1              | 1.09                | 3/1             | 4.00                        | 0.50 | 4                                 | 4.00                             |

## Lane Input Data

| Arm/<br>Lane                    | Link<br>Num                            | Physical<br>Length<br>(PCU) | Expected<br>Usage<br>(PCU) | Sat<br>Flow<br>Type | User<br>Saturation<br>Flow<br>(PCU/Hr) | Lane<br>Width<br>(m) | Gradient | Nearside<br>Lane | Allowed<br>Turns                    | Turning<br>Radius<br>(m) |
|---------------------------------|----------------------------------------|-----------------------------|----------------------------|---------------------|----------------------------------------|----------------------|----------|------------------|-------------------------------------|--------------------------|
| 1/1<br>(Station Rd S<br>Lane 1) | Link 1<br>(Station Rd S<br>Left Ahead) | Inf                         | Inf                        | User                | 1833                                   | 3.25                 | 0.00     | Y                | Arm 7<br>Left<br><br>Arm 8<br>Ahead | Inf<br><br>Inf           |
| 1/2<br>(Station Rd S<br>Lane 2) | Link 2<br>(Station Rd S<br>Right)      | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 5<br>Right                      | 15.00                    |
| 2/1<br>(Station Rd N<br>Lane 1) | Link 2<br>(Station Rd N<br>Left Ahead) | Inf                         | Inf                        | User                | 1919                                   | 3.25                 | 0.00     | Y                | Arm 5<br>Left<br><br>Arm 6<br>Ahead | Inf<br><br>Inf           |
| 2/2<br>(Station Rd N<br>Lane 2) | Link 1<br>(Station Rd N<br>Right)      | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 7<br>Right                      | 14.00                    |
| 3/1<br>(N Hyde Rd W<br>Lane 1)  | Link 1<br>(N Hyde Rd W<br>Ahead Left)  | Inf                         | Inf                        | User                | 1818                                   | 3.25                 | 0.00     | Y                | Arm 5<br>Ahead<br><br>Arm 8<br>Left | Inf<br><br>Inf           |
| 3/2<br>(N Hyde Rd W<br>Lane 2)  | Link 2<br>(N Hyde Rd W<br>Right)       | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 6<br>Right                      | 17.00                    |
| 4/1<br>(N Hyde Rd E<br>Lane 1)  | Link 1<br>(N Hyde Rd E<br>Left Ahead)  | Inf                         | Inf                        | User                | 1821                                   | 3.25                 | 0.00     | Y                | Arm 6<br>Left<br><br>Arm 7<br>Ahead | Inf<br><br>Inf           |
| 4/2<br>(N Hyde Rd E<br>Lane 2)  | Link 2<br>(N Hyde Rd E<br>Right)       | Inf                         | Inf                        | Geom                | 1800                                   | 3.60                 | 0.00     | Y                | Arm 8<br>Right                      | 17.00                    |
| 5/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |
| 6/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |
| 7/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |



Full Input Data And Results

|     |        |     |     |      |      |      |      |   |  |  |
|-----|--------|-----|-----|------|------|------|------|---|--|--|
| 8/1 | Link 1 | Inf | Inf | User | 1800 | 3.25 | 0.00 | Y |  |  |
|-----|--------|-----|-----|------|------|------|------|---|--|--|

Traffic Flow Groups

| Flow Group                   | Start Time | End Time | Duration | Formula |
|------------------------------|------------|----------|----------|---------|
| 25: 'Base + Com 2024 AM Sen' | 08:00      | 09:00    | 01:00    |         |

Scenario 19: 'Base + Com 2024 AM Sen'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 25: 'Base + Com 2024 AM Sen'

Traffic Flow Matrix

Desired Flow :

| Origin | Destination |     |     |     |     |      |
|--------|-------------|-----|-----|-----|-----|------|
|        |             | A   | B   | C   | D   | Tot. |
|        | A           | 0   | 155 | 456 | 142 | 753  |
|        | B           | 143 | 0   | 384 | 432 | 959  |
|        | C           | 305 | 163 | 0   | 122 | 590  |
|        | D           | 109 | 244 | 81  | 0   | 434  |
|        | Tot.        | 557 | 562 | 921 | 696 | 2736 |

Link Traffic Flows

| Arm/Link | Flow Group 25: Base + Com 2024 AM Sen |
|----------|---------------------------------------|
| 1/1      | 427                                   |
| 1/2      | 163                                   |
| 2/1      | 142                                   |
| 2/2      | 611                                   |
| 3/1      | 353                                   |
| 3/2      | 81                                    |
| 4/1      | 816                                   |
| 4/2      | 143                                   |
| 5/1      | 562                                   |
| 6/1      | 921                                   |
| 7/1      | 696                                   |
| 8/1      | 557                                   |

Lane Saturation Flows

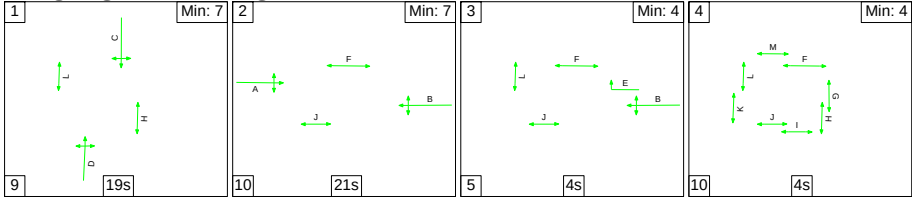
| Arm/<br>Lane                 | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Rd S Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1833                 |
| 1/2<br>(Station Rd S Lane 2) | 3.00                                              | 0.00     | Y                | Arm 5 Right      | 15.00                    | 100.0 %          | 1741                 |
| 2/1<br>(Station Rd N Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1919                 |
| 2/2<br>(Station Rd N Lane 2) | 3.00                                              | 0.00     | Y                | Arm 7 Right      | 14.00                    | 100.0 %          | 1730                 |
| 3/1<br>(N Hyde Rd W Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1818                 |
| 3/2<br>(N Hyde Rd W Lane 2)  | 3.00                                              | 0.00     | Y                | Arm 6 Right      | 17.00                    | 100.0 %          | 1760                 |
| 4/1<br>(N Hyde Rd E Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1821                 |
| 4/2<br>(N Hyde Rd E Lane 2)  | 3.60                                              | 0.00     | Y                | Arm 8 Right      | 17.00                    | 100.0 %          | 1815                 |
| 5/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 7/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 8/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

Scenario 19: 'Base + Com 2024 AM Sen'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 25: 'Base + Com 2024 AM Sen'

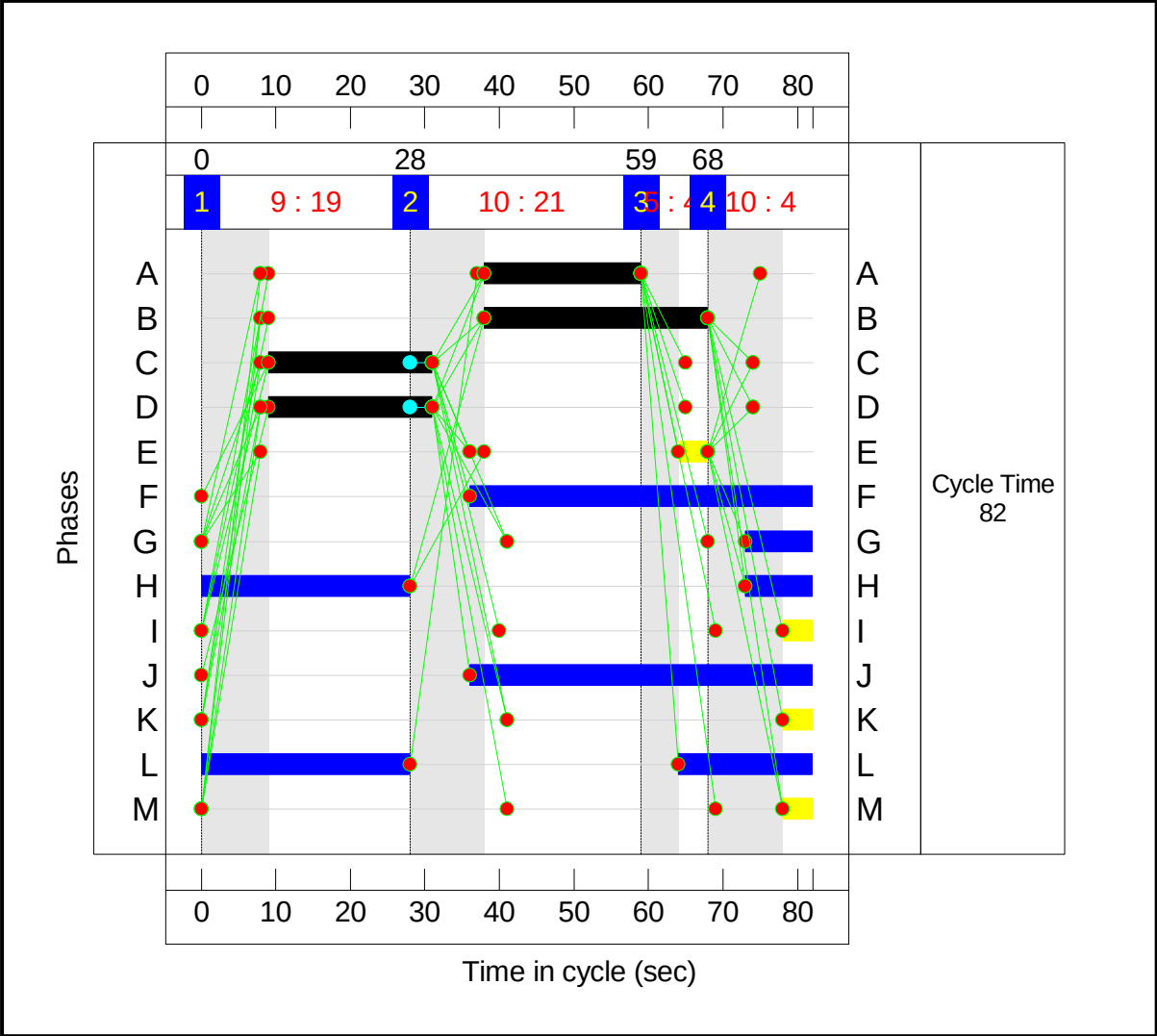
Staging Plan Diagram



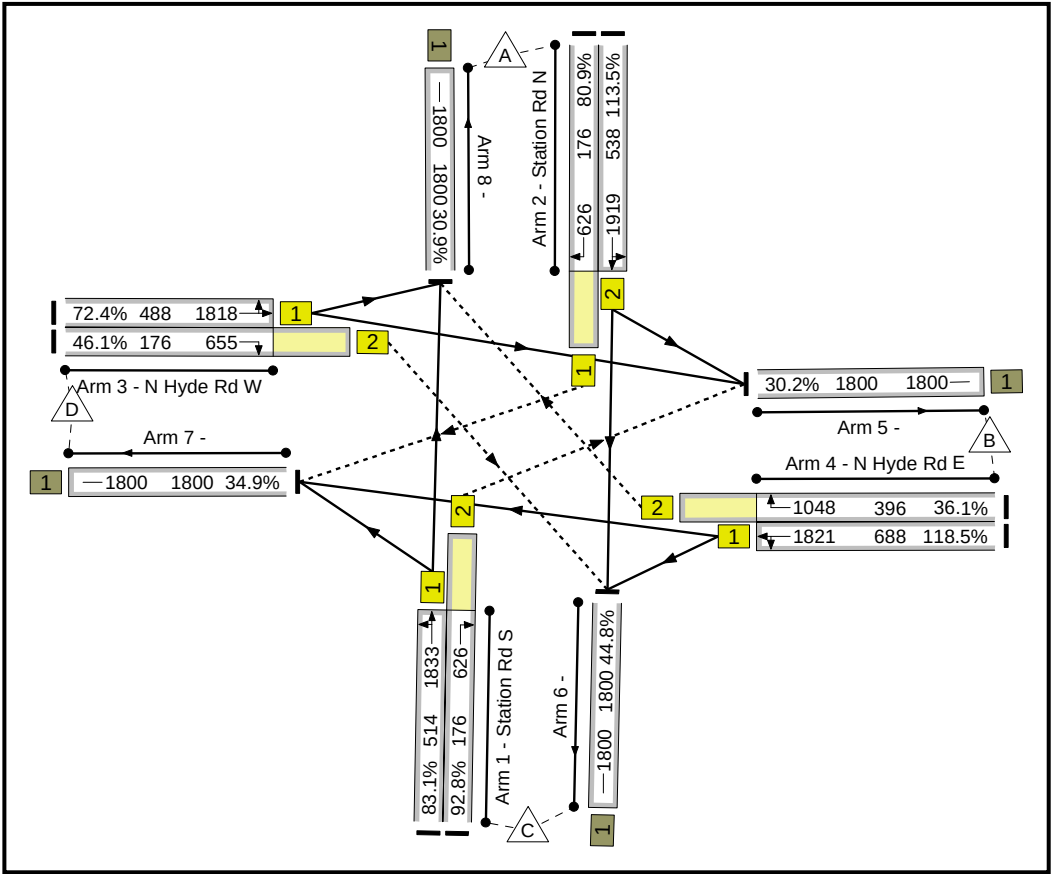
Stage Timings

| Stage        | 1  | 2  | 3  | 4  |
|--------------|----|----|----|----|
| Duration     | 19 | 21 | 4  | 4  |
| Change Point | 0  | 28 | 59 | 68 |

Signal Timings Diagram



Junction Layout Diagram



## Full Input Data And Results

### Link Results

| Link Num | Link Desc               | Link Type | Stage Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Max Sat Flow (pcu/Hr) | Ave Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|----------|-------------------------|-----------|--------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-----------------------|-----------------------|----------------|-------------|
| 1/1      | Station Rd S Left Ahead | U         | N/A          | N/A                        | D          |             | 1          | 22              | -               | 427               | 1833                  | 1833                  | 514            | 83.1        |
| 1/2      | Station Rd S Right      | O         | N/A          | N/A                        | D          |             | 1          | 22              | -               | 163               | 1741                  | 626                   | 176            | 92.8        |
| 2/1      | Station Rd N Right      | O         | N/A          | N/A                        | C          |             | 1          | 22              | -               | 142               | 1730                  | 626                   | 176            | 80.9        |
| 2/2      | Station Rd N Left Ahead | U         | N/A          | N/A                        | C          |             | 1          | 22              | -               | 611               | 1919                  | 1919                  | 538            | 113.5       |
| 3/1      | N Hyde Rd W Ahead Left  | U         | N/A          | N/A                        | A          |             | 1          | 21              | -               | 353               | 1818                  | 1818                  | 488            | 72.4        |
| 3/2      | N Hyde Rd W Right       | O         | N/A          | N/A                        | A          |             | 1          | 21              | -               | 81                | 1760                  | 655                   | 176            | 46.1        |
| 4/1      | N Hyde Rd E Left Ahead  | U         | N/A          | N/A                        | B          |             | 1          | 30              | -               | 816               | 1821                  | 1821                  | 688            | 118.5       |
| 4/2      | N Hyde Rd E Right       | O         | N/A          | N/A                        | B          | E           | 1          | 30              | 4               | 143               | 1815                  | 1048                  | 396            | 36.1        |
| 5/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 562               | 1800                  | 1800                  | 1800           | 30.2        |
| 6/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 921               | 1800                  | 1800                  | 1800           | 44.8        |
| 7/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 696               | 1800                  | 1800                  | 1800           | 34.9        |
| 8/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 557               | 1800                  | 1800                  | 1800           | 30.9        |

## Full Input Data And Results

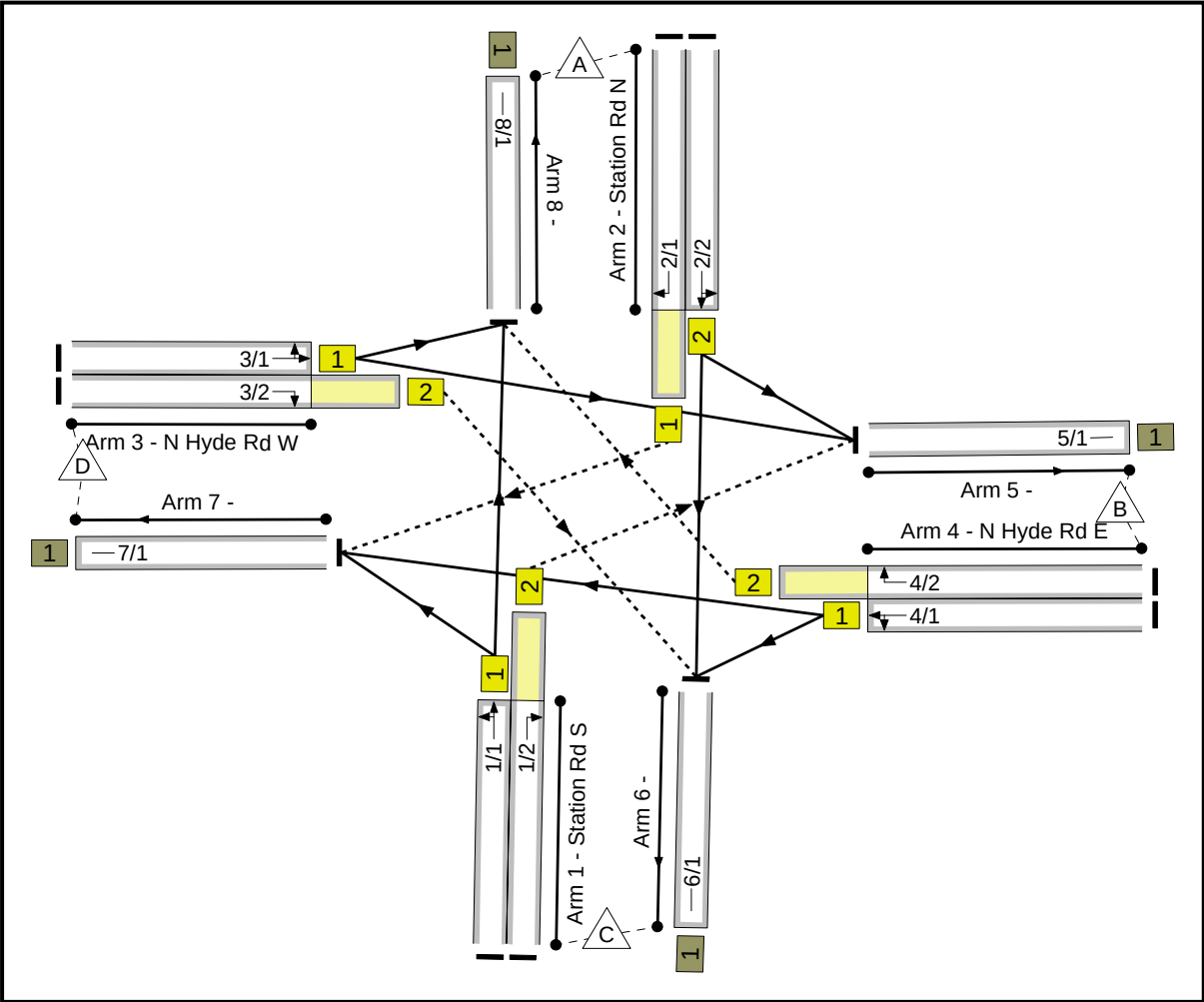
| Link Num                                                | Entering (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu)                                                   | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per Veh (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |  |
|---------------------------------------------------------|----------------|---------------|-----------------------|--------------------------------------------------------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|--|
| 1/1                                                     | 427            | 427           | -                     | -                                                                              | -                           | 3.3                   | 2.3                          | -                                  | 5.6                 | 47.3                      | 9.0                              | 2.3                        | 11.3                 |  |
| 1/2                                                     | 163            | 163           | 0                     | 0                                                                              | 163                         | 1.1                   | 4.0                          | 0.9                                | 5.9                 | 130.5                     | 2.9                              | 4.0                        | 6.9                  |  |
| 2/1                                                     | 142            | 142           | 59                    | 0                                                                              | 83                          | 1.0                   | 1.9                          | 0.7                                | 3.6                 | 90.2                      | 2.6                              | 1.9                        | 4.5                  |  |
| 2/2                                                     | 611            | 538           | -                     | -                                                                              | -                           | 7.9                   | 40.2                         | -                                  | 48.1                | 283.1                     | 15.6                             | 40.2                       | 55.7                 |  |
| 3/1                                                     | 353            | 353           | -                     | -                                                                              | -                           | 2.7                   | 1.3                          | -                                  | 4.0                 | 40.4                      | 7.3                              | 1.3                        | 8.5                  |  |
| 3/2                                                     | 81             | 81            | 0                     | 0                                                                              | 81                          | 0.5                   | 0.4                          | 0.6                                | 1.5                 | 68.8                      | 1.4                              | 0.4                        | 1.8                  |  |
| 4/1                                                     | 816            | 688           | -                     | -                                                                              | -                           | 10.1                  | 66.8                         | -                                  | 76.9                | 339.2                     | 21.9                             | 66.8                       | 88.7                 |  |
| 4/2                                                     | 143            | 143           | 94                    | 42                                                                             | 7                           | 0.7                   | 0.3                          | 0.4                                | 1.4                 | 35.6                      | 2.2                              | 0.3                        | 2.5                  |  |
| 5/1                                                     | 544            | 544           | -                     | -                                                                              | -                           | 0.0                   | 0.2                          | -                                  | 0.3                 | 1.6                       | 5.1                              | 0.2                        | 5.3                  |  |
| 6/1                                                     | 807            | 807           | -                     | -                                                                              | -                           | 0.0                   | 0.4                          | -                                  | 0.4                 | 1.6                       | 0.0                              | 0.4                        | 0.4                  |  |
| 7/1                                                     | 628            | 628           | -                     | -                                                                              | -                           | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.4                       | 0.0                              | 0.3                        | 0.3                  |  |
| 8/1                                                     | 557            | 557           | -                     | -                                                                              | -                           | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 0.0                              | 0.2                        | 0.2                  |  |
| PRC for Signalled Links (%):<br>PRC Over All Links (%): |                |               | -31.7<br>-31.7        | Total Delay for Signalled Links (pcuHr):<br>Total Delay Over All Links(pcuHr): |                             |                       | 146.94<br>148.09             | Cycle Time (s): 82                 |                     |                           |                                  |                            |                      |  |

Full Input Data And Results

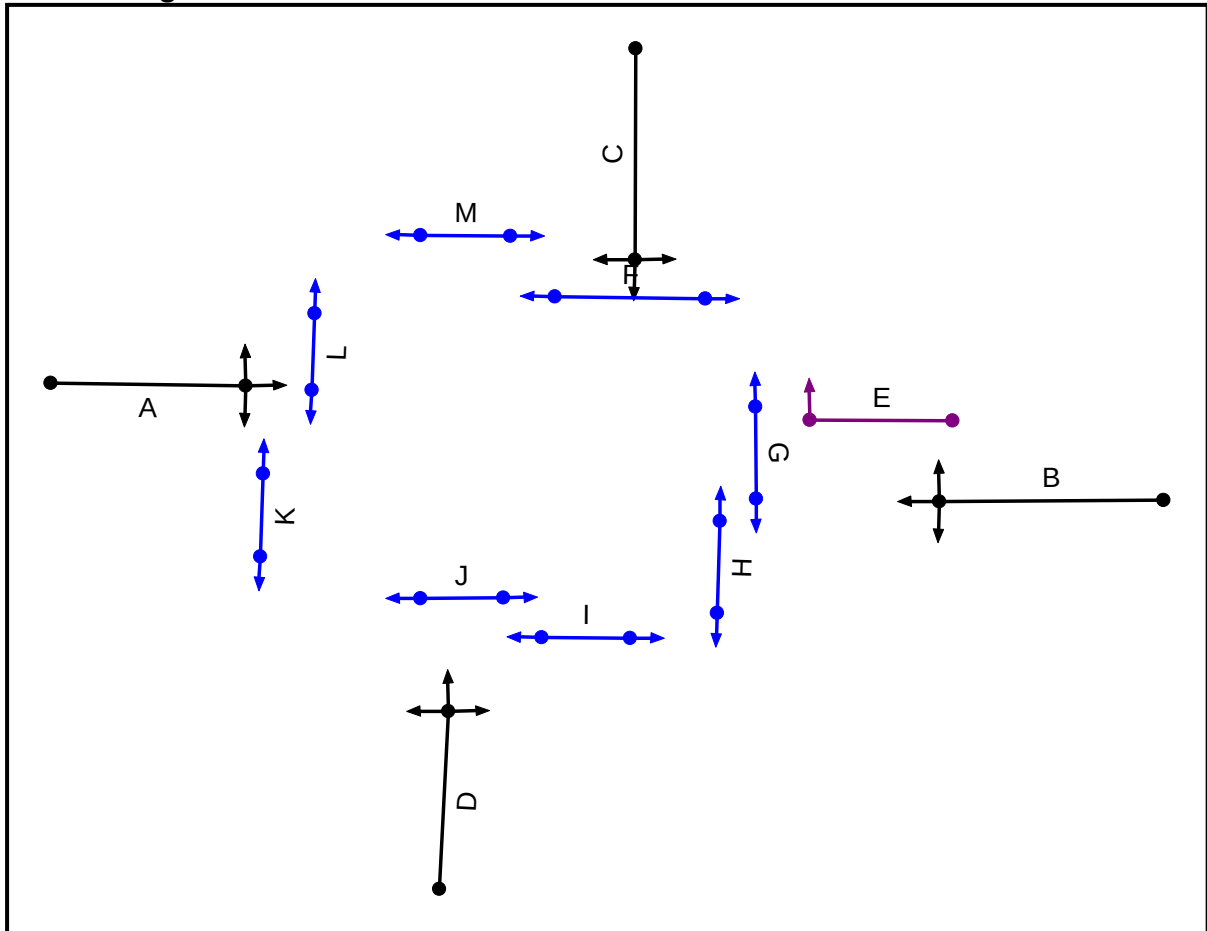
User and Project Details

|             |                 |
|-------------|-----------------|
| Project:    |                 |
| Title:      |                 |
| Location:   |                 |
| File name:  | 26_10PM_LL.lsgx |
| Author:     |                 |
| Company:    |                 |
| Address:    |                 |
| Controller: | Generic         |
| SCN:        |                 |
| Notes:      |                 |

Junction 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          | Ind. Arrow | B           | 4          | 4        |
| F          | Pedestrian |             | 5          | 5        |
| G          | Pedestrian |             | 5          | 5        |
| H          | Pedestrian |             | 5          | 5        |
| I          | Pedestrian |             | 5          | 5        |
| J          | Pedestrian |             | 5          | 5        |
| K          | Pedestrian |             | 5          | 5        |
| L          | Pedestrian |             | 5          | 5        |
| M          | Pedestrian |             | 5          | 5        |



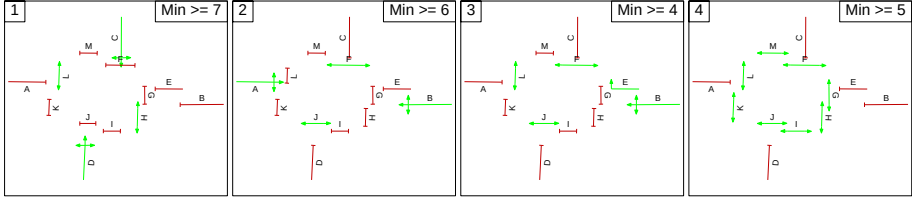
Phase Intergreens Matrix

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

Phases in Stage

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1         | C D H L         |
| 2         | A B F J         |
| 3         | B E F J L       |
| 4         | F G H I J K L M |

Stages Diagram



Phase Delays

| Term. Stage | Start Stage | Phase | Type   | Value | Cont value |
|-------------|-------------|-------|--------|-------|------------|
| 1           | 2           | C     | Losing | 3     | 3          |
| 1           | 2           | D     | Losing | 3     | 3          |
| 2           | 1           | A     | Losing | 3     | 3          |
| 2           | 1           | B     | Losing | 3     | 3          |

**Prohibited Stage Changes**

|            | To Stage |   |    |    |    |
|------------|----------|---|----|----|----|
| From Stage |          | 1 | 2  | 3  | 4  |
|            | 1        |   | 10 | 10 | 10 |
|            | 2        | 9 |    | 5  | 10 |
|            | 3        | 9 | 9  |    | 10 |
|            | 4        | 9 | 10 | 10 |    |

**Link Input Data**

| Arm/ Link | Link Name               | Link Type | Num Lanes | Phases | Start Disp. | End Disp. |
|-----------|-------------------------|-----------|-----------|--------|-------------|-----------|
| 1/1       | Station Rd S Left Ahead | U         | 1         | D      | 2           | 3         |
| 1/2       | Station Rd S Right      | O         | 1         | D      | 2           | 3         |
| 2/1       | Station Rd N Right      | O         | 1         | C      | 2           | 3         |
| 2/2       | Station Rd N Left Ahead | U         | 1         | C      | 2           | 3         |
| 3/1       | N Hyde Rd W Ahead Left  | U         | 1         | A      | 2           | 3         |
| 3/2       | N Hyde Rd W Right       | O         | 1         | A      | 2           | 3         |
| 4/1       | N Hyde Rd E Left Ahead  | U         | 1         | B      | 2           | 3         |
| 4/2       | N Hyde Rd E Right       | O         | 1         | B E    | 2           | 3         |
| 5/1       |                         | U         | 1         |        | 2           | 3         |
| 6/1       |                         | U         | 1         |        | 2           | 3         |
| 7/1       |                         | U         | 1         |        | 2           | 3         |
| 8/1       |                         | U         | 1         |        | 2           | 3         |

# Full Input Data And Results

## Give-Way Link Input Data

| Arm/<br>Link | Link Name             | Movement   | Max Flow when<br>Giving Way<br>(PCU/Hr) | Opposing<br>Link | Opp. Link<br>Coeff. | Opp.<br>Mvmnts. | Right Turn<br>Storage (PCU) | RTF  | Right Turn<br>Move up time<br>(s) | Max Turns in<br>Intergreen (PCU) |
|--------------|-----------------------|------------|-----------------------------------------|------------------|---------------------|-----------------|-----------------------------|------|-----------------------------------|----------------------------------|
| 1/2          | Station Rd<br>S Right | 1/2 to 5/1 | 1440                                    | 2/2              | 1.09                | 2/2             | 4.00                        | 0.50 | 4                                 | 4.00                             |
| 2/1          | Station Rd<br>N Right | 2/1 to 7/1 | 1440                                    | 1/1              | 1.09                | 1/1             | 4.00                        | 0.50 | 4                                 | 2.00                             |
| 3/2          | N Hyde Rd<br>W Right  | 3/2 to 6/1 | 1440                                    | 4/1              | 1.09                | 4/1             | 4.00                        | 0.50 | 4                                 | 4.00                             |
| 4/2          | N Hyde Rd<br>E Right  | 4/2 to 8/1 | 1440                                    | 3/1              | 1.09                | 3/1             | 4.00                        | 0.50 | 4                                 | 4.00                             |

## Lane Input Data

| Arm/<br>Lane                    | Link<br>Num                            | Physical<br>Length<br>(PCU) | Expected<br>Usage<br>(PCU) | Sat<br>Flow<br>Type | User<br>Saturation<br>Flow<br>(PCU/Hr) | Lane<br>Width<br>(m) | Gradient | Nearside<br>Lane | Allowed<br>Turns                    | Turning<br>Radius<br>(m) |
|---------------------------------|----------------------------------------|-----------------------------|----------------------------|---------------------|----------------------------------------|----------------------|----------|------------------|-------------------------------------|--------------------------|
| 1/1<br>(Station Rd S<br>Lane 1) | Link 1<br>(Station Rd S<br>Left Ahead) | Inf                         | Inf                        | User                | 1833                                   | 3.25                 | 0.00     | Y                | Arm 7<br>Left<br><br>Arm 8<br>Ahead | Inf<br><br>Inf           |
| 1/2<br>(Station Rd S<br>Lane 2) | Link 2<br>(Station Rd S<br>Right)      | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 5<br>Right                      | 15.00                    |
| 2/1<br>(Station Rd N<br>Lane 1) | Link 2<br>(Station Rd N<br>Left Ahead) | Inf                         | Inf                        | User                | 1919                                   | 3.25                 | 0.00     | Y                | Arm 5<br>Left<br><br>Arm 6<br>Ahead | Inf<br><br>Inf           |
| 2/2<br>(Station Rd N<br>Lane 2) | Link 1<br>(Station Rd N<br>Right)      | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 7<br>Right                      | 14.00                    |
| 3/1<br>(N Hyde Rd W<br>Lane 1)  | Link 1<br>(N Hyde Rd W<br>Ahead Left)  | Inf                         | Inf                        | User                | 1818                                   | 3.25                 | 0.00     | Y                | Arm 5<br>Ahead<br><br>Arm 8<br>Left | Inf<br><br>Inf           |
| 3/2<br>(N Hyde Rd W<br>Lane 2)  | Link 2<br>(N Hyde Rd W<br>Right)       | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 6<br>Right                      | 17.00                    |
| 4/1<br>(N Hyde Rd E<br>Lane 1)  | Link 1<br>(N Hyde Rd E<br>Left Ahead)  | Inf                         | Inf                        | User                | 1821                                   | 3.25                 | 0.00     | Y                | Arm 6<br>Left<br><br>Arm 7<br>Ahead | Inf<br><br>Inf           |
| 4/2<br>(N Hyde Rd E<br>Lane 2)  | Link 2<br>(N Hyde Rd E<br>Right)       | Inf                         | Inf                        | Geom                | 1800                                   | 3.60                 | 0.00     | Y                | Arm 8<br>Right                      | 17.00                    |
| 5/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |
| 6/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |
| 7/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |

|     |        |     |     |      |      |      |      |   |  |  |
|-----|--------|-----|-----|------|------|------|------|---|--|--|
| 8/1 | Link 1 | Inf | Inf | User | 1800 | 3.25 | 0.00 | Y |  |  |
|-----|--------|-----|-----|------|------|------|------|---|--|--|

Traffic Flow Groups

| Flow Group                   | Start Time | End Time | Duration | Formula |
|------------------------------|------------|----------|----------|---------|
| 25: 'Base + Com 2024 PM Sen' | 17:30      | 18:30    | 01:00    |         |

Scenario 19: 'Base + Com 2024 PM Sen'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 25: 'Base + Com 2024 PM Sen'

Traffic Flow Matrix

Desired Flow :

| Origin | Destination |     |     |     |     |      |
|--------|-------------|-----|-----|-----|-----|------|
|        |             | A   | B   | C   | D   | Tot. |
|        | A           | 0   | 158 | 335 | 128 | 621  |
|        | B           | 226 | 0   | 324 | 363 | 913  |
|        | C           | 336 | 326 | 0   | 103 | 765  |
|        | D           | 115 | 270 | 70  | 0   | 455  |
|        | Tot.        | 677 | 754 | 729 | 594 | 2754 |

Link Traffic Flows

| Arm/Link | Flow Group 25: Base + Com 2024 PM Sen |
|----------|---------------------------------------|
| 1/1      | 439                                   |
| 1/2      | 326                                   |
| 2/1      | 128                                   |
| 2/2      | 493                                   |
| 3/1      | 385                                   |
| 3/2      | 70                                    |
| 4/1      | 687                                   |
| 4/2      | 226                                   |
| 5/1      | 754                                   |
| 6/1      | 729                                   |
| 7/1      | 594                                   |
| 8/1      | 677                                   |

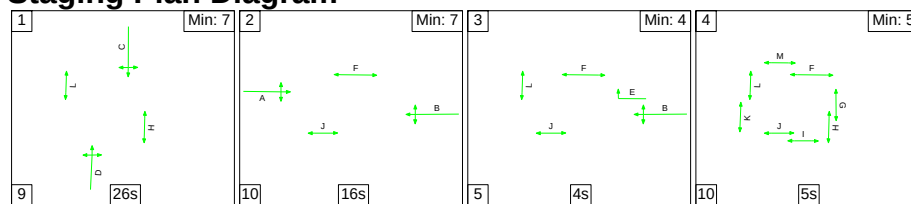
**Lane Saturation Flows**

| Arm/<br>Lane                 | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Rd S Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1833                 |
| 1/2<br>(Station Rd S Lane 2) | 3.00                                              | 0.00     | Y                | Arm 5 Right      | 15.00                    | 100.0 %          | 1741                 |
| 2/1<br>(Station Rd N Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1919                 |
| 2/2<br>(Station Rd N Lane 2) | 3.00                                              | 0.00     | Y                | Arm 7 Right      | 14.00                    | 100.0 %          | 1730                 |
| 3/1<br>(N Hyde Rd W Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1818                 |
| 3/2<br>(N Hyde Rd W Lane 2)  | 3.00                                              | 0.00     | Y                | Arm 6 Right      | 17.00                    | 100.0 %          | 1760                 |
| 4/1<br>(N Hyde Rd E Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1821                 |
| 4/2<br>(N Hyde Rd E Lane 2)  | 3.60                                              | 0.00     | Y                | Arm 8 Right      | 17.00                    | 100.0 %          | 1815                 |
| 5/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 7/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 8/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

**Scenario 19: 'Base + Com 2024 PM Sen'**

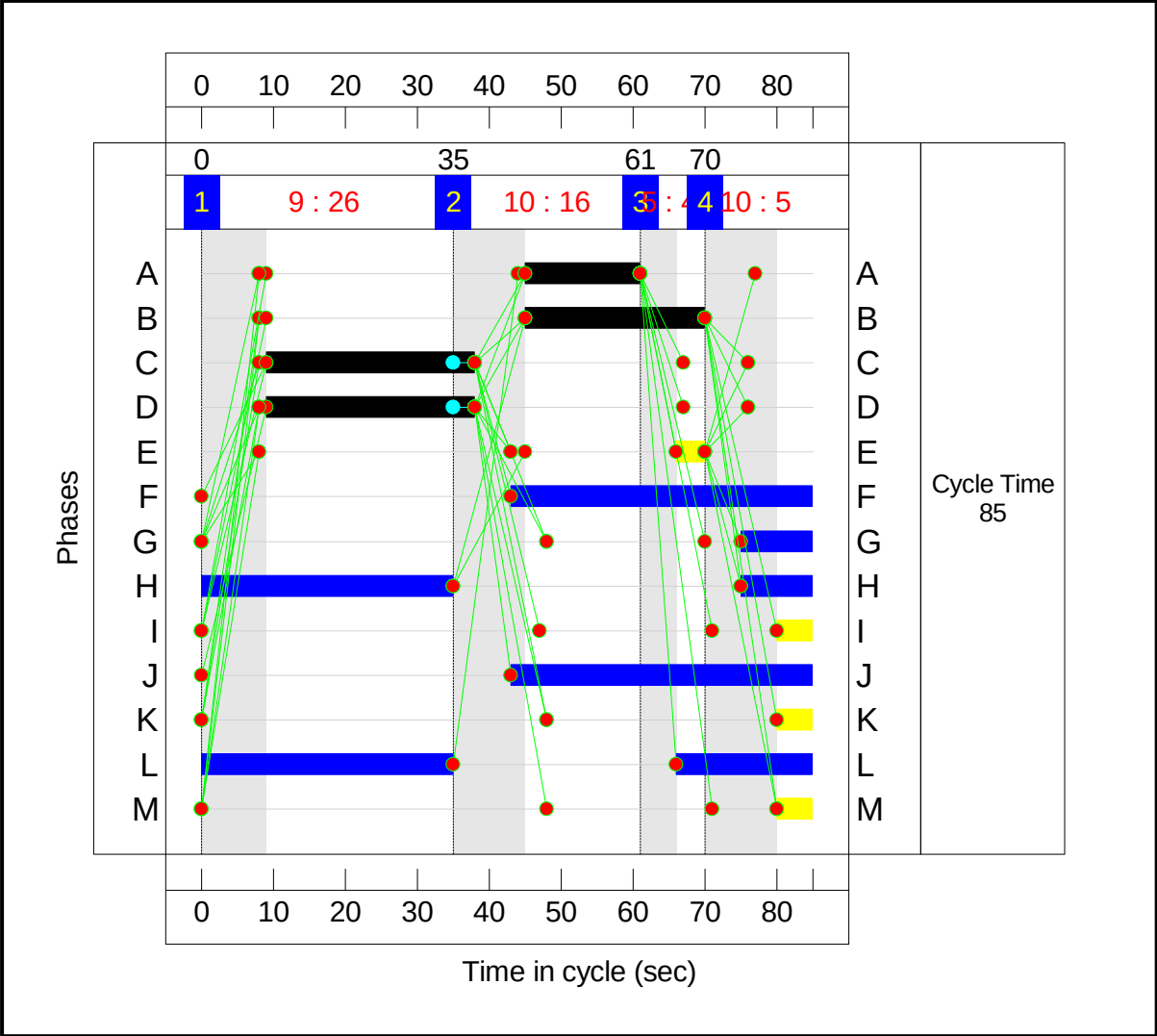
Staging Plan 1: 'Staging Plan No. 1'

Flow Group 25: 'Base + Com 2024 PM Sen'

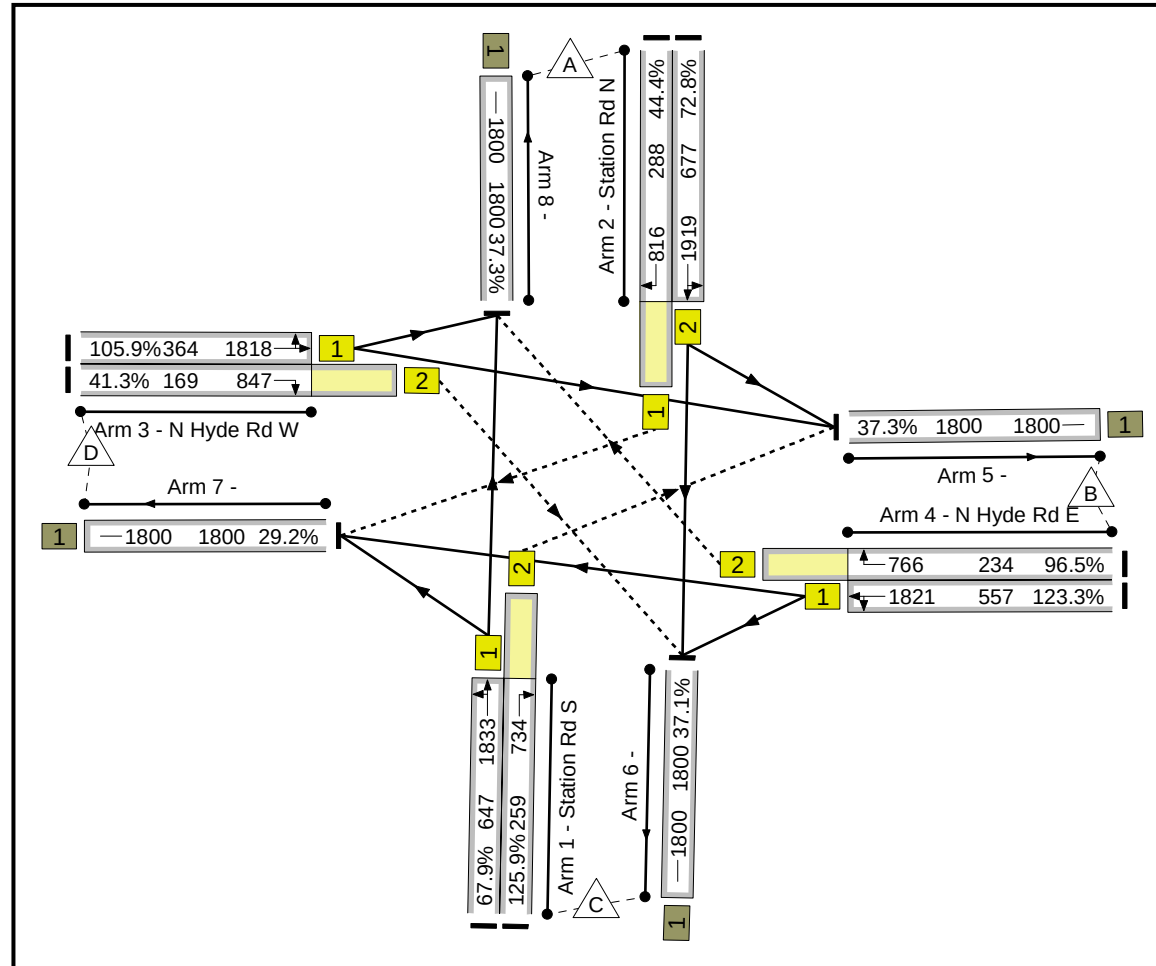
**Staging Plan Diagram****Stage Timings**

| Stage        | 1  | 2  | 3  | 4  |
|--------------|----|----|----|----|
| Duration     | 26 | 16 | 4  | 5  |
| Change Point | 0  | 35 | 61 | 70 |

Signal Timings Diagram



## Junction Layout Diagram





## Full Input Data And Results

### Link Results

| Link Num | Link Desc               | Link Type | Stage Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Max Sat Flow (pcu/Hr) | Ave Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|----------|-------------------------|-----------|--------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-----------------------|-----------------------|----------------|-------------|
| 1/1      | Station Rd S Left Ahead | U         | N/A          | N/A                        | D          |             | 1          | 29              | -               | 439               | 1833                  | 1833                  | 647            | 67.9        |
| 1/2      | Station Rd S Right      | O         | N/A          | N/A                        | D          |             | 1          | 29              | -               | 326               | 1741                  | 734                   | 259            | 125.9       |
| 2/1      | Station Rd N Right      | O         | N/A          | N/A                        | C          |             | 1          | 29              | -               | 128               | 1730                  | 816                   | 288            | 44.4        |
| 2/2      | Station Rd N Left Ahead | U         | N/A          | N/A                        | C          |             | 1          | 29              | -               | 493               | 1919                  | 1919                  | 677            | 72.8        |
| 3/1      | N Hyde Rd W Ahead Left  | U         | N/A          | N/A                        | A          |             | 1          | 16              | -               | 385               | 1818                  | 1818                  | 364            | 105.9       |
| 3/2      | N Hyde Rd W Right       | O         | N/A          | N/A                        | A          |             | 1          | 16              | -               | 70                | 1760                  | 847                   | 169            | 41.3        |
| 4/1      | N Hyde Rd E Left Ahead  | U         | N/A          | N/A                        | B          |             | 1          | 25              | -               | 687               | 1821                  | 1821                  | 557            | 123.3       |
| 4/2      | N Hyde Rd E Right       | O         | N/A          | N/A                        | B          | E           | 1          | 25              | 4               | 226               | 1815                  | 766                   | 234            | 96.5        |
| 5/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 754               | 1800                  | 1800                  | 1800           | 37.3        |
| 6/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 729               | 1800                  | 1800                  | 1800           | 37.1        |
| 7/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 594               | 1800                  | 1800                  | 1800           | 29.2        |
| 8/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 677               | 1800                  | 1800                  | 1800           | 37.3        |

## Full Input Data And Results

[illegible]

## APPENDIX R

## 2014 With Full Development Sensitivity

As requested by LBH Highways, each of the junction assessed in Section 2 of this report have been re-assessed using the 2014 With Full Development Sensitivity traffic flows. The following paragraphs describe the results of these models under 2014 With Full Development Sensitivity flows.

### Dawley Road/Blyth Road/Kestral Way/Betam Road Roundabout

| ARM             | AM Peak<br>Base + Com |       | AM Peak |       | PM Peak<br>Base + Com |       | PM Peak |       |
|-----------------|-----------------------|-------|---------|-------|-----------------------|-------|---------|-------|
|                 | RFC                   | Queue | RFC     | Queue | RFC                   | Queue | RFC     | Queue |
| Dawley Road (N) | 0.654                 | 2     | 0.675   | 2     | 0.511                 | 1     | 0.515   | 1     |
| Blyth Road      | 0.862                 | 5     | 0.890   | 7     | 0.588                 | 1     | 0.591   | 1     |
| Dawley Road (S) | 0.681                 | 2     | 0.684   | 2     | 0.695                 | 2     | 0.721   | 3     |
| Kestral Way     | 0.080                 | 0     | 0.080   | 0     | 0.224                 | 0     | 0.231   | 0     |
| Betam Road      | 0.050                 | 0     | 0.050   | 0     | 0.120                 | 0     | 0.123   | 0     |

In the morning peak, this junction operates with RFCs under 0.9. When the impact of the 2014 with Full Development Sensitivity scenario is compared with the Baseline Sensitivity scenario, the impact from the proposed development is minimal. In the AM peak the Blyth Road South approach's queue length increased by 2 pcus with the RFC increased by 0.028.

In the evening peak the junction operates within capacity.

### Dawley Road/North Hyde Road/Millington Road/Bourne Avenue Roundabout

| ARM             | AM Peak<br>Base + Com |       | AM Peak |       | PM Peak<br>Base + Com |       | PM Peak |       |
|-----------------|-----------------------|-------|---------|-------|-----------------------|-------|---------|-------|
|                 | RFC                   | Queue | RFC     | Queue | RFC                   | Queue | RFC     | Queue |
| Dawley Road (N) | 0.787                 | 4     | 0.816   | 4     | 0.720                 | 3     | 0.724   | 3     |
| North Hyde Road | 0.616                 | 2     | 0.635   | 2     | 0.558                 | 1     | 0.560   | 1     |
| Millington Road | 0.093                 | 0     | 0.105   | 0     | 0.531                 | 1     | 0.634   | 2     |
| Dawley Road (S) | 0.676                 | 2     | 0.703   | 2     | 0.751                 | 3     | 0.768   | 3     |
| Bourne Avenue   | 0.645                 | 2     | 0.666   | 2     | 0.472                 | 1     | 0.487   | 1     |

This junction operates within capacity under anticipated 2014 Baseline with Full Development Sensitivity traffic flows.

#### Dawley Road/Station Road/Shepiston Lane mini-roundabout

| ARM             | AM Peak<br>Base + Com |       | AM Peak |       | PM Peak<br>Base + Com |       | PM Peak |       |
|-----------------|-----------------------|-------|---------|-------|-----------------------|-------|---------|-------|
|                 | RFC                   | Queue | RFC     | Queue | RFC                   | Queue | RFC     | Queue |
| Dawley Road (N) | 0.672                 | 2     | 0.684   | 2     | 0.643                 | 2     | 0.662   | 2     |
| Station Road    | 0.591                 | 1     | 0.597   | 2     | 0.530                 | 1     | 0.538   | 1     |
| Shepiston Lane  | 0.586                 | 1     | 0.576   | 1     | 0.666                 | 2     | 0.672   | 2     |

This junction operates within capacity under anticipated 2014 With Full Development Sensitivity traffic flows.

#### North Hyde Road/Millington Road priority junction

| ARM                            | AM Peak<br>Base + Com |       | AM Peak |       | PM Peak<br>Base + Com |       | PM Peak |       |
|--------------------------------|-----------------------|-------|---------|-------|-----------------------|-------|---------|-------|
|                                | RFC                   | Queue | RFC     | Queue | RFC                   | Queue | RFC     | Queue |
| Millington Road right turn     | 0.021                 | 0     | 0.084   | 0     | 0.152                 | 0     | 0.660   | 2     |
| North Hyde Road (W) right turn | 0.009                 | 0     | 0.012   | 0     | 0.012                 | 0     | 0.012   | 0     |

This junction operates within capacity under anticipated 2014 Baseline with Full Development Sensitivity traffic flows.

#### Station Road /Millington Road/ Bedwell Gardens priority junction

| ARM                         | AM Peak<br>Base + Com |       | AM Peak |       | PM Peak<br>Base + Com |       | PM Peak |       |
|-----------------------------|-----------------------|-------|---------|-------|-----------------------|-------|---------|-------|
|                             | RFC                   | Queue | RFC     | Queue | RFC                   | Queue | RFC     | Queue |
| Millington Road right turn  | 0.237                 | 0     | 0.264   | 2     | 0.811                 | 4     | 0.858   | 5     |
| Station Road (S) right turn | 0.054                 | 0     | 0.054   | 0     | 0.049                 | 0     | 0.049   | 0     |
| Bedwell Gardens right turn  | 0.399                 | 1     | 0.396   | 1     | 0.220                 | 0     | 0.221   | 0     |
| Station Road (N) right turn | 0.346                 | 0     | 0.348   | 0     | 0.370                 | 0     | 0.370   | 0     |

In the morning peak, this junction operates within capacity. In the evening peak the junction operates above capacity with Millington Road North arm operating at 0.858 RFC.

### North Hyde Road / Station Road signals junction

| Link | ARM                     | AM Peak (82s)<br>Base + Com |       | AM Peak (82s) |       | PM Peak (85s)<br>Base + Com |       | PM Peak (85s) |       |
|------|-------------------------|-----------------------------|-------|---------------|-------|-----------------------------|-------|---------------|-------|
|      |                         | DoS                         | Queue | DoS           | Queue | DoS                         | Queue | DoS           | Queue |
| 1/1  | Station Rd S Left Ahead | 72.0                        | 8.8   | 78.8          | 9.6   | 66.0                        | 9.2   | 70.9          | 9.7   |
| 1/2  | Station Rd S Right      | 80.9                        | 4.4   | 80.9          | 4.5   | 98.0                        | 14.0  | 113.1         | 28.2  |
| 2/1  | Station Rd N Right      | 63.1                        | 3.1   | 75.7          | 3.9   | 39.0                        | 2.2   | 47.7          | 2.4   |
| 2/2  | Station Rd N Left Ahead | 100.3                       | 24.4  | 109.9         | 42.3  | 63.7                        | 9.1   | 68.4          | 9.6   |
| 3/1  | N Hyde Rd W Ahead Left  | 63.6                        | 7.1   | 61.1          | 7.1   | 88.1                        | 11.0  | 108.0         | 34.0  |
| 3/2  | N Hyde Rd W Right       | 40.4                        | 1.6   | 40.4          | 1.5   | 36.6                        | 1.5   | 36.6          | 1.4   |
| 4/1  | N Hyde Rd E Left Ahead  | 104.4                       | 40.1  | 114.2         | 77.3  | 103.7                       | 33.4  | 100.0         | 26.9  |
| 4/2  | N Hyde Rd E Right       | 26.4                        | 1.9   | 24.7          | 1.9   | 71.5                        | 4.8   | 85.4          | 6.0   |
| PRC  |                         | -16.0%                      |       | -26.9%        |       | -15.3%                      |       | -25.7%        |       |

In the morning peak hour, this junction operates above capacity with both the Station Road North ahead and left lane and North Hyde Road East left operating with a degrees of saturation over 100%. In the evening peak Station Road South right turn lane, North Hyde Road West ahead and left and North Hyde Rd East left and ahead operating above capacity.

| Link | ARM                     | AM Peak (82s)<br>Base + Com |       | AM Peak (96s) |       | PM Peak (85s)<br>Base + Com |       | PM Peak (96s) |       |
|------|-------------------------|-----------------------------|-------|---------------|-------|-----------------------------|-------|---------------|-------|
|      |                         | DoS                         | Queue | DoS           | Queue | DoS                         | Queue | DoS           | Queue |
| 1/1  | Station Rd S Left Ahead | 72.0                        | 8.8   | 74.5          | 10.4  | 66.0                        | 9.2   | 63.6          | 10.0  |
| 1/2  | Station Rd S Right      | 80.9                        | 4.4   | 94.7          | 7.3   | 98.0                        | 14.0  | 97.2          | 14.3  |
| 2/1  | Station Rd N Right      | 63.1                        | 3.1   | 75.6          | 4.2   | 39.0                        | 2.2   | 38.8          | 2.4   |
| 2/2  | Station Rd N Left Ahead | 100.3                       | 24.4  | 103.9         | 32.7  | 63.7                        | 9.1   | 61.4          | 9.9   |
| 3/1  | N Hyde Rd W Ahead Left  | 63.6                        | 7.1   | 52.0          | 7.4   | 88.1                        | 11.0  | 101.7         | 25.3  |
| 3/2  | N Hyde Rd W Right       | 40.4                        | 1.6   | 47.3          | 1.7   | 36.6                        | 1.5   | 41.3          | 1.6   |
| 4/1  | N Hyde Rd E Left Ahead  | 104.4                       | 40.1  | 105.1         | 51.1  | 103.7                       | 33.4  | 99.2          | 27.7  |
| 4/2  | N Hyde Rd E Right       | 26.4                        | 1.9   | 23.7          | 2.0   | 71.5                        | 4.8   | 96.5          | 9.4   |
| PRC  |                         | -16.0%                      |       | -16.7%        |       | -15.3%                      |       | -12.9%        |       |

To mitigate for the effects of development traffic at this junction we proposed to increase the existing cycle time to 96 seconds which is compatible with UTC/Scoot control. By increasing the cycle time of the junction to UTC/Scoot control compatible timing to 96 seconds 2014 with Full Development Sensitivity in place would result in the junction performing equal to or better than under the 2014 Baseline Sensitivity traffic flows.

## High Street / Station Road signals junction

| LINK | ARM                         | AM Peak |       | PM Peak |       |
|------|-----------------------------|---------|-------|---------|-------|
|      |                             | DoS     | Queue | DoS     | Queue |
| 1/1  | Station Road (N) Ahead      | 66.9    | 7.9   | 48.4    | 4.9   |
| 1/2  | Station Road (N) Right      | 57.8    | 4.0   | 56.1    | 3.9   |
| 2/1  | High Street (S) Ahead Left  | 75.1    | 10.0  | 81.0    | 12.7  |
| 3/1  | Station Road (W) Left Right | 80.1    | 8.7   | 80.2    | 8.1   |
| PRC  |                             | 12.3%   |       | 11.1%   |       |

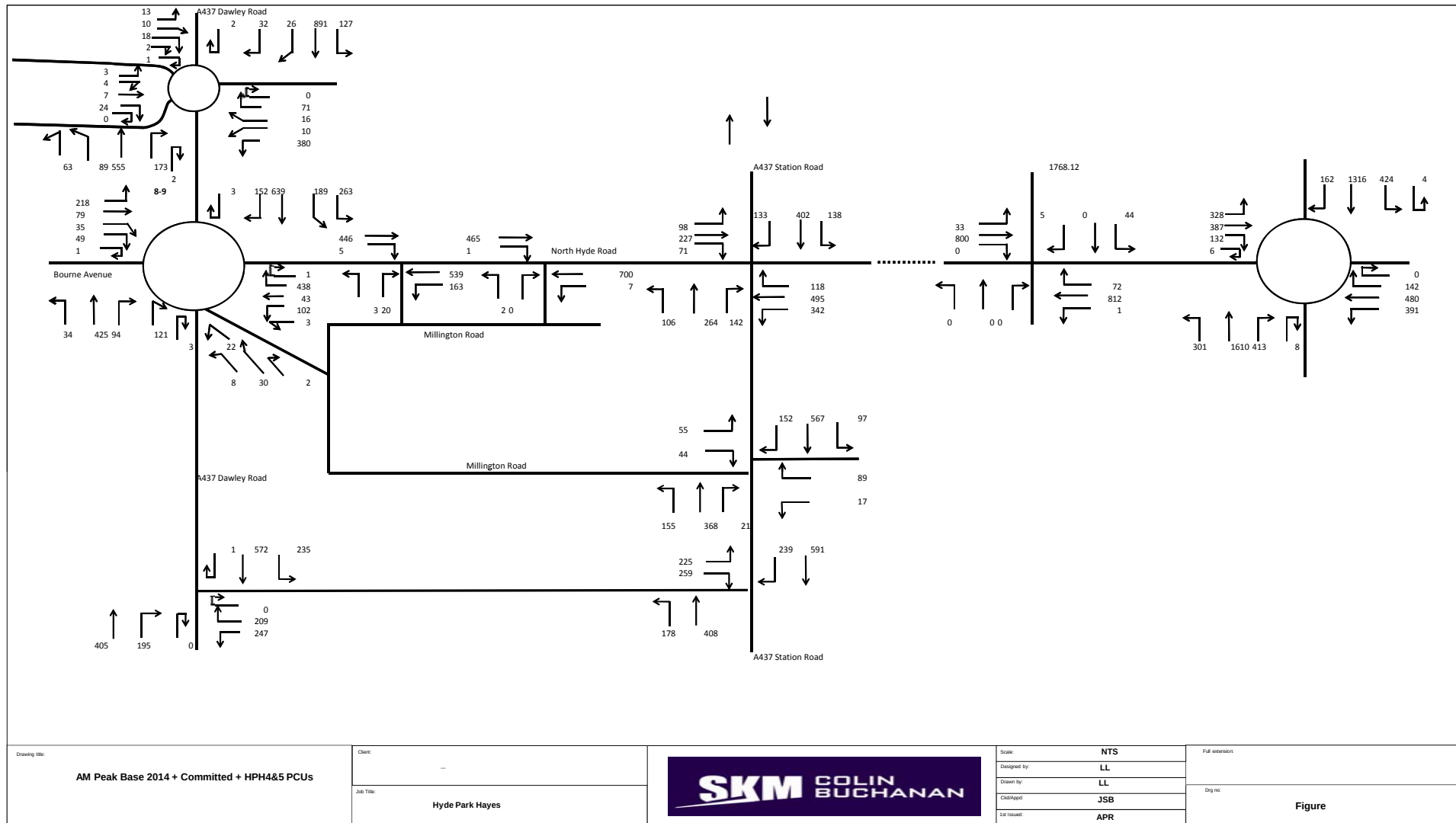
In the morning and evening peak, this junction operates within capacity.

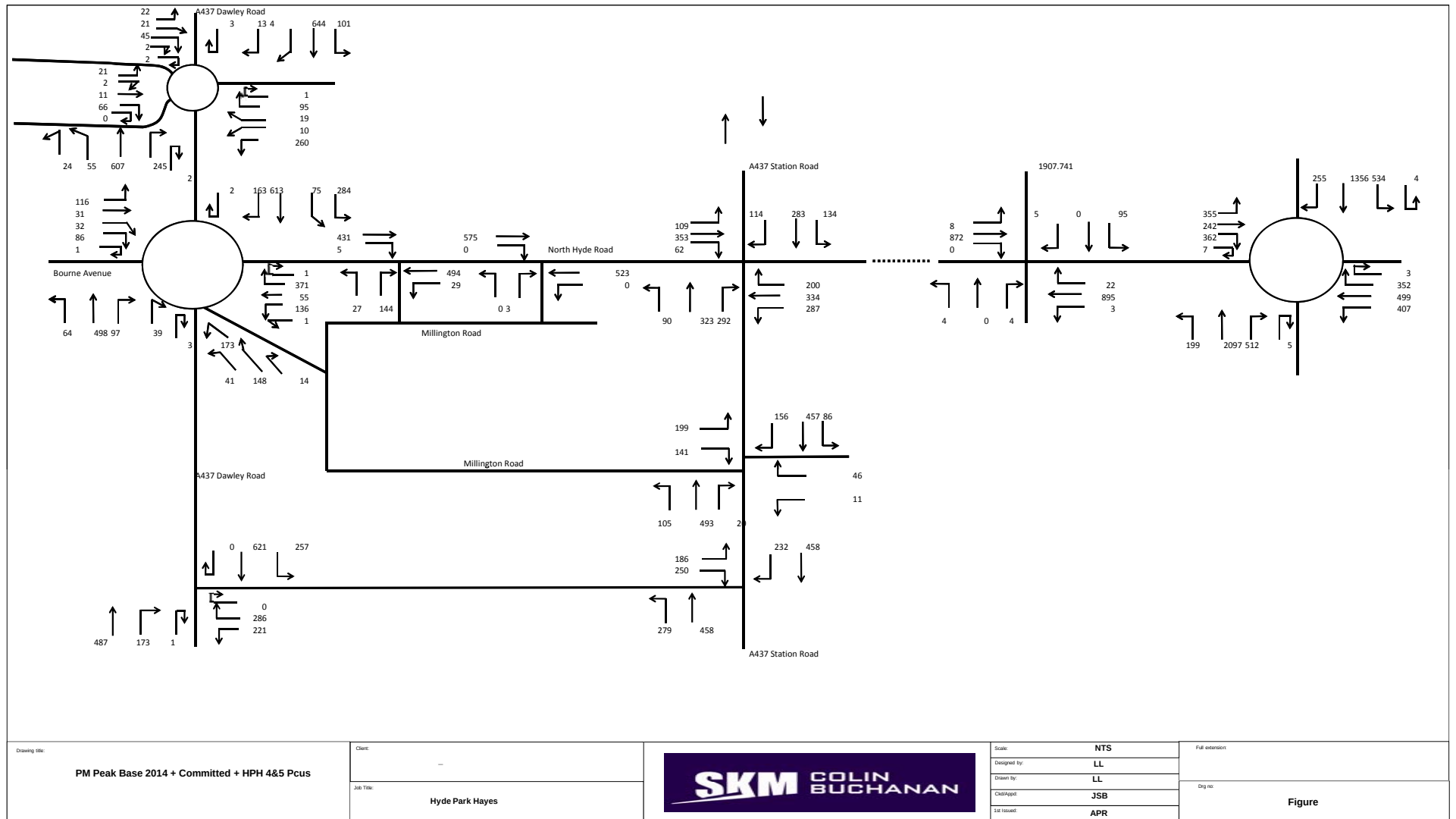
Transyt Results –North Hyde Gardens/North Hyde Road/Watersplash Lane & North Hyde Road / Hayes Bypass  
/ Hayes Road signalised roundabout

| Approach                                 | AM Peak |       | PM Peak |       |
|------------------------------------------|---------|-------|---------|-------|
|                                          | DoS %   | Queue | DoS%    | Queue |
| <b>Bulls Bridge Roundabout</b>           |         |       |         |       |
| Hayes Road Eastbound nearside            | 66      | 5     | 87      | 10    |
| Hayes Road Eastbound lane 2              | 45      | 2     | 89      | 10    |
| Hayes Road Eastbound lane 3              | 12      | 0     | 39      | 2     |
| The Parkway Southbound nearside          | 88      | 15    | 85      | 16    |
| The Parkway Southbound lane 2            | 86      | 13    | 85      | 15    |
| The Parkway Southbound lane 3            | 87      | 13    | 57      | 7     |
| Hayes Road Westbound nearside            | 67      | 4     | 78      | 8     |
| Hayes Road Westbound lane 2              | 65      | 4     | 26      | 1     |
| Hayes Road Westbound lane 3              | 65      | 4     | 76      | 8     |
| Hayes Road Westbound lane 4              | 29      | 2     | 65      | 6     |
| The Parkway Northbound nearside          | 39      | 4     | 88      | 16    |
| The Parkway Northbound lane 2            | 85      | 13    | 86      | 15    |
| The Parkway Northbound lane 3            | 89      | 16    | 86      | 16    |
| The Parkway Northbound lane 4            | 85      | 13    | 58      | 8     |
| <b>North Hyde Rd/ North Hyde Gardens</b> |         |       |         |       |
| North Hyde Gardens Southbound            | 8       | 1     | 17      | 1     |
| Watersplash Lane                         | 9       | 0     | 9       | 0     |
| North Hyde Rd Eastbound                  | 85      | 16    | 84      | 16    |
| North Hyde Rd Westbound nearside         | 54      | 2     | 56      | 4     |
| North Hyde Rd Westbound Right turn       | 12      | 0     | 4       | 0     |
| <b>Internal Links</b>                    |         |       |         |       |
| Internal Eastbound nearside              | 32      | 4     | 34      | 3     |
| Internal Eastbound lane 2                | 27      | 3     | 42      | 4     |
| Internal Eastbound lane 3                | 31      | 4     | 55      | 4     |
| Internal Eastbound lane 4                | 9       | 1     | 27      | 0     |
| Internal southbound nearside             | 31      | 1     | 65      | 4     |
| Internal southbound lane 2               | 46      | 2     | 58      | 3     |
| Internal southbound lane 3               | 43      | 1     | 33      | 2     |
| Internal southbound lane 4               | 15      | 0     | 25      | 0     |
| Internal westbound nearside              | 42      | 5     | 49      | 5     |
| Internal westbound lane 2                | 33      | 5     | 50      | 1     |
| Internal westbound lane 3                | 16      | 2     | 45      | 1     |
| Internal northbound nearside             | 64      | 1     | 60      | 1     |
| Internal northbound lane 2               | 76      | 4     | 68      | 4     |
| Internal northbound lane 3               | 58      | 3     | 80      | 5     |
| Internal northbound lane 4               | 51      | 1     | 47      | 3     |

During the AM and PM peak the network operates within capacity for the 2014 With Full Development traffic flow.







# <Enter Report 1 Title Here>

## PRT File

## AM Base B14+Com+H4&5

1 TRANSYT 12

Traffic Network Study Tool

Analysis Program Release 3 (March 2004)  
(c) Copyright TRL Limited, 2004

For sales and distribution information,  
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770018  
Old Wokingham road Fax: +44 (0) 1344 770864  
Crowthorne, Berks. Email: softwarebureau@trl.co.uk  
RG45 6AU, UK. Web: www.trlsoftware.co.uk

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

Run with file:- "BULLS BRIDGE RABOUT\_AM\_ST.DAT" at 19:04 on 06/08/12

TRANST 12.0

### PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES = 8  
NUMBER OF LINKS = 70  
NUMBER OF OPTIMISED NODES = 8  
MAXIMUM NUMBER OF GRAPHIC PLOTS = 0  
NUMBER OF STEPS IN CYCLE = 65  
MAXIMUM NUMBER OF SHARED STOPLINES = 2  
MAXIMUM NUMBER OF TIMING POINTS = 3  
MAXIMUM LINKS AT ANY NODE = 12

CORE REQUESTED = 14800 WORDS  
CORE AVAILABLE = 72000 WORDS

### DATA INPUT :-

CARD NO. CARD TYPE  
( 1)= TITLE:-  
CARD NO. CARD TYPE CYCLE NO. OF TIME EFFECTIVE-GREEN EQUISAT 0=UNEQUAL FLOW CRUISE-SPEEDS OPTIMISE EXTRA HILL- DELAY STOP  
NO. TYPE TIME STEPS PERIOD DISPLACEMENTS SETTINGS CYCLE SCALE SCALE CARD32 0=NONE COPIES CLIMB VALUE VALUE  
(SEC) PER 1-1200 START END 0=NO 1=EQUAL 10-200 50-200 0=TIMES 1=0/SET FINAL OUTPUT P PER P PER  
CYCLE CYCLE MINS. (SEC) (SEC) 1=YES CYCLE % % 1=SPEEDS 2=FULL OUTPUT 1=FULL PCU-H 100  
2)= 1 65 65 60 2 3 0 1 100 100 0 0 0 0 1420 260 100  
CARD NO. CARD TYPE  
3)= 2 146 126 127 128 129 130 131 132 0 0 0 0 0 0 0

LINKS HAVING SHARED STOPLINES  
CARD NO. CARD TYPE FIRST SET..... SECOND SET..... THIRD SET.....  
4)= 7 29 12602 0 0 0 0 0 0 0 0 0 0 0 0 0  
5)= 7 31 58 0 0 0 0 0 0 0 0 0 0 0 0 0  
6)= 7 36 37 0 0 0 0 0 0 0 0 0 0 0 0 0  
7)= 7 38 39 0 0 0 0 0 0 0 0 0 0 0 0 0  
8)= 7 40 41 0 0 0 0 0 0 0 0 0 0 0 0 0  
9)= 7 42 62 0 0 0 0 0 0 0 0 0 0 0 0 0  
10)= 7 52 53 0 0 0 0 0 0 0 0 0 0 0 0 0  
11)= 7 54 56 0 0 0 0 0 0 0 0 0 0 0 0 0  
12)= 7 1262 1261 0 0 0 0 0 0 0 0 0 0 0 0 0  
13)= 7 1264 1263 0 0 0 0 0 0 0 0 0 0 0 0 0  
14)= 7 1267 1266 0 0 0 0 0 0 0 0 0 0 0 0 0  
15)= 7 1272 1271 0 0 0 0 0 0 0 0 0 0 0 0 0  
16)= 7 1274 1273 0 0 0 0 0 0 0 0 0 0 0 0 0  
17)= 7 1276 1275 0 0 0 0 0 0 0 0 0 0 0 0 0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
18)= 10 126 7 7  
19)= 10 127 7 7  
20)= 10 128 7 7  
21)= 10 129 7 7  
22)= 10 130 7 7  
23)= 10 131 7 7  
24)= 10 132 7 7  
25)= 10 146 7 7 7

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
26)= 11 126 6 6  
27)= 11 127 5 5  
28)= 11 128 6 6  
29)= 11 129 5 5  
30)= 11 130 6 6  
31)= 11 131 5 5  
32)= 11 132 5 6  
33)= 11 146 7 8 8

NODE CARDS: STAGE CHANGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. Sgl/Db1 S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
Cycled  
34)= 12 126 1 3 36  
35)= 12 127 1 35 0  
36)= 12 128 1 35 22  
37)= 12 129 1 19 41  
38)= 12 130 1 19 6

39)= 12 131 1 0 31  
40)= 12 132 1 33 20  
41)= 12 146 1 18 49 3

| LINK CARDS:                          |           |          |           |           |        |      |    |    |   | GIVEWAY DATA |              |          |               |             |  |  |  |  |  |
|--------------------------------------|-----------|----------|-----------|-----------|--------|------|----|----|---|--------------|--------------|----------|---------------|-------------|--|--|--|--|--|
| PRIORITY LINKS LINK1 GIVEWAY COEFFS. |           |          |           |           |        |      |    |    |   |              |              |          |               |             |  |  |  |  |  |
| CARD NO.                             | CARD TYPE | LINK NO. | LINK1 NO. | LINK2 NO. | % FLOW | ONLY | A1 | A2 |   | LINK LENGTH  | STOP WT.X100 | MAX FLOW | DELAY WT.X100 | DISPSN X100 |  |  |  |  |  |
| 42)=                                 | 30        | 1462     | 1465      | 0         | 0      | 0    | 50 | 0  | 0 | 130          | 0            | 1000     | 0             | 0           |  |  |  |  |  |
| 43)=                                 | 30        | 1466     | 1462      | 0         | 0      | 0    | 22 | 0  | 0 | 31           | 0            | 715      | 0             | 0           |  |  |  |  |  |

| LINK CARDS: |           |          |           |       |     |       |     |     |       | FIXED DATA |       |     |     |        |              |     |               |             |  |
|-------------|-----------|----------|-----------|-------|-----|-------|-----|-----|-------|------------|-------|-----|-----|--------|--------------|-----|---------------|-------------|--|
|             |           |          |           |       |     |       |     |     |       |            |       |     |     |        |              |     |               |             |  |
|             |           |          |           |       |     |       |     |     |       |            |       |     |     |        |              |     |               |             |  |
| CARD NO.    | CARD TYPE | LINK NO. | EXIT NODE | STAGE | LAG | STAGE | END | LAG | STAGE | LAG        | STAGE | END | LAG | LENGTH | STOP WT.X100 | SAT | DELAY WT.X100 | DISPSN X100 |  |
| 44)=        | 31        | 29       | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 200 | 0      | 4000         | 0   | 0             | 0           |  |
| 45)=        | 31        | 31       | 128       | 1     | 6   | 2     | 0   | 0   | 0     | 0          | 0     | 0   | 95  | 0      | 5591         | 0   | 0             | 0           |  |
| 46)=        | 31        | 32       | 128       | 2     | 6   | 1     | 0   | 0   | 0     | 0          | 0     | 0   | 10  | 0      | 10000        | 0   | 0             | 0           |  |
| 47)=        | 31        | 33       | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 200 | 0      | 6000         | 0   | 0             | 0           |  |
| 48)=        | 31        | 34       | 129       | 2     | 5   | 1     | 0   | 0   | 0     | 0          | 0     | 0   | 53  | 0      | 1806         | 0   | 0             | 0           |  |
| 49)=        | 31        | 36       | 129       | 2     | 5   | 1     | 0   | 0   | 0     | 0          | 0     | 0   | 53  | 0      | 2047         | 0   | 0             | 0           |  |
| 50)=        | 31        | 37       | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 53  | 0      | 0            | 0   | 0             | 0           |  |
| 51)=        | 31        | 38       | 129       | 2     | 5   | 1     | 0   | 0   | 0     | 0          | 0     | 0   | 53  | 0      | 2028         | 0   | 0             | 0           |  |
| 52)=        | 31        | 39       | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 53  | 0      | 0            | 0   | 0             | 0           |  |
| 53)=        | 31        | 40       | 129       | 2     | 5   | 1     | 0   | 0   | 0     | 0          | 0     | 0   | 53  | 0      | 1867         | 0   | 0             | 0           |  |
| 54)=        | 31        | 41       | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 53  | 0      | 0            | 0   | 0             | 0           |  |
| 55)=        | 31        | 42       | 132       | 1     | 5   | 2     | 0   | 0   | 0     | 0          | 0     | 0   | 58  | 0      | 2028         | 0   | 0             | 0           |  |
| 56)=        | 31        | 43       | 132       | 2     | 6   | 1     | 0   | 0   | 0     | 0          | 0     | 0   | 10  | 0      | 10000        | 0   | 0             | 0           |  |
| 57)=        | 31        | 44       | 129       | 1     | 5   | 2     | 0   | 0   | 0     | 0          | 0     | 0   | 45  | 0      | 1612         | 0   | 0             | 0           |  |
| 58)=        | 31        | 45       | 129       | 1     | 5   | 2     | 0   | 0   | 0     | 0          | 0     | 0   | 45  | 0      | 1613         | 0   | 0             | 0           |  |
| 59)=        | 31        | 46       | 130       | 1     | 6   | 2     | 0   | 0   | 0     | 0          | 0     | 0   | 200 | 0      | 4839         | 0   | 0             | 0           |  |
| 60)=        | 31        | 47       | 130       | 2     | 6   | 1     | 0   | 0   | 0     | 0          | 0     | 0   | 10  | 0      | 10000        | 0   | 0             | 0           |  |
| 61)=        | 31        | 48       | 131       | 2     | 5   | 1     | 0   | 0   | 0     | 0          | 0     | 0   | 63  | 0      | 1806         | 0   | 0             | 0           |  |
| 62)=        | 31        | 50       | 131       | 2     | 5   | 1     | 0   | 0   | 0     | 0          | 0     | 0   | 63  | 0      | 1922         | 0   | 0             | 0           |  |
| 63)=        | 31        | 52       | 131       | 2     | 5   | 1     | 0   | 0   | 0     | 0          | 0     | 0   | 63  | 0      | 1886         | 0   | 0             | 0           |  |
| 64)=        | 31        | 53       | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 63  | 0      | 0            | 0   | 0             | 0           |  |
| 65)=        | 31        | 54       | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 200 | 0      | 6000         | 0   | 0             | 0           |  |
| 66)=        | 31        | 55       | 131       | 1     | 5   | 2     | 0   | 0   | 0     | 0          | 0     | 0   | 40  | 0      | 1855         | 0   | 0             | 0           |  |
| 67)=        | 31        | 56       | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 200 | 0      | 0            | 0   | 0             | 0           |  |
| 68)=        | 31        | 57       | 131       | 1     | 5   | 2     | 0   | 0   | 0     | 0          | 0     | 0   | 40  | 0      | 1800         | 0   | 0             | 0           |  |
| 69)=        | 31        | 58       | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 95  | 0      | 0            | 0   | 0             | 0           |  |
| 70)=        | 31        | 59       | 128       | 2     | 6   | 1     | 0   | 0   | 0     | 0          | 0     | 0   | 10  | 0      | 10000        | 0   | 0             | 0           |  |
| 71)=        | 31        | 60       | 132       | 2     | 6   | 1     | 0   | 0   | 0     | 0          | 0     | 0   | 10  | 0      | 10000        | 0   | 0             | 0           |  |
| 72)=        | 31        | 61       | 130       | 2     | 6   | 1     | 0   | 0   | 0     | 0          | 0     | 0   | 10  | 0      | 10000        | 0   | 0             | 0           |  |
| 73)=        | 31        | 62       | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 58  | 0      | 0            | 0   | 0             | 0           |  |
| 74)=        | 31        | 63       | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 10  | 0      | 3600         | 0   | 0             | 0           |  |
| 75)=        | 31        | 64       | 129       | 1     | 5   | 2     | 0   | 0   | 0     | 0          | 0     | 0   | 45  | 0      | 1613         | 0   | 0             | 0           |  |
| 76)=        | 31        | 65       | 129       | 1     | 5   | 2     | 0   | 0   | 0     | 0          | 0     | 0   | 45  | 0      | 1613         | 0   | 0             | 0           |  |
| 77)=        | 31        | 66       | 131       | 1     | 5   | 2     | 0   | 0   | 0     | 0          | 0     | 0   | 40  | 0      | 1969         | 0   | 0             | 0           |  |
| 78)=        | 31        | 67       | 131       | 1     | 5   | 2     | 0   | 0   | 0     | 0          | 0     | 0   | 40  | 0      | 1875         | 0   | 0             | 0           |  |
| 79)=        | 31        | 68       | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 200 | 0      | 3600         | 0   | 0             | 0           |  |
| 80)=        | 31        | 1261     | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 55  | 0      | 0            | 0   | 0             | 0           |  |
| 81)=        | 31        | 1262     | 126       | 1     | 6   | 2     | 1   | 0   | 0     | 0          | 0     | 0   | 55  | 0      | 1905         | 0   | 0             | 0           |  |
| 82)=        | 31        | 1263     | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 55  | 0      | 0            | 0   | 0             | 0           |  |
| 83)=        | 31        | 1264     | 126       | 1     | 6   | 2     | 1   | 0   | 0     | 0          | 0     | 0   | 55  | 0      | 2038         | 0   | 0             | 0           |  |
| 84)=        | 31        | 1266     | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 55  | 0      | 0            | 0   | 0             | 0           |  |
| 85)=        | 31        | 1267     | 126       | 1     | 6   | 2     | 1   | 0   | 0     | 0          | 0     | 0   | 55  | 0      | 2019         | 0   | 0             | 0           |  |
| 86)=        | 31        | 1269     | 126       | 1     | 6   | 2     | 1   | 0   | 0     | 0          | 0     | 0   | 55  | 0      | 1824         | 0   | 0             | 0           |  |
| 87)=        | 31        | 1271     | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 67  | 0      | 0            | 0   | 0             | 0           |  |
| 88)=        | 31        | 1272     | 127       | 2     | 5   | 1     | 0   | 0   | 0     | 0          | 0     | 0   | 67  | 0      | 1876         | 0   | 0             | 0           |  |
| 89)=        | 31        | 1273     | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 67  | 0      | 0            | 0   | 0             | 0           |  |
| 90)=        | 31        | 1274     | 127       | 2     | 5   | 1     | 0   | 0   | 0     | 0          | 0     | 0   | 67  | 0      | 2046         | 0   | 0             | 0           |  |
| 91)=        | 31        | 1275     | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 67  | 0      | 0            | 0   | 0             | 0           |  |
| 92)=        | 31        | 1276     | 127       | 2     | 5   | 1     | 0   | 0   | 0     | 0          | 0     | 0   | 67  | 0      | 1973         | 0   | 0             | 0           |  |
| 93)=        | 31        | 1278     | 127       | 2     | 5   | 1     | 0   | 0   | 0     | 0          | 0     | 0   | 67  | 0      | 1770         | 0   | 0             | 0           |  |
| 94)=        | 31        | 1461     | 146       | 2     | 1   | 3     | 0   | 0   | 0     | 0          | 0     | 0   | 200 | 0      | 1860         | 0   | 0             | 0           |  |
| 95)=        | 31        | 1462     | 146       | 1     | 0   | 3     | 0   | 0   | 0     | 0          | 0     | 0   | 130 | 0      | 1774         | 0   | 0             | 0           |  |
| 96)=        | 31        | 1463     | 146       | 1     | 0   | 3     | 6   | 0   | 0     | 0          | 0     | 0   | 130 | 0      | 1833         | 0   | 0             | 0           |  |
| 97)=        | 31        | 1464     | 146       | 3     | 8   | 1     | 0   | 0   | 0     | 0          | 0     | 0   | 200 | 0      | 1833         | 0   | 0             | 0           |  |
| 98)=        | 31        | 1465     | 146       | 1     | 0   | 2     | 1   | 0   | 0     | 0          | 0     | 0   | 200 | 0      | 1926         | 0   | 0             | 0           |  |
| 99)=        | 31        | 1467     | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 200 | 0      | 2000         | 0   | 0             | 0           |  |
| 100)=       | 31        | 1468     | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 200 | 0      | 2000         | 0   | 0             | 0           |  |
| 101)=       | 31        | 1469     | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 200 | 0      | 2000         | 0   | 0             | 0           |  |
| 102)=       | 31        | 12691    | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 156 | 0      | 1800         | 0   | 0             | 0           |  |
| 103)=       | 31        | 12692    | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 200 | 0      | 0            | 0   | 0             | 0           |  |
| 104)=       | 31        | 12693    | 126       | 1     | 6   | 2     | 0   | 0   | 0     | 0          | 0     | 0   | 10  | 0      | 10000        | 0   | 0             | 0           |  |
| 105)=       | 31        | 12694    | 126       | 1     | 6   | 2     | 0   | 0   | 0     | 0          | 0     | 0   | 10  | 0      | 10000        | 0   | 0             | 0           |  |
| 106)=       | 31        | 12695    | 126       | 2     | 6   | 1     | 0   | 0   | 0     | 0          | 0     | 0   | 20  | 0      | 1522         | 0   | 0             | 0           |  |
| 107)=       | 31        | 12696    | 126       | 2     | 6   | 1     | 0   | 0   | 0     | 0          | 0     | 0   | 20  | 0      | 1640         | 0   | 0             | 0           |  |
| 108)=       | 31        | 12697    | 126       | 2     | 6   | 1     | 0   | 0   | 0     | 0          | 0     | 0   | 20  | 0      | 1757         | 0   | 0             | 0           |  |
| 109)=       | 31        | 12701    | 127       | 1     | 5   | 2     | 0   | 0   | 0     | 0          | 0     | 0   | 23  | 0      | 1777         | 0   | 0             | 0           |  |
| 110)=       | 31        | 12702    | 127       | 1     | 5   | 2     | 0   | 0   | 0     | 0          | 0     | 0   | 23  | 0      | 1775         | 0   | 0             | 0           |  |
| 111)=       | 31        | 12703    | 0         | 0     | 0   | 0     | 0   | 0   | 0     | 0          | 0     | 0   | 200 | 0      | 3600         | 0   | 0             | 0           |  |
| 112)=       | 31        | 12704    | 127       | 1     | 5   | 2     | 0   | 0   | 0     | 0          | 0     | 0   | 23  | 0      | 1907         | 0   | 0             | 0           |  |

| LINK CARDS: |           |          |            |                      |          |      |             |                      |          | FLOW DATA |             |                      |          |       |             |                      |          |      |             |
|-------------|-----------|----------|------------|----------------------|----------|------|-------------|----------------------|----------|-----------|-------------|----------------------|----------|-------|-------------|----------------------|----------|------|-------------|
|             |           |          |            |                      |          |      |             |                      |          |           |             |                      |          |       |             |                      |          |      |             |
|             |           |          |            |                      |          |      |             |                      |          |           |             |                      |          |       |             |                      |          |      |             |
| CARD NO.    | CARD TYPE | LINK NO. | TOTAL FLOW | ENTRY 1 UNIFORM FLOW | LINK NO. | FLOW | CRUISE TIME | ENTRY 2 UNIFORM FLOW | LINK NO. | FLOW      | CRUISE TIME | ENTRY 3 UNIFORM FLOW | LINK NO. | FLOW  | CRUISE TIME | ENTRY 4 UNIFORM FLOW | LINK NO. | FLOW | CRUISE TIME |
| 113)=       | 32        | 29       | 1944       | 0                    | 1262     | 530  | 18          | 1264                 | 630      | 18        | 1267        | 450                  | 18       | 12607 | 334         | 18                   |          |      |             |
| 114)=       | 32        | 31       | 525        | 0                    | 1272     | 151  | 9           | 1274                 | 130      | 9         | 1275        | 138                  | 9        | 1276  | 106         | 9                    |          |      |             |
| 115)=       | 32        | 32       | 10         | 0                    | 0        | 0    | 4           | 0                    | 0        | 0         | 0           | 0                    | 0        | 0     | 0           | 0                    |          |      |             |
| 116)=       | 32        | 33       | 1224       | 0                    | 31       | 525  | 18          | 58                   | 699      | 18        | 0           | 0                    | 0        | 0     | 0           | 0                    |          |      |             |
| 117)=       | 32        | 34       | 162        | 0                    | 12702    | 162  | 5           | 0                    | 0        | 0         | 0           | 0                    | 0        | 0     | 0           | 0                    |          |      |             |
| 118)=       | 32        | 36       | 492        | 0                    | 12701    | 39   | 5           | 12702                | 453      | 5         | 0           | 0                    | 0        | 0     | 0           | 0                    |          |      |             |

| LINK<br>NUMBER | FLOW<br>INTO<br>LINK | SAT<br>FLOW | DEGREE<br>OF<br>SAT | MEAN<br>PER<br>CRUISE | -----DELAY----- |                                        |                                      |                              | ---STOPS---                   |                       | ----QUEUE----                 |                                     | PERFORMANCE<br>INDEX<br>SUM | EXIT<br>NODE | GREEN<br>START |
|----------------|----------------------|-------------|---------------------|-----------------------|-----------------|----------------------------------------|--------------------------------------|------------------------------|-------------------------------|-----------------------|-------------------------------|-------------------------------------|-----------------------------|--------------|----------------|
|                |                      |             |                     |                       | TIMES<br>(SEC)  | UNIFORM<br>(U+R+O=MEAN Q)<br>(PCU-H/H) | RANDOM<br>OVERSAT<br>DELAY<br>(\$/H) | COST<br>STOPS<br>/PCU<br>(%) | MEAN<br>OF<br>STOPS<br>(\$/H) | COST<br>MAX.<br>(PCU) | AVERAGE<br>EXCESS OF<br>(PCU) | WEIGHTED<br>( )<br>VALUES<br>(\$/H) |                             |              |                |
|                |                      |             |                     |                       |                 |                                        |                                      |                              |                               |                       |                               |                                     |                             |              |                |
| 1266           | 72                   | 1267L       | 58                  | 7.5                   | 33.0            | 0.6 + 0.6                              | ( 9.2 )                              | 107                          | ( 0.8 )                       | 3                     |                               | 10.1                                | 126                         | 9            | 37             |
| 1267           | 451                  | 2019S       | 58                  | 5.5                   | 5.6             | 0.0 + 0.1                              | ( 9.2 )                              | 12                           | ( 1.1 )                       | 3                     |                               | 10.3                                | 126                         | 9            | 37             |
| 1269           | 413                  | 1824        | 51                  | 5.5                   | 5.3             | 0.0 + 0.5                              | ( 7.8 )                              | 8                            | ( 0.7 )                       | 1                     |                               | 8.4                                 | 126                         | 9            | 37             |
| 1271           | 137                  | 1272L       | 32                  | 8.5                   | 10.6            | 0.3 + 0.1                              | ( 5.5 )                              | 28                           | ( 0.5 )                       | 4                     |                               | 5.9                                 | 127                         | 5            | 35             |
| 1272           | 151                  | 1876S       | 32                  | 6.5                   | 17.6            | 0.6 + 0.1                              | ( 10.2 )                             | 97                           | ( 3.2 )                       | 4                     |                               | 13.5                                | 127                         | 5            | 35             |
| 1273           | 138                  | 1274L       | 27                  | 8.5                   | 10.1            | 0.3 + 0.1                              | ( 5.2 )                              | 27                           | ( 0.5 )                       | 3                     |                               | 5.7                                 | 127                         | 5            | 35             |
| 1274           | 130                  | 2046S       | 27                  | 8.5                   | 17.0            | 0.5 + 0.1                              | ( 8.5 )                              | 93                           | ( 2.7 )                       | 3                     |                               | 11.1                                | 127                         | 5            | 35             |
| 1275           | 138                  | 1276L       | 31                  | 8.5                   | 10.4            | 0.3 + 0.1                              | ( 5.4 )                              | 28                           | ( 0.5 )                       | 4                     |                               | 5.9                                 | 127                         | 5            | 35             |
| 1276           | 154                  | 1973S       | 31                  | 6.5                   | 17.7            | 0.6 + 0.1                              | ( 10.4 )                             | 95                           | ( 3.3 )                       | 4                     |                               | 13.7                                | 127                         | 5            | 35             |
| 1278           | 80                   | 1770        | 9                   | 6.5                   | 15.6            | 0.3 + 0.1                              | ( 4.8 )                              | 88                           | ( 1.6 )                       | 1                     |                               | 6.3                                 | 127                         | 5            | 35             |

|       |      |       |    |      |      |           |         |     |         |    |       |     |    |    |
|-------|------|-------|----|------|------|-----------|---------|-----|---------|----|-------|-----|----|----|
| 1461  | 44   | 1860  | 8  | 18.5 | 20.8 | 0.2 + 0.0 | ( 3.5)  | 73  | ( 0.7)  | 1  | 4.2   | 146 | 50 | 3  |
| 1462  | 72   | 1774  | 12 | 13.5 | 9.9  | 0.1 + 0.1 | ( 2.7)  | 44  | ( 0.5)  | 1  | 3.2   | 146 | 18 | 3  |
| 1463  | 873  | 1833  | 54 | 13.5 | 3.4  | 0.1 + 0.6 | ( 9.9)  | 10  | ( 1.5)  | 2  | 11.3  | 146 | 18 | 9  |
| 1464  | 20   | 1833  | 9  | 18.5 | 34.7 | 0.1 + 0.0 | ( 2.7)  | 96  | ( 0.4)  | 0  | 3.1   | 146 | 11 | 18 |
| 1465  | 833  | 1926  | 85 | 18.5 | 26.4 | 3.2 + 2.8 | ( 84.9) | 96  | ( 16.9) | 16 | 101.8 | 146 | 18 | 50 |
| 1466  | 33   | 715   | 5  | 2.5  | 3.2  | 0.0 + 0.0 | ( 0.4)  | 0   | ( 0.0)  | 0  | 0.4   |     |    |    |
| 1467  | 104  | 2000  | 5  | 18.5 | 1.5  | 0.0 + 0.0 | ( 0.4)  | 1   | ( 0.0)  | 0  | 0.4   |     |    |    |
| 1468  | 20   | 2000  | 1  | 18.5 | 1.4  | 0.0 + 0.0 | ( 0.1)  | 1   | ( 0.0)  | 0  | 0.1   |     |    |    |
| 1469  | 873  | 2000  | 44 | 18.5 | 2.1  | 0.0 + 0.4 | ( 5.5)  | 2   | ( 0.5)  | 0  | 5.9   |     |    |    |
| 12601 | 848  | 1800  | 47 | 18.3 | 2.4  | 0.0 + 0.4 | ( 6.3)  | 3   | ( 0.6)  | 0  | 6.9   |     |    |    |
| 12602 | 142  | 29L   | 52 | 18.5 | 1.5  | 0.0 + 0.0 | ( 0.5)  | 3   | ( 0.1)  | 19 | 0.6   |     |    |    |
| 12603 | 10   | 10000 | 0  | 4.5  | 11.7 | 0.0 + 0.0 | ( 0.4)  | 57  | ( 0.0)  | 0  | 0.4   | 126 | 9  | 36 |
| 12604 | 10   | 10000 | 0  | 4.5  | 11.7 | 0.0 + 0.0 | ( 0.4)  | 57  | ( 0.0)  | 0  | 0.4   | 126 | 9  | 36 |
| 12605 | 283  | 1522  | 45 | 2.5  | 9.7  | 0.3 + 0.4 | ( 10.3) | 32  | ( 1.6)  | 2  | 11.8  | 126 | 42 | 3  |
| 12606 | 80   | 1640  | 12 | 2.5  | 7.1  | 0.1 + 0.1 | ( 2.1)  | 23  | ( 0.3)  | 0  | 2.4   | 126 | 42 | 3  |
| 12607 | 485  | 1757  | 66 | 2.5  | 12.3 | 0.6 + 1.0 | ( 22.6) | 43  | ( 3.6)  | 5  | 26.2  | 126 | 42 | 3  |
| 12701 | 620  | 1777  | 87 | 2.5  | 37.0 | 3.1 + 3.2 | ( 89.3) | 111 | ( 16.1) | 13 | 105.4 | 127 | 40 | 0  |
| 12702 | 616  | 1775  | 87 | 2.5  | 36.5 | 3.1 + 3.1 | ( 87.4) | 110 | ( 15.9) | 13 | 103.3 | 127 | 40 | 0  |
| 12703 | 1902 | 3600  | 53 | 18.5 | 1.6  | 0.0 + 0.6 | ( 7.9)  | 2   | ( 0.7)  | 1  | 8.6   |     |    |    |
| 12704 | 670  | 1907  | 88 | 2.5  | 36.5 | 3.4 + 3.3 | ( 95.2) | 111 | ( 17.3) | 15 | 112.5 | 127 | 40 | 0  |

| TOTAL<br>DISTANCE<br>TRAVELLED | TOTAL<br>TIME<br>SPENT | MEAN<br>JOURNEY<br>SPEED | TOTAL<br>UNIFORM<br>DELAY | TOTAL<br>RANDOM+<br>OVERSAT<br>DELAY | TOTAL<br>COST<br>OF<br>STOPS | TOTAL<br>COST<br>OF<br>STOPS | PENALTY<br>FOR<br>EXCESS<br>QUEUES | TOTAL<br>PERFORMANCE<br>INDEX |
|--------------------------------|------------------------|--------------------------|---------------------------|--------------------------------------|------------------------------|------------------------------|------------------------------------|-------------------------------|
| (PCU-KM/H)                     | (PCU-H/H)              | (KM/H)                   | (PCU-H/H)                 | (PCU-H/H)                            | (\$/H)                       | (\$/H)                       | (\$/H)                             | (\$/H)                        |

3407.7    164.5    20.7    38.6    38.1    (1089.7) + ( 192.8) + ( 0.0) = 1282.5    TOTALS

ROUTE

| CRUISE<br>LITRES PER HOUR | DELAY<br>LITRES PER HOUR | STOPS<br>LITRES PER HOUR | TOTALS<br>LITRES PER HOUR |
|---------------------------|--------------------------|--------------------------|---------------------------|
|---------------------------|--------------------------|--------------------------|---------------------------|

FUEL CONSUMPTION PREDICTIONS    190.0    +    88.2    +    87.9    =    366.1

NO. OF ENTRIES TO SUBPT = 1  
NO. OF LINKS RECALCULATED= 70

PROGRAM TRANSYT FINISHED

# <Enter Report 1 Title Here>

## PRT File

## PM Base B14+Com+H4&5

1 T R A N S Y T 12

Traffic Network Study Tool

Analysis Program Release 3 (March 2004)  
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For sales and distribution information,  
program advice and maintenance, contact:

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RG45 6AU, UK. Web: www.trlsoftware.co.uk

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

Run with file:- "BULLS BRIDGE RABOUT\_PM\_MC\_ST.DAT" at 19:05 on 06/08/12

TRANSYT 12.0

### PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES = 8  
NUMBER OF LINKS = 70  
NUMBER OF OPTIMISED NODES = 8  
MAXIMUM NUMBER OF GRAPHIC PLOTS = 8  
NUMBER OF STEPS IN CYCLE = 66  
MAXIMUM NUMBER OF SHARED STOPLINES = 2  
MAXIMUM NUMBER OF TIMING POINTS = 3  
MAXIMUM LINKS AT ANY NODE = 12

CORE REQUESTED = 14914 WORDS  
CORE AVAILABLE = 72000 WORDS

### DATA INPUT :-

CARD NO. CARD TYPE  
( 1)= TITLE:-  
CARD NO. CARD TYPE CYCLE TIME NO. OF STEPS PERIOD DISPLACEMENTS SETTINGS CYCLE SCALE SCALE CARD32 0=NONE COPIES CLIMB VALUE VALUE  
(SEC) PER 1-1200 START END 0=NO 1=EQUAL 10-200 50-200 0=TIMES 1=0/SET FINAL OUTPUT P PER P PER  
CYCLE CYCLE MINS. (SEC) (SEC) 1=YES CYCLE % % 1=SPEEDS 2=FULL OUTPUT 1=FULL PCU-H 100  
2)= 1 66 66 60 2 3 0 1 100 100 0 0 0 0 1420 260 100  
CARD NO. CARD TYPE  
3)= 2 146 126 127 128 129 130 131 132 0 0 0 0 0 0 0

LINKS HAVING SHARED STOPLINES  
CARD NO. CARD TYPE FIRST SET..... SECOND SET..... THIRD SET.....  
4)= 7 29 12602 0 0 0 0 0 0 0 0 0 0 0 0 0  
5)= 7 31 58 0 0 0 0 0 0 0 0 0 0 0 0 0  
6)= 7 36 37 0 0 0 0 0 0 0 0 0 0 0 0 0  
7)= 7 38 39 0 0 0 0 0 0 0 0 0 0 0 0 0  
8)= 7 40 41 0 0 0 0 0 0 0 0 0 0 0 0 0  
9)= 7 42 62 0 0 0 0 0 0 0 0 0 0 0 0 0  
10)= 7 52 53 0 0 0 0 0 0 0 0 0 0 0 0 0  
11)= 7 54 56 0 0 0 0 0 0 0 0 0 0 0 0 0  
12)= 7 1262 1261 0 0 0 0 0 0 0 0 0 0 0 0 0  
13)= 7 1264 1263 0 0 0 0 0 0 0 0 0 0 0 0 0  
14)= 7 1267 1266 0 0 0 0 0 0 0 0 0 0 0 0 0  
15)= 7 1272 1271 0 0 0 0 0 0 0 0 0 0 0 0 0  
16)= 7 1274 1273 0 0 0 0 0 0 0 0 0 0 0 0 0  
17)= 7 1276 1275 0 0 0 0 0 0 0 0 0 0 0 0 0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
18)= 10 126 7 7  
19)= 10 127 7 7  
20)= 10 128 7 7  
21)= 10 129 7 7  
22)= 10 130 7 7  
23)= 10 131 7 7  
24)= 10 132 7 7  
25)= 10 146 7 7 7

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
26)= 11 126 6 6  
27)= 11 127 5 5  
28)= 11 128 6 6  
29)= 11 129 5 5  
30)= 11 130 6 6  
31)= 11 131 5 5  
32)= 11 132 5 6  
33)= 11 146 7 8 8

NODE CARDS: STAGE CHANGE TIMES (WORKING)  
CARD NO. CARD TYPE NODE NO. Sgl/Db1 Cycled S1 S2 S3 S4 S5 S6 S7 S8 S9 S10  
34)= 12 126 1 29 6  
35)= 12 127 1 33 5  
36)= 12 128 1 53 40  
37)= 12 129 1 8 33  
38)= 12 130 1 5 58

39)= 12 131 1 34 3  
40)= 12 132 1 52 39  
41)= 12 146 1 51 17 36

| LINK CARDS: |           |          |           |           |                   |               |         |               |         | GIVEWAY DATA |               |          |                |             |  |  |  |  |  |
|-------------|-----------|----------|-----------|-----------|-------------------|---------------|---------|---------------|---------|--------------|---------------|----------|----------------|-------------|--|--|--|--|--|
| CARD NO.    | CARD TYPE | LINK NO. | LINK1 NO. | LINK2 NO. | LINKS ONLY % FLOW | LINK1 GIVEWAY |         | LINK2 GIVEWAY |         | LINK LENGTH  | STOP WT. X100 | MAX FLOW | DELAY WT. X100 | DISPSN X100 |  |  |  |  |  |
|             |           |          |           |           |                   | A1 X100       | A2 X100 | A1 X100       | A2 X100 |              |               |          |                |             |  |  |  |  |  |
| 42)=        | 30        | 1462     | 1465      | 0         | 0                 | 50            | 0       | 0             | 0       | 0            | 0             | 0        | 0              | 0           |  |  |  |  |  |
| 43)=        | 30        | 1466     | 1462      | 0         | 0                 | 22            | 0       | 0             | 0       | 0            | 0             | 0        | 0              | 0           |  |  |  |  |  |

| CARD NO. |    | CARD TYPE | LINK NO. | EXIT NODE | LINK CARDS: FIRST GREEN |     |       |     | FIXED DATA: SECOND GREEN |     |       |     | LINK |   | STOP WT.X100 | SAT FLOW | DELAY WT.X100 | DISPSN X100 |
|----------|----|-----------|----------|-----------|-------------------------|-----|-------|-----|--------------------------|-----|-------|-----|------|---|--------------|----------|---------------|-------------|
|          |    |           |          |           | STAGE                   | LAG | STAGE | LAG | STAGE                    | LAG | STAGE | LAG |      |   |              |          |               |             |
| 44)=     | 31 | 29        | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 200  | 0 | 4000         | 0        | 0             |             |
| 45)=     | 31 | 31        | 128      | 1         | 6                       | 2   | 0     | 0   | 0                        | 0   | 0     | 0   | 95   | 0 | 5591         | 0        | 0             |             |
| 46)=     | 31 | 32        | 128      | 2         | 6                       | 1   | 0     | 0   | 0                        | 0   | 0     | 0   | 10   | 0 | 10000        | 0        | 0             |             |
| 47)=     | 31 | 33        | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 200  | 0 | 6000         | 0        | 0             |             |
| 48)=     | 31 | 34        | 129      | 2         | 5                       | 1   | 0     | 0   | 0                        | 0   | 0     | 0   | 53   | 0 | 1806         | 0        | 0             |             |
| 49)=     | 31 | 36        | 129      | 2         | 5                       | 1   | 0     | 0   | 0                        | 0   | 0     | 0   | 53   | 0 | 2047         | 0        | 0             |             |
| 50)=     | 31 | 37        | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 53   | 0 | 0            | 0        | 0             |             |
| 51)=     | 31 | 38        | 129      | 2         | 5                       | 1   | 0     | 0   | 0                        | 0   | 0     | 0   | 53   | 0 | 2028         | 0        | 0             |             |
| 52)=     | 31 | 39        | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 53   | 0 | 0            | 0        | 0             |             |
| 53)=     | 31 | 40        | 129      | 2         | 5                       | 1   | 0     | 0   | 0                        | 0   | 0     | 0   | 53   | 0 | 1867         | 0        | 0             |             |
| 54)=     | 31 | 41        | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 53   | 0 | 0            | 0        | 0             |             |
| 55)=     | 31 | 42        | 132      | 1         | 5                       | 2   | 0     | 0   | 0                        | 0   | 0     | 0   | 58   | 0 | 2028         | 0        | 0             |             |
| 56)=     | 31 | 43        | 132      | 2         | 6                       | 1   | 0     | 0   | 0                        | 0   | 0     | 0   | 10   | 0 | 10000        | 0        | 0             |             |
| 57)=     | 31 | 44        | 129      | 1         | 5                       | 2   | 0     | 0   | 0                        | 0   | 0     | 0   | 45   | 0 | 1612         | 0        | 0             |             |
| 58)=     | 31 | 45        | 129      | 1         | 5                       | 2   | 0     | 0   | 0                        | 0   | 0     | 0   | 45   | 0 | 1613         | 0        | 0             |             |
| 59)=     | 31 | 46        | 130      | 1         | 6                       | 2   | 0     | 0   | 0                        | 0   | 0     | 0   | 200  | 0 | 4839         | 0        | 0             |             |
| 60)=     | 31 | 47        | 130      | 2         | 6                       | 1   | 0     | 0   | 0                        | 0   | 0     | 0   | 10   | 0 | 10000        | 0        | 0             |             |
| 61)=     | 31 | 48        | 131      | 2         | 5                       | 1   | 0     | 0   | 0                        | 0   | 0     | 0   | 63   | 0 | 1806         | 0        | 0             |             |
| 62)=     | 31 | 50        | 131      | 2         | 5                       | 1   | 0     | 0   | 0                        | 0   | 0     | 0   | 63   | 0 | 1922         | 0        | 0             |             |
| 63)=     | 31 | 52        | 131      | 2         | 5                       | 1   | 0     | 0   | 0                        | 0   | 0     | 0   | 63   | 0 | 1886         | 0        | 0             |             |
| 64)=     | 31 | 53        | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 63   | 0 | 0            | 0        | 0             |             |
| 65)=     | 31 | 54        | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 200  | 0 | 6000         | 0        | 0             |             |
| 66)=     | 31 | 55        | 131      | 1         | 5                       | 2   | 0     | 0   | 0                        | 0   | 0     | 0   | 40   | 0 | 1855         | 0        | 0             |             |
| 67)=     | 31 | 56        | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 200  | 0 | 0            | 0        | 0             |             |
| 68)=     | 31 | 57        | 131      | 1         | 5                       | 2   | 0     | 0   | 0                        | 0   | 0     | 0   | 40   | 0 | 1800         | 0        | 0             |             |
| 69)=     | 31 | 58        | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 95   | 0 | 0            | 0        | 0             |             |
| 70)=     | 31 | 59        | 128      | 2         | 6                       | 1   | 0     | 0   | 0                        | 0   | 0     | 0   | 10   | 0 | 10000        | 0        | 0             |             |
| 71)=     | 31 | 60        | 132      | 2         | 6                       | 1   | 0     | 0   | 0                        | 0   | 0     | 0   | 10   | 0 | 10000        | 0        | 0             |             |
| 72)=     | 31 | 61        | 130      | 2         | 6                       | 1   | 0     | 0   | 0                        | 0   | 0     | 0   | 10   | 0 | 10000        | 0        | 0             |             |
| 73)=     | 31 | 62        | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 58   | 0 | 0            | 0        | 0             |             |
| 74)=     | 31 | 63        | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 10   | 0 | 3600         | 0        | 0             |             |
| 75)=     | 31 | 64        | 129      | 1         | 5                       | 2   | 0     | 0   | 0                        | 0   | 0     | 0   | 45   | 0 | 1613         | 0        | 0             |             |
| 76)=     | 31 | 65        | 129      | 1         | 5                       | 2   | 0     | 0   | 0                        | 0   | 0     | 0   | 45   | 0 | 1613         | 0        | 0             |             |
| 77)=     | 31 | 66        | 131      | 1         | 5                       | 2   | 0     | 0   | 0                        | 0   | 0     | 0   | 40   | 0 | 1969         | 0        | 0             |             |
| 78)=     | 31 | 67        | 131      | 1         | 5                       | 2   | 0     | 0   | 0                        | 0   | 0     | 0   | 40   | 0 | 1875         | 0        | 0             |             |
| 79)=     | 31 | 68        | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 200  | 0 | 3600         | 0        | 0             |             |
| 80)=     | 31 | 1261      | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 55   | 0 | 0            | 0        | 0             |             |
| 81)=     | 31 | 1262      | 126      | 1         | 6                       | 2   | 1     | 0   | 0                        | 0   | 0     | 0   | 55   | 0 | 1905         | 0        | 0             |             |
| 82)=     | 31 | 1263      | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 55   | 0 | 0            | 0        | 0             |             |
| 83)=     | 31 | 1264      | 126      | 1         | 6                       | 2   | 1     | 0   | 0                        | 0   | 0     | 0   | 55   | 0 | 2038         | 0        | 0             |             |
| 84)=     | 31 | 1266      | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 55   | 0 | 0            | 0        | 0             |             |
| 85)=     | 31 | 1267      | 126      | 1         | 6                       | 2   | 1     | 0   | 0                        | 0   | 0     | 0   | 55   | 0 | 2019         | 0        | 0             |             |
| 86)=     | 31 | 1269      | 126      | 1         | 6                       | 2   | 1     | 0   | 0                        | 0   | 0     | 0   | 55   | 0 | 1824         | 0        | 0             |             |
| 87)=     | 31 | 1271      | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 67   | 0 | 0            | 0        | 0             |             |
| 88)=     | 31 | 1272      | 127      | 2         | 5                       | 1   | 0     | 0   | 0                        | 0   | 0     | 0   | 67   | 0 | 1876         | 0        | 0             |             |
| 89)=     | 31 | 1273      | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 67   | 0 | 0            | 0        | 0             |             |
| 90)=     | 31 | 1274      | 127      | 2         | 5                       | 1   | 0     | 0   | 0                        | 0   | 0     | 0   | 67   | 0 | 2046         | 0        | 0             |             |
| 91)=     | 31 | 1275      | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 67   | 0 | 0            | 0        | 0             |             |
| 92)=     | 31 | 1276      | 127      | 2         | 5                       | 1   | 0     | 0   | 0                        | 0   | 0     | 0   | 67   | 0 | 1973         | 0        | 0             |             |
| 93)=     | 31 | 1278      | 127      | 2         | 5                       | 1   | 0     | 0   | 0                        | 0   | 0     | 0   | 67   | 0 | 1770         | 0        | 0             |             |
| 94)=     | 31 | 1461      | 146      | 2         | 0                       | 3   | 0     | 0   | 0                        | 0   | 0     | 0   | 200  | 0 | 1860         | 0        | 0             |             |
| 95)=     | 31 | 1462      | 146      | 1         | 0                       | 3   | 2     | 0   | 0                        | 0   | 0     | 0   | 130  | 0 | 1774         | 0        | 0             |             |
| 96)=     | 31 | 1463      | 146      | 1         | 0                       | 3   | 8     | 0   | 0                        | 0   | 0     | 0   | 130  | 0 | 1833         | 0        | 0             |             |
| 97)=     | 31 | 1464      | 146      | 3         | 8                       | 1   | 0     | 0   | 0                        | 0   | 0     | 0   | 200  | 0 | 1833         | 0        | 0             |             |
| 98)=     | 31 | 1465      | 146      | 1         | 0                       | 2   | 3     | 0   | 0                        | 0   | 0     | 0   | 200  | 0 | 1926         | 0        | 0             |             |
| 99)=     | 31 | 1467      | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 200  | 0 | 2000         | 0        | 0             |             |
| 100)=    | 31 | 1468      | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 200  | 0 | 2000         | 0        | 0             |             |
| 101)=    | 31 | 1469      | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 200  | 0 | 2000         | 0        | 0             |             |
| 102)=    | 31 | 12601     | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 156  | 0 | 1800         | 0        | 0             |             |
| 103)=    | 31 | 12602     | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 200  | 0 | 0            | 0        | 0             |             |
| 104)=    | 31 | 12603     | 126      | 1         | 6                       | 2   | 0     | 0   | 0                        | 0   | 0     | 0   | 10   | 0 | 10000        | 0        | 0             |             |
| 105)=    | 31 | 12604     | 126      | 1         | 6                       | 2   | 0     | 0   | 0                        | 0   | 0     | 0   | 10   | 0 | 10000        | 0        | 0             |             |
| 106)=    | 31 | 12605     | 126      | 2         | 6                       | 1   | 0     | 0   | 0                        | 0   | 0     | 0   | 20   | 0 | 1522         | 0        | 0             |             |
| 107)=    | 31 | 12606     | 126      | 2         | 6                       | 1   | 0     | 0   | 0                        | 0   | 0     | 0   | 20   | 0 | 1640         | 0        | 0             |             |
| 108)=    | 31 | 12607     | 126      | 2         | 6                       | 1   | 0     | 0   | 0                        | 0   | 0     | 0   | 20   | 0 | 1757         | 0        | 0             |             |
| 109)=    | 31 | 12701     | 127      | 1         | 5                       | 2   | 0     | 0   | 0                        | 0   | 0     | 0   | 23   | 0 | 1802         | 0        | 0             |             |
| 110)=    | 31 | 12702     | 127      | 1         | 5                       | 2   | 0     | 0   | 0                        | 0   | 0     | 0   | 23   | 0 | 1775         | 0        | 0             |             |
| 111)=    | 31 | 12703     | 0        | 0         | 0                       | 0   | 0     | 0   | 0                        | 0   | 0     | 0   | 200  | 0 | 3600         | 0        | 0             |             |
| 112)=    | 31 | 12704     | 127      | 1         | 5                       | 2   | 0     | 0   | 0                        | 0   | 0     | 0   | 23   | 0 | 1907         | 0        | 0             |             |



[illegible]

| CARD NO. | CARD TYPE | ROUTE NUMBER | ROUTE DESCRIPTION |
|----------|-----------|--------------|-------------------|
| 184)=    | 41        | 1            | <Route Name>      |
| 185)=    | 41        | 2            | <Route Name>      |
| 186)=    | 41        | 3            | <Route Name>      |
| 187)=    | 41        | 4            | <Route Name>      |

```
*****END OF SUBROUTINE TINPUT*****
```

INITIAL SETTINGS  
- (SECONDS)

| LINK<br>NUMBER | FLOW<br>INTO<br>LINK | SAT<br>FLOW<br>(PCU/H) | DEGREE<br>OF<br>SAT | MEAN<br>CRUISE<br>(SEC) | -----DELAY-----     |                                     |                                 |                         |                       | -----STOPS----- |                                       |                                                  | -----QUEUE----- |            |            | PERFORMANCE |  | EXIT<br>NODE | GREEN TIMES |  |  |  |  |  |  |  |  |
|----------------|----------------------|------------------------|---------------------|-------------------------|---------------------|-------------------------------------|---------------------------------|-------------------------|-----------------------|-----------------|---------------------------------------|--------------------------------------------------|-----------------|------------|------------|-------------|--|--------------|-------------|--|--|--|--|--|--|--|--|
|                |                      |                        |                     |                         | PER<br>PCU<br>(SEC) | TIMES<br>(U+R+O=MEAN<br>DELAY (SEC) | RANDOM+<br>OVERSAT<br>(PCU+H/H) | COST<br>DELAY<br>(\$/H) | MEAN<br>STOPS<br>/PCU | OF<br>STOPS     | MAX.<br>AVERAGE<br>EXCESS OF<br>(PCU) | INDEX<br>WEIGHTED SUM<br>OF ( ) VALUES<br>(\$/H) | SUM             | 1ST<br>END | 2ND<br>END |             |  |              |             |  |  |  |  |  |  |  |  |
|                |                      |                        |                     |                         |                     |                                     |                                 |                         |                       |                 |                                       |                                                  |                 |            |            |             |  |              |             |  |  |  |  |  |  |  |  |
|                |                      |                        |                     |                         |                     |                                     |                                 |                         |                       |                 |                                       |                                                  |                 |            |            |             |  |              |             |  |  |  |  |  |  |  |  |
| 29             | 2097                 | 4000S                  | 70                  | 18.5                    | 3.7                 | 1.0                                 | + 0.9                           | ( 26.3)                 | 42                    | ( 18.5)         | 34                                    |                                                  | 44.8            |            |            |             |  |              |             |  |  |  |  |  |  |  |  |
| 31             | 411                  | 5591S                  | 32                  | 9.5                     | 2.3                 | 0.1                                 | + 0.1                           | ( 2.9)                  | 8                     | ( 0.6)          | 4                                     |                                                  | 3.6             | 128        | 59         | 40          |  |              |             |  |  |  |  |  |  |  |  |
| 32             | 10                   | 10000                  | 1                   | 4.5                     | 27.9                | 0.1                                 | + 0.0                           | ( 1.1)                  | 89                    | ( 0.0)          | 0                                     |                                                  | 1.1             | 128        | 46         | 53          |  |              |             |  |  |  |  |  |  |  |  |
| 33             | 1285                 | 6000                   | 21                  | 18.5                    | 0.9                 | 0.0                                 | + 0.1                           | ( 1.9)                  | 1                     | ( 0.2)          | 0                                     |                                                  | 2.1             |            |            |             |  |              |             |  |  |  |  |  |  |  |  |
| 34             | 255                  | 1806                   | 25                  | 5.5                     | 3.9                 | 0.1                                 | + 0.2                           | ( 3.4)                  | 7                     | ( 0.4)          | 0                                     |                                                  | 3.8             | 129        | 38         | 8           |  |              |             |  |  |  |  |  |  |  |  |
| 36             | 264                  | 2047S                  | 33                  | 5.5                     | 3.8                 | 0.1                                 | + 0.2                           | ( 3.5)                  | 7                     | ( 0.4)          | 2                                     |                                                  | 3.8             | 129        | 38         | 8           |  |              |             |  |  |  |  |  |  |  |  |
| 37             | 119                  | 361                    | 33                  | 7.5                     | 12.4                | 0.3                                 | + 0.1                           | ( 2.2)                  | 88                    | ( 1.0)          | 2                                     |                                                  | 0.1             | 129        | 38         | 8           |  |              |             |  |  |  |  |  |  |  |  |
| 38             | 537                  | 2028S                  | 58                  | 5.5                     | 5.3                 | 0.2                                 | + 0.6                           | ( 10.1)                 | 9                     | ( 1.0)          | 3                                     |                                                  | 11.1            | 129        | 38         | 8           |  |              |             |  |  |  |  |  |  |  |  |
| 39             | 123                  | 38L                    | 58                  | 7.5                     | 13.4                | 0.3                                 | + 0.1                           | ( 6.3)                  | 89                    | ( 1.1)          | 3                                     |                                                  | 7.4             | 129        | 38         | 8           |  |              |             |  |  |  |  |  |  |  |  |
| 40             | 557                  | 1867S                  | 65                  | 5.5                     | 6.5                 | 0.2                                 | + 0.8                           | ( 13.2)                 | 12                    | ( 1.3)          | 4                                     |                                                  | 14.5            | 129        | 38         | 8           |  |              |             |  |  |  |  |  |  |  |  |
| 41             | 129                  | 40L                    | 65                  | 7.5                     | 13.8                | 0.3                                 | + 0.2                           | ( 6.8)                  | 88                    | ( 1.2)          | 4                                     |                                                  | 7.9             | 129        | 38         | 8           |  |              |             |  |  |  |  |  |  |  |  |
| 42             | 698                  | 2028S                  | 63                  | 5.5                     | 5.3                 | 0.3                                 | + 0.6                           | ( 13.2)                 | 21                    | ( 3.4)          | 3                                     |                                                  | 16.6            | 132        | 57         | 39          |  |              |             |  |  |  |  |  |  |  |  |
| 43             | 10                   | 10000                  | 1                   | 4.5                     | 27.9                | 0.1                                 | + 0.0                           | ( 1.1)                  | 89                    | ( 0.0)          | 0                                     |                                                  | 1.1             | 132        | 45         | 52          |  |              |             |  |  |  |  |  |  |  |  |
| 44             | 398                  | 1612                   | 78                  | 4.5                     | 32.4                | 1.8                                 | + 1.7                           | ( 50.0)                 | 95                    | ( 8.4)          | 8                                     | +                                                | 58.4            | 129        | 13         | 33          |  |              |             |  |  |  |  |  |  |  |  |
| 45             | 136                  | 1613                   | 26                  | 4.5                     | 19.6                | 0.5                                 | + 0.2                           | ( 10.2)                 | 53                    | ( 1.6)          | 1                                     |                                                  | 11.8            | 129        | 13         | 33          |  |              |             |  |  |  |  |  |  |  |  |
| 46             | 1258                 | 4839                   | 36                  | 18.5                    | 4.6                 | 1.2                                 | + 0.3                           | ( 20.4)                 | 32                    | ( 8.4)          | 9                                     |                                                  | 28.8            | 130        | 11         | 58          |  |              |             |  |  |  |  |  |  |  |  |
| 47             | 10                   | 10000                  | 1                   | 4.5                     | 27.9                | 0.1                                 | + 0.0                           | ( 1.1)                  | 89                    | ( 0.0)          | 0                                     |                                                  | 1.1             | 130        | 64         | 5           |  |              |             |  |  |  |  |  |  |  |  |
| 48             | 332                  | 1806                   | 45                  | 6.5                     | 8.6                 | 0.3                                 | + 0.4                           | ( 10.6)                 | 17                    | ( 1.0)          | 1                                     |                                                  | 11.6            | 131        | 8          | 34          |  |              |             |  |  |  |  |  |  |  |  |
| 50             | 393                  | 1922                   | 50                  | 6.5                     | 6.3                 | 0.5                                 | + 0.5                           | ( 13.6)                 | 58                    | ( 1.4)          | 8                                     |                                                  | 15.5            | 131        | 8          | 34          |  |              |             |  |  |  |  |  |  |  |  |
| 52             | 126                  | 1866S                  | 49                  | 6.5                     | 8.6                 | 0.1                                 | + 0.2                           | ( 4.0)                  | 16                    | ( 0.4)          | 5                                     |                                                  | 4.4             | 131        | 8          | 34          |  |              |             |  |  |  |  |  |  |  |  |
| 53             | 255                  | 52L                    | 49                  | 8.5                     | 22.0                | 1.2                                 | + 0.3                           | ( 21.6)                 | 101                   | ( 2.8)          | 5                                     |                                                  | 24.4            | 131        | 8          | 34          |  |              |             |  |  |  |  |  |  |  |  |
| 54             | 1755                 | 6000S                  | 35                  | 18.5                    | 1.0                 | 0.0                                 | + 0.2                           | ( 3.2)                  | 1                     | ( 0.3)          | 0                                     |                                                  | 3.5             |            |            |             |  |              |             |  |  |  |  |  |  |  |  |
| 55             | 769                  | 1855                   | 88                  | 4.5                     | 32.9                | 3.4                                 | + 3.5                           | ( 98.3)                 | 106                   | ( 13.9)         | 16                                    | +                                                | 112.2           | 131        | 39         | 3           |  |              |             |  |  |  |  |  |  |  |  |
| 56             | 372                  | 54L                    | 35                  | 18.5                    | 1.0                 | 0.0                                 | + 0.0                           | ( 0.7)                  | 1                     | ( 0.1)          | 0                                     |                                                  | 0.7             |            |            |             |  |              |             |  |  |  |  |  |  |  |  |
| 57             | 730                  | 1800                   | 86                  | 4.5                     | 30.9                | 3.2                                 | + 3.0                           | ( 87.7)                 | 102                   | ( 12.7)         | 15                                    | +                                                | 100.4           | 131        | 39         | 3           |  |              |             |  |  |  |  |  |  |  |  |
| 58             | 874                  | 31L                    | 32                  | 10.7                    | 2.4                 | 0.3                                 | + 0.2                           | ( 6.6)                  | 18                    |                 |                                       |                                                  |                 |            |            |             |  |              |             |  |  |  |  |  |  |  |  |

|      |     |    |   |
|------|-----|----|---|
| 12.9 | 126 | 35 | 7 |
| 9.2  | 126 | 35 | 7 |
| 14.4 | 126 | 35 | 7 |

## 66 SECOND CYCLE 66 STEPS

[illegible]

| ROUTE |      |      |     |     |               |            |         |       |   |
|-------|------|------|-----|-----|---------------|------------|---------|-------|---|
| 483.8 | 21.1 | 22.9 | 4.2 | 4.7 | ( 127.2 ) + ( | 32.5 ) + ( | 0.0 ) = | 159.6 | 1 |
| 44.4  | 3.3  | 13.6 | 1.3 | 0.7 | ( 28.3 ) + (  | 3.5 ) + (  | 0.0 ) = | 31.8  | 2 |
| 54.7  | 3.3  | 16.7 | 1.0 | 1.0 | ( 27.5 ) + (  | 5.4 ) + (  | 0.0 ) = | 32.9  | 3 |
| 65.2  | 3.5  | 18.6 | 0.8 | 1.1 | ( 26.8 ) + (  | 4.8 ) + (  | 0.0 ) = | 31.6  | 4 |

\*\*\*\*\*

|                              | CRUISE<br>LITRES PER HOUR | DELAY<br>LITRES PER HOUR | STOPS<br>LITRES PER HOUR | TOTALS<br>LITRES PER HOUR |
|------------------------------|---------------------------|--------------------------|--------------------------|---------------------------|
| FUEL CONSUMPTION PREDICTIONS | 223.8                     | + 104.4                  | + 102.6                  | = 430.8                   |

```
NO. OF ENTRIES TO SUBPT = 1
NO. OF LINKS RECALCULATED= 70
```

### CYCLIC FLOW PROFILE GRAPHS

LINK 1271 FED BY 1269 0 0 0 M.M.E. 0.97

[illegible]

|      |    |        |    |    |    |          |      |
|------|----|--------|----|----|----|----------|------|
| LINK | 42 | FED BY | 50 | 52 | 55 | 0 M.M.E. | 0.72 |
|------|----|--------|----|----|----|----------|------|

```

      I
      I
      I
      I
2000+  I
      I      00000000
      I      0000000000
      I      000000000000
      I      00000000000000
      I      0000000000000000
1500+  I      0000000000000000
      I      000000000000000000
      I      00000000000000000000
      I      0000000000000000000000
      I      000000000000000000000000
      I      00000000000000000000000000
      I      0000000000000000000000000000
      I      000000000000000000000000000000
1000+  I      01      000000000000000000000000000000000000
      I      00      000000000000000000000000000000000000
      I      00      000000000000000000000000000000000000
      I      00      000000000000000000000000000000000000

```

```

I      00      0000000000000000      ^^^^^
I      000     0000000000000000      ^^^^^
500+0000     000  0000000000000000      1111111111000000
I00000      0000 00000000000000001  111111111111000000
I000000      0000 00000000000000001  111111111111000000
I000000000      00000 000000000000000011 111111111111000000
I0000000000      000000 000000000000000011 111111111111000000
I00000000000      0000000 0000000000000000111111111111000000
+.....1.....1.....1.....1=====1=====1.....

```

```

LINK 52 FED BY 45 0 0 0 M.M.E. 1.30
I
I
I
I
2000+
I
I
I
I
I
1500+
I
I
I
I
I
1000+
I
I      ^      00
I      ^      00
I      ^      000
I      ^      0000
500+
I      ^      000000
I      ^      0000000000
I      ^      000000000000
I      ^      000000000000001
I      ^      0000000000000000111111
+=====1.....1.....1.....1=====1=====1=====

```

```

LINK 53 FED BY 34 0 0 0 M.M.E. 0.89
I
I
I
I
2000+
I      ^^^^^^^^
I      ^^^^^^^^
I      ^^^^^^^^
I      ^^^^^^^^
1500+
I      ^^^^^^^^
I      ^^^^^^^^
I      ^^^^^^^^
I      ^^^^^^^^
I      ^^^^^^^^
1000+
I      ^^^^^^^^
I      ^^^^^^^^      11
I      ^^^^^^^^      11111111
I      ^^^^^^^^      1111111111
I      ^^^^^^^^      111111111111
500+11      ^^^^^^^^      111111111111
I1111      ^^^^^^^^      11111111111111
I1111111111000000^      1111111111111111
I11111111111000000^      1 1111111111111111
I111111111110000000      111111111111111111
+=====1.....1.....1.....1=====1=====1=====

```

PROGRAM TRANSYT FINISHED

## A R C A D Y 6

## ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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| Crowthorne House  | Fax: +44 (0) 1344 770356   |
| Nine Mile Ride    | Email: software@trl.co.uk  |
| Wokingham, Berks. | Web: www.trlsoftware.co.uk |
| RG40 3GA, UK      |                            |

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

Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_BlythRd AM Sen.vai"  
(drive-on-the-left ) at 10:33:49 on Sunday, 5 August 2012

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Site 4 Base Model  
LOCATION: Hayes and Harlington  
DATE: 17/07/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - Dawley Road (N)  
ARM B - Blyth Road (E)  
ARM C - Dawley Road (S)  
ARM D - Kestral Way (SW)  
ARM E - Betam Road (NW)

GEOMETRIC DATA  
-----

| T5 |     |   |       |      |       |      |       |       |       |       |       |       |           |      |       |       |                     |        |   |
|----|-----|---|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-----------|------|-------|-------|---------------------|--------|---|
| I  | ARM | I | V (M) | I    | E (M) | I    | L (M) | I     | R (M) | I     | D (M) | I     | PHI (DEG) | I    | SLOPE | I     | INTERCEPT (PCU/MIN) | I      |   |
| I  | ARM | A | I     | 3.90 | I     | 7.86 | I     | 19.00 | I     | 13.60 | I     | 34.70 | I         | 17.0 | I     | 0.708 | I                   | 32.392 | I |
| I  | ARM | B | I     | 3.29 | I     | 5.65 | I     | 3.60  | I     | 7.00  | I     | 35.00 | I         | 16.5 | I     | 0.531 | I                   | 19.562 | I |
| I  | ARM | C | I     | 4.97 | I     | 9.46 | I     | 13.00 | I     | 3.00  | I     | 34.70 | I         | 36.0 | I     | 0.522 | I                   | 25.183 | I |
| I  | ARM | D | I     | 3.90 | I     | 4.66 | I     | 3.20  | I     | 3.00  | I     | 34.00 | I         | 28.0 | I     | 0.419 | I                   | 15.966 | I |
| I  | ARM | E | I     | 3.60 | I     | 7.70 | I     | 8.00  | I     | 8.20  | I     | 35.00 | I         | 16.5 | I     | 0.609 | I                   | 25.411 | I |

V = approach half-width      L = effective flare length      D = inscribed circle diameter  
E = entry width                R = entry radius                PHI = entry angle

TRAFFIC DEMAND DATA  
-----

Only sets included in the current run are shown

## SCALING FACTORS

----- T13

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

-----

TIME PERIOD BEGINS(07.30)AND ENDS(09.00)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com+H4&5 2014

----- T15

| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN        | I | RATE OF FLOW (VEH/MIN)    | I |
|---|-------|---|------------------------------------------|---|---------------------------|---|
| I |       | I | I FLOW STARTS I TOP OF PEAK I FLOW STOPS | I | I BEFORE I AT TOP I AFTER | I |
| I |       | I | I TO RISE I IS REACHED I FALLING         | I | I PEAK I OF PEAK I PEAK   | I |
| I | ARM A | I | 15.00 I 45.00 I 75.00                    | I | 13.48 I 20.21 I 13.48     | I |
| I | ARM B | I | 15.00 I 45.00 I 75.00                    | I | 5.96 I 8.94 I 5.96        | I |
| I | ARM C | I | 15.00 I 45.00 I 75.00                    | I | 11.02 I 16.54 I 11.02     | I |
| I | ARM D | I | 15.00 I 45.00 I 75.00                    | I | 0.47 I 0.71 I 0.47        | I |
| I | ARM E | I | 15.00 I 45.00 I 75.00                    | I | 0.55 I 0.83 I 0.55        | I |

-----

DEMAND SET TITLE: Base+Com+H4&5 2014

----- T33

| I |               | I | TURNING PROPORTIONS                     | I |
|---|---------------|---|-----------------------------------------|---|
| I |               | I | TURNING COUNTS                          | I |
| I |               | I | (PERCENTAGE OF H.V.S)                   | I |
| I | TIME          | I | FROM/T                                  | I |
| I |               | I | ARM A                                   | I |
| I |               | I | ARM B                                   | I |
| I |               | I | ARM C                                   | I |
| I |               | I | ARM D                                   | I |
| I |               | I | ARM E                                   | I |
| I | 07.30 - 09.00 | I | I                                       | I |
| I |               | I | ARM A                                   | I |
| I |               | I | 0.002 I 0.118 I 0.827 I 0.024 I 0.030 I | I |
| I |               | I | 2.0 I 127.0 I 891.0 I 26.0 I 32.0 I     | I |
| I |               | I | ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I | I |
| I |               | I | I                                       | I |
| I |               | I | ARM B                                   | I |
| I |               | I | 0.149 I 0.000 I 0.797 I 0.021 I 0.034 I | I |
| I |               | I | 71.0 I 0.0 I 380.0 I 10.0 I 16.0 I      | I |
| I |               | I | ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I | I |
| I |               | I | I                                       | I |
| I |               | I | ARM C                                   | I |
| I |               | I | 0.629 I 0.196 I 0.002 I 0.071 I 0.101 I | I |
| I |               | I | 555.0 I 173.0 I 2.0 I 63.0 I 89.0 I     | I |
| I |               | I | ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I | I |
| I |               | I | I                                       | I |
| I |               | I | ARM D                                   | I |
| I |               | I | 0.079 I 0.184 I 0.632 I 0.000 I 0.105 I | I |
| I |               | I | 3.0 I 7.0 I 24.0 I 0.0 I 4.0 I          | I |
| I |               | I | ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I | I |
| I |               | I | I                                       | I |
| I |               | I | ARM E                                   | I |
| I |               | I | 0.295 I 0.227 I 0.409 I 0.045 I 0.023 I | I |
| I |               | I | 13.0 I 10.0 I 18.0 I 2.0 I 1.0 I        | I |
| I |               | I | ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I | I |
| I |               | I | I                                       | I |

-----

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT



QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 07.45                  | 0.8                            | *  |
| 08.00                  | 1.2                            | *  |
| 08.15                  | 2.0                            | ** |
| 08.30                  | 2.1                            | ** |
| 08.45                  | 1.2                            | *  |
| 09.00                  | 0.8                            | *  |

QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 07.45                  | 0.8                            | *     |
| 08.00                  | 1.5                            | **    |
| 08.15                  | 5.7                            | ***** |
| 08.30                  | 6.6                            | ***** |
| 08.45                  | 1.7                            | **    |
| 09.00                  | 0.9                            | *     |

QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 07.45                  | 0.8                            | *  |
| 08.00                  | 1.2                            | *  |
| 08.15                  | 2.1                            | ** |
| 08.30                  | 2.1                            | ** |
| 08.45                  | 1.3                            | *  |
| 09.00                  | 0.9                            | *  |

QUEUE AT ARM D

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

QUEUE AT ARM E

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

|   |     |   |              |          |   |              |           |   |                        |           | T75 |
|---|-----|---|--------------|----------|---|--------------|-----------|---|------------------------|-----------|-----|
| I | ARM | I | TOTAL DEMAND |          | I | * QUEUEING * |           | I | * INCLUSIVE QUEUEING * |           | I   |
| I |     | I |              |          | I | * DELAY *    |           | I | * DELAY *              |           | I   |
| I |     | I |              |          | I |              |           | I |                        |           | I   |
| I |     | I | (VEH)        | (VEH/H)  | I | (MIN)        | (MIN/VEH) | I | (MIN)                  | (MIN/VEH) | I   |
| I | A   | I | 1483.8       | I 989.2  | I | 119.4        | I 0.08    | I | 119.4                  | I 0.08    | I   |
| I | B   | I | 656.6        | I 437.7  | I | 238.7        | I 0.36    | I | 238.7                  | I 0.36    | I   |
| I | C   | I | 1214.0       | I 809.3  | I | 124.3        | I 0.10    | I | 124.3                  | I 0.10    | I   |
| I | D   | I | 52.3         | I 34.9   | I | 5.7          | I 0.11    | I | 5.7                    | I 0.11    | I   |
| I | E   | I | 60.6         | I 40.4   | I | 3.6          | I 0.06    | I | 3.6                    | I 0.06    | I   |
| I | ALL | I | 3467.2       | I 2311.5 | I | 491.7        | I 0.14    | I | 491.7                  | I 0.14    | I   |

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

END OF JOB

===== end of file =====

Printed at 10:34:37 on 05/08/2012]



# A R C A D Y 6

## ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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RG40 3GA,UK

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_BlythRd PM Sen.vai"  
(drive-on-the-left ) at 10:34:47 on Sunday, 5 August 2012

## FILE PROPERTIES

RUN TITLE: Site 4 Base Model  
LOCATION: Hayes and Harlington  
DATE: 17/07/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

## INPUT DATA

ARM A - Dawley Road (N)  
ARM B - Blyth Road (E)  
ARM C - Dawley Road (S)  
ARM D - Kestral Way (SW)  
ARM E - Betam Road (NW)

## GEOMETRIC DATA

| T5 |     |   |       |      |       |      |       |       |       |       |       |       |           |      |       |       |                     |        |   |
|----|-----|---|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-----------|------|-------|-------|---------------------|--------|---|
| I  | ARM | I | V (M) | I    | E (M) | I    | L (M) | I     | R (M) | I     | D (M) | I     | PHI (DEG) | I    | SLOPE | I     | INTERCEPT (PCU/MIN) | I      |   |
| I  | ARM | A | I     | 3.90 | I     | 7.86 | I     | 19.00 | I     | 13.60 | I     | 34.70 | I         | 17.0 | I     | 0.708 | I                   | 32.392 | I |
| I  | ARM | B | I     | 3.29 | I     | 5.65 | I     | 3.60  | I     | 7.00  | I     | 35.00 | I         | 16.5 | I     | 0.531 | I                   | 19.562 | I |
| I  | ARM | C | I     | 4.97 | I     | 9.46 | I     | 13.00 | I     | 3.00  | I     | 34.70 | I         | 36.0 | I     | 0.522 | I                   | 25.183 | I |
| I  | ARM | D | I     | 3.90 | I     | 4.66 | I     | 3.20  | I     | 3.00  | I     | 34.00 | I         | 28.0 | I     | 0.419 | I                   | 15.966 | I |
| I  | ARM | E | I     | 3.60 | I     | 7.70 | I     | 8.00  | I     | 8.20  | I     | 35.00 | I         | 16.5 | I     | 0.609 | I                   | 25.411 | I |

V = approach half-width L = effective flare length D = inscribed circle diameter  
E = entry width R = entry radius PHI = entry angle

## TRAFFIC DEMAND DATA

Only sets included in the current run are shown

## SCALING FACTORS

----- T13

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

-----

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com+H4&5 2014

----- T15

| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN        | I | RATE OF FLOW (VEH/MIN)    | I |
|---|-------|---|------------------------------------------|---|---------------------------|---|
| I |       | I | I FLOW STARTS I TOP OF PEAK I FLOW STOPS | I | I BEFORE I AT TOP I AFTER | I |
| I |       | I | I TO RISE I IS REACHED I FALLING         | I | I PEAK I OF PEAK I PEAK   | I |
| I | ARM A | I | 15.00 I 45.00 I 75.00                    | I | 9.56 I 14.34 I 9.56       | I |
| I | ARM B | I | 15.00 I 45.00 I 75.00                    | I | 4.81 I 7.22 I 4.81        | I |
| I | ARM C | I | 15.00 I 45.00 I 75.00                    | I | 11.66 I 17.49 I 11.66     | I |
| I | ARM D | I | 15.00 I 45.00 I 75.00                    | I | 1.25 I 1.88 I 1.25        | I |
| I | ARM E | I | 15.00 I 45.00 I 75.00                    | I | 1.15 I 1.72 I 1.15        | I |

-----

DEMAND SET TITLE: Base+Com+H4&5 2014

----- T33

| I |               | I | TURNING PROPORTIONS                     | I |
|---|---------------|---|-----------------------------------------|---|
| I |               | I | TURNING COUNTS                          | I |
| I |               | I | (PERCENTAGE OF H.V.S)                   | I |
| I | TIME          | I | FROM/T                                  | I |
| I |               | I | ARM A                                   | I |
| I |               | I | ARM B                                   | I |
| I |               | I | ARM C                                   | I |
| I |               | I | ARM D                                   | I |
| I |               | I | ARM E                                   | I |
| I | 16.15 - 17.45 | I | I                                       | I |
| I |               | I | ARM A                                   | I |
| I |               | I | 0.004 I 0.132 I 0.842 I 0.005 I 0.017 I | I |
| I |               | I | 3.0 I 101.0 I 644.0 I 4.0 I 13.0 I      | I |
| I |               | I | ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I | I |
| I |               | I | I                                       | I |
| I |               | I | ARM B                                   | I |
| I |               | I | 0.247 I 0.003 I 0.675 I 0.026 I 0.049 I | I |
| I |               | I | 95.0 I 1.0 I 260.0 I 10.0 I 19.0 I      | I |
| I |               | I | ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I | I |
| I |               | I | I                                       | I |
| I |               | I | ARM C                                   | I |
| I |               | I | 0.651 I 0.263 I 0.002 I 0.026 I 0.059 I | I |
| I |               | I | 607.0 I 245.0 I 2.0 I 24.0 I 55.0 I     | I |
| I |               | I | ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I | I |
| I |               | I | I                                       | I |
| I |               | I | ARM D                                   | I |
| I |               | I | 0.210 I 0.110 I 0.660 I 0.000 I 0.020 I | I |
| I |               | I | 21.0 I 11.0 I 66.0 I 0.0 I 2.0 I        | I |
| I |               | I | ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I | I |
| I |               | I | I                                       | I |
| I |               | I | ARM E                                   | I |
| I |               | I | 0.239 I 0.228 I 0.489 I 0.022 I 0.022 I | I |
| I |               | I | 22.0 I 21.0 I 45.0 I 2.0 I 2.0 I        | I |
| I |               | I | ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I | I |
| I |               | I | I                                       | I |

-----

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

-----



QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|------------------------|--------------------------------|---|
| 16.30                  | 0.5                            |   |
| 16.45                  | 0.7                            | * |
| 17.00                  | 1.0                            | * |
| 17.15                  | 1.1                            | * |
| 17.30                  | 0.7                            | * |
| 17.45                  | 0.5                            | * |

QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|------------------------|--------------------------------|---|
| 16.30                  | 0.5                            | * |
| 16.45                  | 0.7                            | * |
| 17.00                  | 1.4                            | * |
| 17.15                  | 1.4                            | * |
| 17.30                  | 0.8                            | * |
| 17.45                  | 0.5                            | * |

QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |     |
|------------------------|--------------------------------|-----|
| 16.30                  | 0.9                            | *   |
| 16.45                  | 1.4                            | *   |
| 17.00                  | 2.5                            | **  |
| 17.15                  | 2.5                            | *** |
| 17.30                  | 1.4                            | *   |
| 17.45                  | 0.9                            | *   |

QUEUE AT ARM D

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |  |
|------------------------|--------------------------------|--|
| 16.30                  | 0.1                            |  |
| 16.45                  | 0.2                            |  |
| 17.00                  | 0.3                            |  |
| 17.15                  | 0.3                            |  |
| 17.30                  | 0.2                            |  |
| 17.45                  | 0.1                            |  |

QUEUE AT ARM E

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |  |
|------------------------|--------------------------------|--|
| 16.30                  | 0.1                            |  |
| 16.45                  | 0.1                            |  |
| 17.00                  | 0.1                            |  |
| 17.15                  | 0.1                            |  |
| 17.30                  | 0.1                            |  |
| 17.45                  | 0.1                            |  |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| T75 |     |   |        |          |   |              |           |                        |       |           |
|-----|-----|---|--------|----------|---|--------------|-----------|------------------------|-------|-----------|
| I   | ARM | I | TOTAL  | DEMAND   | I | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I     | I         |
| I   | I   | I | I      | I        | I | * DELAY *    | I         | * DELAY *              | I     | I         |
| I   | I   | I | I      | I        | I | I            | I         | I                      | I     | I         |
| I   | I   | I | (VEH)  | (VEH/H)  | I | (MIN)        | (MIN/VEH) | I                      | (MIN) | (MIN/VEH) |
| I   | A   | I | 1053.0 | I 702.0  | I | 66.6         | I 0.06    | I                      | 66.6  | I 0.06    |
| I   | B   | I | 529.9  | I 353.3  | I | 79.1         | I 0.15    | I                      | 79.1  | I 0.15    |
| I   | C   | I | 1284.2 | I 856.1  | I | 142.9        | I 0.11    | I                      | 142.9 | I 0.11    |
| I   | D   | I | 137.6  | I 91.8   | I | 18.5         | I 0.13    | I                      | 18.5  | I 0.13    |
| I   | E   | I | 126.6  | I 84.4   | I | 9.2          | I 0.07    | I                      | 9.2   | I 0.07    |
| I   | ALL | I | 3131.4 | I 2087.6 | I | 316.2        | I 0.10    | I                      | 316.3 | I 0.10    |

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

END OF JOB

===== end of file =====

Printed at 10:35:03 on 05/08/2012]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_NorthHydeRd AM Sen.vai"  
(drive-on-the-left ) at 11:28:05 on Sunday, 5 August 2012

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Base Model - Roundabout 1  
LOCATION: North Hyde Road/Dawley Road  
DATE: 23/04/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - Dawley Road (N)  
ARM B - North Hyde Road  
ARM C - Millington Road  
ARM D - Daweley Road (S)  
ARM E - Bourne Avenue

GEOMETRIC DATA  
-----

| T5 |     |   |       |      |       |      |       |       |       |       |       |       |           |      |       |       |                     |        |   |
|----|-----|---|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-----------|------|-------|-------|---------------------|--------|---|
| I  | ARM | I | V (M) | I    | E (M) | I    | L (M) | I     | R (M) | I     | D (M) | I     | PHI (DEG) | I    | SLOPE | I     | INTERCEPT (PCU/MIN) | I      |   |
| I  | ARM | A | I     | 3.65 | I     | 9.50 | I     | 13.00 | I     | 22.00 | I     | 75.00 | I         | 20.0 | I     | 0.526 | I                   | 31.736 | I |
| I  | ARM | B | I     | 3.50 | I     | 8.00 | I     | 16.00 | I     | 10.00 | I     | 72.00 | I         | 40.0 | I     | 0.467 | I                   | 27.158 | I |
| I  | ARM | C | I     | 4.00 | I     | 6.00 | I     | 8.00  | I     | 22.00 | I     | 54.00 | I         | 36.0 | I     | 0.553 | I                   | 25.388 | I |
| I  | ARM | D | I     | 3.50 | I     | 5.50 | I     | 12.00 | I     | 20.00 | I     | 76.00 | I         | 46.0 | I     | 0.422 | I                   | 22.915 | I |
| I  | ARM | E | I     | 3.65 | I     | 4.50 | I     | 3.00  | I     | 32.00 | I     | 56.00 | I         | 35.0 | I     | 0.497 | I                   | 20.704 | I |

V = approach half-width L = effective flare length D = inscribed circle diameter  
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA  
-----

Only sets included in the current run are shown

SCALING FACTORS

----- T13

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

-----

TIME PERIOD BEGINS(07.45)AND ENDS(09.15)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com+H4&5 2014

----- T15

| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN      | I | RATE OF FLOW (VEH/MIN)  | I |
|---|-------|---|----------------------------------------|---|-------------------------|---|
| I |       | I | FLOW STARTS I TOP OF PEAK I FLOW STOPS | I | BEFORE I AT TOP I AFTER | I |
| I |       | I | TO RISE I IS REACHED I FALLING         | I | PEAK I OF PEAK I PEAK   | I |
| I | ARM A | I | 15.00 I 45.00 I 75.00                  | I | 15.57 I 23.36 I 15.57   | I |
| I | ARM B | I | 15.00 I 45.00 I 75.00                  | I | 7.34 I 11.01 I 7.34     | I |
| I | ARM C | I | 15.00 I 45.00 I 75.00                  | I | 0.77 I 1.16 I 0.77      | I |
| I | ARM D | I | 15.00 I 45.00 I 75.00                  | I | 8.46 I 12.69 I 8.46     | I |
| I | ARM E | I | 15.00 I 45.00 I 75.00                  | I | 4.78 I 7.16 I 4.78      | I |

-----

DEMAND SET TITLE: Base+Com+H4&5 2014

----- T33

| I |               | I | TURNING PROPORTIONS                     | I |
|---|---------------|---|-----------------------------------------|---|
| I |               | I | TURNING COUNTS                          | I |
| I |               | I | (PERCENTAGE OF H.V.S)                   | I |
| I | TIME          | I | FROM/T                                  | I |
| I |               | I | ARM A                                   | I |
| I |               | I | ARM B                                   | I |
| I |               | I | ARM C                                   | I |
| I |               | I | ARM D                                   | I |
| I |               | I | ARM E                                   | I |
| I | 07.45 - 09.15 | I | I                                       | I |
| I |               | I | ARM A                                   | I |
| I |               | I | 0.002 I 0.211 I 0.152 I 0.513 I 0.122 I | I |
| I |               | I | 3.0 I 263.0 I 189.0 I 639.0 I 152.0 I   | I |
| I |               | I | ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I | I |
| I |               | I | I                                       | I |
| I |               | I | ARM B                                   | I |
| I |               | I | 0.746 I 0.002 I 0.005 I 0.174 I 0.073 I | I |
| I |               | I | 438.0 I 1.0 I 3.0 I 102.0 I 43.0 I      | I |
| I |               | I | ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I | I |
| I |               | I | I                                       | I |
| I |               | I | ARM C                                   | I |
| I |               | I | 0.484 I 0.032 I 0.000 I 0.355 I 0.129 I | I |
| I |               | I | 30.0 I 2.0 I 0.0 I 22.0 I 8.0 I         | I |
| I |               | I | ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I | I |
| I |               | I | I                                       | I |
| I |               | I | ARM D                                   | I |
| I |               | I | 0.628 I 0.139 I 0.179 I 0.004 I 0.050 I | I |
| I |               | I | 425.0 I 94.0 I 121.0 I 3.0 I 34.0 I     | I |
| I |               | I | ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I | I |
| I |               | I | I                                       | I |
| I |               | I | ARM E                                   | I |
| I |               | I | 0.571 I 0.207 I 0.092 I 0.128 I 0.003 I | I |
| I |               | I | 218.0 I 79.0 I 35.0 I 49.0 I 1.0 I      | I |
| I |               | I | ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I | I |
| I |               | I | I                                       | I |

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QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| T70 |             |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |   |
|-----|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I   | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
| I   | 07.45-08.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I   | ARM A       | 15.63               | 29.21                 | 0.535                        | - -                              | 0.0                      | 1.1                    | 16.5                                | -                                             | 0.073                                          | I |
| I   | ARM B       | 7.37                | 20.21                 | 0.364                        | - -                              | 0.0                      | 0.6                    | 8.3                                 | -                                             | 0.077                                          | I |
| I   | ARM C       | 0.78                | 15.52                 | 0.050                        | - -                              | 0.0                      | 0.1                    | 0.8                                 | -                                             | 0.068                                          | I |
| I   | ARM D       | 8.49                | 19.35                 | 0.439                        | - -                              | 0.0                      | 0.8                    | 11.2                                | -                                             | 0.091                                          | I |
| I   | ARM E       | 4.79                | 13.78                 | 0.348                        | - -                              | 0.0                      | 0.5                    | 7.6                                 | -                                             | 0.110                                          | I |
| I   |             |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|--|
| 08.00-08.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |  |
| ARM A       | 18.67               | 28.71                 | 0.650                        | - -                              | -                        | 1.1                    | 26.3                                | -                                             | 0.099                                          |  |
| ARM B       | 8.80                | 18.84                 | 0.467                        | - -                              | -                        | 0.6                    | 12.6                                | -                                             | 0.099                                          |  |
| ARM C       | 0.93                | 13.57                 | 0.068                        | - -                              | -                        | 0.1                    | 1.1                                 | -                                             | 0.079                                          |  |
| ARM D       | 10.14               | 18.64                 | 0.544                        | - -                              | -                        | 0.8                    | 17.0                                | -                                             | 0.117                                          |  |
| ARM E       | 5.72                | 12.41                 | 0.461                        | - -                              | -                        | 0.5                    | 12.1                                | -                                             | 0.148                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|--|
| 08.15-08.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |  |
| ARM A       | 22.86               | 28.05                 | 0.815                        | -                                | 1.8                      | 4.1                    | 56.4                                | -                                             | 0.182                                          |  |
| ARM B       | 10.77               | 17.02                 | 0.633                        | -                                | 0.9                      | 1.7                    | 23.7                                | -                                             | 0.157                                          |  |
| ARM C       | 1.14                | 10.97                 | 0.104                        | -                                | 0.1                      | 0.1                    | 1.7                                 | -                                             | 0.102                                          |  |
| ARM D       | 12.42               | 17.70                 | 0.702                        | -                                | 1.2                      | 2.3                    | 31.6                                | -                                             | 0.185                                          |  |
| ARM E       | 7.01                | 10.58                 | 0.663                        | -                                | 0.8                      | 1.9                    | 25.7                                | -                                             | 0.270                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.30-08.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| ARM A       | 22.86               | 28.02                 | 0.816                        | -                                | 4.1                      | 4.3                    | 63.4                                | -                                             | 0.192                                          |
| ARM B       | 10.77               | 16.95                 | 0.635                        | -                                | 1.7                      | 1.7                    | 25.5                                | -                                             | 0.162                                          |
| ARM C       | 1.14                | 10.89                 | 0.105                        | -                                | 0.1                      | 0.1                    | 1.7                                 | -                                             | 0.103                                          |
| ARM D       | 12.42               | 17.67                 | 0.703                        | -                                | 2.3                      | 2.3                    | 34.4                                | -                                             | 0.190                                          |
| ARM E       | 7.01                | 10.52                 | 0.666                        | -                                | 1.9                      | 1.9                    | 28.6                                | -                                             | 0.284                                          |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|--|
| 08.45-09.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |  |
| ARM A       | 18.67               | 28.67                 | 0.651                        | -                                | 4.3                      | 1.9                    | 30.2                                | -                                             | 0.103                                          |  |
| ARM B       | 8.80                | 18.75                 | 0.469                        | -                                | 1.7                      | 0.9                    | 13.9                                | -                                             | 0.102                                          |  |
| ARM C       | 0.93                | 13.45                 | 0.069                        | -                                | 0.1                      | 0.1                    | 1.1                                 | -                                             | 0.080                                          |  |
| ARM D       | 10.14               | 18.60                 | 0.545                        | -                                | 2.3                      | 1.2                    | 19.2                                | -                                             | 0.120                                          |  |
| ARM E       | 5.72                | 12.33                 | 0.464                        | -                                | 1.9                      | 0.9                    | 14.0                                | -                                             | 0.154                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|--|
| 09.00-09.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |  |
| ARM A       | 15.63               | 29.18                 | 0.536                        | -                                | 1.9                      | 1.2                    | 18.0                                | -                                             | 0.074                                          |  |
| ARM B       | 7.37                | 20.15                 | 0.365                        | -                                | 0.9                      | 0.6                    | 8.9                                 | -                                             | 0.078                                          |  |
| ARM C       | 0.78                | 15.44                 | 0.050                        | -                                | 0.1                      | 0.1                    | 0.8                                 | -                                             | 0.068                                          |  |
| ARM D       | 8.49                | 19.32                 | 0.440                        | -                                | 1.2                      | 0.8                    | 12.3                                | -                                             | 0.093                                          |  |
| ARM E       | 4.79                | 13.72                 | 0.349                        | -                                | 0.9                      | 0.5                    | 8.4                                 | -                                             | 0.113                                          |  |



-----  
 QUEUE AT ARM A  
 -----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |      |
|------------------------|--------------------------------|------|
| 08.00                  | 1.1                            | *    |
| 08.15                  | 1.8                            | **   |
| 08.30                  | 4.1                            | **** |
| 08.45                  | 4.3                            | **** |
| 09.00                  | 1.9                            | **   |
| 09.15                  | 1.2                            | *    |

-----  
 QUEUE AT ARM B  
 -----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 08.00                  | 0.6                            | *  |
| 08.15                  | 0.9                            | *  |
| 08.30                  | 1.7                            | ** |
| 08.45                  | 1.7                            | ** |
| 09.00                  | 0.9                            | *  |
| 09.15                  | 0.6                            | *  |

-----  
 QUEUE AT ARM C  
 -----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |  |
|------------------------|--------------------------------|--|
| 08.00                  | 0.1                            |  |
| 08.15                  | 0.1                            |  |
| 08.30                  | 0.1                            |  |
| 08.45                  | 0.1                            |  |
| 09.00                  | 0.1                            |  |
| 09.15                  | 0.1                            |  |

-----  
 QUEUE AT ARM D  
 -----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 08.00                  | 0.8                            | *  |
| 08.15                  | 1.2                            | *  |
| 08.30                  | 2.3                            | ** |
| 08.45                  | 2.3                            | ** |
| 09.00                  | 1.2                            | *  |
| 09.15                  | 0.8                            | *  |

-----  
 QUEUE AT ARM E  
 -----

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 08.00                  | 0.5                            | *  |
| 08.15                  | 0.8                            | *  |
| 08.30                  | 1.9                            | ** |
| 08.45                  | 1.9                            | ** |
| 09.00                  | 0.9                            | *  |
| 09.15                  | 0.5                            | *  |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| T75 |     |   |              |          |              |       |                        |   |       |           |
|-----|-----|---|--------------|----------|--------------|-------|------------------------|---|-------|-----------|
| I   | ARM | I | TOTAL DEMAND | I        | * QUEUEING * | I     | * INCLUSIVE QUEUEING * | I |       |           |
| I   |     | I |              | I        | * DELAY *    | I     | * DELAY *              | I |       | I         |
| I   |     | I | (VEH)        | (VEH/H)  | I            | (MIN) | (MIN/VEH)              | I | (MIN) | (MIN/VEH) |
| I   | A   | I | 1715.0       | I 1143.4 | I            | 210.8 | I 0.12                 | I | 210.8 | I 0.12    |
| I   | B   | I | 808.0        | I 538.6  | I            | 93.0  | I 0.12                 | I | 93.0  | I 0.12    |
| I   | C   | I | 85.3         | I 56.9   | I            | 7.2   | I 0.08                 | I | 7.2   | I 0.08    |
| I   | D   | I | 931.8        | I 621.2  | I            | 125.6 | I 0.13                 | I | 125.7 | I 0.13    |
| I   | E   | I | 525.8        | I 350.5  | I            | 96.4  | I 0.18                 | I | 96.5  | I 0.18    |
| I   | ALL | I | 4066.0       | I 2710.6 | I            | 533.1 | I 0.13                 | I | 533.2 | I 0.13    |

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

END OF JOB

===== end of file =====

Printed at 11:29:15 on 05/08/2012]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_NorthHydeRd PM Sen.vai"  
(drive-on-the-left ) at 11:30:03 on Sunday, 5 August 2012

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Base Model - Roundabout 1  
LOCATION: North Hyde Road/Dawley Road  
DATE: 23/04/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - Dawley Road (N)  
ARM B - North Hyde Road  
ARM C - Millington Road  
ARM D - Daweley Road (S)  
ARM E - Bourne Avenue

GEOMETRIC DATA  
-----

| T5 |     |   |       |      |       |      |       |       |       |       |       |       |           |      |       |       |                     |        |   |
|----|-----|---|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-----------|------|-------|-------|---------------------|--------|---|
| I  | ARM | I | V (M) | I    | E (M) | I    | L (M) | I     | R (M) | I     | D (M) | I     | PHI (DEG) | I    | SLOPE | I     | INTERCEPT (PCU/MIN) | I      |   |
| I  | ARM | A | I     | 3.65 | I     | 9.50 | I     | 13.00 | I     | 22.00 | I     | 75.00 | I         | 20.0 | I     | 0.526 | I                   | 31.736 | I |
| I  | ARM | B | I     | 3.50 | I     | 8.00 | I     | 16.00 | I     | 10.00 | I     | 72.00 | I         | 40.0 | I     | 0.467 | I                   | 27.158 | I |
| I  | ARM | C | I     | 4.00 | I     | 6.00 | I     | 8.00  | I     | 22.00 | I     | 54.00 | I         | 36.0 | I     | 0.553 | I                   | 25.388 | I |
| I  | ARM | D | I     | 3.50 | I     | 5.50 | I     | 12.00 | I     | 20.00 | I     | 76.00 | I         | 46.0 | I     | 0.422 | I                   | 22.915 | I |
| I  | ARM | E | I     | 3.65 | I     | 4.50 | I     | 3.00  | I     | 32.00 | I     | 56.00 | I         | 35.0 | I     | 0.497 | I                   | 20.704 | I |

V = approach half-width L = effective flare length D = inscribed circle diameter  
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA  
-----

Only sets included in the current run are shown

SCALING FACTORS

----- T13

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

-----

TIME PERIOD BEGINS(17.00)AND ENDS(18.30)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com+H4&5 2014

----- T15

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

-----

DEMAND SET TITLE: Base+Com+H4&5 2014

----- T33

| I | TIME          | I | TURNING PROPORTIONS   | I |
|---|---------------|---|-----------------------|---|
| I |               | I | TURNING COUNTS        | I |
| I |               | I | (PERCENTAGE OF H.V.S) | I |
| I |               | I | FROM/T                | I |
| I |               | I | ARM A                 | I |
| I |               | I | ARM B                 | I |
| I |               | I | ARM C                 | I |
| I |               | I | ARM D                 | I |
| I |               | I | ARM E                 | I |
| I | 17.00 - 18.30 | I | 0.002                 | I |
| I |               | I | 0.250                 | I |
| I |               | I | 0.066                 | I |
| I |               | I | 0.539                 | I |
| I |               | I | 0.143                 | I |
| I |               | I | 2.0                   | I |
| I |               | I | 284.0                 | I |
| I |               | I | 75.0                  | I |
| I |               | I | 613.0                 | I |
| I |               | I | 163.0                 | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | 0.658                 | I |
| I |               | I | 0.002                 | I |
| I |               | I | 0.241                 | I |
| I |               | I | 0.098                 | I |
| I |               | I | 371.0                 | I |
| I |               | I | 1.0                   | I |
| I |               | I | 1.0                   | I |
| I |               | I | 136.0                 | I |
| I |               | I | 55.0                  | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | 0.394                 | I |
| I |               | I | 0.037                 | I |
| I |               | I | 0.000                 | I |
| I |               | I | 0.460                 | I |
| I |               | I | 0.109                 | I |
| I |               | I | 148.0                 | I |
| I |               | I | 14.0                  | I |
| I |               | I | 0.0                   | I |
| I |               | I | 173.0                 | I |
| I |               | I | 41.0                  | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | 0.710                 | I |
| I |               | I | 0.138                 | I |
| I |               | I | 0.056                 | I |
| I |               | I | 0.004                 | I |
| I |               | I | 0.091                 | I |
| I |               | I | 498.0                 | I |
| I |               | I | 97.0                  | I |
| I |               | I | 39.0                  | I |
| I |               | I | 3.0                   | I |
| I |               | I | 64.0                  | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | 0.436                 | I |
| I |               | I | 0.117                 | I |
| I |               | I | 0.120                 | I |
| I |               | I | 0.323                 | I |
| I |               | I | 0.004                 | I |
| I |               | I | 116.0                 | I |
| I |               | I | 31.0                  | I |
| I |               | I | 32.0                  | I |
| I |               | I | 86.0                  | I |
| I |               | I | 1.0                   | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | ( 0.0)                | I |
| I |               | I | ( 0.0)                | I |

-----

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| T70 |             |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |   |
|-----|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I   | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
| I   | 17.00-17.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I   | ARM A       | 14.27               | 29.74                 | 0.480                        | - -                              | 0.0                      | 0.9                    | 13.3                                | -                                             | 0.064                                          | I |
| I   | ARM B       | 7.08                | 21.25                 | 0.333                        | - -                              | 0.0                      | 0.5                    | 7.2                                 | -                                             | 0.070                                          | I |
| I   | ARM C       | 4.72                | 15.51                 | 0.304                        | - -                              | 0.0                      | 0.4                    | 6.3                                 | -                                             | 0.092                                          | I |
| I   | ARM D       | 8.80                | 18.73                 | 0.470                        | - -                              | 0.0                      | 0.9                    | 12.6                                | -                                             | 0.100                                          | I |
| I   | ARM E       | 3.34                | 13.43                 | 0.248                        | - -                              | 0.0                      | 0.3                    | 4.8                                 | -                                             | 0.099                                          | I |
| I   |             |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.15-17.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| ARM A       | 17.04               | 29.35                 | 0.581                        | -                                | 0.9                      | 1.4                    | 19.9                                | -                                             | 0.081                                          |
| ARM B       | 8.45                | 20.08                 | 0.421                        | -                                | 0.5                      | 0.7                    | 10.5                                | -                                             | 0.086                                          |
| ARM C       | 5.63                | 13.56                 | 0.415                        | -                                | 0.4                      | 0.7                    | 10.2                                | -                                             | 0.125                                          |
| ARM D       | 10.50               | 17.90                 | 0.587                        | -                                | 0.9                      | 1.4                    | 20.0                                | -                                             | 0.134                                          |
| ARM E       | 3.99                | 12.00                 | 0.332                        | -                                | 0.3                      | 0.5                    | 7.2                                 | -                                             | 0.124                                          |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|--|
| 17.30-17.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |  |
| ARM A       | 20.86               | 28.82                 | 0.724                        | -                                | 1.4                      | 2.5                    | 36.0                                | -                                             | 0.123                                          |  |
| ARM B       | 10.35               | 18.51                 | 0.559                        | -                                | 0.7                      | 1.2                    | 17.9                                | -                                             | 0.121                                          |  |
| ARM C       | 6.90                | 10.93                 | 0.631                        | -                                | 0.7                      | 1.6                    | 22.7                                | -                                             | 0.241                                          |  |
| ARM D       | 12.86               | 16.79                 | 0.766                        | -                                | 1.4                      | 3.1                    | 41.7                                | -                                             | 0.241                                          |  |
| ARM E       | 4.88                | 10.09                 | 0.484                        | -                                | 0.5                      | 0.9                    | 13.0                                | -                                             | 0.190                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.45-18.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| ARM A       | 20.86               | 28.80                 | 0.724                        | -                                | 2.5                      | 2.6                    | 38.6                                | -                                             | 0.126                                          |
| ARM B       | 10.35               | 18.48                 | 0.560                        | -                                | 1.2                      | 1.3                    | 18.8                                | -                                             | 0.123                                          |
| ARM C       | 6.90                | 10.88                 | 0.634                        | -                                | 1.6                      | 1.7                    | 25.1                                | -                                             | 0.250                                          |
| ARM D       | 12.86               | 16.76                 | 0.768                        | -                                | 3.1                      | 3.2                    | 47.1                                | -                                             | 0.256                                          |
| ARM E       | 4.88                | 10.02                 | 0.487                        | -                                | 0.9                      | 0.9                    | 13.9                                | -                                             | 0.194                                          |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|--|
| 18.00-18.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |  |
| ARM A       | 17.04               | 29.32                 | 0.581                        | -                                | 2.6                      | 1.4                    | 21.9                                | -                                             | 0.082                                          |  |
| ARM B       | 8.45                | 20.03                 | 0.422                        | -                                | 1.3                      | 0.7                    | 11.4                                | -                                             | 0.087                                          |  |
| ARM C       | 5.63                | 13.49                 | 0.418                        | -                                | 1.7                      | 0.7                    | 11.5                                | -                                             | 0.129                                          |  |
| ARM D       | 10.50               | 17.86                 | 0.588                        | -                                | 3.2                      | 1.5                    | 23.3                                | -                                             | 0.140                                          |  |
| ARM E       | 3.99                | 11.89                 | 0.335                        | -                                | 0.9                      | 0.5                    | 8.0                                 | -                                             | 0.127                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|--|
| 18.15-18.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |  |
| ARM A       | 14.27               | 29.72                 | 0.480                        | -                                | 1.4                      | 0.9                    | 14.3                                | -                                             | 0.065                                          |  |
| ARM B       | 7.08                | 21.21                 | 0.334                        | -                                | 0.7                      | 0.5                    | 7.7                                 | -                                             | 0.071                                          |  |
| ARM C       | 4.72                | 15.44                 | 0.305                        | -                                | 0.7                      | 0.4                    | 6.8                                 | -                                             | 0.093                                          |  |
| ARM D       | 8.80                | 18.69                 | 0.471                        | -                                | 1.5                      | 0.9                    | 14.0                                | -                                             | 0.102                                          |  |
| ARM E       | 3.34                | 13.37                 | 0.250                        | -                                | 0.5                      | 0.3                    | 5.2                                 | -                                             | 0.100                                          |  |

QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |     |
|------------------------|--------------------------------|-----|
| 17.15                  | 0.9                            | *   |
| 17.30                  | 1.4                            | *   |
| 17.45                  | 2.5                            | *** |
| 18.00                  | 2.6                            | *** |
| 18.15                  | 1.4                            | *   |
| 18.30                  | 0.9                            | *   |

QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|------------------------|--------------------------------|---|
| 17.15                  | 0.5                            |   |
| 17.30                  | 0.7                            | * |
| 17.45                  | 1.2                            | * |
| 18.00                  | 1.3                            | * |
| 18.15                  | 0.7                            | * |
| 18.30                  | 0.5                            | * |

QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 17.15                  | 0.4                            |    |
| 17.30                  | 0.7                            | *  |
| 17.45                  | 1.6                            | ** |
| 18.00                  | 1.7                            | ** |
| 18.15                  | 0.7                            | *  |
| 18.30                  | 0.4                            |    |

QUEUE AT ARM D

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |     |
|------------------------|--------------------------------|-----|
| 17.15                  | 0.9                            | *   |
| 17.30                  | 1.4                            | *   |
| 17.45                  | 3.1                            | *** |
| 18.00                  | 3.2                            | *** |
| 18.15                  | 1.5                            | *   |
| 18.30                  | 0.9                            | *   |

QUEUE AT ARM E

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|------------------------|--------------------------------|---|
| 17.15                  | 0.3                            |   |
| 17.30                  | 0.5                            |   |
| 17.45                  | 0.9                            | * |
| 18.00                  | 0.9                            | * |
| 18.15                  | 0.5                            | * |
| 18.30                  | 0.3                            |   |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

|   |     |   |              |          |   |              |           |   |                        |           | T75 |
|---|-----|---|--------------|----------|---|--------------|-----------|---|------------------------|-----------|-----|
| I | ARM | I | TOTAL DEMAND |          | I | * QUEUEING * |           | I | * INCLUSIVE QUEUEING * |           | I   |
| I |     | I |              |          | I | * DELAY *    |           | I | * DELAY *              |           | I   |
| I |     | I |              |          | I |              |           | I |                        |           | I   |
| I |     | I | (VEH)        | (VEH/H)  | I | (MIN)        | (MIN/VEH) | I | (MIN)                  | (MIN/VEH) | I   |
| I | A   | I | 1565.0       | I 1043.3 | I | 144.0        | I 0.09    | I | 144.0                  | I 0.09    | I   |
| I | B   | I | 776.3        | I 517.5  | I | 73.6         | I 0.09    | I | 73.6                   | I 0.09    | I   |
| I | C   | I | 517.5        | I 345.0  | I | 82.5         | I 0.16    | I | 82.6                   | I 0.16    | I   |
| I | D   | I | 964.9        | I 643.2  | I | 158.6        | I 0.16    | I | 158.6                  | I 0.16    | I   |
| I | E   | I | 366.1        | I 244.1  | I | 52.0         | I 0.14    | I | 52.0                   | I 0.14    | I   |
| I | ALL | I | 4189.8       | I 2793.2 | I | 510.8        | I 0.12    | I | 510.9                  | I 0.12    | I   |

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

END OF JOB

===== end of file =====

Printed at 11:30:25 on 05/08/2012]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_StationRd AM\_Int Sen.vai"  
(drive-on-the-left ) at 13:35:38 on Sunday, 5 August 2012

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Dawley Road Station Road Site 2 Base Model  
LOCATION: Dawley Road/Station Road  
DATE: 16/07/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - Dawley Road (N)  
ARM B - Station Road (E)  
ARM C - Shepiston Lane (S)

MINI-ROUNDABOUT GEOMETRIC DATA

JUNCTION IN LONDON  
LIGHTING CONDITIONS : NORMAL  
ROAD SURFACE CONDITION: NORMAL  
ARM \*HAS A CENTRAL ISLAND

ARM \* HAS A ZEBRA CROSSING  
ARM \* HAS A ZEBRA CROSSING

| I | ARM   | I | V (M) | I | E (M) | I | Lm(M) | I | Vm(M) | I | A (M) | I | K (M) | I | G (%) | I | SLOPE | I | INTERCEPT | I |
|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-----------|---|
| I |       | I |       | I |       | I |       | I |       | I |       | I |       | I |       | I |       | I | (PCU/MIN) | I |
| I | ARM A | I | 3.75  | I | 6.10  | I | 6.00  | I | 3.75  | I | 11.00 | I | 7.00  | I | 0.00  | I | 0.595 | I | 28.234*   | I |
| I | ARM B | I | 3.85  | I | 5.50  | I | 5.50  | I | 3.85  | I | 11.70 | I | 5.90  | I | 0.00  | I | 0.589 | I | 20.216*   | I |
| I | ARM C | I | 4.69  | I | 6.50  | I | 31.00 | I | 4.69  | I | 16.00 | I | 11.00 | I | 0.00  | I | 0.539 | I | 21.366    | I |

V = approach half-width Lm = effective flare length A = distance between arms  
E = entry width Vm = minimum approach half-width K= entry corner kerb line G=gradient over 50 m  
\*\*WARNING\*\* One or more intercept values (flagged \* in the table)  
have been adjusted according to local input values  
from a previous run and listed below -

|       |   |   |                     |    |
|-------|---|---|---------------------|----|
| ----- |   |   |                     | T6 |
| I     |   | I | ADJUSTMENT TO       | I  |
| I     |   | I | INTERCEPT (PCU/MIN) | I  |
| ----- |   |   |                     |    |
| IARM  | A | I | 11.000              | I  |
| IARM  | B | I | 5.000               | I  |



# TRAFFIC DEMAND DATA

Only sets included in the current run are shown

## SCALING FACTORS

| T13   |   |               |   |
|-------|---|---------------|---|
| I ARM | I | FLOW SCALE(%) | I |
| I A   | I | 100           | I |
| I B   | I | 100           | I |
| I C   | I | 100           | I |

TIME PERIOD BEGINS(07.30)AND ENDS(09.00)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com+H4&5 2014

| T15 |       |   |                                               |   |             |   |            |   |
|-----|-------|---|-----------------------------------------------|---|-------------|---|------------|---|
| I   | ARM   | I | NUMBER OF MINUTES FROM START WHEN FLOW STARTS | I | TOP OF PEAK | I | FLOW STOPS | I |
| I   |       | I | TO RISE                                       | I | IS REACHED  | I | FALLING    | I |
| I   |       | I |                                               | I |             | I | PEAK       | I |
| I   | ARM A | I | 15.00                                         | I | 45.00       | I | 75.00      | I |
| I   | ARM B | I | 15.00                                         | I | 45.00       | I | 75.00      | I |
| I   | ARM C | I | 15.00                                         | I | 45.00       | I | 75.00      | I |

DEMAND SET TITLE: Base+Com+H4&5 2014

| T33 |                       |   |        |   |        |   |
|-----|-----------------------|---|--------|---|--------|---|
| I   | TURNING PROPORTIONS   |   |        |   |        | I |
| I   | TURNING COUNTS        |   |        |   |        | I |
| I   | (PERCENTAGE OF H.V.S) |   |        |   |        | I |
| I   | TIME                  | I | FROM/T | I | ARM A  | I |
| I   | 07.30 - 09.00         | I |        | I |        | I |
| I   |                       | I | ARM A  | I | 0.001  | I |
| I   |                       | I |        | I | 1.0    | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I |        | I |        | I |
| I   |                       | I | ARM B  | I | 0.458  | I |
| I   |                       | I |        | I | 209.0  | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I |        | I |        | I |
| I   |                       | I | ARM C  | I | 0.675  | I |
| I   |                       | I |        | I | 405.0  | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I |        | I |        | I |

## PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING USE:

ARM A: Frequency of use is distributed throughout the period in the s 90.0y as vehicular demand on the link. (= times per hour)  
 ARM B: Frequency of use is distributed throughout the period in the s 30.0y as vehicular demand on the link. (= times per hour)

## ZEBRA CROSSINGS

| T40 |     |   |                        |   |                                                           |   |
|-----|-----|---|------------------------|---|-----------------------------------------------------------|---|
| I   | ARM | I | LENGTH OF CROSSING (M) | I | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION (VEHS)       | I |
| I   |     | I | (ENTRY)                | I | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) | I |
| I   | A   | I | 4.50                   | I | 0.0                                                       | I |
| I   | B   | I | 3.70                   | I | 3.8                                                       | I |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | T70 |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|-----|
| 07.30-07.45 |                     |                       |                              |                                  |                          |                        |                                     |                                                |     |
| ARM A       | 10.14               | 23.48                 | 0.432                        | -                                | 1.2                      | 0.0                    | 10.9                                | 0.074                                          |     |
| ARM B       | 5.72                | 16.00                 | 0.358                        | -                                | 0.4                      | 0.0                    | 8.0                                 | 0.097                                          |     |
| ARM C       | 7.53                | 19.93                 | 0.378                        | -                                | -                        | 0.0                    | 8.7                                 | 0.080                                          |     |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|--|
| 07.45-08.00 |                     |                       |                              |                                  |                          |                        |                                     |                                                |  |
| ARM A       | 12.11               | 22.70                 | 0.533                        | -                                | 1.5                      | 0.8                    | 16.4                                | 0.094                                          |  |
| ARM B       | 6.83                | 15.17                 | 0.450                        | -                                | 0.5                      | 0.6                    | 11.7                                | 0.119                                          |  |
| ARM C       | 8.99                | 19.62                 | 0.458                        | -                                | -                        | 0.6                    | 12.2                                | 0.094                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|--|
| 08.00-08.15 |                     |                       |                              |                                  |                          |                        |                                     |                                                |  |
| ARM A       | 14.83               | 21.69                 | 0.684                        | -                                | 1.8                      | 1.1                    | 29.7                                | 0.143                                          |  |
| ARM B       | 8.37                | 14.05                 | 0.596                        | -                                | 0.6                      | 0.8                    | 20.3                                | 0.174                                          |  |
| ARM C       | 11.01               | 19.14                 | 0.575                        | -                                | -                        | 0.8                    | 19.1                                | 0.122                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|--|
| 08.15-08.30 |                     |                       |                              |                                  |                          |                        |                                     |                                                |  |
| ARM A       | 14.83               | 21.68                 | 0.684                        | -                                | 1.8                      | 2.1                    | 31.8                                | 0.146                                          |  |
| ARM B       | 8.37                | 14.02                 | 0.597                        | -                                | 0.6                      | 1.4                    | 21.7                                | 0.177                                          |  |
| ARM C       | 11.01               | 19.13                 | 0.576                        | -                                | -                        | 1.3                    | 20.1                                | 0.123                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|--|
| 08.30-08.45 |                     |                       |                              |                                  |                          |                        |                                     |                                                |  |
| ARM A       | 12.11               | 22.70                 | 0.533                        | -                                | 1.5                      | 2.1                    | 18.1                                | 0.095                                          |  |
| ARM B       | 6.83                | 15.13                 | 0.452                        | -                                | 0.5                      | 1.5                    | 13.0                                | 0.122                                          |  |
| ARM C       | 8.99                | 19.60                 | 0.459                        | -                                | -                        | 1.3                    | 13.3                                | 0.095                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------------------------------------------------|--|
| 08.45-09.00 |                     |                       |                              |                                  |                          |                        |                                     |                                                |  |
| ARM A       | 10.14               | 23.47                 | 0.432                        | -                                | 1.2                      | 1.2                    | 11.8                                | 0.075                                          |  |
| ARM B       | 5.72                | 15.97                 | 0.358                        | -                                | 0.4                      | 0.6                    | 8.7                                 | 0.098                                          |  |
| ARM C       | 7.53                | 19.92                 | 0.378                        | -                                | -                        | 0.9                    | 9.4                                 | 0.081                                          |  |

# QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|------------------------|--------------------------------|
| 07.45                  | 0.8 *                          |
| 08.00                  | 1.1 *                          |
| 08.15                  | 2.1 **                         |
| 08.30                  | 2.1 **                         |
| 08.45                  | 1.2 *                          |
| 09.00                  | 0.8 *                          |

QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|------------------------|--------------------------------|---|
| 07.45                  | 0.6                            | * |
| 08.00                  | 0.8                            | * |
| 08.15                  | 1.4                            | * |
| 08.30                  | 1.5                            | * |
| 08.45                  | 0.8                            | * |
| 09.00                  | 0.6                            | * |

QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|------------------------|--------------------------------|---|
| 07.45                  | 0.6                            | * |
| 08.00                  | 0.8                            | * |
| 08.15                  | 1.3                            | * |
| 08.30                  | 1.3                            | * |
| 08.45                  | 0.9                            | * |
| 09.00                  | 0.6                            | * |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| T75 |   |              |          |              |           |                        |           |  |  |   |
|-----|---|--------------|----------|--------------|-----------|------------------------|-----------|--|--|---|
| ARM | I | TOTAL DEMAND | I        | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I         |  |  | I |
|     | I |              | I        | * DELAY *    | I         | * DELAY *              | I         |  |  | I |
|     | I | (VEH)        | (VEH/H)  | (MIN)        | (MIN/VEH) | (MIN)                  | (MIN/VEH) |  |  | I |
| A   | I | 1112.2       | I 741.4  | I 118.7      | I 0.11    | I 118.7                | I 0.11    |  |  | I |
| B   | I | 627.7        | I 418.4  | I 83.5       | I 0.13    | I 83.5                 | I 0.13    |  |  | I |
| C   | I | 825.9        | I 550.6  | I 82.9       | I 0.10    | I 82.9                 | I 0.10    |  |  | I |
| ALL | I | 2565.7       | I 1710.4 | I 285.1      | I 0.11    | I 285.1                | I 0.11    |  |  | I |

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

END OF JOB

===== end of file =====

Printed at 13:36:35 on 05/08/2012]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-  
"i:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\DawleyRd\_StationRd PM\_Int Sen.vai"  
(drive-on-the-left ) at 13:36:47 on Sunday, 5 August 2012

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: Dawley Road Station Road Site 2 Base Model  
LOCATION: Dawley Road/Station Road  
DATE: 16/07/12  
CLIENT:  
ENUMERATOR: rhussain [IE-D00135]  
JOB NUMBER: VN50026  
STATUS: Draft 1  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - Dawley Road (N)  
ARM B - Station Road (E)  
ARM C - Shepiston Lane (S)

MINI-ROUNDABOUT GEOMETRIC DATA

JUNCTION IN LONDON  
LIGHTING CONDITIONS : NORMAL  
ROAD SURFACE CONDITION: NORMAL  
ARM \*HAS A CENTRAL ISLAND

ARM \* HAS A ZEBRA CROSSING  
ARM \* HAS A ZEBRA CROSSING

| I | ARM   | I | V (M) | I | E (M) | I | Lm(M) | I | Vm(M) | I | A (M) | I | K (M) | I | G (%) | I | SLOPE | I | INTERCEPT | I |
|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-----------|---|
| I |       | I |       | I |       | I |       | I |       | I |       | I |       | I |       | I |       | I | (PCU/MIN) | I |
| I | ARM A | I | 3.75  | I | 6.10  | I | 6.00  | I | 3.75  | I | 11.00 | I | 7.00  | I | 0.00  | I | 0.595 | I | 31.934*   | I |
| I | ARM B | I | 3.85  | I | 5.50  | I | 5.50  | I | 3.85  | I | 11.70 | I | 5.90  | I | 0.00  | I | 0.589 | I | 24.016*   | I |
| I | ARM C | I | 4.69  | I | 6.50  | I | 31.00 | I | 4.69  | I | 16.00 | I | 11.00 | I | 0.00  | I | 0.539 | I | 21.366    | I |

V = approach half-width Lm = effective flare length A = distance between arms  
E = entry width Vm = minimum approach half-width K= entry corner kerb line G=gradient over 50 m  
\*\*WARNING\*\* One or more intercept values (flagged \* in the table)  
have been adjusted according to local input values  
from a previous run and listed below -

T6

| I |       | I | ADJUSTMENT TO       | I |
|---|-------|---|---------------------|---|
| I |       | I | INTERCEPT (PCU/MIN) | I |
| I | ARM A | I | 14.700              | I |
| I | ARM B | I | 8.800               | I |

# TRAFFIC DEMAND DATA

Only sets included in the current run are shown

## SCALING FACTORS

| T13   |   |               |   |
|-------|---|---------------|---|
| I ARM | I | FLOW SCALE(%) | I |
| I A   | I | 100           | I |
| I B   | I | 100           | I |
| I C   | I | 100           | I |

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)

LENGTH OF TIME PERIOD -( 90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: Base+Com+H4&5 2014

| T15 |       |   |                                               |   |             |   |            |   |
|-----|-------|---|-----------------------------------------------|---|-------------|---|------------|---|
| I   | ARM   | I | NUMBER OF MINUTES FROM START WHEN FLOW STARTS | I | TOP OF PEAK | I | FLOW STOPS | I |
| I   |       | I | TO RISE                                       | I | IS REACHED  | I | FALLING    | I |
| I   |       | I |                                               | I |             | I | PEAK       | I |
| I   | ARM A | I | 15.00                                         | I | 45.00       | I | 75.00      | I |
| I   | ARM B | I | 15.00                                         | I | 45.00       | I | 75.00      | I |
| I   | ARM C | I | 15.00                                         | I | 45.00       | I | 75.00      | I |

DEMAND SET TITLE: Base+Com+H4&5 2014

| T33 |                       |   |        |   |        |   |
|-----|-----------------------|---|--------|---|--------|---|
| I   | TURNING PROPORTIONS   |   |        |   |        | I |
| I   | TURNING COUNTS        |   |        |   |        | I |
| I   | (PERCENTAGE OF H.V.S) |   |        |   |        | I |
| I   | TIME                  | I | FROM/T | I | ARM A  | I |
| I   | 16.45 - 18.15         | I |        | I |        | I |
| I   |                       | I | ARM A  | I | 0.000  | I |
| I   |                       | I |        | I | 0.293  | I |
| I   |                       | I |        | I | 0.0    | I |
| I   |                       | I |        | I | 257.0  | I |
| I   |                       | I |        | I | 621.0  | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I | ARM B  | I | 0.564  | I |
| I   |                       | I |        | I | 0.000  | I |
| I   |                       | I |        | I | 0.436  | I |
| I   |                       | I |        | I | 286.0  | I |
| I   |                       | I |        | I | 0.0    | I |
| I   |                       | I |        | I | 221.0  | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I | ARM C  | I | 0.737  | I |
| I   |                       | I |        | I | 0.262  | I |
| I   |                       | I |        | I | 0.002  | I |
| I   |                       | I |        | I | 487.0  | I |
| I   |                       | I |        | I | 173.0  | I |
| I   |                       | I |        | I | 1.0    | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I |        | I | ( 0.0) | I |
| I   |                       | I |        | I | ( 0.0) | I |

## PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING USE:

ARM A: Frequency of use is distributed throughout the period in the s 90.0y as vehicular demand on the link. (= times per hour)  
 ARM B: Frequency of use is distributed throughout the period in the s 30.0y as vehicular demand on the link. (= times per hour)

## ZEBRA CROSSINGS

| T40 |     |   |                        |   |                                              |   |
|-----|-----|---|------------------------|---|----------------------------------------------|---|
| I   | ARM | I | LENGTH OF CROSSING (M) | I | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION | I |
| I   |     | I | (ENTRY)                | I | (EXIT)                                       | I |
| I   |     | I |                        | I | ENTRY (VEHS)                                 | I |
| I   | A   | I | 4.50                   | I | 4.30                                         | I |
| I   | B   | I | 3.70                   | I | 4.00                                         | I |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

|   |             |           |           |          |            |        |        |               |      |               | T70   |   |
|---|-------------|-----------|-----------|----------|------------|--------|--------|---------------|------|---------------|-------|---|
| I | TIME        | DEMAND    | CAPACITY  | DEMAND/  | PEDESTRIAN | START  | END    | DELAY         |      | AVERAGE DELAY | I     |   |
| I |             | (VEH/MIN) | (VEH/MIN) | CAPACITY | FLOW       | QUEUE  | QUEUE  | (VEH.MIN/     |      | PER ARRIVING  | I     |   |
| I |             |           |           | (RFC)    | (PEDS/MIN) | (VEHS) | (VEHS) | TIME SEGMENT) |      | VEHICLE (MIN) | I     |   |
| - |             |           |           |          |            |        |        |               |      |               | -     |   |
| I | 16.45-17.00 |           |           |          |            |        |        |               |      |               | I     |   |
| I | ARM A       | 11.02     | 26.40     | 0.417    | - -        | 1.2    | 0.0    | 0.7           | 10.4 | -             | 0.065 | I |
| I | ARM B       | 6.36      | 19.44     | 0.327    | - -        | 0.4    | 0.0    | 0.5           | 7.0  | -             | 0.076 | I |
| I | ARM C       | 8.29      | 19.37     | 0.428    | - -        | -      | 0.0    | 0.7           | 10.7 | -             | 0.089 | I |
| I |             |           |           |          |            |        |        |               |      |               |       | I |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) |      | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------|------------------------------------------------|--|
| 17.00-17.15 |                     |                       |                              |                                  |                          |                        |                                     |      |                                                |  |
| ARM A       | 13.16               | 25.51                 | 0.516                        | -                                | 1.5                      | 0.7                    | 1.1                                 | 15.4 | 0.081                                          |  |
| ARM B       | 7.60                | 18.54                 | 0.410                        | -                                | 0.5                      | 0.5                    | 0.7                                 | 10.1 | 0.091                                          |  |
| ARM C       | 9.90                | 18.90                 | 0.524                        | -                                | -                        | 0.7                    | 1.1                                 | 15.7 | 0.111                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) |      | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------|------------------------------------------------|--|
| 17.15-17.30 |                     |                       |                              |                                  |                          |                        |                                     |      |                                                |  |
| ARM A       | 16.11               | 24.36                 | 0.661                        | -                                | 1.8                      | 1.1                    | 1.9                                 | 27.2 | 0.120                                          |  |
| ARM B       | 9.30                | 17.32                 | 0.537                        | -                                | 0.6                      | 0.7                    | 1.1                                 | 16.4 | 0.124                                          |  |
| ARM C       | 12.13               | 18.08                 | 0.671                        | -                                | -                        | 1.1                    | 2.0                                 | 27.8 | 0.165                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) |      | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------|------------------------------------------------|--|
| 17.30-17.45 |                     |                       |                              |                                  |                          |                        |                                     |      |                                                |  |
| ARM A       | 16.11               | 24.35                 | 0.662                        | -                                | 1.8                      | 1.9                    | 1.9                                 | 28.9 | 0.121                                          |  |
| ARM B       | 9.30                | 17.29                 | 0.538                        | -                                | 0.6                      | 1.1                    | 1.2                                 | 17.2 | 0.125                                          |  |
| ARM C       | 12.13               | 18.06                 | 0.672                        | -                                | -                        | 2.0                    | 2.0                                 | 29.9 | 0.169                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) |      | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------|------------------------------------------------|--|
| 17.45-18.00 |                     |                       |                              |                                  |                          |                        |                                     |      |                                                |  |
| ARM A       | 13.16               | 25.50                 | 0.516                        | -                                | 1.5                      | 1.9                    | 1.1                                 | 16.7 | 0.082                                          |  |
| ARM B       | 7.60                | 18.50                 | 0.411                        | -                                | 0.5                      | 1.2                    | 0.7                                 | 10.9 | 0.092                                          |  |
| ARM C       | 9.90                | 18.88                 | 0.525                        | -                                | -                        | 2.0                    | 1.1                                 | 17.5 | 0.113                                          |  |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) |      | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |  |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|------|------------------------------------------------|--|
| 18.00-18.15 |                     |                       |                              |                                  |                          |                        |                                     |      |                                                |  |
| ARM A       | 11.02               | 26.39                 | 0.417                        | -                                | 1.2                      | 1.1                    | 0.7                                 | 11.1 | 0.065                                          |  |
| ARM B       | 6.36                | 19.41                 | 0.328                        | -                                | 0.4                      | 0.7                    | 0.5                                 | 7.5  | 0.077                                          |  |
| ARM C       | 8.29                | 19.36                 | 0.428                        | -                                | -                        | 1.1                    | 0.8                                 | 11.7 | 0.091                                          |  |

# QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|------------------------|--------------------------------|
| 17.00                  | 0.7 *                          |
| 17.15                  | 1.1 *                          |
| 17.30                  | 1.9 **                         |
| 17.45                  | 1.9 **                         |
| 18.00                  | 1.1 *                          |
| 18.15                  | 0.7 *                          |

QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|------------------------|--------------------------------|---|
| 17.00                  | 0.5                            |   |
| 17.15                  | 0.7                            | * |
| 17.30                  | 1.1                            | * |
| 17.45                  | 1.2                            | * |
| 18.00                  | 0.7                            | * |
| 18.15                  | 0.5                            |   |

QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 17.00                  | 0.7                            | *  |
| 17.15                  | 1.1                            | *  |
| 17.30                  | 2.0                            | ** |
| 17.45                  | 2.0                            | ** |
| 18.00                  | 1.1                            | *  |
| 18.15                  | 0.8                            | *  |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

|   |     |   |              |   |              |   |                        |   |           | T75 |
|---|-----|---|--------------|---|--------------|---|------------------------|---|-----------|-----|
| I | ARM | I | TOTAL DEMAND | I | * QUEUEING * | I | * INCLUSIVE QUEUEING * | I |           |     |
| I | I   | I |              | I | * DELAY *    | I | * DELAY *              | I |           | I   |
| I | I   | I |              | I |              | I |                        | I |           | I   |
| I | I   | I | (VEH)        | I | (MIN)        | I | (MIN)                  | I | (MIN/VEH) | I   |
| I | A   | I | 1208.5       | I | 109.6        | I | 109.6                  | I | 0.09      | I   |
| I | B   | I | 697.8        | I | 69.2         | I | 69.2                   | I | 0.10      | I   |
| I | C   | I | 909.8        | I | 113.5        | I | 113.5                  | I | 0.12      | I   |
| I | ALL | I | 2816.2       | I | 292.3        | I | 292.3                  | I | 0.10      | I   |

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

END OF JOB

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Printed at 13:37:14 on 05/08/2012]

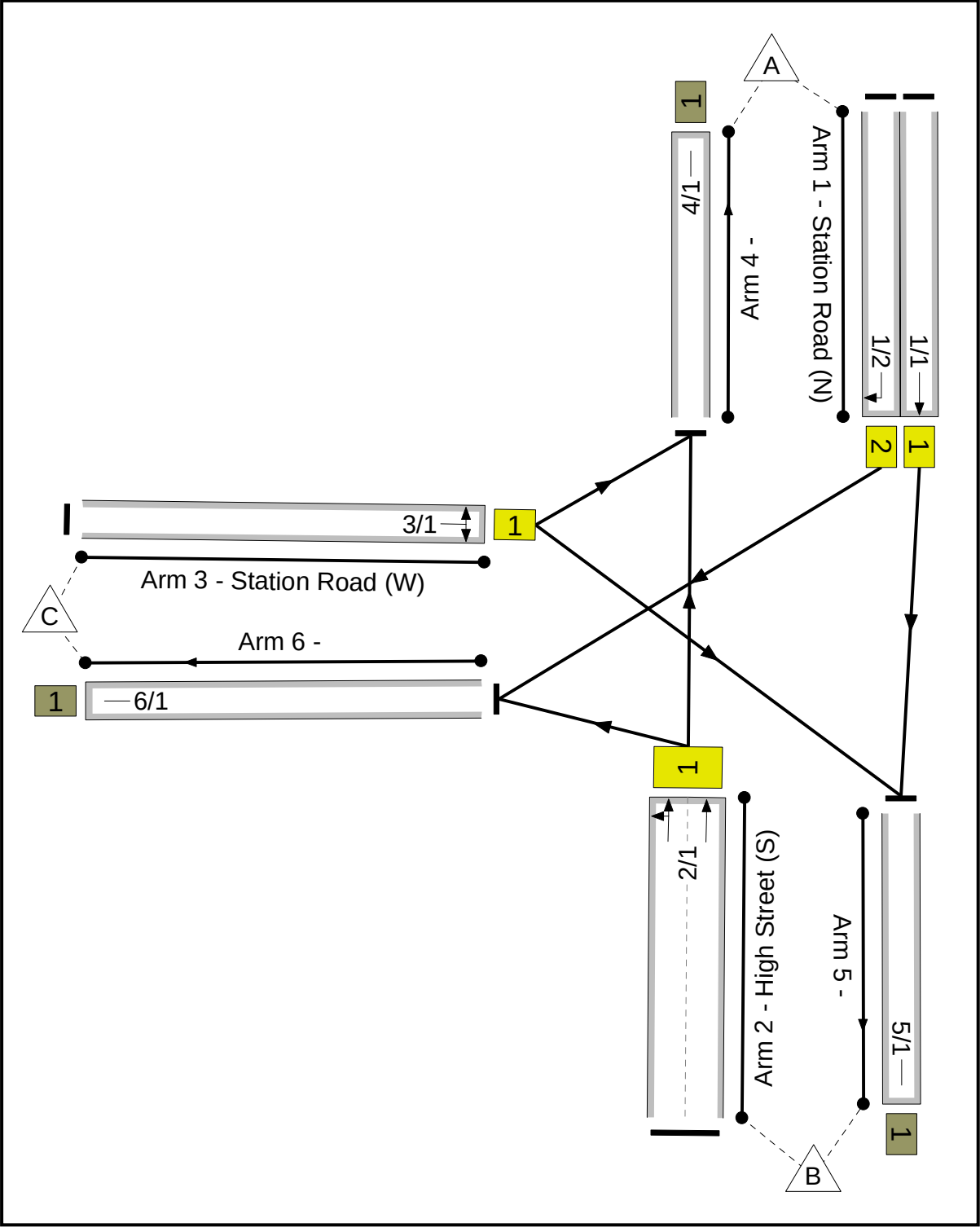
## Full Input Data And Results

### User and Project Details

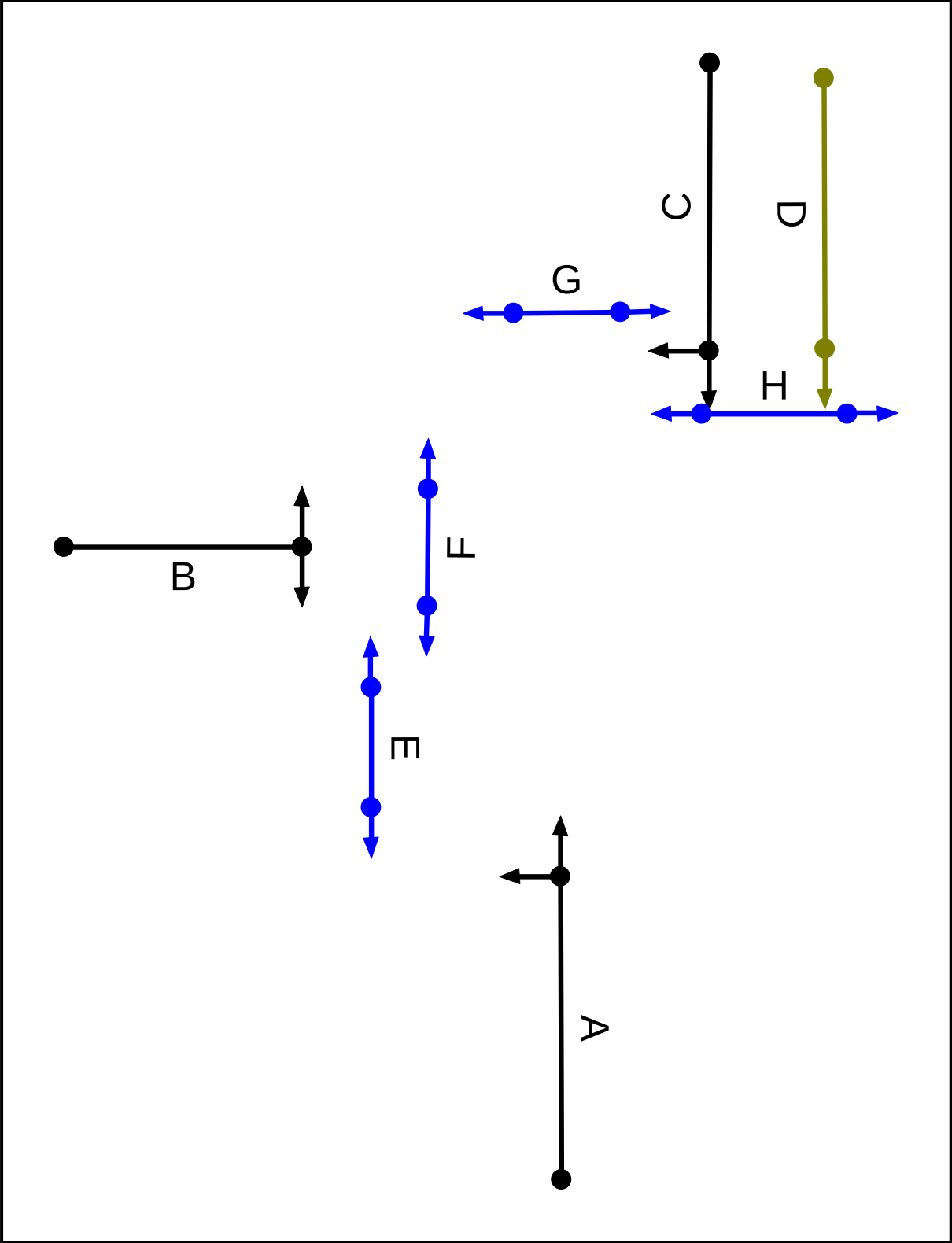
|                    |                             |
|--------------------|-----------------------------|
| <b>Project:</b>    |                             |
| <b>Title:</b>      |                             |
| <b>Location:</b>   |                             |
| <b>File name:</b>  |                             |
| <b>Author:</b>     | Station Rd_High Street.lsgx |
| <b>Company:</b>    |                             |
| <b>Address:</b>    | Generic                     |
| <b>Controller:</b> |                             |
| <b>SCN:</b>        |                             |
| <b>Notes:</b>      |                             |



Junction Layout Diagram



Phase Diagram



**Phase Input Data**

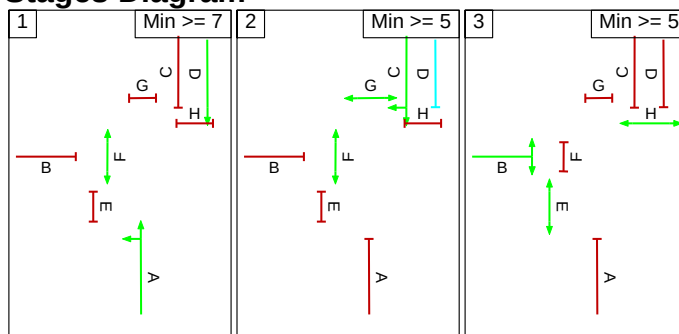
| Phase Name | Phase type | Assoc Phase | Street Min | Cont Min |
|------------|------------|-------------|------------|----------|
| A          | Traffic    |             | 7          | 7        |
| B          | Traffic    |             | 7          | 7        |
| C          | Traffic    |             | 7          | 7        |
| D          | Filter     | C           | 4          | 0        |
| E          | Pedestrian |             | 5          | 5        |
| F          | Pedestrian |             | 5          | 5        |
| G          | Pedestrian |             | 5          | 5        |
| H          | Pedestrian |             | 5          | 5        |

**Phase Intergreens Matrix**

| Terminating Phase | Starting Phase |   |   |   |   |    |   |   |   |
|-------------------|----------------|---|---|---|---|----|---|---|---|
|                   |                | A | B | C | D | E  | F | G | H |
|                   | A              |   | 5 | 5 | - | 7  | - | 8 | - |
|                   | B              | 5 |   | 5 | 5 | -  | 5 | 8 | - |
|                   | C              | 8 | 5 |   | - | 10 | - | - | 5 |
|                   | D              | - | 5 | - |   | -  | - | - | 5 |
|                   | E              | 8 | - | 8 | - |    | - | - | - |
|                   | F              | - | 8 | - | - | -  |   | - | - |
|                   | G              | 8 | 8 | - | - | -  | - |   | - |
|                   | H              | - | - | 8 | 8 | -  | - | - |   |

**Phases in Stage**

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

**Stages Diagram**

**Phase Delays**

| Term. Stage | Start Stage | Phase | Type   | Value | Cont value |
|-------------|-------------|-------|--------|-------|------------|
| 2           | 3           | C     | Losing | 3     | 3          |
| 3           | 1           | B     | Losing | 3     | 3          |

**Prohibited Stage Changes**

| From Stage | To Stage |   |   |
|------------|----------|---|---|
|            | 1        | 2 | 3 |
|            | 1        |   | 8 |
|            | 2        | 8 |   |
|            | 3        | 8 | 8 |

**Link Input Data**

| Arm/ Link | Link Name                   | Link Type | Num Lanes | Phases | Start Disp. | End Disp. |
|-----------|-----------------------------|-----------|-----------|--------|-------------|-----------|
| 1/1       | Station Road (N) Ahead      | U         | 1         | C D    | 2           | 3         |
| 1/2       | Station Road (N) Right      | U         | 1         | C      | 2           | 3         |
| 2/1       | High Street (S) Ahead Left  | U         | 2         | A      | 2           | 3         |
| 3/1       | Station Road (W) Left Right | U         | 1         | B      | 2           | 3         |
| 4/1       |                             | U         | 1         |        | 2           | 3         |
| 5/1       |                             | U         | 1         |        | 2           | 3         |
| 6/1       |                             | U         | 1         |        | 2           | 3         |

**Lane Input Data**

| Arm/<br>Lane                                 | Link<br>Num                                         | Physical<br>Length<br>(PCU) | Expected<br>Usage<br>(PCU) | Sat<br>Flow<br>Type | User<br>Saturation<br>Flow<br>(PCU/Hr) | Lane<br>Width<br>(m) | Gradient | Nearside<br>Lane | Allowed<br>Turns                    | Turning<br>Radius<br>(m) |
|----------------------------------------------|-----------------------------------------------------|-----------------------------|----------------------------|---------------------|----------------------------------------|----------------------|----------|------------------|-------------------------------------|--------------------------|
| 1/1<br>(Station<br>Road<br>(N)<br>Lane<br>1) | Link 1<br>(Station<br>Road<br>(N)<br>Ahead<br>)     | Inf                         | Inf                        | User                | 1766                                   | 3.25                 | 0.00     | Y                | Arm 5<br>Ahead                      | Inf                      |
| 1/2<br>(Station<br>Road<br>(N)<br>Lane<br>2) | Link 2<br>(Station<br>Road<br>(N)<br>Right)         | Inf                         | Inf                        | User                | 1929                                   | 3.25                 | 0.00     | Y                | Arm 6<br>Right                      | Inf                      |
| 2/1<br>(High<br>Street<br>(S)<br>Lane<br>1)  | Link 1<br>(High<br>Street<br>(S)<br>Ahead<br>Left)  | Inf                         | Inf                        | User                | 1763                                   | 3.25                 | 0.00     | Y                | Arm 4<br>Ahead<br><br>Arm 6<br>Left | Inf<br><br>Inf           |
| 2/2<br>(High<br>Street<br>(S)<br>Lane<br>2)  | Link 1<br>(High<br>Street<br>(S)<br>Ahead<br>Left)  | Inf                         | Inf                        | User                | 1877                                   | 3.25                 | 0.00     | Y                | Arm 4<br>Ahead                      | Inf                      |
| 3/1<br>(Station<br>Road<br>(W)<br>Lane<br>1) | Link 1<br>(Station<br>Road<br>(W)<br>Left<br>Right) | Inf                         | Inf                        | User                | 1691                                   | 3.25                 | 0.00     | Y                | Arm 4<br>Left<br><br>Arm 5<br>Right | Inf<br><br>Inf           |
| 4/1                                          | Link 1                                              | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |
| 5/1                                          | Link 1                                              | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |
| 6/1                                          | Link 1                                              | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |

**Traffic Flow Groups**

| Flow Group                                  | Start Time | End Time | Duration | Formula |
|---------------------------------------------|------------|----------|----------|---------|
| 21: 'Base + Com + H4 5 2014 AM Sensitivity' | 08:00      | 09:00    | 01:00    |         |
| 22: 'Base + Com + H4 5 2014 PM Sensitivity' | 17:00      | 18:00    | 01:00    |         |

**Scenario 21: 'Base + Com + H4 5 2014 AM Sen'**

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 21: 'Base + Com + H4 5 2014 AM Sensitivity'

**Traffic Flow Matrix****Desired Flow :**

|  | Destination |     |     |     |      |
|--|-------------|-----|-----|-----|------|
|  |             | A   | B   | C   | Tot. |
|  | A           | 0   | 591 | 239 | 830  |
|  | B           | 408 | 0   | 178 | 586  |
|  | C           | 225 | 259 | 0   | 484  |
|  | Tot.        | 633 | 850 | 417 | 1900 |

**Link Traffic Flows**

| Arm/Link | Flow Group 21:<br>Base +<br>Com + H4<br>5 2014 AM<br>Sensitivity |
|----------|------------------------------------------------------------------|
| 1/1      | 591                                                              |
| 1/2      | 239                                                              |
| 2/1      | 586                                                              |
| 3/1      | 484                                                              |
| 4/1      | 633                                                              |
| 5/1      | 850                                                              |
| 6/1      | 417                                                              |

**Lane Saturation Flows**

| Arm/<br>Lane                     | Lane<br>Width<br>(m) | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|----------------------------------|----------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Road (N) Lane 1) |                      |          |                  |                  |                          |                  | 1766                 |
| 1/2<br>(Station Road (N) Lane 2) |                      |          |                  |                  |                          |                  | 1929                 |
| 2/1<br>(High Street (S) Lane 1)  |                      |          |                  |                  |                          |                  | 1763                 |
| 2/2<br>(High Street (S) Lane 2)  |                      |          |                  |                  |                          |                  | 1877                 |
| 3/1<br>(Station Road (W) Lane 1) |                      |          |                  |                  |                          |                  | 1691                 |
| 4/1                              |                      |          |                  |                  |                          |                  | 1800                 |
| 5/1                              |                      |          |                  |                  |                          |                  | 1800                 |
| 6/1                              |                      |          |                  |                  |                          |                  | 1800                 |

**Scenario 22: 'Base + Com + H4 5 2014 PM Sen'**

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 22: 'Base + Com + H4 5 2014 PM Sensitivity'

**Traffic Flow Matrix****Desired Flow :**

|        | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
|        | A           | 0   | 458 | 232 | 690  |
|        | B           | 458 | 0   | 279 | 737  |
|        | C           | 186 | 250 | 0   | 436  |
| Origin | Tot.        | 644 | 708 | 511 | 1863 |

**Link Traffic Flows**

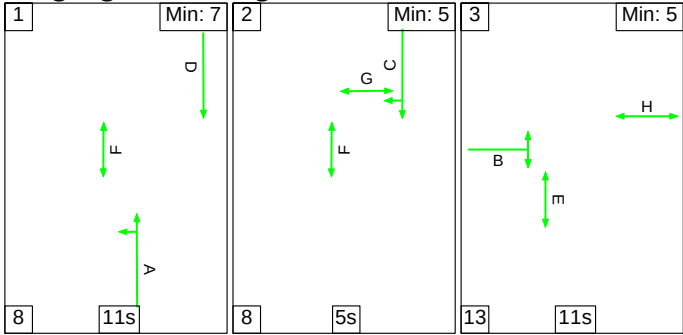
| Arm/Link | Flow Group 22: Base + Com + H4 5 2014 PM Sensitivity |
|----------|------------------------------------------------------|
| 1/1      | 458                                                  |
| 1/2      | 232                                                  |
| 2/1      | 737                                                  |
| 3/1      | 436                                                  |
| 4/1      | 644                                                  |
| 5/1      | 708                                                  |
| 6/1      | 511                                                  |

**Lane Saturation Flows**

| Arm/Lane                         | Lane Width (m)                                    | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat flow (PCU/Hr) |
|----------------------------------|---------------------------------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|
| 1/1<br>(Station Road (N) Lane 1) | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1766              |
| 1/2<br>(Station Road (N) Lane 2) | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1929              |
| 2/1<br>(High Street (S) Lane 1)  | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1763              |
| 2/2<br>(High Street (S) Lane 2)  | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1877              |
| 3/1<br>(Station Road (W) Lane 1) | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1691              |
| 4/1                              | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1800              |
| 5/1                              | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1800              |
| 6/1                              | This lane uses a directly entered Saturation Flow |          |               |               |                    |               | 1800              |

Scenario 21: 'Base + Com + H4 5 2014 AM Sen'  
Staging Plan 1: 'Staging Plan No. 1'  
Flow Group 21: 'Base + Com + H4 5 2014 AM Sensitivity'

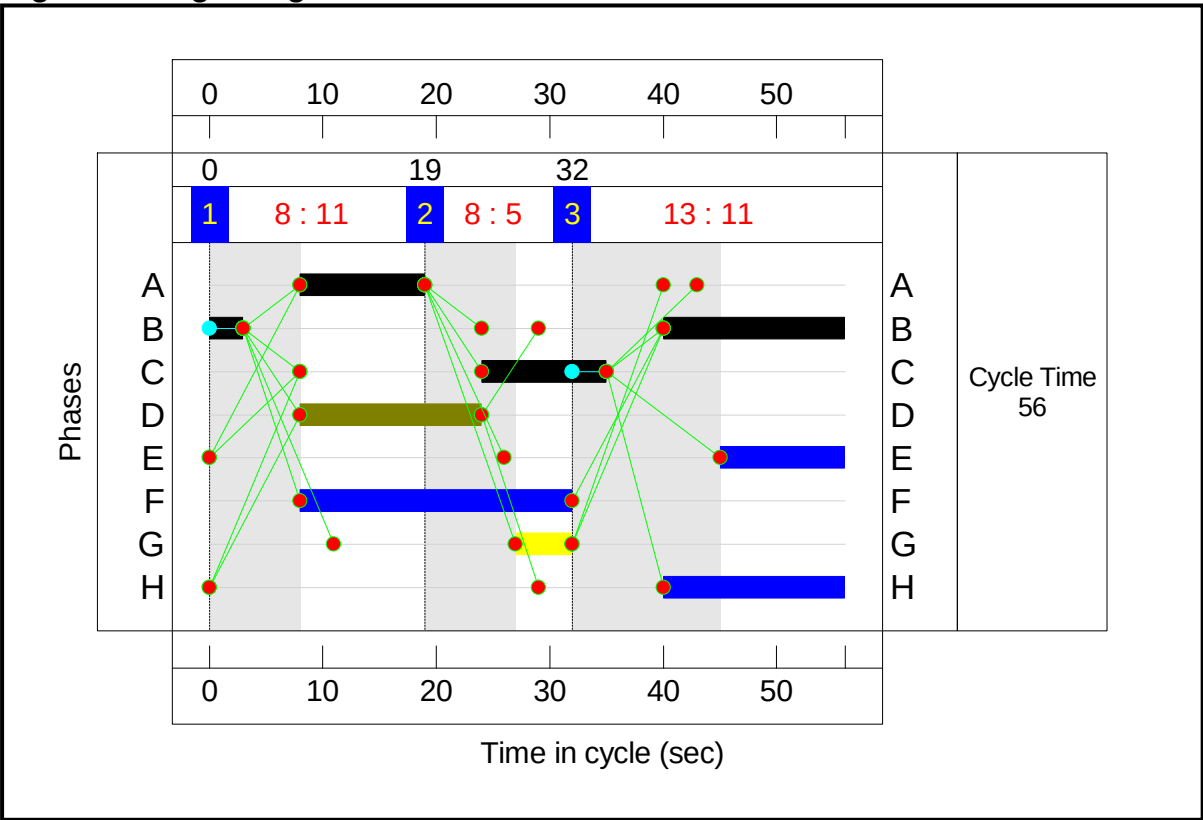
Staging Plan Diagram



Stage Timings

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 11 | 5  | 11 |
| Change Point | 0  | 19 | 32 |

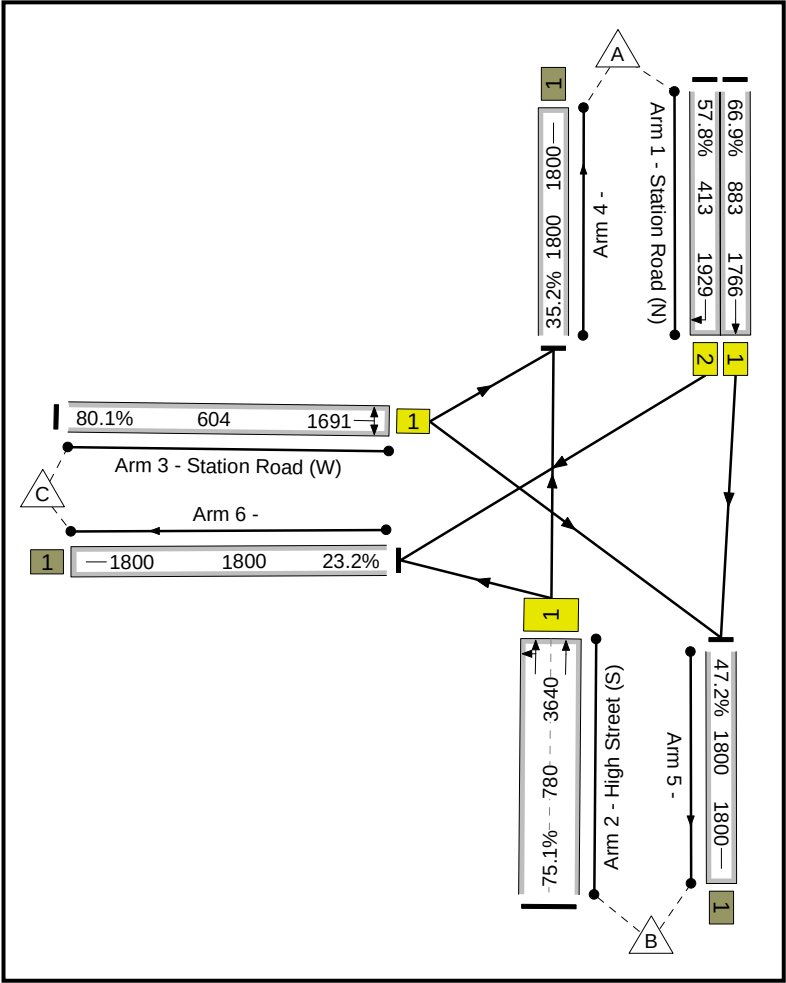
Signal Timings Diagram





Full Input Data And Results

**Junction Layout Diagram**



# Full Input Data And Results

## Link Results

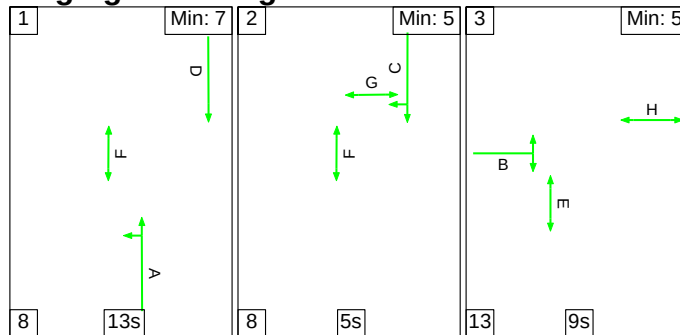
| Link Num                     | Link Desc                   | Link Type     | Stage Stream          | Position In Filtered Route   | Full Phase                               | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Max Sat Flow (pcu/Hr)            | Ave Sat Flow (pcu/Hr)      | Capacity (pcu)       | Deg Sat (%) |
|------------------------------|-----------------------------|---------------|-----------------------|------------------------------|------------------------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|-------------|
| 1/1                          | Station Road (N) Ahead      | U             | N/A                   | N/A                          | C                                        | D                     | 1                            | 27                                 | 16                  | 591                       | 1766                             | 1766                       | 883                  | 66.9        |
| 1/2                          | Station Road (N) Right      | U             | N/A                   | N/A                          | C                                        |                       | 1                            | 11                                 | -                   | 239                       | 1929                             | 1929                       | 413                  | 57.8        |
| 2/1                          | High Street (S) Ahead Left  | U             | N/A                   | N/A                          | A                                        |                       | 1                            | 11                                 | -                   | 586                       | 3640                             | 3640                       | 780                  | 75.1        |
| 3/1                          | Station Road (W) Left Right | U             | N/A                   | N/A                          | B                                        |                       | 1                            | 19                                 | -                   | 484                       | 1691                             | 1691                       | 604                  | 80.1        |
| 4/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 633                       | 1800                             | 1800                       | 1800                 | 35.2        |
| 5/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 850                       | 1800                             | 1800                       | 1800                 | 47.2        |
| 6/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 417                       | 1800                             | 1800                       | 1800                 | 23.2        |
| Link Num                     | Entering (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 Veh (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |             |
| 1/1                          | 591                         | 591           | -                     | -                            | -                                        | 1.7                   | 1.0                          | -                                  | 2.7                 | 16.6                      | 6.9                              | 1.0                        | 7.9                  |             |
| 1/2                          | 239                         | 239           | -                     | -                            | -                                        | 1.3                   | 0.7                          | -                                  | 2.0                 | 30.0                      | 3.3                              | 0.7                        | 4.0                  |             |
| 2/1                          | 586                         | 586           | -                     | -                            | -                                        | 3.4                   | 1.5                          | -                                  | 4.8                 | 29.8                      | 8.5                              | 1.5                        | 10.0                 |             |
| 3/1                          | 484                         | 484           | -                     | -                            | -                                        | 2.2                   | 2.0                          | -                                  | 4.1                 | 30.8                      | 6.7                              | 2.0                        | 8.7                  |             |
| 4/1                          | 633                         | 633           | -                     | -                            | -                                        | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.8                       | 4.6                              | 0.3                        | 4.9                  |             |
| 5/1                          | 850                         | 850           | -                     | -                            | -                                        | 0.0                   | 0.4                          | -                                  | 0.4                 | 1.9                       | 0.0                              | 0.4                        | 0.4                  |             |
| 6/1                          | 417                         | 417           | -                     | -                            | -                                        | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.3                       | 0.0                              | 0.2                        | 0.2                  |             |
| PRC for Signalled Links (%): |                             |               |                       | 12.3                         | Total Delay for Signalled Links (pcuHr): |                       |                              |                                    | 13.70               |                           |                                  |                            |                      |             |
| PRC Over All Links (%):      |                             |               |                       | 12.3                         | Total Delay Over All Links (pcuHr):      |                       |                              |                                    | 14.61               | Cycle Time (s): 56        |                                  |                            |                      |             |

## Scenario 22: 'Base + Com + H4 5 2014 PM Sen'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 22: 'Base + Com + H4 5 2014 PM Sensitivity'

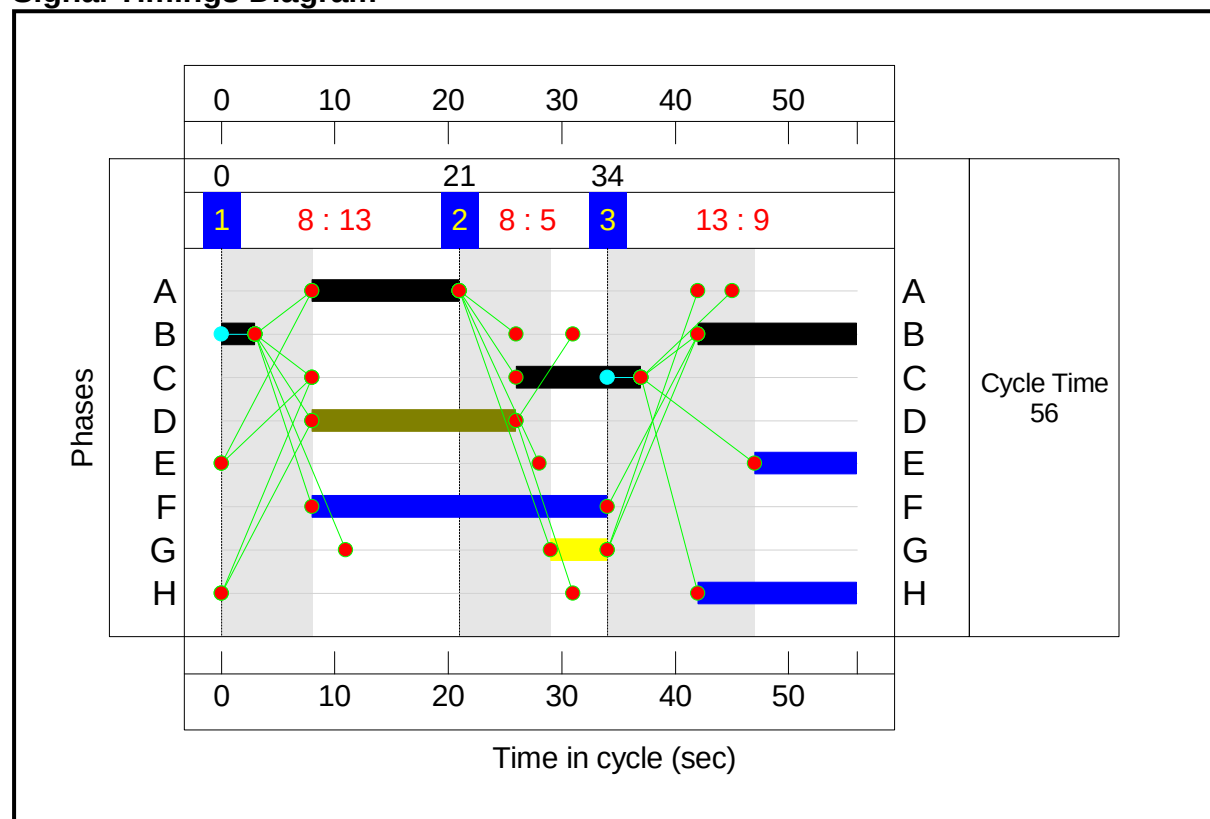
### Staging Plan Diagram



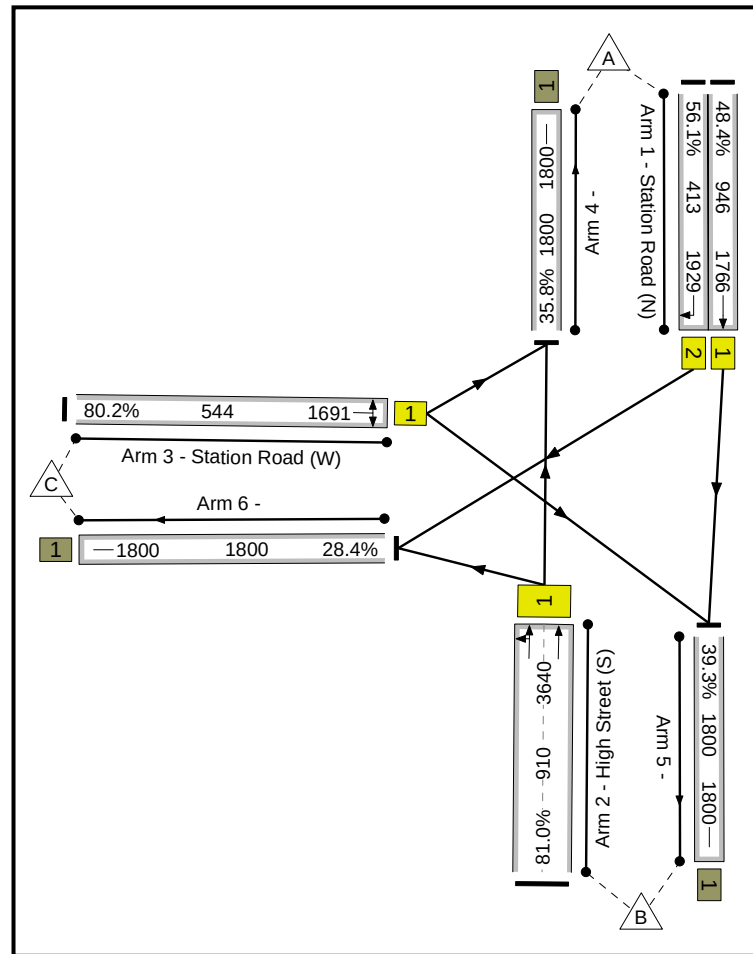
### Stage Timings

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 13 | 5  | 9  |
| Change Point | 0  | 21 | 34 |

### Signal Timings Diagram



### Junction Layout Diagram



## Full Input Data And Results

## Link Results

| Link Num                     | Link Desc                   | Link Type     | Stage Stream          | Position In Filtered Route   | Full Phase                               | Arrow Phase           | Num Greens                   | Total Green (s)                    | Arrow Green (s)     | Demand Flow (pcu)         | Max Sat Flow (pcu/Hr)            | Ave Sat Flow (pcu/Hr)      | Capacity (pcu)       | Deg Sat (%) |
|------------------------------|-----------------------------|---------------|-----------------------|------------------------------|------------------------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|-------------|
| 1/1                          | Station Road (N) Ahead      | U             | N/A                   | N/A                          | C                                        | D                     | 1                            | 29                                 | 18                  | 458                       | 1766                             | 1766                       | 946                  | 48.4        |
| 1/2                          | Station Road (N) Right      | U             | N/A                   | N/A                          | C                                        |                       | 1                            | 11                                 | -                   | 232                       | 1929                             | 1929                       | 413                  | 56.1        |
| 2/1                          | High Street (S) Ahead Left  | U             | N/A                   | N/A                          | A                                        |                       | 1                            | 13                                 | -                   | 737                       | 3640                             | 3640                       | 910                  | 81.0        |
| 3/1                          | Station Road (W) Left Right | U             | N/A                   | N/A                          | B                                        |                       | 1                            | 17                                 | -                   | 436                       | 1691                             | 1691                       | 544                  | 80.2        |
| 4/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 644                       | 1800                             | 1800                       | 1800                 | 35.8        |
| 5/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 708                       | 1800                             | 1800                       | 1800                 | 39.3        |
| 6/1                          |                             | U             | N/A                   | N/A                          | -                                        |                       | -                            | -                                  | -                   | 511                       | 1800                             | 1800                       | 1800                 | 28.4        |
| Link Num                     | Entering (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 Veh (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |             |
| 1/1                          | 458                         | 458           | -                     | -                            | -                                        | 1.0                   | 0.5                          | -                                  | 1.5                 | 11.8                      | 4.5                              | 0.5                        | 4.9                  |             |
| 1/2                          | 232                         | 232           | -                     | -                            | -                                        | 1.3                   | 0.6                          | -                                  | 1.9                 | 29.5                      | 3.2                              | 0.6                        | 3.9                  |             |
| 2/1                          | 737                         | 737           | -                     | -                            | -                                        | 4.0                   | 2.1                          | -                                  | 6.1                 | 29.9                      | 10.6                             | 2.1                        | 12.7                 |             |
| 3/1                          | 436                         | 436           | -                     | -                            | -                                        | 2.1                   | 2.0                          | -                                  | 4.1                 | 33.5                      | 6.2                              | 2.0                        | 8.1                  |             |
| 4/1                          | 644                         | 644           | -                     | -                            | -                                        | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.7                       | 4.5                              | 0.3                        | 4.8                  |             |
| 5/1                          | 708                         | 708           | -                     | -                            | -                                        | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.6                       | 0.0                              | 0.3                        | 0.3                  |             |
| 6/1                          | 511                         | 511           | -                     | -                            | -                                        | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 0.0                              | 0.2                        | 0.2                  |             |
| PRC for Signalled Links (%): |                             |               |                       | 11.1                         | Total Delay for Signalled Links (pcuHr): |                       |                              |                                    | 13.59               |                           |                                  |                            |                      |             |
| PRC Over All Links (%):      |                             |               |                       | 11.1                         | Total Delay Over All Links (pcuHr):      |                       |                              |                                    | 14.43               | Cycle Time (s): 56        |                                  |                            |                      |             |

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

PICADY 5.1 ANALYSIS PROGRAM  
RELEASE 5.0 (JUNE 2010)

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Run with file:-  
"I:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\NorthHydeRd\_MillingtonRd AM Sen.vpi"  
(drive-on-the-left) at 12:23:58 on Sunday, 5 August 2012

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Base Model Junction 2  
LOCATION : North Hyde Road/Millington Road  
DATE : 23/04/12  
CLIENT :  
ENUMERATOR : rhussain [IE-D00135]  
JOB NUMBER : VN50026  
STATUS : Draft 1  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----

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

ARM A IS North Hyde Road (E)  
ARM B IS Millington Road  
ARM C IS North Hyde Road (W)

STREAM LABELLING CONVENTION  
-----

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

## GEOMETRIC DATA

| I | DATA ITEM                          | I | MINOR ROAD B    | I |
|---|------------------------------------|---|-----------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | ( W ) 7.64 M.   | I |
| I | CENTRAL RESERVE WIDTH              | I | (WCR ) 0.00 M.  | I |
| I |                                    | I |                 | I |
| I | MAJOR ROAD RIGHT TURN - WIDTH      | I | (WC-B) 2.20 M.  | I |
| I | - VISIBILITY                       | I | (VC-B)119.00 M. | I |
| I | - BLOCKS TRAFFIC (SPACES)          | I | NO ( 0 )        | I |
| I |                                    | I |                 | I |
| I | MINOR ROAD - VISIBILITY TO LEFT    | I | (VB-C) 23.0 M.  | I |
| I | - VISIBILITY TO RIGHT              | I | (VB-A) 19.0 M.  | I |
| I | - LANE 1 WIDTH                     | I | (WB-C) 3.00 M.  | I |
| I | - LANE 2 WIDTH                     | I | (WB-A) 0.00 M.  | I |

## .SLOPES AND INTERCEPT

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

| I | Intercept  | For | Slope  | For | Opposing | Slope  | For | Opposing | I |
|---|------------|-----|--------|-----|----------|--------|-----|----------|---|
| I | STREAM B-C |     | STREAM | A-C |          | STREAM | A-B |          | I |
| I | 635.90     |     | 0.23   |     |          | 0.09   |     |          | I |

| I | Intercept | For | Slope | For    | Opposing | Slope | For    | Opposing | Slope | For    | Opposing | I    |        |     |   |
|---|-----------|-----|-------|--------|----------|-------|--------|----------|-------|--------|----------|------|--------|-----|---|
| I | STREAM    | B-A |       | STREAM | A-C      |       | STREAM | A-B      |       | STREAM | C-A      |      | STREAM | C-B | I |
| I | 494.40    |     | 0.21  |        |          | 0.08  |        |          | 0.13  |        |          | 0.30 |        |     | I |

| I | Intercept  | For | Slope  | For | Opposing | Slope  | For | Opposing | I |
|---|------------|-----|--------|-----|----------|--------|-----|----------|---|
| I | STREAM C-B |     | STREAM | A-C |          | STREAM | A-B |          | I |
| I | 642.88     |     | 0.23   |     |          | 0.23   |     |          | I |

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

## TRAFFIC DEMAND DATA

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

Demand set: Base+Com+H4&amp;5 2014

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN | I | RATE OF FLOW (VEH/MIN) | I |
|---|-------|---|-----------------------------------|---|------------------------|---|
| I |       | I | FLOW STARTS                       | I | BEFORE                 | I |
| I |       | I | TOP OF PEAK                       | I | AT TOP                 | I |
| I |       | I | TO RISE                           | I | PEAK                   | I |
| I |       | I | IS REACHED                        | I | OF PEAK                | I |
| I |       | I | FALLING                           | I | PEAK                   | I |
| I | ARM A | I | 15.00                             | I | 8.77                   | I |
| I | ARM B | I | 15.00                             | I | 0.29                   | I |
| I | ARM C | I | 15.00                             | I | 5.64                   | I |

Demand set: Base+Com+H4&amp;5 2014

| TIME          | TURNING PROPORTIONS   |     |        |        |        |     |   |  |  |
|---------------|-----------------------|-----|--------|--------|--------|-----|---|--|--|
|               | TURNING COUNTS        |     |        |        |        |     |   |  |  |
|               | (PERCENTAGE OF H.V.S) |     |        |        |        |     |   |  |  |
|               | FROM/TO               | ARM | A      | ARM    | B      | ARM | C |  |  |
| 07.45 - 09.15 | ARM A                 |     | 0.000  | 0.232  | 0.768  |     |   |  |  |
|               |                       |     | 0.0    | 163.0  | 539.0  |     |   |  |  |
|               |                       |     | ( 0.0) | ( 0.0) | ( 0.0) |     |   |  |  |
|               | ARM B                 |     | 0.870  | 0.000  | 0.130  |     |   |  |  |
|               |                       |     | 20.0   | 0.0    | 3.0    |     |   |  |  |
|               |                       |     | ( 0.0) | ( 0.0) | ( 0.0) |     |   |  |  |
|               | ARM C                 |     | 0.989  | 0.011  | 0.000  |     |   |  |  |
|               |                       |     | 446.0  | 5.0    | 0.0    |     |   |  |  |
|               |                       |     | ( 0.0) | ( 0.0) | ( 0.0) |     |   |  |  |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

## QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET Base+Com+H4&5 2014  
AND FOR TIME PERIOD 1

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 07.45-08.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.29                | 6.15                  | 0.047                        |                                  | 0.00                     | 0.05                   | 0.7                                 |                                               | 0.17                                           |
| C-A         | 5.60                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.06                | 8.68                  | 0.007                        |                                  | 0.00                     | 0.01                   | 0.1                                 |                                               | 0.12                                           |
| A-B         | 2.05                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 6.76                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.00-08.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.34                | 5.69                  | 0.061                        |                                  | 0.05                     | 0.06                   | 0.9                                 |                                               | 0.19                                           |
| C-A         | 6.68                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.07                | 8.28                  | 0.009                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.12                                           |
| A-B         | 2.44                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 8.08                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.15-08.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.42                | 5.05                  | 0.084                        |                                  | 0.06                     | 0.09                   | 1.3                                 |                                               | 0.22                                           |
| C-A         | 8.18                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.09                | 7.73                  | 0.012                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.13                                           |
| A-B         | 2.99                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 9.89                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.30-08.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.42                | 5.05                  | 0.084                        |                                  | 0.09                     | 0.09                   | 1.4                                 |                                               | 0.22                                           |
| C-A         | 8.18                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.09                | 7.73                  | 0.012                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.13                                           |
| A-B         | 2.99                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 9.89                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |



| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.45-09.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.34                | 5.69                  | 0.061                        |                                  | 0.09                     | 0.07                   | 1.0                                 |                                               | 0.19                                           |
| C-A         | 6.68                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.07                | 8.28                  | 0.009                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.12                                           |
| A-B         | 2.44                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 8.08                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 09.00-09.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 0.29                | 6.15                  | 0.047                        |                                  | 0.07                     | 0.05                   | 0.8                                 |                                               | 0.17                                           |
| C-A         | 5.60                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.06                | 8.68                  | 0.007                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.12                                           |
| A-B         | 2.05                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 6.76                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

#### QUEUE FOR STREAM B-AC

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 08.00                     | 0.0                            |
| 08.15                     | 0.1                            |
| 08.30                     | 0.1                            |
| 08.45                     | 0.1                            |
| 09.00                     | 0.1                            |
| 09.15                     | 0.0                            |

#### QUEUE FOR STREAM C-B

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

#### QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND<br>(VEH) | DEMAND<br>(VEH/H) | * QUEUEING *<br>DELAY (MIN) | * INCLUSIVE QUEUEING *<br>DELAY (MIN/VEH) |
|--------|-----------------------|-------------------|-----------------------------|-------------------------------------------|
| B-AC   | 31.7                  | 21.1              | 6.1                         | 0.19                                      |
| C-A    | 613.9                 | 409.3             |                             |                                           |
| C-B    | 6.9                   | 4.6               | 0.8                         | 0.12                                      |
| A-B    | 224.4                 | 149.6             |                             |                                           |
| A-C    | 741.9                 | 494.6             |                             |                                           |
| ALL    | 1618.7                | 1079.1            | 6.9                         | 0.00                                      |

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

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

===== end of file =====

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

PICADY 5.1 ANALYSIS PROGRAM  
RELEASE 5.0 (JUNE 2010)

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Run with file:-  
"I:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\NorthHydeRd\_MillingtonRd PM Sen.vpi"  
(drive-on-the-left) at 11:44:59 on Sunday, 12 August 2012

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Base Model Junction 2  
LOCATION : North Hyde Road/Millington Road  
DATE : 23/04/12  
CLIENT :  
ENUMERATOR : rhussain [IE-D00135]  
JOB NUMBER : VN50026  
STATUS : Draft 1  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----

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

ARM A IS North Hyde Road (E)  
ARM B IS Millington Road  
ARM C IS North Hyde Road (W)

STREAM LABELLING CONVENTION  
-----

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

## GEOMETRIC DATA

| I | DATA ITEM                          | I | MINOR ROAD B    | I |
|---|------------------------------------|---|-----------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | ( W ) 7.64 M.   | I |
| I | CENTRAL RESERVE WIDTH              | I | (WCR) 0.00 M.   | I |
| I |                                    | I |                 | I |
| I | MAJOR ROAD RIGHT TURN - WIDTH      | I | (WC-B) 2.20 M.  | I |
| I | - VISIBILITY                       | I | (VC-B)119.00 M. | I |
| I | - BLOCKS TRAFFIC (SPACES)          | I | NO ( 0 )        | I |
| I |                                    | I |                 | I |
| I | MINOR ROAD - VISIBILITY TO LEFT    | I | (VB-C) 23.0 M.  | I |
| I | - VISIBILITY TO RIGHT              | I | (VB-A) 19.0 M.  | I |
| I | - LANE 1 WIDTH                     | I | (WB-C) 3.00 M.  | I |
| I | - LANE 2 WIDTH                     | I | (WB-A) 0.00 M.  | I |

## .SLOPES AND INTERCEPT

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

| I | Intercept  | For | Slope  | For | Opposing | Slope  | For | Opposing | I |
|---|------------|-----|--------|-----|----------|--------|-----|----------|---|
| I | STREAM B-C |     | STREAM | A-C |          | STREAM | A-B |          | I |
| I | 635.90     |     | 0.23   |     |          | 0.09   |     |          | I |

| I | Intercept | For | Slope | For    | Opposing | Slope | For    | Opposing | Slope | For    | Opposing | I    |        |     |   |
|---|-----------|-----|-------|--------|----------|-------|--------|----------|-------|--------|----------|------|--------|-----|---|
| I | STREAM    | B-A |       | STREAM | A-C      |       | STREAM | A-B      |       | STREAM | C-A      |      | STREAM | C-B | I |
| I | 494.40    |     | 0.21  |        |          | 0.08  |        |          | 0.13  |        |          | 0.30 |        |     | I |

| I | Intercept  | For | Slope  | For | Opposing | Slope  | For | Opposing | I |
|---|------------|-----|--------|-----|----------|--------|-----|----------|---|
| I | STREAM C-B |     | STREAM | A-C |          | STREAM | A-B |          | I |
| I | 642.88     |     | 0.23   |     |          | 0.23   |     |          | I |

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

## TRAFFIC DEMAND DATA

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

Demand set: Base+Com+H4&amp;5 2014

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN | I | RATE OF FLOW (VEH/MIN) | I |
|---|-------|---|-----------------------------------|---|------------------------|---|
| I |       | I | FLOW STARTS                       | I | BEFORE                 | I |
| I |       | I | TOP OF PEAK                       | I | AT TOP                 | I |
| I |       | I | TO RISE                           | I | PEAK                   | I |
| I |       | I | IS REACHED                        | I | OF PEAK                | I |
| I |       | I | FALLING                           | I | PEAK                   | I |
| I | ARM A | I | 15.00                             | I | 6.54                   | I |
| I | ARM B | I | 15.00                             | I | 2.14                   | I |
| I | ARM C | I | 15.00                             | I | 5.45                   | I |

Demand set: Base+Com+H4&5 2014

| TIME          | TURNING PROPORTIONS   |     |        |     |        |     |        |  |  |
|---------------|-----------------------|-----|--------|-----|--------|-----|--------|--|--|
|               | TURNING COUNTS        |     |        |     |        |     |        |  |  |
|               | (PERCENTAGE OF H.V.S) |     |        |     |        |     |        |  |  |
|               | FROM/TO               | ARM | A      | ARM | B      | ARM | C      |  |  |
| 17.00 - 18.30 |                       |     |        |     |        |     |        |  |  |
|               | ARM A                 |     | 0.000  |     | 0.055  |     | 0.945  |  |  |
|               |                       |     | 0.0    |     | 29.0   |     | 494.0  |  |  |
|               |                       |     | ( 0.0) |     | ( 0.0) |     | ( 0.0) |  |  |
|               | ARM B                 |     | 0.842  |     | 0.000  |     | 0.158  |  |  |
|               |                       |     | 144.0  |     | 0.0    |     | 27.0   |  |  |
|               |                       |     | ( 0.0) |     | ( 0.0) |     | ( 0.0) |  |  |
|               | ARM C                 |     | 0.989  |     | 0.011  |     | 0.000  |  |  |
|               |                       |     | 431.0  |     | 5.0    |     | 0.0    |  |  |
|               |                       |     | ( 0.0) |     | ( 0.0) |     | ( 0.0) |  |  |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET Base+Com+H4&5 2014  
AND FOR TIME PERIOD 1

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.00-17.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 2.15                | 6.50                  | 0.330                        |                                  | 0.00                     | 0.48                   | 6.8                                 |                                               | 0.23                                           |
| C-A         | 5.41                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.06                | 9.20                  | 0.007                        |                                  | 0.00                     | 0.01                   | 0.1                                 |                                               | 0.11                                           |
| A-B         | 0.36                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 6.20                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.15-17.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 2.56                | 6.10                  | 0.420                        |                                  | 0.48                     | 0.70                   | 10.0                                |                                               | 0.28                                           |
| C-A         | 6.46                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.07                | 8.90                  | 0.008                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.11                                           |
| A-B         | 0.43                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.40                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.30-17.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 3.14                | 5.54                  | 0.567                        |                                  | 0.70                     | 1.23                   | 17.0                                |                                               | 0.40                                           |
| C-A         | 7.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.09                | 8.49                  | 0.011                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.53                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 9.07                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.45-18.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 3.14                | 5.54                  | 0.567                        |                                  | 1.23                     | 1.27                   | 18.8                                |                                               | 0.42                                           |
| C-A         | 7.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.09                | 8.49                  | 0.011                        |                                  | 0.01                     | 0.01                   | 0.2                                 |                                               | 0.12                                           |
| A-B         | 0.53                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 9.07                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 18.00-18.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 2.56                | 6.09                  | 0.420                        |                                  | 1.27                     | 0.75                   | 12.0                                |                                               | 0.29                                           |
| C-A         | 6.46                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.07                | 8.90                  | 0.008                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.11                                           |
| A-B         | 0.43                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.40                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 18.15-18.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-AC        | 2.15                | 6.50                  | 0.330                        |                                  | 0.75                     | 0.50                   | 7.9                                 |                                               | 0.23                                           |
| C-A         | 5.41                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.06                | 9.20                  | 0.007                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.11                                           |
| A-B         | 0.36                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 6.20                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

## QUEUE FOR STREAM B-AC

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.15                     | 0.5                            |
| 17.30                     | 0.7 *                          |
| 17.45                     | 1.2 *                          |
| 18.00                     | 1.3 *                          |
| 18.15                     | 0.7 *                          |
| 18.30                     | 0.5 *                          |

## QUEUE FOR STREAM C-B

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.15                     | 0.0                            |
| 17.30                     | 0.0                            |
| 17.45                     | 0.0                            |
| 18.00                     | 0.0                            |
| 18.15                     | 0.0                            |
| 18.30                     | 0.0                            |

## QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND<br>(VEH) | DEMAND<br>(VEH/H) | QUEUEING<br>DELAY<br>(MIN) | QUEUEING<br>DELAY<br>(MIN/VEH) | INCLUSIVE QUEUEING<br>DELAY<br>(MIN) | INCLUSIVE QUEUEING<br>DELAY<br>(MIN/VEH) |
|--------|-----------------------|-------------------|----------------------------|--------------------------------|--------------------------------------|------------------------------------------|
| B-AC   | 235.4                 | 156.9             | 72.6                       | 0.31                           | 72.6                                 | 0.31                                     |
| C-A    | 593.2                 | 395.5             |                            |                                |                                      |                                          |
| C-B    | 6.9                   | 4.6               | 0.8                        | 0.11                           | 0.8                                  | 0.11                                     |
| A-B    | 39.9                  | 26.6              |                            |                                |                                      |                                          |
| A-C    | 680.0                 | 453.3             |                            |                                |                                      |                                          |
| ALL    | 1555.4                | 1036.9            | 73.3                       | 0.05                           | 73.4                                 | 0.05                                     |

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

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

===== end of file =====

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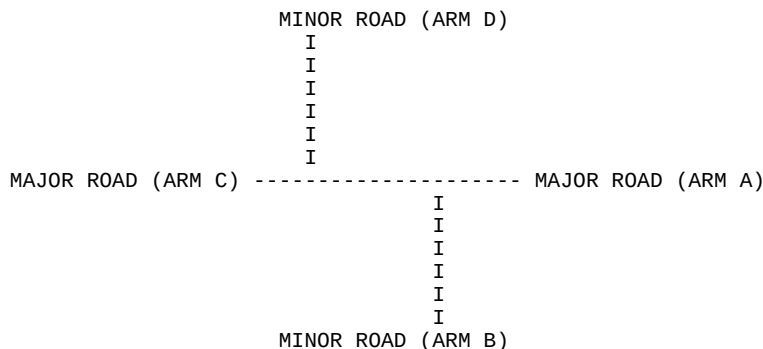
Run with file:-  
"I:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\StationRd\_MillingtonRd AM Sen.vpi"  
(drive-on-the-left) at 12:51:56 on Sunday, 5 August 2012

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Base Model Junction 4  
LOCATION : Station Road/Millington Road  
DATE : 23/04/12  
CLIENT :  
ENUMERATOR : rhussain [IE-D00135]  
JOB NUMBER : VN50026  
STATUS : Draft 1  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----



ARM A IS Station Road (S)  
ARM B IS Millington Road  
ARM C IS Station Road (N)  
ARM D IS Bedwell Gardens

STREAM LABELLING CONVENTION  
-----

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

## GEOMETRIC DATA

| I | DATA ITEM                          | I | MINOR ROAD B      | I | MINOR ROAD D      | I |
|---|------------------------------------|---|-------------------|---|-------------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | ( W ) 8.25 M.     | I | ( W ) 8.25 M.     | I |
| I | CENTRAL RESERVE WIDTH              | I | ( WCR ) 0.00 M.   | I | ( WCR ) 0.00 M.   | I |
| I |                                    | I |                   | I |                   | I |
| I | MAJOR ROAD RIGHT TURN - WIDTH      | I | ( WC-B ) 2.20 M.  | I | ( WA-D ) 2.20 M.  | I |
| I | - VISIBILITY                       | I | ( VC-B ) 60.00 M. | I | ( VA-D ) 80.00 M. | I |
| I | - BLOCKS TRAFFIC (SPACES)          | I | YES ( 2 )         | I | YES ( 2 )         | I |
| I |                                    | I |                   | I |                   | I |
| I | MINOR ROAD - VISIBILITY TO LEFT    | I | ( VB-C ) 29.0 M.  | I | ( VD-A ) 31.0 M.  | I |
| I | - VISIBILITY TO RIGHT              | I | ( VB-A ) 41.0 M.  | I | ( VD-C ) 26.0 M.  | I |
| I | - LANE 1 WIDTH                     | I | ( WB-C ) 5.00 M.  | I | ( WD-A ) 3.52 M.  | I |
| I | - LANE 2 WIDTH                     | I | ( WB-A ) 0.00 M.  | I | ( WD-C ) 0.00 M.  | I |

## .SLOPES AND INTERCEPT

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

## STREAM B-A

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-A    | STREAM A-C         | STREAM A-D         | STREAM A-B         | STREAM C-A         | I |
| I | 608.68        | 0.25               | 0.25               | 0.10               | 0.16               | I |

| I | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-A         | STREAM C-B         | STREAM D-B         | STREAM C-A         | I |
| I | 0.16               | 0.36               | 0.36               |                    | I |

## STREAM D-C

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-C    | STREAM C-A         | STREAM C-B         | STREAM C-D         | STREAM A-C         | I |
| I | 526.46        | 0.22               | 0.22               | 0.09               | 0.14               | I |

| I | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-C         | STREAM A-D         | STREAM B-D         | STREAM C-D         | I |
| I | 0.14               | 0.31               | 0.31               |                    | I |

## STREAM CD-B

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM CD-B   | STREAM A-B         | STREAM A-C         | STREAM A-D         | STREAM C-B         | I |
| I | 620.29        | 0.21               | 0.21               | 0.25               |                    | I |

## STREAM AB-D

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM AB-D   | STREAM C-D         | STREAM C-A         | STREAM C-B         | STREAM A-B         | I |
| I | 620.29        | 0.22               | 0.22               | 0.22               |                    | I |

## STREAM B-CD

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-CD   | STREAM A-C         | STREAM A-D         | STREAM A-B         | STREAM C-D         | I |
| I | 779.85        | 0.27               | 0.27               | 0.11               |                    | I |

## STREAM D-AB

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-AB   | STREAM C-A         | STREAM C-B         | STREAM C-D         | STREAM A-B         | I |
| I | 673.64        | 0.24               | 0.24               | 0.09               |                    | I |

TRAFFIC DEMAND DATA

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

Demand set: Base+Com+H4&5 2014

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | I | TOP OF PEAK IS REACHED | I | FLOW STOPS FALLING | I | RATE OF FLOW (VEH/MIN) BEFORE PEAK | I | AT TOP OF PEAK | I | AFTER PEAK | I |
|---|-------|---|-------------------------------------------------------|---|------------------------|---|--------------------|---|------------------------------------|---|----------------|---|------------|---|
| I | ARM A | I | 15.00                                                 | I | 45.00                  | I | 75.00              | I | 6.80                               | I | 10.20          | I | 6.80       | I |
| I | ARM B | I | 15.00                                                 | I | 45.00                  | I | 75.00              | I | 1.24                               | I | 1.86           | I | 1.24       | I |
| I | ARM C | I | 15.00                                                 | I | 45.00                  | I | 75.00              | I | 10.20                              | I | 15.30          | I | 10.20      | I |
| I | ARM D | I | 15.00                                                 | I | 45.00                  | I | 75.00              | I | 1.33                               | I | 1.99           | I | 1.33       | I |

Demand set: Base+Com+H4&5 2014

| I | TIME          | I | FROM/TO | I | ARM    | A | I      | ARM | B      | I | ARM    | C | I | ARM | D | I |
|---|---------------|---|---------|---|--------|---|--------|-----|--------|---|--------|---|---|-----|---|---|
| I | 07.45 - 09.15 | I | ARM A   | I | 0.000  | I | 0.285  | I   | 0.676  | I | 0.039  | I |   |     |   |   |
| I |               | I |         | I | 0.0    | I | 155.0  | I   | 368.0  | I | 21.0   | I |   |     |   |   |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |   |     |   |   |
| I |               | I | ARM B   | I | 0.556  | I | 0.000  | I   | 0.444  | I | 0.000  | I |   |     |   |   |
| I |               | I |         | I | 55.0   | I | 0.0    | I   | 44.0   | I | 0.0    | I |   |     |   |   |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |   |     |   |   |
| I |               | I | ARM C   | I | 0.695  | I | 0.186  | I   | 0.000  | I | 0.119  | I |   |     |   |   |
| I |               | I |         | I | 567.0  | I | 152.0  | I   | 0.0    | I | 97.0   | I |   |     |   |   |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |   |     |   |   |
| I |               | I | ARM D   | I | 0.160  | I | 0.000  | I   | 0.840  | I | 0.000  | I |   |     |   |   |
| I |               | I |         | I | 17.0   | I | 0.0    | I   | 89.0   | I | 0.0    | I |   |     |   |   |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |   |     |   |   |
| I |               | I |         | I |        | I |        | I   |        | I |        | I |   |     |   |   |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS  
AND FOR TIME PERIOD 1



| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 07.45-08.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.24                | 8.35                  | 0.149                        |                                  | 0.00                     | 0.17                   | 2.5                                 |                                               | 0.14                                           |
| A-B         | 1.94                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 4.62                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.26                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.26)             | 8.12                  | 0.032                        |                                  | 0.00                     | 0.03                   | 0.5                                 |                                               | 0.13                                           |
| AB-C        | ( 5.16)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.33                | 6.25                  | 0.213                        |                                  | 0.00                     | 0.27                   | 3.8                                 |                                               | 0.20                                           |
| C-D         | 1.22                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 7.11                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 1.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 1.91)             | 8.69                  | 0.219                        |                                  | 0.00                     | 0.22                   | 3.2                                 |                                               | 0.15                                           |
| CD-A        | ( 7.32)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.00-08.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.48                | 7.75                  | 0.192                        |                                  | 0.17                     | 0.23                   | 3.4                                 |                                               | 0.16                                           |
| A-B         | 2.32                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 5.51                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.31                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.31)             | 7.69                  | 0.041                        |                                  | 0.03                     | 0.04                   | 0.6                                 |                                               | 0.14                                           |
| AB-C        | ( 6.17)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.59                | 5.69                  | 0.279                        |                                  | 0.27                     | 0.38                   | 5.5                                 |                                               | 0.24                                           |
| C-D         | 1.45                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 8.50                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 2.28                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 2.28)             | 8.41                  | 0.271                        |                                  | 0.22                     | 0.27                   | 4.0                                 |                                               | 0.16                                           |
| CD-A        | ( 8.75)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.15-08.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.82                | 6.88                  | 0.264                        |                                  | 0.23                     | 0.35                   | 5.1                                 |                                               | 0.20                                           |
| A-B         | 2.84                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 6.75                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.39                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.39)             | 7.09                  | 0.054                        |                                  | 0.04                     | 0.05                   | 0.8                                 |                                               | 0.15                                           |
| AB-C        | ( 7.56)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.95                | 4.91                  | 0.396                        |                                  | 0.38                     | 0.63                   | 8.9                                 |                                               | 0.33                                           |
| C-D         | 1.78                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 10.40               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 2.79                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 2.79)             | 8.02                  | 0.348                        |                                  | 0.27                     | 0.34                   | 5.2                                 |                                               | 0.19                                           |
| CD-A        | ( 10.71)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.30-08.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 1.82                | 6.88                  | 0.264                        |                                  | 0.35                     | 0.36                   | 5.3                                 |                                               | 0.20                                           |
| A-B         | 2.84                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 6.75                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.39                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.39)             | 7.09                  | 0.054                        |                                  | 0.05                     | 0.05                   | 0.8                                 |                                               | 0.15                                           |
| AB-C        | ( 7.56)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.95                | 4.91                  | 0.396                        |                                  | 0.63                     | 0.64                   | 9.6                                 |                                               | 0.34                                           |
| C-D         | 1.78                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 10.40               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 2.79                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 2.79)             | 8.02                  | 0.348                        |                                  | 0.34                     | 0.35                   | 5.2                                 |                                               | 0.19                                           |
| CD-A        | ( 10.72)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| I | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 08.45-09.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | B-ACD       | 1.48                | 7.74                  | 0.192                        |                                  | 0.36                     | 0.24                   | 3.7                                 |                                               | 0.16                                           | I |
| I | A-B         | 2.32                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-C         | 5.51                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-D         | 0.31                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | AB-CD (     | 0.31)               | 7.69                  | 0.041                        |                                  | 0.05                     | 0.04                   | 0.6                                 |                                               | 0.14                                           | I |
| I | AB-C (      | 6.18)               |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | D-ABC       | 1.59                | 5.69                  | 0.279                        |                                  | 0.64                     | 0.40                   | 6.3                                 |                                               | 0.25                                           | I |
| I | C-D         | 1.45                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-A         | 8.50                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-B         | 2.28                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | CD-AB (     | 2.28)               | 8.41                  | 0.271                        |                                  | 0.35                     | 0.27                   | 4.1                                 |                                               | 0.16                                           | I |
| I | CD-A (      | 8.75)               |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I |             |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

| I | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 09.00-09.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | B-ACD       | 1.24                | 8.35                  | 0.149                        |                                  | 0.24                     | 0.18                   | 2.7                                 |                                               | 0.14                                           | I |
| I | A-B         | 1.94                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-C         | 4.62                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-D         | 0.26                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | AB-CD (     | 0.26)               | 8.12                  | 0.032                        |                                  | 0.04                     | 0.03                   | 0.5                                 |                                               | 0.13                                           | I |
| I | AB-C (      | 5.17)               |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | D-ABC       | 1.33                | 6.25                  | 0.213                        |                                  | 0.40                     | 0.28                   | 4.3                                 |                                               | 0.20                                           | I |
| I | C-D         | 1.22                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-A         | 7.11                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-B         | 1.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | CD-AB (     | 1.91)               | 8.69                  | 0.219                        |                                  | 0.27                     | 0.22                   | 3.3                                 |                                               | 0.15                                           | I |
| I | CD-A (      | 7.33)               |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I |             |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

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

#### QUEUE FOR STREAM B-ACD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 08.00                     | 0.2                            |
| 08.15                     | 0.2                            |
| 08.30                     | 0.4                            |
| 08.45                     | 0.4                            |
| 09.00                     | 0.2                            |
| 09.15                     | 0.2                            |

#### QUEUE FOR STREAM AB-CD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 08.00                     | 0.0                            |
| 08.15                     | 0.0                            |
| 08.30                     | 0.1                            |
| 08.45                     | 0.1                            |
| 09.00                     | 0.0                            |
| 09.15                     | 0.0                            |

#### QUEUE FOR STREAM D-ABC

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|---------------------------|--------------------------------|---|
| 08.00                     | 0.3                            |   |
| 08.15                     | 0.4                            |   |
| 08.30                     | 0.6                            | * |
| 08.45                     | 0.6                            | * |
| 09.00                     | 0.4                            |   |
| 09.15                     | 0.3                            |   |

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 08.00                     | 0.2                            |
| 08.15                     | 0.3                            |
| 08.30                     | 0.3                            |
| 08.45                     | 0.3                            |
| 09.00                     | 0.3                            |
| 09.15                     | 0.2                            |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL DEMAND | I         | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I         |
|---|--------|---|--------------|-----------|--------------|-----------|------------------------|-----------|
| I | I      | I | I            | I         | * DELAY *    | I         | * DELAY *              | I         |
| I | I      | I | I            | I         | I            | I         | I                      | I         |
| I | I      | I | (VEH)        | (VEH/H)   | (MIN)        | (MIN/VEH) | (MIN)                  | (MIN/VEH) |
| I | B-ACD  | I | 136.3        | I 90.8    | I 22.8       | I 0.17    | I 22.8                 | I 0.17    |
| I | A-B    | I | 213.3        | I 142.2   | I            | I         | I                      | I         |
| I | A-C    | I | 506.5        | I 337.7   | I            | I         | I                      | I         |
| I | A-D    | I | 28.9         | I 19.3    | I            | I         | I                      | I         |
| I | AB-CD  | I | ( 28.9)      | I( 19.3)  | I 3.8        | I 0.13    | I 3.8                  | I 0.13    |
| I | AB-C   | I | ( 567.0)     | I( 378.0) | I            | I         | I                      | I         |
| I | D-ABC  | I | 145.9        | I 97.3    | I 38.3       | I 0.26    | I 38.3                 | I 0.26    |
| I | C-D    | I | 133.5        | I 89.0    | I            | I         | I                      | I         |
| I | C-A    | I | 780.4        | I 520.3   | I            | I         | I                      | I         |
| I | C-B    | I | 209.2        | I 139.5   | I            | I         | I                      | I         |
| I | CD-AB  | I | ( 209.2)     | I( 139.5) | I 25.1       | I 0.12    | I 25.1                 | I 0.12    |
| I | CD-A   | I | ( 803.8)     | I( 535.9) | I            | I         | I                      | I         |
| I | ALL    | I | 2154.1       | I 1436.1  | I 90.0       | I 0.04    | I 90.0                 | I 0.04    |

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

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

===== end of file =====

Printed at 12:53:05 on 05/08/2012]

TRL LIMITED

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

PICADY 5.1 ANALYSIS PROGRAM  
RELEASE 5.0 (JUNE 2010)

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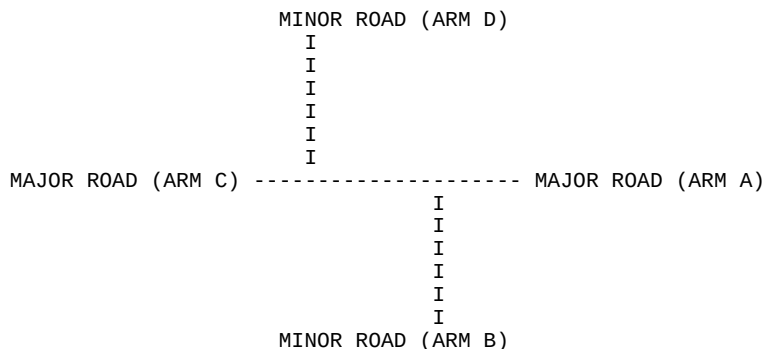
Run with file:-  
"I:\VNIF\Projects\VN50026\Technical\Data\Modelling\Base\Validated models\StationRd\_MillingtonRd PM Sen.vpi"  
(drive-on-the-left) at 12:53:14 on Sunday, 5 August 2012

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Base Model Junction 4  
LOCATION : Station Road/Millington Road  
DATE : 23/04/12  
CLIENT :  
ENUMERATOR : rhussain [IE-D00135]  
JOB NUMBER : VN50026  
STATUS : Draft 1  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----



ARM A IS Station Road (S)  
ARM B IS Millington Road  
ARM C IS Station Road (N)  
ARM D IS Bedwell Gardens

STREAM LABELLING CONVENTION  
-----

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

## GEOMETRIC DATA

| I | DATA ITEM                          | I | MINOR ROAD B      | I | MINOR ROAD D      | I |
|---|------------------------------------|---|-------------------|---|-------------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | ( W ) 8.25 M.     | I | ( W ) 8.25 M.     | I |
| I | CENTRAL RESERVE WIDTH              | I | ( WCR ) 0.00 M.   | I | ( WCR ) 0.00 M.   | I |
| I |                                    | I |                   | I |                   | I |
| I | MAJOR ROAD RIGHT TURN - WIDTH      | I | ( WC-B ) 2.20 M.  | I | ( WA-D ) 2.20 M.  | I |
| I | - VISIBILITY                       | I | ( VC-B ) 60.00 M. | I | ( VA-D ) 80.00 M. | I |
| I | - BLOCKS TRAFFIC (SPACES)          | I | YES ( 2 )         | I | YES ( 2 )         | I |
| I |                                    | I |                   | I |                   | I |
| I | MINOR ROAD - VISIBILITY TO LEFT    | I | ( VB-C ) 29.0 M.  | I | ( VD-A ) 31.0 M.  | I |
| I | - VISIBILITY TO RIGHT              | I | ( VB-A ) 41.0 M.  | I | ( VD-C ) 26.0 M.  | I |
| I | - LANE 1 WIDTH                     | I | ( WB-C ) 5.00 M.  | I | ( WD-A ) 3.52 M.  | I |
| I | - LANE 2 WIDTH                     | I | ( WB-A ) 0.00 M.  | I | ( WD-C ) 0.00 M.  | I |

## .SLOPES AND INTERCEPT

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

## STREAM B-A

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-A    | STREAM A-C         | STREAM A-D         | STREAM A-B         | STREAM C-A         | I |
| I | 608.68        | 0.25               | 0.25               | 0.10               | 0.16               | I |

| I | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-A         | STREAM C-B         | STREAM D-B         | STREAM C-A         | I |
| I | 0.16               | 0.36               | 0.36               |                    | I |

## STREAM D-C

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-C    | STREAM C-A         | STREAM C-B         | STREAM C-D         | STREAM A-C         | I |
| I | 526.46        | 0.22               | 0.22               | 0.09               | 0.14               | I |

| I | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-C         | STREAM A-D         | STREAM B-D         | STREAM C-D         | I |
| I | 0.14               | 0.31               | 0.31               |                    | I |

## STREAM CD-B

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM CD-B   | STREAM A-B         | STREAM A-C         | STREAM A-D         | STREAM C-B         | I |
| I | 620.29        | 0.21               | 0.21               | 0.25               |                    | I |

## STREAM AB-D

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM AB-D   | STREAM C-D         | STREAM C-A         | STREAM C-B         | STREAM A-B         | I |
| I | 620.29        | 0.22               | 0.22               | 0.22               |                    | I |

## STREAM B-CD

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM B-CD   | STREAM A-C         | STREAM A-D         | STREAM A-B         | STREAM C-D         | I |
| I | 779.85        | 0.27               | 0.27               | 0.11               |                    | I |

## STREAM D-AB

| I | Intercept For | Slope For Opposing | Slope For Opposing | Slope For Opposing | Slope For Opposing | I |
|---|---------------|--------------------|--------------------|--------------------|--------------------|---|
| I | STREAM D-AB   | STREAM C-A         | STREAM C-B         | STREAM C-D         | STREAM A-B         | I |
| I | 673.64        | 0.24               | 0.24               | 0.09               |                    | I |

TRAFFIC DEMAND DATA

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

Demand set: Base+Com+H4&5 2014

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | I | TOP OF PEAK IS REACHED | I | FLOW STOPS FALLING | I | RATE OF FLOW (VEH/MIN) BEFORE PEAK | I | AT TOP OF PEAK | I | AFTER PEAK | I |
|---|-------|---|-------------------------------------------------------|---|------------------------|---|--------------------|---|------------------------------------|---|----------------|---|------------|---|
| I | ARM A | I | 15.00                                                 | I | 45.00                  | I | 75.00              | I | 7.72                               | I | 11.59          | I | 7.72       | I |
| I | ARM B | I | 15.00                                                 | I | 45.00                  | I | 75.00              | I | 4.25                               | I | 6.38           | I | 4.25       | I |
| I | ARM C | I | 15.00                                                 | I | 45.00                  | I | 75.00              | I | 8.74                               | I | 13.11          | I | 8.74       | I |
| I | ARM D | I | 15.00                                                 | I | 45.00                  | I | 75.00              | I | 0.71                               | I | 1.07           | I | 0.71       | I |

Demand set: Base+Com+H4&5 2014

| I | TIME          | I | FROM/TO | I | ARM    | A | I      | ARM | B      | I | ARM    | C | I | ARM | D | I |
|---|---------------|---|---------|---|--------|---|--------|-----|--------|---|--------|---|---|-----|---|---|
| I | 16.45 - 18.15 | I | ARM A   | I | 0.000  | I | 0.170  | I   | 0.798  | I | 0.032  | I |   |     |   | I |
| I |               | I |         | I | 0.0    | I | 105.0  | I   | 493.0  | I | 20.0   | I |   |     |   | I |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |   |     |   | I |
| I |               | I | ARM B   | I | 0.415  | I | 0.000  | I   | 0.585  | I | 0.000  | I |   |     |   | I |
| I |               | I |         | I | 141.0  | I | 0.0    | I   | 199.0  | I | 0.0    | I |   |     |   | I |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |   |     |   | I |
| I |               | I | ARM C   | I | 0.654  | I | 0.223  | I   | 0.000  | I | 0.123  | I |   |     |   | I |
| I |               | I |         | I | 457.0  | I | 156.0  | I   | 0.0    | I | 86.0   | I |   |     |   | I |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |   |     |   | I |
| I |               | I | ARM D   | I | 0.193  | I | 0.000  | I   | 0.807  | I | 0.000  | I |   |     |   | I |
| I |               | I |         | I | 11.0   | I | 0.0    | I   | 46.0   | I | 0.0    | I |   |     |   | I |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I   | ( 0.0) | I | ( 0.0) | I |   |     |   | I |
| I |               | I |         | I |        | I |        | I   |        | I |        | I |   |     |   | I |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS  
AND FOR TIME PERIOD 1

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 16.45-17.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 4.27                | 8.76                  | 0.487                        |                                  | 0.00                     | 0.92                   | 12.9                                |                                               | 0.22                                           |
| A-B         | 1.32                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 6.19                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.25                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.25)             | 8.44                  | 0.030                        |                                  | 0.00                     | 0.03                   | 0.4                                 |                                               | 0.12                                           |
| AB-C        | ( 8.65)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 0.72                | 6.19                  | 0.116                        |                                  | 0.00                     | 0.13                   | 1.8                                 |                                               | 0.18                                           |
| C-D         | 1.08                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 5.73                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 1.96                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 1.96)             | 8.50                  | 0.230                        |                                  | 0.00                     | 0.23                   | 3.4                                 |                                               | 0.15                                           |
| CD-A        | ( 5.87)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.00-17.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 5.09                | 8.15                  | 0.625                        |                                  | 0.92                     | 1.58                   | 21.9                                |                                               | 0.32                                           |
| A-B         | 1.57                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 7.39                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.30                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.30)             | 8.07                  | 0.037                        |                                  | 0.03                     | 0.04                   | 0.6                                 |                                               | 0.13                                           |
| AB-C        | ( 10.34)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 0.85                | 5.59                  | 0.153                        |                                  | 0.13                     | 0.18                   | 2.6                                 |                                               | 0.21                                           |
| C-D         | 1.29                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 6.85                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 2.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 2.34)             | 8.18                  | 0.286                        |                                  | 0.23                     | 0.28                   | 4.3                                 |                                               | 0.17                                           |
| CD-A        | ( 7.01)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.15-17.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 6.24                | 7.27                  | 0.858                        |                                  | 1.58                     | 4.51                   | 54.8                                |                                               | 0.72                                           |
| A-B         | 1.93                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 9.05                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.37                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.37)             | 7.56                  | 0.049                        |                                  | 0.04                     | 0.05                   | 0.7                                 |                                               | 0.14                                           |
| AB-C        | ( 12.58)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.05                | 4.76                  | 0.220                        |                                  | 0.18                     | 0.28                   | 4.0                                 |                                               | 0.27                                           |
| C-D         | 1.58                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 8.39                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 2.86                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 2.86)             | 7.73                  | 0.370                        |                                  | 0.28                     | 0.37                   | 5.5                                 |                                               | 0.20                                           |
| CD-A        | ( 8.59)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.30-17.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-ACD       | 6.24                | 7.27                  | 0.858                        |                                  | 4.51                     | 5.07                   | 72.5                                |                                               | 0.87                                           |
| A-B         | 1.93                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 9.05                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-D         | 0.37                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| AB-CD       | ( 0.37)             | 7.56                  | 0.049                        |                                  | 0.05                     | 0.05                   | 0.7                                 |                                               | 0.14                                           |
| AB-C        | ( 12.68)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| D-ABC       | 1.05                | 4.74                  | 0.221                        |                                  | 0.28                     | 0.28                   | 4.2                                 |                                               | 0.27                                           |
| C-D         | 1.58                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-A         | 8.39                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 2.86                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| CD-AB       | ( 2.86)             | 7.73                  | 0.370                        |                                  | 0.37                     | 0.37                   | 5.6                                 |                                               | 0.20                                           |
| CD-A        | ( 8.59)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| I | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 17.45-18.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | B-ACD       | 5.09                | 8.15                  | 0.625                        |                                  | 5.07                     | 1.76                   | 31.3                                |                                               | 0.38                                           | I |
| I | A-B         | 1.57                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-C         | 7.39                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-D         | 0.30                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | AB-CD       | ( 0.30)             | 8.07                  | 0.037                        |                                  | 0.05                     | 0.04                   | 0.6                                 |                                               | 0.13                                           | I |
| I | AB-C        | ( 10.50)            |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | D-ABC       | 0.85                | 5.57                  | 0.153                        |                                  | 0.28                     | 0.18                   | 2.9                                 |                                               | 0.21                                           | I |
| I | C-D         | 1.29                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-A         | 6.85                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-B         | 2.34                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | CD-AB       | ( 2.34)             | 8.18                  | 0.286                        |                                  | 0.37                     | 0.29                   | 4.3                                 |                                               | 0.17                                           | I |
| I | CD-A        | ( 7.01)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I |             |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

| I | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 18.00-18.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | B-ACD       | 4.27                | 8.75                  | 0.487                        |                                  | 1.76                     | 0.98                   | 15.6                                |                                               | 0.23                                           | I |
| I | A-B         | 1.32                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-C         | 6.19                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | A-D         | 0.25                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | AB-CD       | ( 0.25)             | 8.44                  | 0.030                        |                                  | 0.04                     | 0.03                   | 0.4                                 |                                               | 0.12                                           | I |
| I | AB-C        | ( 8.71)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | D-ABC       | 0.72                | 6.18                  | 0.116                        |                                  | 0.18                     | 0.13                   | 2.1                                 |                                               | 0.18                                           | I |
| I | C-D         | 1.08                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-A         | 5.73                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | C-B         | 1.96                |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | CD-AB       | ( 1.96)             | 8.50                  | 0.230                        |                                  | 0.29                     | 0.23                   | 3.5                                 |                                               | 0.15                                           | I |
| I | CD-A        | ( 5.87)             |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I |             |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

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

QUEUE FOR STREAM B-ACD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|---------------------------|--------------------------------|-------|
| 17.00                     | 0.9                            | *     |
| 17.15                     | 1.6                            | **    |
| 17.30                     | 4.5                            | ***** |
| 17.45                     | 5.1                            | ***** |
| 18.00                     | 1.8                            | **    |
| 18.15                     | 1.0                            | *     |

QUEUE FOR STREAM AB-CD

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.00                     | 0.0                            |
| 17.15                     | 0.0                            |
| 17.30                     | 0.0                            |
| 17.45                     | 0.0                            |
| 18.00                     | 0.0                            |
| 18.15                     | 0.0                            |

QUEUE FOR STREAM D-ABC

| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.00                     | 0.1                            |
| 17.15                     | 0.2                            |
| 17.30                     | 0.3                            |
| 17.45                     | 0.3                            |
| 18.00                     | 0.2                            |
| 18.15                     | 0.1                            |



| TIME<br>SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|---------------------------|--------------------------------|
| 17.00                     | 0.2                            |
| 17.15                     | 0.3                            |
| 17.30                     | 0.4                            |
| 17.45                     | 0.4                            |
| 18.00                     | 0.3                            |
| 18.15                     | 0.2                            |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL DEMAND | I       | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I         |      |   |       |   |      |   |
|---|--------|---|--------------|---------|--------------|-----------|------------------------|-----------|------|---|-------|---|------|---|
| I | I      | I | I            | I       | * DELAY *    | I         | * DELAY *              | I         |      |   |       |   |      |   |
| I | I      | I | (VEH)        | (VEH/H) | (MIN)        | (MIN/VEH) | (MIN)                  | (MIN/VEH) |      |   |       |   |      |   |
| I | B-ACD  | I | 468.0        | I       | 312.0        | I         | 209.0                  | I         | 0.45 | I | 209.1 | I | 0.45 | I |
| I | A-B    | I | 144.5        | I       | 96.3         | I         |                        | I         |      | I |       | I |      | I |
| I | A-C    | I | 678.6        | I       | 452.4        | I         |                        | I         |      | I |       | I |      | I |
| I | A-D    | I | 27.5         | I       | 18.4         | I         |                        | I         |      | I |       | I |      | I |
| I | AB-CD  | I | ( 27.5)      | I       | ( 18.4)      | I         | 3.5                    | I         | 0.13 | I | 3.5   | I | 0.13 | I |
| I | AB-C   | I | ( 951.9)     | I       | ( 634.6)     | I         |                        | I         |      | I |       | I |      | I |
| I | D-ABC  | I | 78.5         | I       | 52.3         | I         | 17.5                   | I         | 0.22 | I | 17.5  | I | 0.22 | I |
| I | C-D    | I | 118.4        | I       | 78.9         | I         |                        | I         |      | I |       | I |      | I |
| I | C-A    | I | 629.0        | I       | 419.4        | I         |                        | I         |      | I |       | I |      | I |
| I | C-B    | I | 214.7        | I       | 143.1        | I         |                        | I         |      | I |       | I |      | I |
| I | CD-AB  | I | ( 214.7)     | I       | ( 143.1)     | I         | 26.5                   | I         | 0.12 | I | 26.5  | I | 0.12 | I |
| I | CD-A   | I | ( 644.1)     | I       | ( 429.4)     | I         |                        | I         |      | I |       | I |      | I |
| I | ALL    | I | 2359.2       | I       | 1572.8       | I         | 256.5                  | I         | 0.11 | I | 256.6 | I | 0.11 | I |

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

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

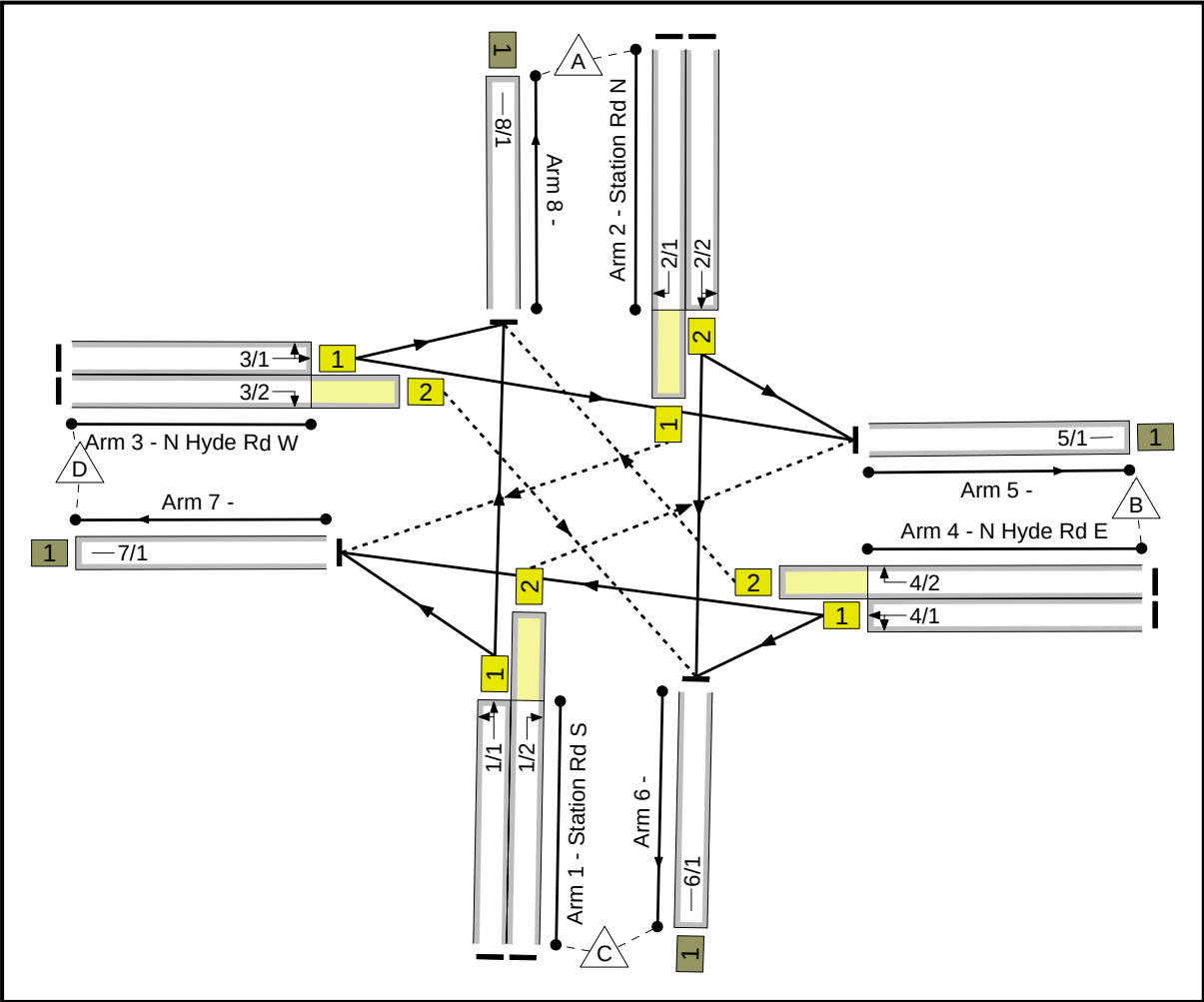
===== end of file =====

Full Input Data And Results

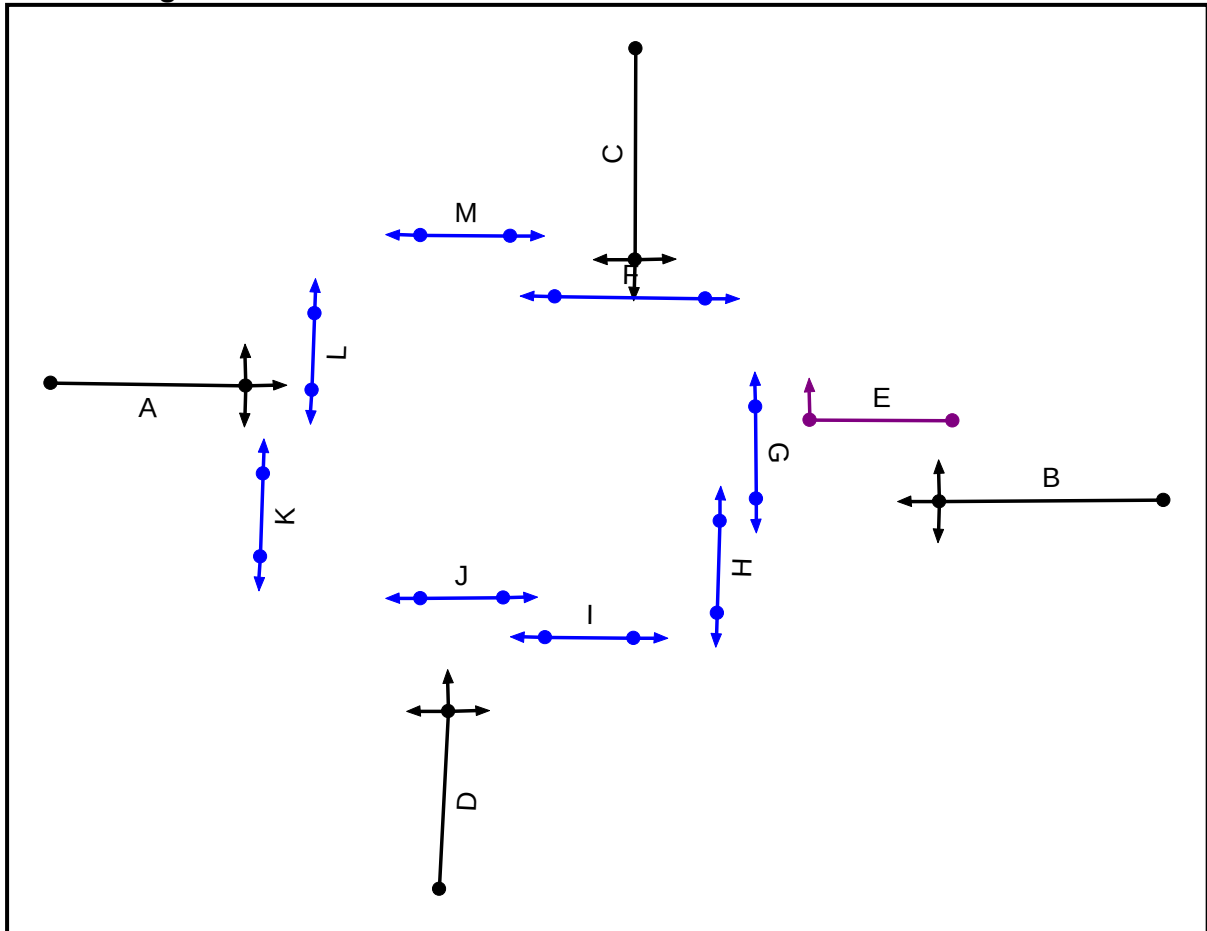
User and Project Details

|             |                 |
|-------------|-----------------|
| Project:    |                 |
| Title:      |                 |
| Location:   |                 |
| File name:  | 26_10AM_LL.lsgx |
| Author:     |                 |
| Company:    |                 |
| Address:    |                 |
| Controller: | Generic         |
| SCN:        |                 |
| Notes:      |                 |

Junction 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          | Ind. Arrow | B           | 4          | 4        |
| F          | Pedestrian |             | 1          | 1        |
| G          | Pedestrian |             | 1          | 1        |
| H          | Pedestrian |             | 1          | 1        |
| I          | Pedestrian |             | 4          | 4        |
| J          | Pedestrian |             | 1          | 1        |
| K          | Pedestrian |             | 4          | 4        |
| L          | Pedestrian |             | 1          | 1        |
| M          | Pedestrian |             | 4          | 4        |

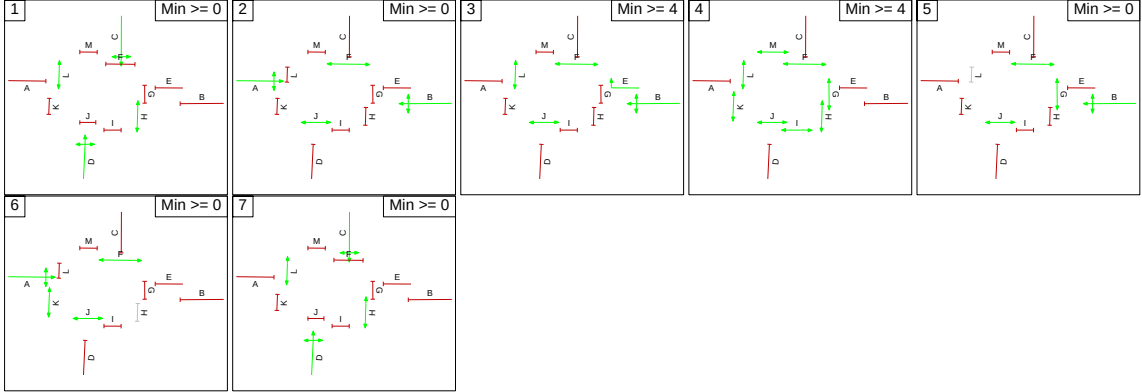
Phase Intergreens Matrix

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

Phases in Stage

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1         | C D H L         |
| 2         | A B F J         |
| 3         | B E F J L       |
| 4         | F G H I J K L M |
| 5         | B F G J         |
| 6         | A F J K         |
| 7         | C D H L         |

Stages Diagram



**Phase Delays**

| Term. Stage | Start Stage | Phase | Type   | Value | Cont value |
|-------------|-------------|-------|--------|-------|------------|
| 1           | 2           | C     | Losing | 3     | 3          |
| 1           | 2           | D     | Losing | 3     | 3          |
| 2           | 1           | A     | Losing | 3     | 3          |
| 2           | 1           | B     | Losing | 3     | 3          |

**Prohibited Stage Changes**

| From Stage | To Stage |    |    |    |    |    |    |
|------------|----------|----|----|----|----|----|----|
|            | 1        | 2  | 3  | 4  | 5  | 6  | 7  |
|            | 1        | 10 | 10 | 10 | 10 | 10 | 0  |
|            | 2        | 9  | 10 | 5  | 10 | 9  | 10 |
|            | 3        | 9  | 9  | 10 | 5  | 10 | 9  |
|            | 4        | 9  | 10 | 10 | 10 | 9  | 9  |
|            | 5        | 9  | 8  | 8  | 10 | 10 | 9  |
|            | 6        | 9  | 8  | 10 | 9  | 10 | 9  |
|            | 7        | 0  | 10 | 10 | 10 | 10 | 10 |

**Link Input Data**

| Arm/ Link | Link Name               | Link Type | Num Lanes | Phases | Start Disp. | End Disp. |
|-----------|-------------------------|-----------|-----------|--------|-------------|-----------|
| 1/1       | Station Rd S Left Ahead | U         | 1         | D      | 2           | 3         |
| 1/2       | Station Rd S Right      | O         | 1         | D      | 2           | 3         |
| 2/1       | Station Rd N Right      | O         | 1         | C      | 2           | 3         |
| 2/2       | Station Rd N Left Ahead | U         | 1         | C      | 2           | 3         |
| 3/1       | N Hyde Rd W Ahead Left  | U         | 1         | A      | 2           | 3         |
| 3/2       | N Hyde Rd W Right       | O         | 1         | A      | 2           | 3         |
| 4/1       | N Hyde Rd E Left Ahead  | U         | 1         | B      | 2           | 3         |
| 4/2       | N Hyde Rd E Right       | O         | 1         | B E    | 2           | 3         |
| 5/1       |                         | U         | 1         |        | 2           | 3         |
| 6/1       |                         | U         | 1         |        | 2           | 3         |
| 7/1       |                         | U         | 1         |        | 2           | 3         |
| 8/1       |                         | U         | 1         |        | 2           | 3         |

# Full Input Data And Results

## Give-Way Link Input Data

| Arm/<br>Link | Link Name             | Movement   | Max Flow when<br>Giving Way<br>(PCU/Hr) | Opposing<br>Link | Opp. Link<br>Coeff. | Opp.<br>Mvmnts. | Right Turn<br>Storage (PCU) | RTF  | Right Turn<br>Move up time<br>(s) | Max Turns in<br>Intergreen (PCU) |
|--------------|-----------------------|------------|-----------------------------------------|------------------|---------------------|-----------------|-----------------------------|------|-----------------------------------|----------------------------------|
| 1/2          | Station Rd<br>S Right | 1/2 to 5/1 | 1440                                    | 2/2              | 1.09                | 2/2             | 4.00                        | 0.50 | 4                                 | 4.00                             |
| 2/1          | Station Rd<br>N Right | 2/1 to 7/1 | 1440                                    | 1/1              | 1.09                | 1/1             | 4.00                        | 0.50 | 4                                 | 2.00                             |
| 3/2          | N Hyde Rd<br>W Right  | 3/2 to 6/1 | 1440                                    | 4/1              | 1.09                | 4/1             | 4.00                        | 0.50 | 4                                 | 4.00                             |
| 4/2          | N Hyde Rd<br>E Right  | 4/2 to 8/1 | 1440                                    | 3/1              | 1.09                | 3/1             | 4.00                        | 0.50 | 4                                 | 4.00                             |

## Lane Input Data

| Arm/<br>Lane                    | Link<br>Num                            | Physical<br>Length<br>(PCU) | Expected<br>Usage<br>(PCU) | Sat<br>Flow<br>Type | User<br>Saturation<br>Flow<br>(PCU/Hr) | Lane<br>Width<br>(m) | Gradient | Nearside<br>Lane | Allowed<br>Turns                    | Turning<br>Radius<br>(m) |
|---------------------------------|----------------------------------------|-----------------------------|----------------------------|---------------------|----------------------------------------|----------------------|----------|------------------|-------------------------------------|--------------------------|
| 1/1<br>(Station Rd S<br>Lane 1) | Link 1<br>(Station Rd S<br>Left Ahead) | Inf                         | Inf                        | User                | 1833                                   | 3.25                 | 0.00     | Y                | Arm 7<br>Left<br><br>Arm 8<br>Ahead | Inf<br><br>Inf           |
| 1/2<br>(Station Rd S<br>Lane 2) | Link 2<br>(Station Rd S<br>Right)      | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 5<br>Right                      | 15.00                    |
| 2/1<br>(Station Rd N<br>Lane 1) | Link 2<br>(Station Rd N<br>Left Ahead) | Inf                         | Inf                        | User                | 1919                                   | 3.25                 | 0.00     | Y                | Arm 5<br>Left<br><br>Arm 6<br>Ahead | Inf<br><br>Inf           |
| 2/2<br>(Station Rd N<br>Lane 2) | Link 1<br>(Station Rd N<br>Right)      | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 7<br>Right                      | 14.00                    |
| 3/1<br>(N Hyde Rd W<br>Lane 1)  | Link 1<br>(N Hyde Rd W<br>Ahead Left)  | Inf                         | Inf                        | User                | 1818                                   | 3.25                 | 0.00     | Y                | Arm 5<br>Ahead<br><br>Arm 8<br>Left | Inf<br><br>Inf           |
| 3/2<br>(N Hyde Rd W<br>Lane 2)  | Link 2<br>(N Hyde Rd W<br>Right)       | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 6<br>Right                      | 17.00                    |
| 4/1<br>(N Hyde Rd E<br>Lane 1)  | Link 1<br>(N Hyde Rd E<br>Left Ahead)  | Inf                         | Inf                        | User                | 1821                                   | 3.25                 | 0.00     | Y                | Arm 6<br>Left<br><br>Arm 7<br>Ahead | Inf<br><br>Inf           |
| 4/2<br>(N Hyde Rd E<br>Lane 2)  | Link 2<br>(N Hyde Rd E<br>Right)       | Inf                         | Inf                        | Geom                | 1800                                   | 3.60                 | 0.00     | Y                | Arm 8<br>Right                      | 17.00                    |
| 5/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |
| 6/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |
| 7/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |

## Full Input Data And Results

|     |        |     |     |      |      |      |      |   |  |  |
|-----|--------|-----|-----|------|------|------|------|---|--|--|
| 8/1 | Link 1 | Inf | Inf | User | 1800 | 3.25 | 0.00 | Y |  |  |
|-----|--------|-----|-----|------|------|------|------|---|--|--|

### Traffic Flow Groups

| Flow Group                          | Start Time | End Time | Duration | Formula |
|-------------------------------------|------------|----------|----------|---------|
| 24: 'Base + Com + H4 5 2014 AM Sen' | 08:00      | 09:00    | 01:00    |         |
| 24: 'Base + Com + H4 5 2014 AM Sen' | 08:00      | 09:00    | 01:00    |         |

### Scenario 17: 'Base + Com + H 4 5 2014 AM Sen'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 24: 'Base + Com + H4 5 2014 AM Sen'

### Traffic Flow Matrix

Desired Flow :

|        | Destination |     |     |     |     |      |
|--------|-------------|-----|-----|-----|-----|------|
|        |             | A   | B   | C   | D   | Tot. |
| Origin | A           | 0   | 138 | 402 | 133 | 673  |
|        | B           | 118 | 0   | 342 | 495 | 955  |
|        | C           | 264 | 142 | 0   | 106 | 512  |
|        | D           | 98  | 227 | 71  | 0   | 396  |
|        | Tot.        | 480 | 507 | 815 | 734 | 2536 |

### Link Traffic Flows

| Arm/Link | Flow Group 24: Base + Com + H4 5 2014 AM Sen |
|----------|----------------------------------------------|
| 1/1      | 370                                          |
| 1/2      | 142                                          |
| 2/1      | 133                                          |
| 2/2      | 540                                          |
| 3/1      | 325                                          |
| 3/2      | 71                                           |
| 4/1      | 837                                          |
| 4/2      | 118                                          |
| 5/1      | 507                                          |
| 6/1      | 815                                          |
| 7/1      | 734                                          |
| 8/1      | 480                                          |



**Lane Saturation Flows**

| Arm/<br>Lane                 | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Rd S Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1833                 |
| 1/2<br>(Station Rd S Lane 2) | 3.00                                              | 0.00     | Y                | Arm 5 Right      | 15.00                    | 100.0 %          | 1741                 |
| 2/1<br>(Station Rd N Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1919                 |
| 2/2<br>(Station Rd N Lane 2) | 3.00                                              | 0.00     | Y                | Arm 7 Right      | 14.00                    | 100.0 %          | 1730                 |
| 3/1<br>(N Hyde Rd W Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1818                 |
| 3/2<br>(N Hyde Rd W Lane 2)  | 3.00                                              | 0.00     | Y                | Arm 6 Right      | 17.00                    | 100.0 %          | 1760                 |
| 4/1<br>(N Hyde Rd E Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1821                 |
| 4/2<br>(N Hyde Rd E Lane 2)  | 3.60                                              | 0.00     | Y                | Arm 8 Right      | 17.00                    | 100.0 %          | 1815                 |
| 5/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 7/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 8/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

**Scenario 18: 'Base + Com + H 4 5 2014 AM Sen'**

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 24: 'Base + Com + H4 5 2014 AM Sen'

**Traffic Flow Matrix****Desired Flow :**

|        | Destination |     |     |     |     |      |
|--------|-------------|-----|-----|-----|-----|------|
|        |             | A   | B   | C   | D   | Tot. |
| Origin | A           | 0   | 138 | 402 | 133 | 673  |
|        | B           | 118 | 0   | 342 | 495 | 955  |
|        | C           | 264 | 142 | 0   | 106 | 512  |
|        | D           | 98  | 227 | 71  | 0   | 396  |
|        | Tot.        | 480 | 507 | 815 | 734 | 2536 |

**Link Traffic Flows**

| Arm/Link | Flow Group 24:<br>Base + Com + H4<br>5 2014 AM Sen |
|----------|----------------------------------------------------|
| 1/1      | 370                                                |
| 1/2      | 142                                                |
| 2/1      | 133                                                |
| 2/2      | 540                                                |
| 3/1      | 325                                                |
| 3/2      | 71                                                 |
| 4/1      | 837                                                |
| 4/2      | 118                                                |
| 5/1      | 507                                                |
| 6/1      | 815                                                |
| 7/1      | 734                                                |
| 8/1      | 480                                                |

**Lane Saturation Flows**

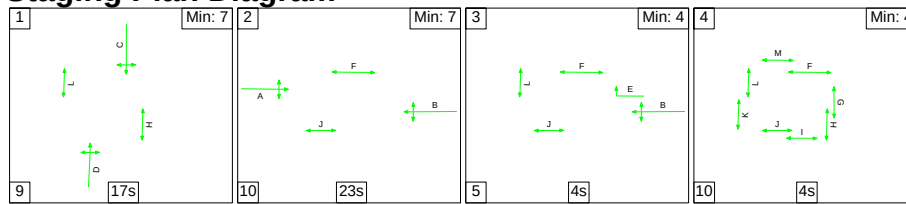
| Arm/<br>Lane                 | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Rd S Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1833                 |
| 1/2<br>(Station Rd S Lane 2) | 3.00                                              | 0.00     | Y                | Arm 5 Right      | 15.00                    | 100.0 %          | 1741                 |
| 2/1<br>(Station Rd N Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1919                 |
| 2/2<br>(Station Rd N Lane 2) | 3.00                                              | 0.00     | Y                | Arm 7 Right      | 14.00                    | 100.0 %          | 1730                 |
| 3/1<br>(N Hyde Rd W Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1818                 |
| 3/2<br>(N Hyde Rd W Lane 2)  | 3.00                                              | 0.00     | Y                | Arm 6 Right      | 17.00                    | 100.0 %          | 1760                 |
| 4/1<br>(N Hyde Rd E Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1821                 |
| 4/2<br>(N Hyde Rd E Lane 2)  | 3.60                                              | 0.00     | Y                | Arm 8 Right      | 17.00                    | 100.0 %          | 1815                 |
| 5/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 7/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 8/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

### Scenario 17: 'Base + Com + H 4 5 2014 AM Sen'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 24: 'Base + Com + H4 5 2014 AM Sen'

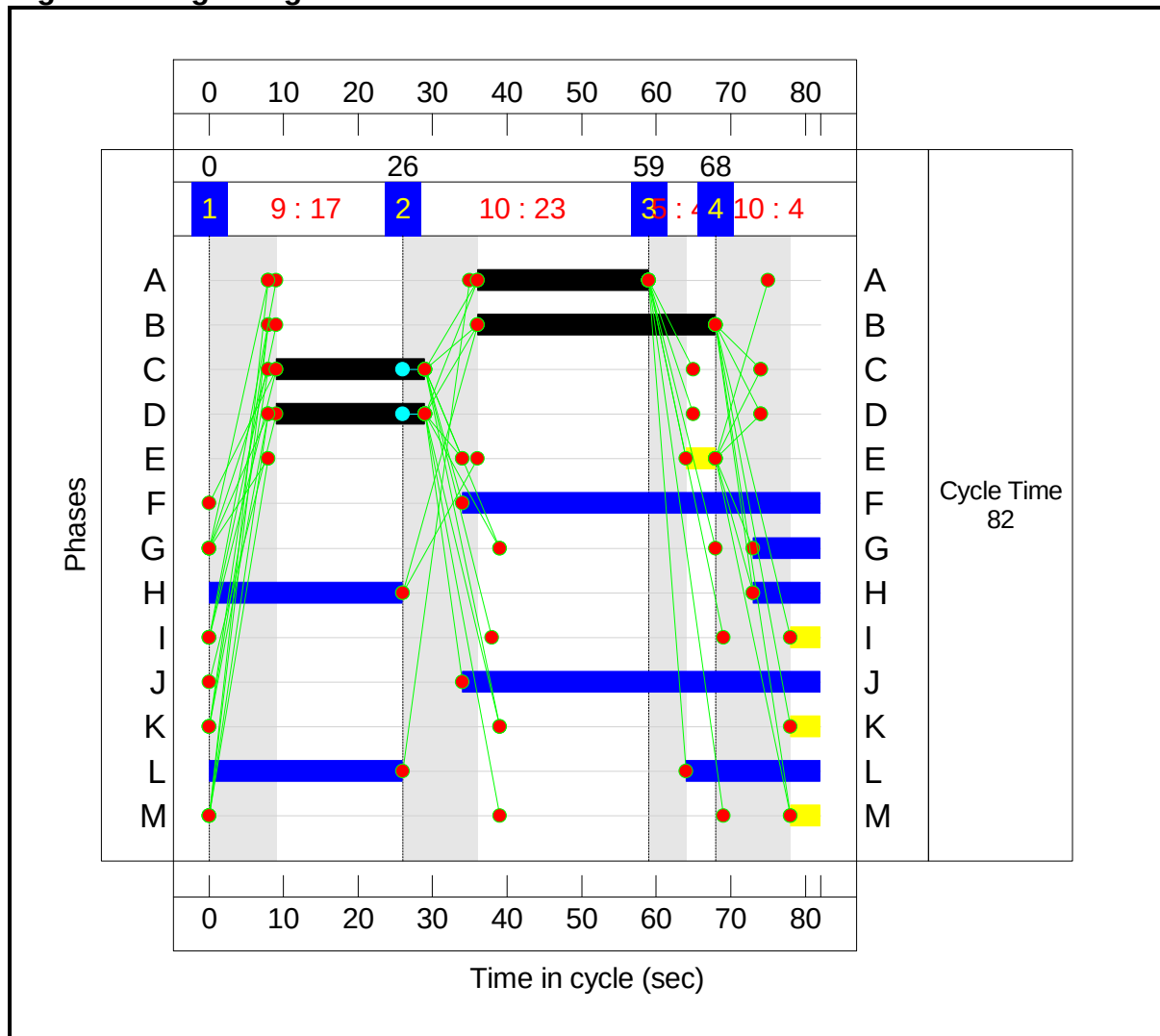
### Staging Plan Diagram



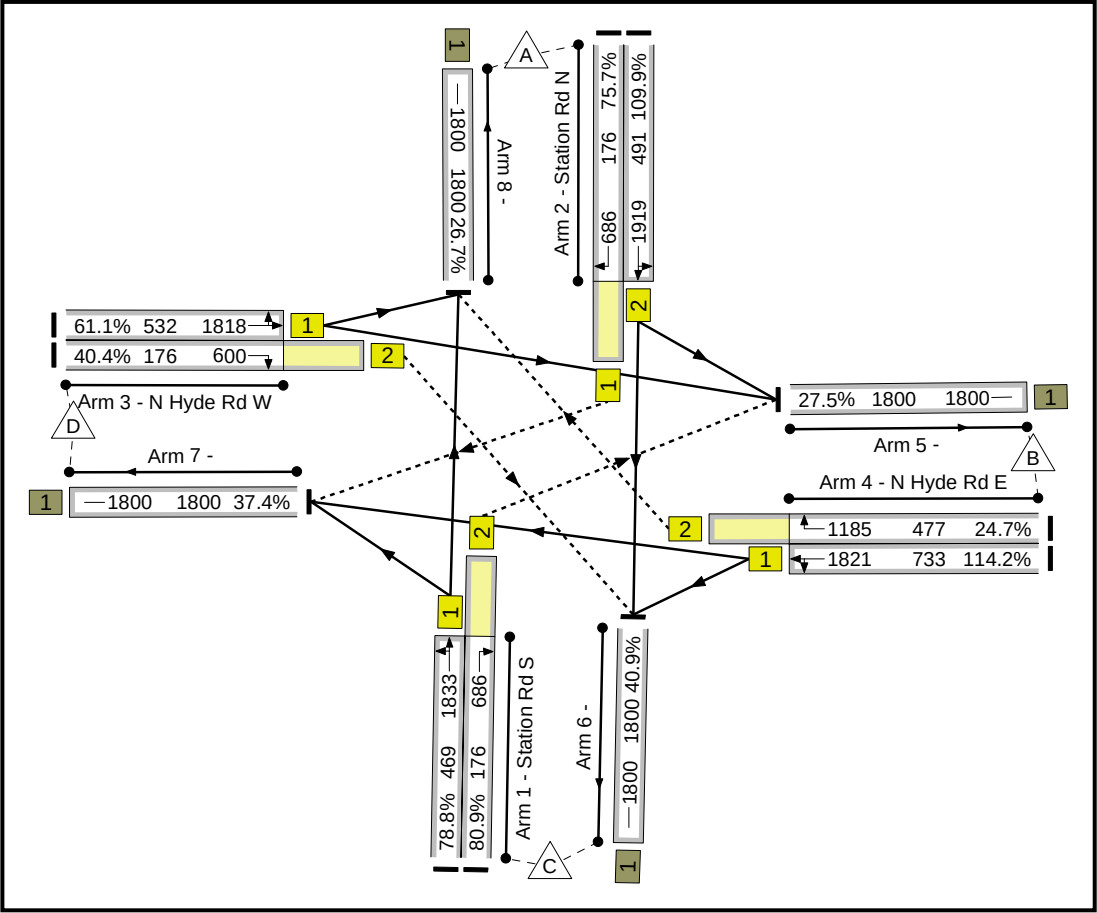
### Stage Timings

| Stage        | 1  | 2  | 3  | 4  |
|--------------|----|----|----|----|
| Duration     | 17 | 23 | 4  | 4  |
| Change Point | 0  | 26 | 59 | 68 |

### Signal Timings Diagram



Junction Layout Diagram



## Full Input Data And Results

### Link Results

| Link Num | Link Desc               | Link Type | Stage Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Max Sat Flow (pcu/Hr) | Ave Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|----------|-------------------------|-----------|--------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-----------------------|-----------------------|----------------|-------------|
| 1/1      | Station Rd S Left Ahead | U         | N/A          | N/A                        | D          |             | 1          | 20              | -               | 370               | 1833                  | 1833                  | 469            | 78.8        |
| 1/2      | Station Rd S Right      | O         | N/A          | N/A                        | D          |             | 1          | 20              | -               | 142               | 1741                  | 686                   | 176            | 80.9        |
| 2/1      | Station Rd N Right      | O         | N/A          | N/A                        | C          |             | 1          | 20              | -               | 133               | 1730                  | 686                   | 176            | 75.7        |
| 2/2      | Station Rd N Left Ahead | U         | N/A          | N/A                        | C          |             | 1          | 20              | -               | 540               | 1919                  | 1919                  | 491            | 109.9       |
| 3/1      | N Hyde Rd W Ahead Left  | U         | N/A          | N/A                        | A          |             | 1          | 23              | -               | 325               | 1818                  | 1818                  | 532            | 61.1        |
| 3/2      | N Hyde Rd W Right       | O         | N/A          | N/A                        | A          |             | 1          | 23              | -               | 71                | 1760                  | 600                   | 176            | 40.4        |
| 4/1      | N Hyde Rd E Left Ahead  | U         | N/A          | N/A                        | B          |             | 1          | 32              | -               | 837               | 1821                  | 1821                  | 733            | 114.2       |
| 4/2      | N Hyde Rd E Right       | O         | N/A          | N/A                        | B          | E           | 1          | 32              | 4               | 118               | 1815                  | 1185                  | 477            | 24.7        |
| 5/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 507               | 1800                  | 1800                  | 1800           | 27.5        |
| 6/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 815               | 1800                  | 1800                  | 1800           | 40.9        |
| 7/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 734               | 1800                  | 1800                  | 1800           | 37.4        |
| 8/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 480               | 1800                  | 1800                  | 1800           | 26.7        |

## Full Input Data And Results

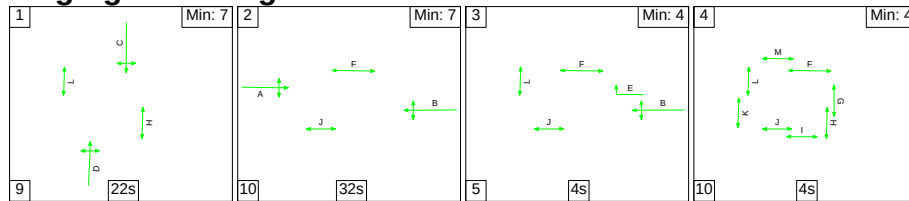
| Link Num                           | Entering<br>(pcu) | Leaving<br>(pcu) | Turners In Gaps<br>(pcu) | Turners When Unopposed<br>(pcu)                 | Turners In Intergreen<br>(pcu) | Uniform Delay<br>(pcuHr) | Rand + Oversat Delay<br>(pcuHr) | Storage Area Uniform Delay<br>(pcuHr) | Total Delay<br>(pcuHr) | Av. Delay Per Veh<br>(s/pcu) | Max. Back of Uniform Queue<br>(pcu) | Rand + Oversat Queue<br>(pcu) | Mean Max Queue<br>(pcu) |  |
|------------------------------------|-------------------|------------------|--------------------------|-------------------------------------------------|--------------------------------|--------------------------|---------------------------------|---------------------------------------|------------------------|------------------------------|-------------------------------------|-------------------------------|-------------------------|--|
| 1/1                                | 370               | 370              | -                        | -                                               | -                              | 2.9                      | 1.8                             | -                                     | 4.7                    | 45.9                         | 7.8                                 | 1.8                           | 9.6                     |  |
| 1/2                                | 142               | 142              | 0                        | 0                                               | 142                            | 1.0                      | 1.9                             | 0.7                                   | 3.6                    | 90.5                         | 2.6                                 | 1.9                           | 4.5                     |  |
| 2/1                                | 133               | 133              | 68                       | 0                                               | 65                             | 0.9                      | 1.5                             | 0.5                                   | 2.9                    | 77.9                         | 2.4                                 | 1.5                           | 3.9                     |  |
| 2/2                                | 540               | 491              | -                        | -                                               | -                              | 6.5                      | 28.9                            | -                                     | 35.4                   | 236.3                        | 13.4                                | 28.9                          | 42.3                    |  |
| 3/1                                | 325               | 325              | -                        | -                                               | -                              | 2.3                      | 0.8                             | -                                     | 3.0                    | 33.6                         | 6.3                                 | 0.8                           | 7.1                     |  |
| 3/2                                | 71                | 71               | 0                        | 0                                               | 71                             | 0.4                      | 0.3                             | 0.6                                   | 1.3                    | 66.8                         | 1.2                                 | 0.3                           | 1.5                     |  |
| 4/1                                | 837               | 733              | -                        | -                                               | -                              | 8.9                      | 55.8                            | -                                     | 64.7                   | 278.3                        | 21.4                                | 55.8                          | 77.3                    |  |
| 4/2                                | 118               | 118              | 102                      | 10                                              | 6                              | 0.5                      | 0.2                             | 0.3                                   | 1.0                    | 29.6                         | 1.7                                 | 0.2                           | 1.9                     |  |
| 5/1                                | 495               | 495              | -                        | -                                               | -                              | 0.0                      | 0.2                             | -                                     | 0.2                    | 1.4                          | 3.5                                 | 0.2                           | 3.7                     |  |
| 6/1                                | 736               | 736              | -                        | -                                               | -                              | 0.0                      | 0.3                             | -                                     | 0.3                    | 1.5                          | 0.0                                 | 0.3                           | 0.3                     |  |
| 7/1                                | 672               | 672              | -                        | -                                               | -                              | 0.0                      | 0.3                             | -                                     | 0.3                    | 1.5                          | 0.0                                 | 0.3                           | 0.3                     |  |
| 8/1                                | 480               | 480              | -                        | -                                               | -                              | 0.0                      | 0.2                             | -                                     | 0.2                    | 1.4                          | 0.0                                 | 0.2                           | 0.2                     |  |
|                                    |                   |                  |                          |                                                 |                                |                          |                                 |                                       |                        |                              |                                     |                               |                         |  |
| PRC for Signalled Links (%): -26.9 |                   |                  |                          | Total Delay for Signalled Links (pcuHr): 116.64 |                                |                          |                                 |                                       |                        |                              |                                     |                               |                         |  |
| PRC Over All Links (%): -26.9      |                   |                  |                          | Total Delay Over All Links(pcuHr): 117.66       |                                |                          |                                 | Cycle Time (s):                       | 82                     |                              |                                     |                               |                         |  |

### Scenario 18: 'Base + Com + H 4 5 2014 AM Sen'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 24: 'Base + Com + H4 5 2014 AM Sen'

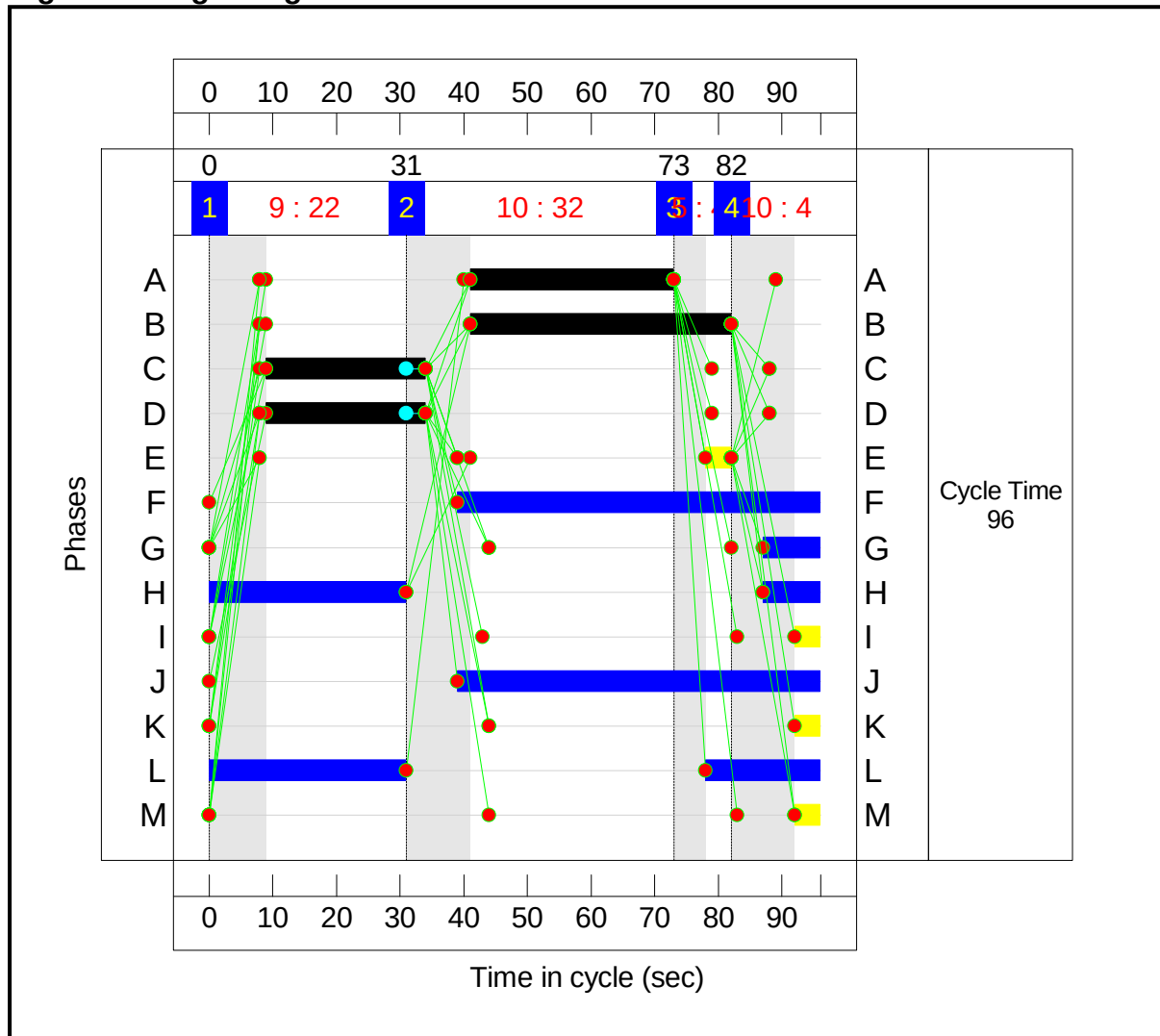
### Staging Plan Diagram



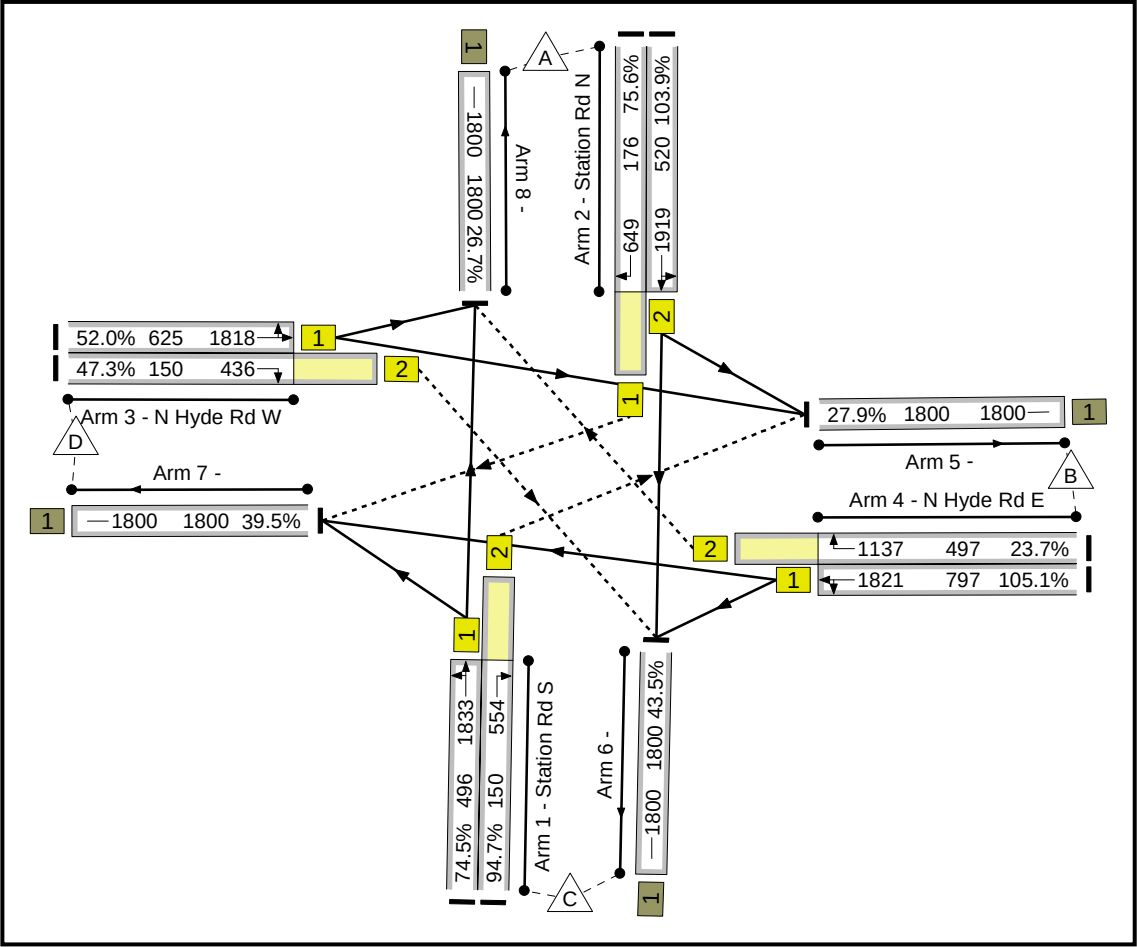
### Stage Timings

| Stage        | 1  | 2  | 3  | 4  |
|--------------|----|----|----|----|
| Duration     | 22 | 32 | 4  | 4  |
| Change Point | 0  | 31 | 73 | 82 |

### Signal Timings Diagram



Junction Layout Diagram





## Full Input Data And Results

### Link Results

| Link Num | Link Desc               | Link Type | Stage Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Max Sat Flow (pcu/Hr) | Ave Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|----------|-------------------------|-----------|--------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-----------------------|-----------------------|----------------|-------------|
| 1/1      | Station Rd S Left Ahead | U         | N/A          | N/A                        | D          |             | 1          | 25              | -               | 370               | 1833                  | 1833                  | 496            | 74.5        |
| 1/2      | Station Rd S Right      | O         | N/A          | N/A                        | D          |             | 1          | 25              | -               | 142               | 1741                  | 554                   | 150            | 94.7        |
| 2/1      | Station Rd N Right      | O         | N/A          | N/A                        | C          |             | 1          | 25              | -               | 133               | 1730                  | 649                   | 176            | 75.6        |
| 2/2      | Station Rd N Left Ahead | U         | N/A          | N/A                        | C          |             | 1          | 25              | -               | 540               | 1919                  | 1919                  | 520            | 103.9       |
| 3/1      | N Hyde Rd W Ahead Left  | U         | N/A          | N/A                        | A          |             | 1          | 32              | -               | 325               | 1818                  | 1818                  | 625            | 52.0        |
| 3/2      | N Hyde Rd W Right       | O         | N/A          | N/A                        | A          |             | 1          | 32              | -               | 71                | 1760                  | 436                   | 150            | 47.3        |
| 4/1      | N Hyde Rd E Left Ahead  | U         | N/A          | N/A                        | B          |             | 1          | 41              | -               | 837               | 1821                  | 1821                  | 797            | 105.1       |
| 4/2      | N Hyde Rd E Right       | O         | N/A          | N/A                        | B          | E           | 1          | 41              | 4               | 118               | 1815                  | 1137                  | 497            | 23.7        |
| 5/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 507               | 1800                  | 1800                  | 1800           | 27.9        |
| 6/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 815               | 1800                  | 1800                  | 1800           | 43.5        |
| 7/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 734               | 1800                  | 1800                  | 1800           | 39.5        |
| 8/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 480               | 1800                  | 1800                  | 1800           | 26.7        |

## Full Input Data And Results

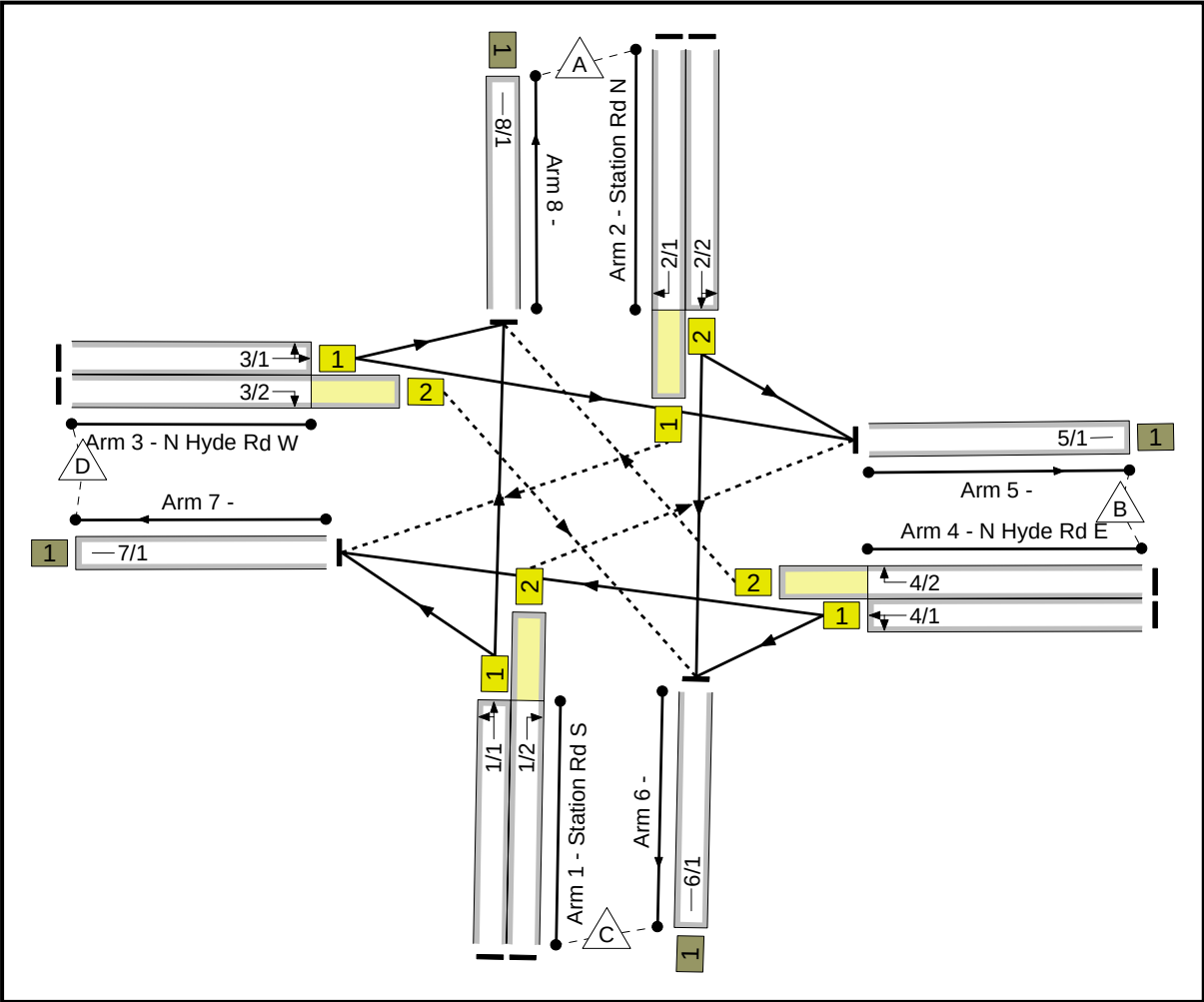
[illegible]

Full Input Data And Results

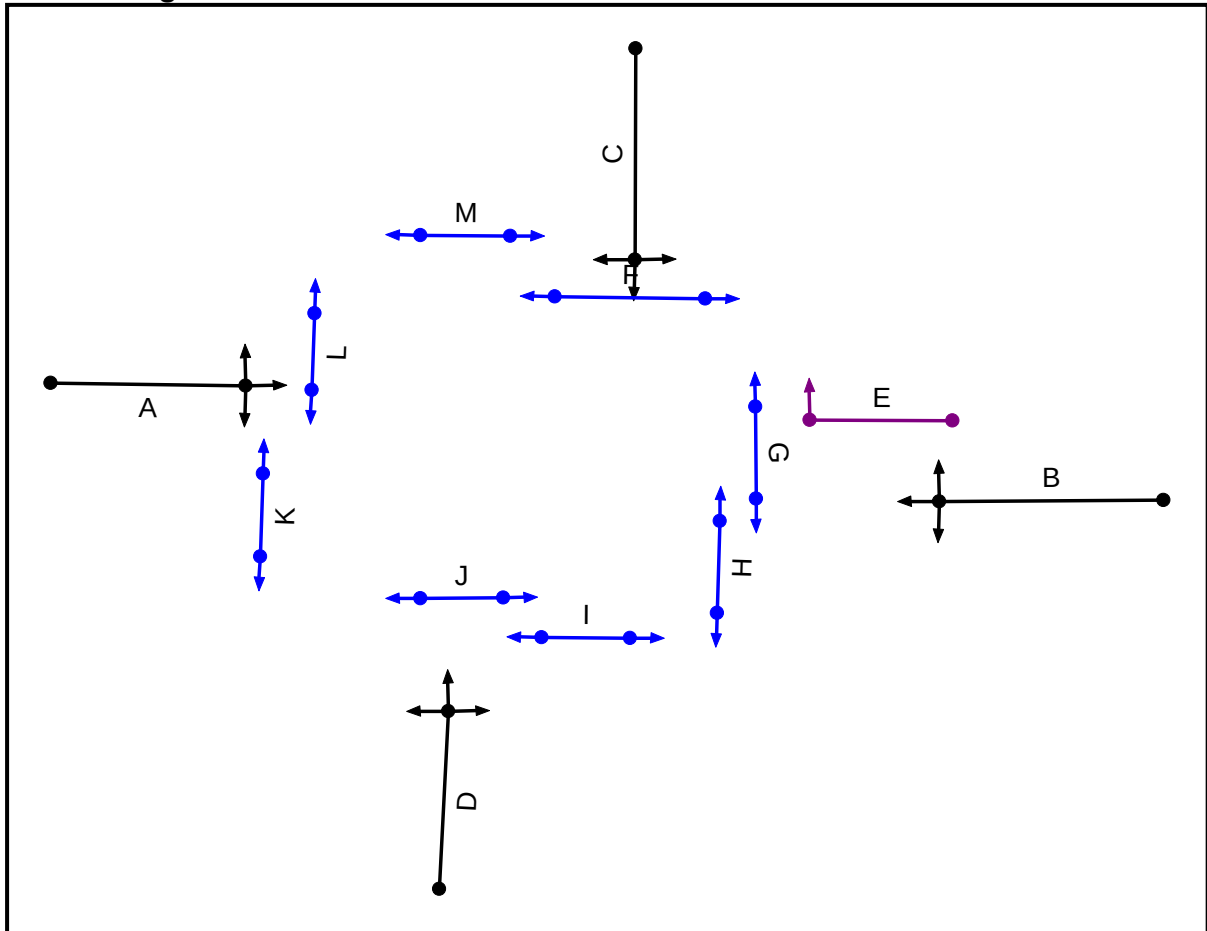
User and Project Details

|             |                 |
|-------------|-----------------|
| Project:    |                 |
| Title:      |                 |
| Location:   |                 |
| File name:  | 26_10PM_LL.lsgx |
| Author:     |                 |
| Company:    |                 |
| Address:    |                 |
| Controller: | Generic         |
| SCN:        |                 |
| Notes:      |                 |

Junction 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          | Ind. Arrow | B           | 4          | 4        |
| F          | Pedestrian |             | 5          | 5        |
| G          | Pedestrian |             | 5          | 5        |
| H          | Pedestrian |             | 5          | 5        |
| I          | Pedestrian |             | 5          | 5        |
| J          | Pedestrian |             | 5          | 5        |
| K          | Pedestrian |             | 5          | 5        |
| L          | Pedestrian |             | 5          | 5        |
| M          | Pedestrian |             | 5          | 5        |

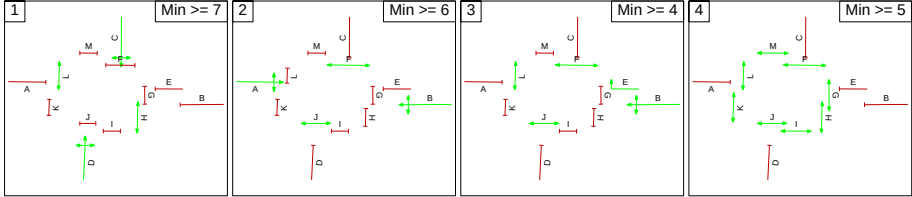
Phase Intergreens Matrix

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

Phases in Stage

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1         | C D H L         |
| 2         | A B F J         |
| 3         | B E F J L       |
| 4         | F G H I J K L M |

Stages Diagram



Phase Delays

| Term. Stage | Start Stage | Phase | Type   | Value | Cont value |
|-------------|-------------|-------|--------|-------|------------|
| 1           | 2           | C     | Losing | 3     | 3          |
| 1           | 2           | D     | Losing | 3     | 3          |
| 2           | 1           | A     | Losing | 3     | 3          |
| 2           | 1           | B     | Losing | 3     | 3          |

**Prohibited Stage Changes**

|            | To Stage |   |    |    |    |
|------------|----------|---|----|----|----|
| From Stage |          | 1 | 2  | 3  | 4  |
|            | 1        |   | 10 | 10 | 10 |
|            | 2        | 9 |    | 5  | 10 |
|            | 3        | 9 | 9  |    | 10 |
|            | 4        | 9 | 10 | 10 |    |

**Link Input Data**

| Arm/ Link | Link Name               | Link Type | Num Lanes | Phases | Start Disp. | End Disp. |
|-----------|-------------------------|-----------|-----------|--------|-------------|-----------|
| 1/1       | Station Rd S Left Ahead | U         | 1         | D      | 2           | 3         |
| 1/2       | Station Rd S Right      | O         | 1         | D      | 2           | 3         |
| 2/1       | Station Rd N Right      | O         | 1         | C      | 2           | 3         |
| 2/2       | Station Rd N Left Ahead | U         | 1         | C      | 2           | 3         |
| 3/1       | N Hyde Rd W Ahead Left  | U         | 1         | A      | 2           | 3         |
| 3/2       | N Hyde Rd W Right       | O         | 1         | A      | 2           | 3         |
| 4/1       | N Hyde Rd E Left Ahead  | U         | 1         | B      | 2           | 3         |
| 4/2       | N Hyde Rd E Right       | O         | 1         | B E    | 2           | 3         |
| 5/1       |                         | U         | 1         |        | 2           | 3         |
| 6/1       |                         | U         | 1         |        | 2           | 3         |
| 7/1       |                         | U         | 1         |        | 2           | 3         |
| 8/1       |                         | U         | 1         |        | 2           | 3         |

# Full Input Data And Results

## Give-Way Link Input Data

| Arm/<br>Link | Link Name             | Movement   | Max Flow when<br>Giving Way<br>(PCU/Hr) | Opposing<br>Link | Opp. Link<br>Coeff. | Opp.<br>Mvmnts. | Right Turn<br>Storage (PCU) | RTF  | Right Turn<br>Move up time<br>(s) | Max Turns in<br>Intergreen (PCU) |
|--------------|-----------------------|------------|-----------------------------------------|------------------|---------------------|-----------------|-----------------------------|------|-----------------------------------|----------------------------------|
| 1/2          | Station Rd<br>S Right | 1/2 to 5/1 | 1440                                    | 2/2              | 1.09                | 2/2             | 4.00                        | 0.50 | 4                                 | 4.00                             |
| 2/1          | Station Rd<br>N Right | 2/1 to 7/1 | 1440                                    | 1/1              | 1.09                | 1/1             | 4.00                        | 0.50 | 4                                 | 2.00                             |
| 3/2          | N Hyde Rd<br>W Right  | 3/2 to 6/1 | 1440                                    | 4/1              | 1.09                | 4/1             | 4.00                        | 0.50 | 4                                 | 4.00                             |
| 4/2          | N Hyde Rd<br>E Right  | 4/2 to 8/1 | 1440                                    | 3/1              | 1.09                | 3/1             | 4.00                        | 0.50 | 4                                 | 4.00                             |

## Lane Input Data

| Arm/<br>Lane                    | Link<br>Num                            | Physical<br>Length<br>(PCU) | Expected<br>Usage<br>(PCU) | Sat<br>Flow<br>Type | User<br>Saturation<br>Flow<br>(PCU/Hr) | Lane<br>Width<br>(m) | Gradient | Nearside<br>Lane | Allowed<br>Turns                    | Turning<br>Radius<br>(m) |
|---------------------------------|----------------------------------------|-----------------------------|----------------------------|---------------------|----------------------------------------|----------------------|----------|------------------|-------------------------------------|--------------------------|
| 1/1<br>(Station Rd S<br>Lane 1) | Link 1<br>(Station Rd S<br>Left Ahead) | Inf                         | Inf                        | User                | 1833                                   | 3.25                 | 0.00     | Y                | Arm 7<br>Left<br><br>Arm 8<br>Ahead | Inf<br><br>Inf           |
| 1/2<br>(Station Rd S<br>Lane 2) | Link 2<br>(Station Rd S<br>Right)      | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 5<br>Right                      | 15.00                    |
| 2/1<br>(Station Rd N<br>Lane 1) | Link 2<br>(Station Rd N<br>Left Ahead) | Inf                         | Inf                        | User                | 1919                                   | 3.25                 | 0.00     | Y                | Arm 5<br>Left<br><br>Arm 6<br>Ahead | Inf<br><br>Inf           |
| 2/2<br>(Station Rd N<br>Lane 2) | Link 1<br>(Station Rd N<br>Right)      | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 7<br>Right                      | 14.00                    |
| 3/1<br>(N Hyde Rd W<br>Lane 1)  | Link 1<br>(N Hyde Rd W<br>Ahead Left)  | Inf                         | Inf                        | User                | 1818                                   | 3.25                 | 0.00     | Y                | Arm 5<br>Ahead<br><br>Arm 8<br>Left | Inf<br><br>Inf           |
| 3/2<br>(N Hyde Rd W<br>Lane 2)  | Link 2<br>(N Hyde Rd W<br>Right)       | Inf                         | Inf                        | Geom                | 1800                                   | 3.00                 | 0.00     | Y                | Arm 6<br>Right                      | 17.00                    |
| 4/1<br>(N Hyde Rd E<br>Lane 1)  | Link 1<br>(N Hyde Rd E<br>Left Ahead)  | Inf                         | Inf                        | User                | 1821                                   | 3.25                 | 0.00     | Y                | Arm 6<br>Left<br><br>Arm 7<br>Ahead | Inf<br><br>Inf           |
| 4/2<br>(N Hyde Rd E<br>Lane 2)  | Link 2<br>(N Hyde Rd E<br>Right)       | Inf                         | Inf                        | Geom                | 1800                                   | 3.60                 | 0.00     | Y                | Arm 8<br>Right                      | 17.00                    |
| 5/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |
| 6/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |
| 7/1                             | Link 1                                 | Inf                         | Inf                        | User                | 1800                                   | 3.25                 | 0.00     | Y                |                                     |                          |



## Full Input Data And Results

|     |        |     |     |      |      |      |      |   |  |  |
|-----|--------|-----|-----|------|------|------|------|---|--|--|
| 8/1 | Link 1 | Inf | Inf | User | 1800 | 3.25 | 0.00 | Y |  |  |
|-----|--------|-----|-----|------|------|------|------|---|--|--|

### Traffic Flow Groups

| Flow Group                          | Start Time | End Time | Duration | Formula |
|-------------------------------------|------------|----------|----------|---------|
| 24: 'Base + Com + H4 5 2014 PM Sen' | 17:30      | 18:30    | 01:00    |         |
| 24: 'Base + Com + H4 5 2014 PM Sen' | 17:30      | 18:30    | 01:00    |         |

### Scenario 17: 'Base + Com +H 4 5 2014 PM Sen'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 24: 'Base + Com + H4 5 2014 PM Sen'

### Traffic Flow Matrix

Desired Flow :

|        | Destination |     |     |     |     |      |
|--------|-------------|-----|-----|-----|-----|------|
|        |             | A   | B   | C   | D   | Tot. |
| Origin | A           | 0   | 134 | 283 | 114 | 531  |
|        | B           | 200 | 0   | 287 | 334 | 821  |
|        | C           | 323 | 292 | 0   | 90  | 705  |
|        | D           | 109 | 353 | 62  | 0   | 524  |
|        | Tot.        | 632 | 779 | 632 | 538 | 2581 |

### Link Traffic Flows

| Arm/Link | Flow Group 24: Base + Com + H4 5 2014 PM Sen |
|----------|----------------------------------------------|
| 1/1      | 413                                          |
| 1/2      | 292                                          |
| 2/1      | 114                                          |
| 2/2      | 417                                          |
| 3/1      | 462                                          |
| 3/2      | 62                                           |
| 4/1      | 621                                          |
| 4/2      | 200                                          |
| 5/1      | 779                                          |
| 6/1      | 632                                          |
| 7/1      | 538                                          |
| 8/1      | 632                                          |

**Lane Saturation Flows**

| Arm/<br>Lane                 | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Rd S Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1833                 |
| 1/2<br>(Station Rd S Lane 2) | 3.00                                              | 0.00     | Y                | Arm 5 Right      | 15.00                    | 100.0 %          | 1741                 |
| 2/1<br>(Station Rd N Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1919                 |
| 2/2<br>(Station Rd N Lane 2) | 3.00                                              | 0.00     | Y                | Arm 7 Right      | 14.00                    | 100.0 %          | 1730                 |
| 3/1<br>(N Hyde Rd W Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1818                 |
| 3/2<br>(N Hyde Rd W Lane 2)  | 3.00                                              | 0.00     | Y                | Arm 6 Right      | 17.00                    | 100.0 %          | 1760                 |
| 4/1<br>(N Hyde Rd E Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1821                 |
| 4/2<br>(N Hyde Rd E Lane 2)  | 3.60                                              | 0.00     | Y                | Arm 8 Right      | 17.00                    | 100.0 %          | 1815                 |
| 5/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 7/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 8/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

**Scenario 18: 'Base + Com +H 4 5 2014 PM Sen'**

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 24: 'Base + Com + H4 5 2014 PM Sen'

**Traffic Flow Matrix****Desired Flow :**

|        | Destination |     |     |     |     |      |
|--------|-------------|-----|-----|-----|-----|------|
|        |             | A   | B   | C   | D   | Tot. |
| Origin | A           | 0   | 134 | 283 | 114 | 531  |
|        | B           | 200 | 0   | 287 | 334 | 821  |
|        | C           | 323 | 292 | 0   | 90  | 705  |
|        | D           | 109 | 353 | 62  | 0   | 524  |
|        | Tot.        | 632 | 779 | 632 | 538 | 2581 |

**Link Traffic Flows**

| Arm/Link | Flow<br>Group 24:<br>Base +<br>Com + H4<br>5 2014 PM<br>Sen |
|----------|-------------------------------------------------------------|
| 1/1      | 413                                                         |
| 1/2      | 292                                                         |
| 2/1      | 114                                                         |
| 2/2      | 417                                                         |
| 3/1      | 462                                                         |
| 3/2      | 62                                                          |
| 4/1      | 621                                                         |
| 4/2      | 200                                                         |
| 5/1      | 779                                                         |
| 6/1      | 632                                                         |
| 7/1      | 538                                                         |
| 8/1      | 632                                                         |

**Lane Saturation Flows**

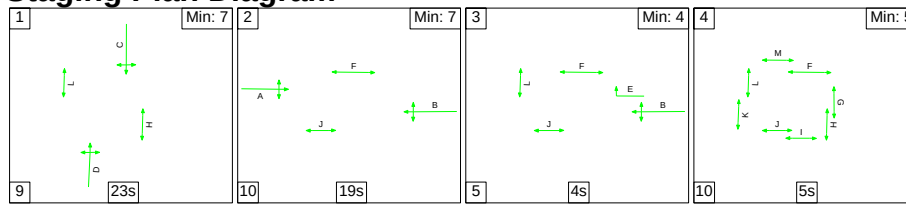
| Arm/<br>Lane                 | Lane<br>Width<br>(m)                              | Gradient | Nearside<br>Lane | Allowed<br>Turns | Turning<br>Radius<br>(m) | Turning<br>Prop. | Sat flow<br>(PCU/Hr) |
|------------------------------|---------------------------------------------------|----------|------------------|------------------|--------------------------|------------------|----------------------|
| 1/1<br>(Station Rd S Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1833                 |
| 1/2<br>(Station Rd S Lane 2) | 3.00                                              | 0.00     | Y                | Arm 5 Right      | 15.00                    | 100.0 %          | 1741                 |
| 2/1<br>(Station Rd N Lane 1) | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1919                 |
| 2/2<br>(Station Rd N Lane 2) | 3.00                                              | 0.00     | Y                | Arm 7 Right      | 14.00                    | 100.0 %          | 1730                 |
| 3/1<br>(N Hyde Rd W Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1818                 |
| 3/2<br>(N Hyde Rd W Lane 2)  | 3.00                                              | 0.00     | Y                | Arm 6 Right      | 17.00                    | 100.0 %          | 1760                 |
| 4/1<br>(N Hyde Rd E Lane 1)  | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1821                 |
| 4/2<br>(N Hyde Rd E Lane 2)  | 3.60                                              | 0.00     | Y                | Arm 8 Right      | 17.00                    | 100.0 %          | 1815                 |
| 5/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 6/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 7/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |
| 8/1                          | This lane uses a directly entered Saturation Flow |          |                  |                  |                          |                  | 1800                 |

### Scenario 17: 'Base + Com +H 4 5 2014 PM Sen'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 24: 'Base + Com + H4 5 2014 PM Sen'

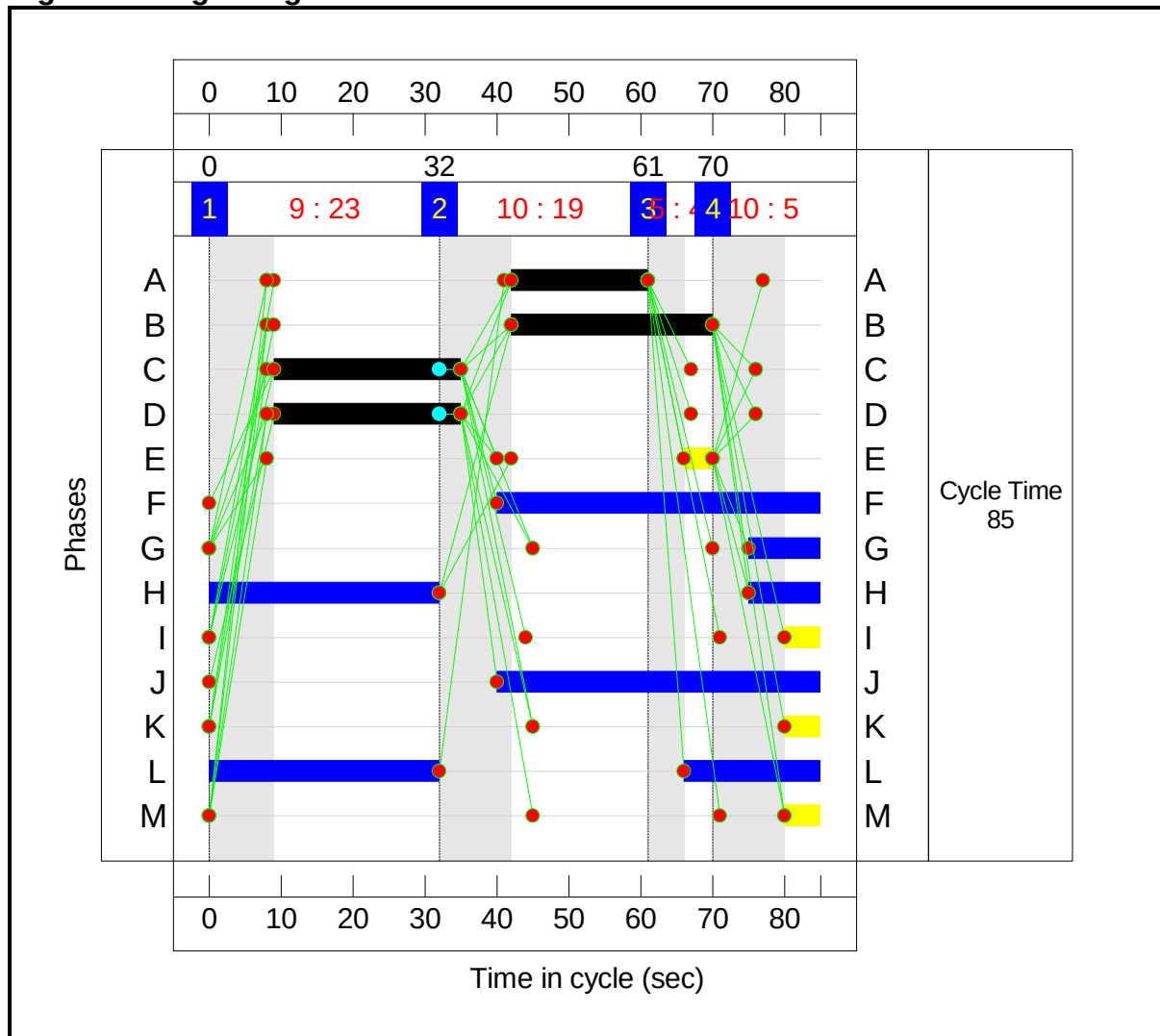
### Staging Plan Diagram



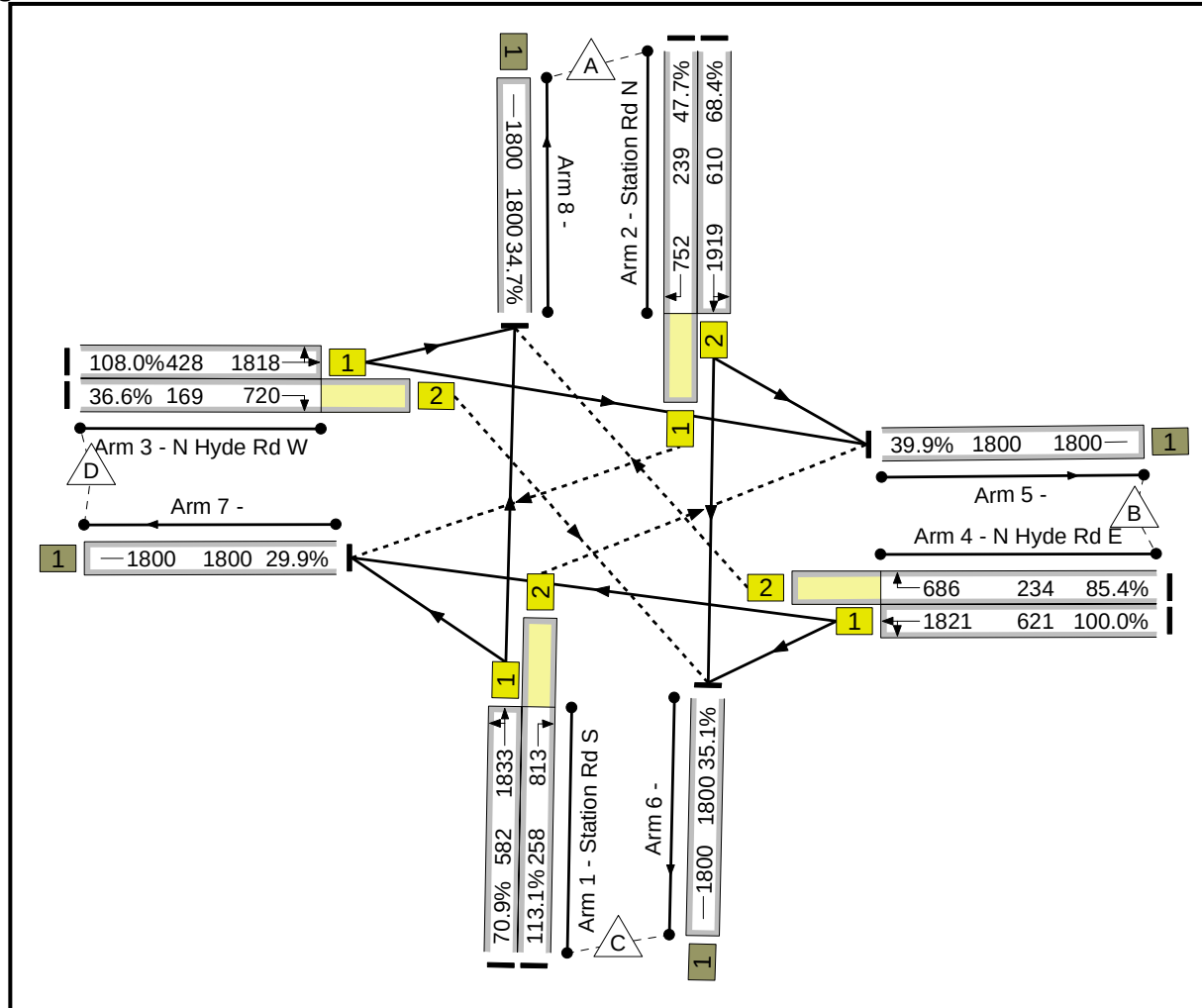
### Stage Timings

| Stage        | 1  | 2  | 3  | 4  |
|--------------|----|----|----|----|
| Duration     | 23 | 19 | 4  | 5  |
| Change Point | 0  | 32 | 61 | 70 |

### Signal Timings Diagram



## Junction Layout Diagram



## Full Input Data And Results

### Link Results

| Link Num | Link Desc               | Link Type | Stage Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Max Sat Flow (pcu/Hr) | Ave Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|----------|-------------------------|-----------|--------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-----------------------|-----------------------|----------------|-------------|
| 1/1      | Station Rd S Left Ahead | U         | N/A          | N/A                        | D          |             | 1          | 26              | -               | 413               | 1833                  | 1833                  | 582            | 70.9        |
| 1/2      | Station Rd S Right      | O         | N/A          | N/A                        | D          |             | 1          | 26              | -               | 292               | 1741                  | 813                   | 258            | 113.1       |
| 2/1      | Station Rd N Right      | O         | N/A          | N/A                        | C          |             | 1          | 26              | -               | 114               | 1730                  | 752                   | 239            | 47.7        |
| 2/2      | Station Rd N Left Ahead | U         | N/A          | N/A                        | C          |             | 1          | 26              | -               | 417               | 1919                  | 1919                  | 610            | 68.4        |
| 3/1      | N Hyde Rd W Ahead Left  | U         | N/A          | N/A                        | A          |             | 1          | 19              | -               | 462               | 1818                  | 1818                  | 428            | 108.0       |
| 3/2      | N Hyde Rd W Right       | O         | N/A          | N/A                        | A          |             | 1          | 19              | -               | 62                | 1760                  | 720                   | 169            | 36.6        |
| 4/1      | N Hyde Rd E Left Ahead  | U         | N/A          | N/A                        | B          |             | 1          | 28              | -               | 621               | 1821                  | 1821                  | 621            | 100.0       |
| 4/2      | N Hyde Rd E Right       | O         | N/A          | N/A                        | B          | E           | 1          | 28              | 4               | 200               | 1815                  | 686                   | 234            | 85.4        |
| 5/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 779               | 1800                  | 1800                  | 1800           | 39.9        |
| 6/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 632               | 1800                  | 1800                  | 1800           | 35.1        |
| 7/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 538               | 1800                  | 1800                  | 1800           | 29.9        |
| 8/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 632               | 1800                  | 1800                  | 1800           | 34.7        |

## Full Input Data And Results

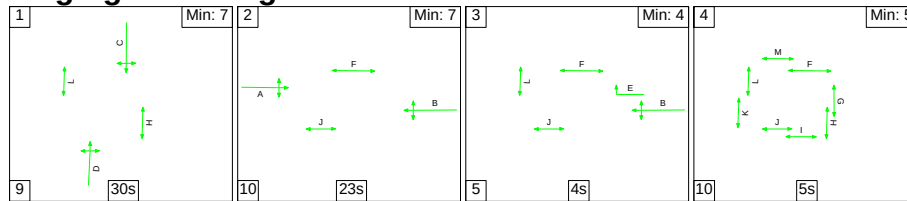
| Link Num                     | Entering (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu)              | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per Veh (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |  |
|------------------------------|----------------|---------------|-----------------------|------------------------------|------------------------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|--|
| 1/1                          | 413            | 413           | -                     | -                            | -                                        | 2.9                   | 1.2                          | -                                  | 4.1                 | 36.0                      | 8.5                              | 1.2                        | 9.7                  |  |
| 1/2                          | 292            | 258           | 126                   | 0                            | 133                                      | 3.6                   | 20.5                         | 0.9                                | 25.0                | 307.6                     | 7.7                              | 20.5                       | 28.2                 |  |
| 2/1                          | 114            | 114           | 111                   | 0                            | 3                                        | 0.7                   | 0.5                          | 0.5                                | 1.6                 | 49.8                      | 2.0                              | 0.5                        | 2.4                  |  |
| 2/2                          | 417            | 417           | -                     | -                            | -                                        | 2.9                   | 1.1                          | -                                  | 4.0                 | 34.5                      | 8.6                              | 1.1                        | 9.6                  |  |
| 3/1                          | 462            | 428           | -                     | -                            | -                                        | 5.3                   | 22.3                         | -                                  | 27.6                | 214.9                     | 11.7                             | 22.3                       | 34.0                 |  |
| 3/2                          | 62             | 62            | 0                     | 0                            | 62                                       | 0.4                   | 0.3                          | 0.4                                | 1.2                 | 67.7                      | 1.2                              | 0.3                        | 1.4                  |  |
| 4/1                          | 621            | 621           | -                     | -                            | -                                        | 4.8                   | 12.4                         | -                                  | 17.2                | 99.8                      | 14.5                             | 12.4                       | 26.9                 |  |
| 4/2                          | 200            | 200           | 0                     | 149                          | 51                                       | 1.2                   | 2.5                          | 0.8                                | 4.6                 | 82.1                      | 3.4                              | 2.5                        | 6.0                  |  |
| 5/1                          | 719            | 719           | -                     | -                            | -                                        | 0.0                   | 0.3                          | -                                  | 0.4                 | 1.7                       | 5.1                              | 0.3                        | 5.4                  |  |
| 6/1                          | 632            | 632           | -                     | -                            | -                                        | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.5                       | 0.0                              | 0.3                        | 0.3                  |  |
| 7/1                          | 538            | 538           | -                     | -                            | -                                        | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 0.0                              | 0.2                        | 0.2                  |  |
| 8/1                          | 624            | 624           | -                     | -                            | -                                        | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.5                       | 0.0                              | 0.3                        | 0.3                  |  |
| PRC for Signalled Links (%): |                |               |                       | -25.7                        | Total Delay for Signalled Links (pcuHr): |                       |                              | 85.18                              |                     |                           |                                  |                            |                      |  |
| PRC Over All Links (%):      |                |               |                       | -25.7                        | Total Delay Over All Links(pcuHr):       |                       |                              | 86.29                              | Cycle Time (s):     | 85                        |                                  |                            |                      |  |

### Scenario 18: 'Base + Com +H 4 5 2014 PM Sen'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 24: 'Base + Com + H4 5 2014 PM Sen'

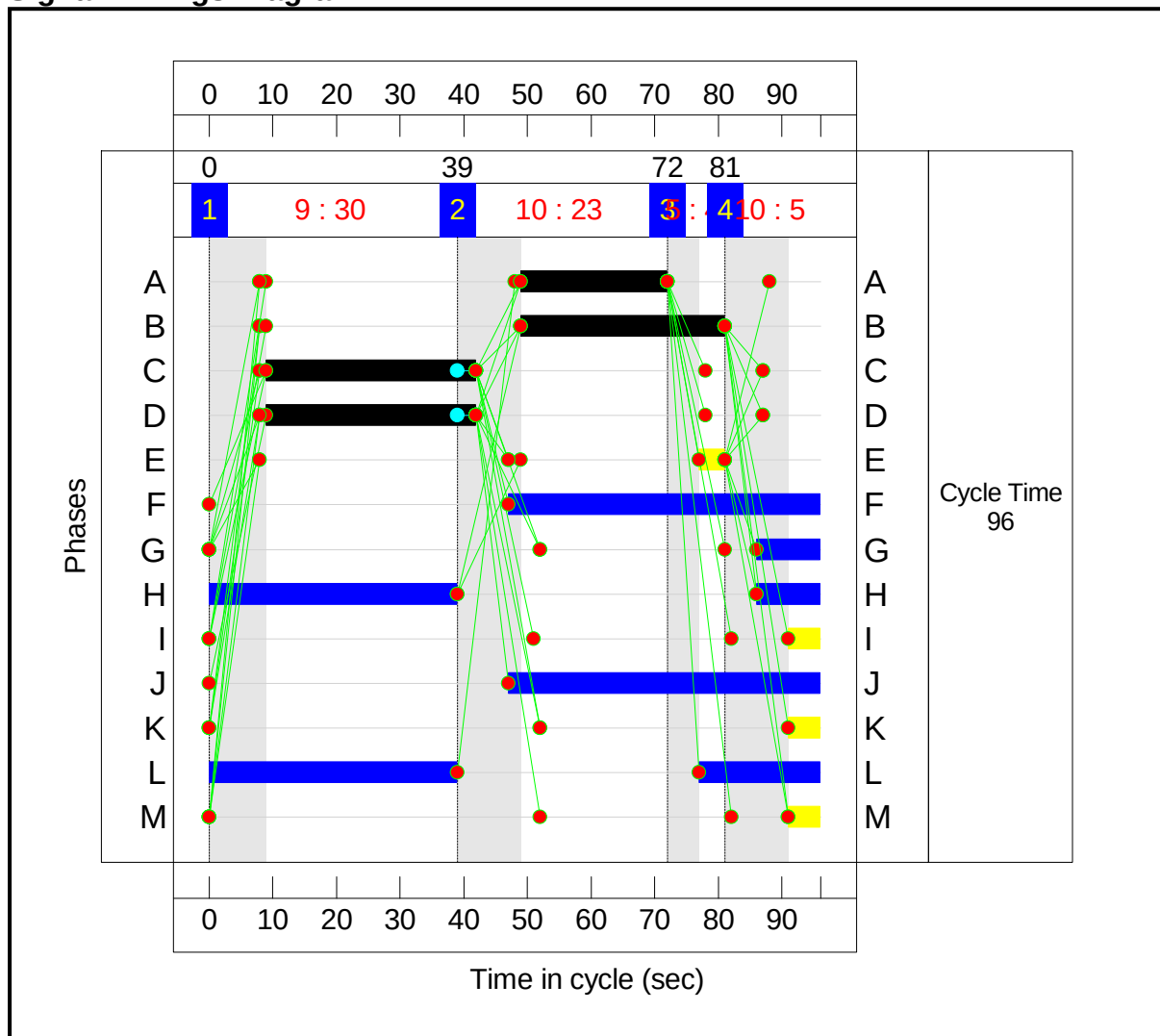
### Staging Plan Diagram



### Stage Timings

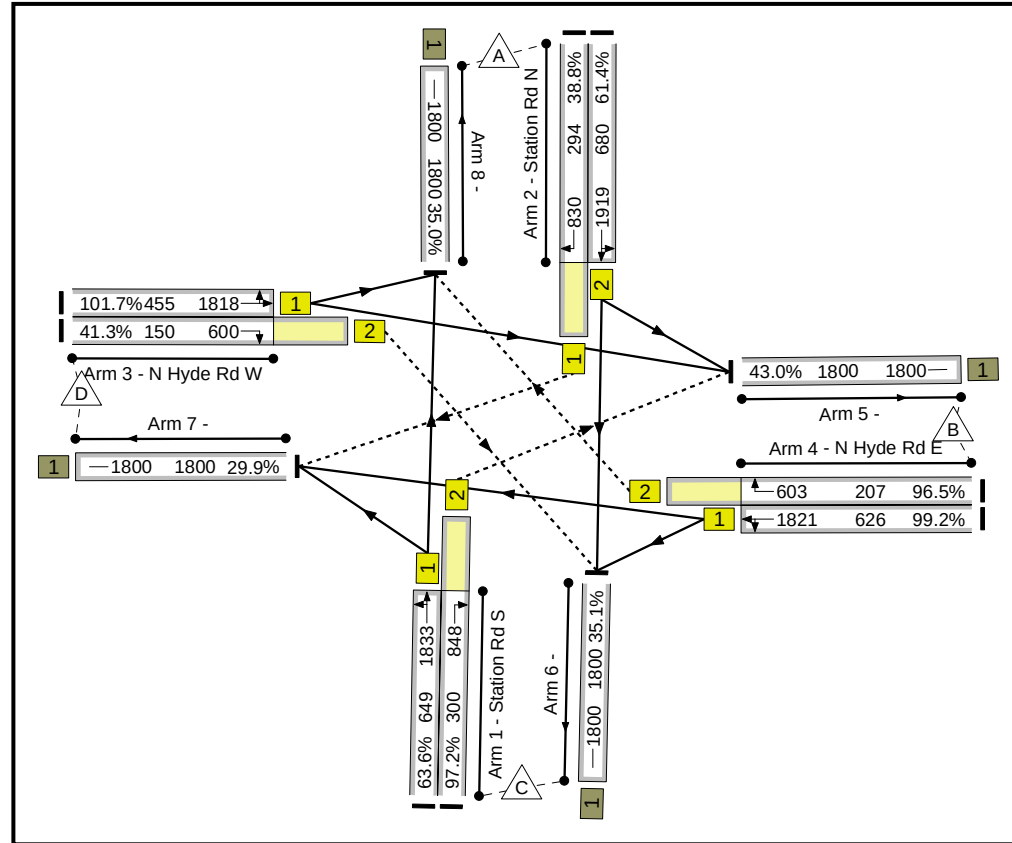
| Stage        | 1  | 2  | 3  | 4  |
|--------------|----|----|----|----|
| Duration     | 30 | 23 | 4  | 5  |
| Change Point | 0  | 39 | 72 | 81 |

### Signal Timings Diagram





## Junction Layout Diagram



## Full Input Data And Results

### Link Results

| Link Num | Link Desc               | Link Type | Stage Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Max Sat Flow (pcu/Hr) | Ave Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|----------|-------------------------|-----------|--------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-----------------------|-----------------------|----------------|-------------|
| 1/1      | Station Rd S Left Ahead | U         | N/A          | N/A                        | D          |             | 1          | 33              | -               | 413               | 1833                  | 1833                  | 649            | 63.6        |
| 1/2      | Station Rd S Right      | O         | N/A          | N/A                        | D          |             | 1          | 33              | -               | 292               | 1741                  | 848                   | 300            | 97.2        |
| 2/1      | Station Rd N Right      | O         | N/A          | N/A                        | C          |             | 1          | 33              | -               | 114               | 1730                  | 830                   | 294            | 38.8        |
| 2/2      | Station Rd N Left Ahead | U         | N/A          | N/A                        | C          |             | 1          | 33              | -               | 417               | 1919                  | 1919                  | 680            | 61.4        |
| 3/1      | N Hyde Rd W Ahead Left  | U         | N/A          | N/A                        | A          |             | 1          | 23              | -               | 462               | 1818                  | 1818                  | 455            | 101.7       |
| 3/2      | N Hyde Rd W Right       | O         | N/A          | N/A                        | A          |             | 1          | 23              | -               | 62                | 1760                  | 600                   | 150            | 41.3        |
| 4/1      | N Hyde Rd E Left Ahead  | U         | N/A          | N/A                        | B          |             | 1          | 32              | -               | 621               | 1821                  | 1821                  | 626            | 99.2        |
| 4/2      | N Hyde Rd E Right       | O         | N/A          | N/A                        | B          | E           | 1          | 32              | 4               | 200               | 1815                  | 603                   | 207            | 96.5        |
| 5/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 779               | 1800                  | 1800                  | 1800           | 43.0        |
| 6/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 632               | 1800                  | 1800                  | 1800           | 35.1        |
| 7/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 538               | 1800                  | 1800                  | 1800           | 29.9        |
| 8/1      |                         | U         | N/A          | N/A                        | -          |             | -          | -               | -               | 632               | 1800                  | 1800                  | 1800           | 35.0        |

## Full Input Data And Results

| Link Num                     | Entering (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 Veh (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |  |
|------------------------------|----------------|---------------|-----------------------|------------------------------|------------------------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|--|
| 1/1                          | 413            | 413           | -                     | -                            | -                                        | 3.0                   | 0.9                          | -                                  | 3.8                 | 33.4                      | 9.2                              | 0.9                        | 10.0                 |  |
| 1/2                          | 292            | 292           | 171                   | 0                            | 121                                      | 2.4                   | 6.7                          | 1.0                                | 10.2                | 125.2                     | 7.6                              | 6.7                        | 14.3                 |  |
| 2/1                          | 114            | 114           | 112                   | 0                            | 2                                        | 0.7                   | 0.3                          | 0.5                                | 1.5                 | 45.8                      | 2.1                              | 0.3                        | 2.4                  |  |
| 2/2                          | 417            | 417           | -                     | -                            | -                                        | 3.0                   | 0.8                          | -                                  | 3.8                 | 32.4                      | 9.2                              | 0.8                        | 9.9                  |  |
| 3/1                          | 462            | 455           | -                     | -                            | -                                        | 4.9                   | 12.8                         | -                                  | 17.7                | 137.7                     | 12.5                             | 12.8                       | 25.3                 |  |
| 3/2                          | 62             | 62            | 0                     | 0                            | 62                                       | 0.5                   | 0.3                          | 0.5                                | 1.3                 | 77.0                      | 1.3                              | 0.3                        | 1.6                  |  |
| 4/1                          | 621            | 621           | -                     | -                            | -                                        | 5.4                   | 11.3                         | -                                  | 16.7                | 96.8                      | 16.4                             | 11.3                       | 27.7                 |  |
| 4/2                          | 200            | 200           | 0                     | 132                          | 68                                       | 1.4                   | 5.5                          | 0.9                                | 7.8                 | 140.8                     | 3.9                              | 5.5                        | 9.4                  |  |
| 5/1                          | 773            | 773           | -                     | -                            | -                                        | 0.0                   | 0.4                          | -                                  | 0.4                 | 1.9                       | 5.6                              | 0.4                        | 6.0                  |  |
| 6/1                          | 632            | 632           | -                     | -                            | -                                        | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.5                       | 0.0                              | 0.3                        | 0.3                  |  |
| 7/1                          | 538            | 538           | -                     | -                            | -                                        | 0.0                   | 0.2                          | -                                  | 0.2                 | 1.4                       | 0.0                              | 0.2                        | 0.2                  |  |
| 8/1                          | 630            | 630           | -                     | -                            | -                                        | 0.0                   | 0.3                          | -                                  | 0.3                 | 1.5                       | 0.0                              | 0.3                        | 0.3                  |  |
| PRC for Signalled Links (%): |                |               |                       | -12.9                        | Total Delay for Signalled Links (pcuHr): |                       |                              | 62.71                              |                     |                           |                                  |                            |                      |  |
| PRC Over All Links (%):      |                |               |                       | -12.9                        | Total Delay Over All Links(pcuHr):       |                       |                              | 63.87                              | Cycle Time (s): 96  |                           |                                  |                            |                      |  |