

## Annex E

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| <b>Junctions 9</b>   |
| <b>PICADY 9 - Priority Intersection Module</b>   |
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Filename: 194663-96 - Site Access - V2.j9  
 Path: C:\Users\alice.todd.VECTOS\Desktop  
 Report generation date: 27/04/2021 15:58:36

- »2021 without development, AM (7-8)
- »2021 without development, AM (8-9)
- »2021 without development, AM (9-10)
- »2021 without development, PM (16-17)
- »2021 without development, PM (17-18)
- »2021 without development, PM (18-19)
- »2021 with development, AM (7-8)
- »2021 with development, AM (8-9)
- »2021 with development, AM (9-10)
- »2021 with development, PM (16-17)
- »2021 with development, PM (17-18)
- »2021 with development, PM (18-19)

**Summary of junction performance**

|                                 | AM (7-8)    |           |      |     | AM (8-9)    |           |      |     | AM (9-10)   |           |      |     | PM (16-17)  |           |      |     | PM (17-18)  |           |      |     | PM (18-19)  |           |      |     |
|---------------------------------|-------------|-----------|------|-----|-------------|-----------|------|-----|-------------|-----------|------|-----|-------------|-----------|------|-----|-------------|-----------|------|-----|-------------|-----------|------|-----|
|                                 | Queue (PCU) | Delay (s) | RFC  | LOS | Queue (PCU) | Delay (s) | RFC  | LOS | Queue (PCU) | Delay (s) | RFC  | LOS | Queue (PCU) | Delay (s) | RFC  | LOS | Queue (PCU) | Delay (s) | RFC  | LOS | Queue (PCU) | Delay (s) | RFC  | LOS |
| <b>2021 without development</b> |             |           |      |     |             |           |      |     |             |           |      |     |             |           |      |     |             |           |      |     |             |           |      |     |
| Stream B-C                      | 0.0         | 8.52      | 0.01 | A   | 0.0         | 9.42      | 0.01 | A   | 0.0         | 8.29      | 0.02 | A   | 0.1         | 7.85      | 0.07 | A   | 0.0         | 7.74      | 0.04 | A   | 0.0         | 6.76      | 0.02 | A   |
| Stream B-A                      | 0.0         | 14.04     | 0.01 | B   | 0.0         | 17.78     | 0.02 | C   | 0.0         | 13.50     | 0.02 | B   | 0.1         | 14.57     | 0.08 | B   | 0.1         | 15.98     | 0.05 | C   | 0.0         | 11.79     | 0.02 | B   |
| Stream C-AB                     | 0.1         | 5.66      | 0.07 | A   | 0.1         | 5.32      | 0.07 | A   | 0.0         | 5.62      | 0.03 | A   | 0.0         | 4.21      | 0.01 | A   | 0.0         | 3.90      | 0.01 | A   | 0.0         | 4.28      | 0.00 | A   |
| <b>2021 with development</b>    |             |           |      |     |             |           |      |     |             |           |      |     |             |           |      |     |             |           |      |     |             |           |      |     |
| Stream B-C                      | 0.3         | 8.21      | 0.25 | A   | 0.1         | 7.60      | 0.09 | A   | 0.0         | 0.00      | 0.00 | A   | 0.2         | 7.77      | 0.15 | A   | 0.2         | 8.44      | 0.16 | A   | 0.2         | 7.39      | 0.14 | A   |
| Stream B-A                      | 0.0         | 0.00      | 0.00 | A   | 0.0         | 0.00      | 0.00 | A   | 0.0         | 0.00      | 0.00 | A   | 0.1         | 18.20     | 0.09 | C   | 0.1         | 22.58     | 0.11 | C   | 0.1         | 15.88     | 0.08 | C   |
| Stream C-AB                     | 0.4         | 6.30      | 0.19 | A   | 0.1         | 5.20      | 0.08 | A   | 0.0         | 0.00      | 0.00 | A   | 1.2         | 6.78      | 0.39 | A   | 1.7         | 7.15      | 0.45 | A   | 0.9         | 6.60      | 0.35 | A   |

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

**File summary**

**File Description**

|             |                   |
|-------------|-------------------|
| Title       |                   |
| Location    |                   |
| Site number |                   |
| Date        | 19/01/2021        |
| Version     |                   |
| Status      | (new file)        |
| Identifier  |                   |
| Client      |                   |
| Jobnumber   |                   |
| Enumerator  | VECTOS\ellen.hill |
| Description |                   |

**Units**

| Distance units | Speed units | Traffic units input | Traffic units results | Flow units | Average delay units | Total delay units | Rate of delay units |
|----------------|-------------|---------------------|-----------------------|------------|---------------------|-------------------|---------------------|
| m              | kph         | PCU                 | PCU                   | perHour    | s                   | -Min              | perMin              |

**Analysis Options**

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|--------------------|-----------------------------|-----------------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
| 5.75               |                             |                                   |                             | 0.85          | 36.00                       | 20.00                 |

### Demand Set Summary

| ID  | Scenario name            | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|--------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D1  | 2021 without development | AM (7-8)         | FLAT                 | 06:45              | 08:15               | 90                       | 15                        | ✓                 |
| D2  | 2021 without development | AM (8-9)         | FLAT                 | 07:45              | 09:15               | 90                       | 15                        | ✓                 |
| D3  | 2021 without development | AM (9-10)        | FLAT                 | 08:45              | 10:15               | 90                       | 15                        | ✓                 |
| D4  | 2021 without development | PM (16-17)       | FLAT                 | 15:45              | 17:15               | 90                       | 15                        | ✓                 |
| D5  | 2021 without development | PM (17-18)       | FLAT                 | 16:45              | 18:15               | 90                       | 15                        | ✓                 |
| D6  | 2021 without development | PM (18-19)       | FLAT                 | 17:45              | 19:15               | 90                       | 15                        | ✓                 |
| D7  | 2021 with development    | AM (7-8)         | FLAT                 | 06:45              | 08:15               | 90                       | 15                        | ✓                 |
| D8  | 2021 with development    | AM (8-9)         | FLAT                 | 07:45              | 09:15               | 90                       | 15                        | ✓                 |
| D9  | 2021 with development    | AM (9-10)        | FLAT                 | 08:45              | 10:15               | 90                       | 15                        | ✓                 |
| D10 | 2021 with development    | PM (16-17)       | FLAT                 | 15:45              | 17:15               | 90                       | 15                        | ✓                 |
| D11 | 2021 with development    | PM (17-18)       | FLAT                 | 16:45              | 18:15               | 90                       | 15                        | ✓                 |
| D12 | 2021 with development    | PM (18-19)       | FLAT                 | 17:45              | 19:15               | 90                       | 15                        | ✓                 |

### Analysis Set Details

| ID | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|----|-------------------|---------------------------------|-------------------------------------|
| A1 | ✓                 | 100.000                         | 100.000                             |

# 2021 without development, AM (7-8)

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 0.39               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Arms

### Arms

| Arm | Name             | Description | Arm type |
|-----|------------------|-------------|----------|
| A   | Southam Road (S) |             | Major    |
| B   | Site Access      |             | Minor    |
| C   | Southam Road (N) |             | Major    |

### Major Arm Geometry

| Arm                  | Width of carriageway (m) | Has kerbed central reserve | Has right turn bay | Visibility for right turn (m) | Blocks? | Blocking queue (PCU) |
|----------------------|--------------------------|----------------------------|--------------------|-------------------------------|---------|----------------------|
| C - Southam Road (N) | 6.48                     |                            |                    | 144.2                         | ✓       | 0.00                 |

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

### Minor Arm Geometry

| Arm             | Minor arm type      | Width at give-way (m) | Width at 5m (m) | Width at 10m (m) | Width at 15m (m) | Width at 20m (m) | Estimate flare length | Flare length (PCU) | Visibility to left (m) | Visibility to right (m) |
|-----------------|---------------------|-----------------------|-----------------|------------------|------------------|------------------|-----------------------|--------------------|------------------------|-------------------------|
| B - Site Access | One lane plus flare | 10.00                 | 6.55            | 4.92             | 4.53             | 4.37             |                       | 1.00               | 39                     | 22                      |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|--------|--------------------|---------------|---------------|---------------|---------------|
| B-A    | 499                | 0.089         | 0.225         | 0.142         | 0.321         |
| B-C    | 672                | 0.101         | 0.255         | -             | -             |
| C-B    | 657                | 0.249         | 0.249         | -             | -             |

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

## Traffic Demand

### Demand Set Details

| ID | Scenario name            | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|--------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D1 | 2021 without development | AM (7-8)         | FLAT                 | 06:45              | 08:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - Southam Road (S) |            | FLAT         | ✓            | 605                     | 100.000            |
| B - Site Access      |            | FLAT         | ✓            | 7                       | 100.000            |
| C - Southam Road (N) |            | FLAT         | ✓            | 316                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

| From                 | To                   |                 |                      |
|----------------------|----------------------|-----------------|----------------------|
|                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| A - Southam Road (S) | 0                    | 20              | 585                  |
| B - Site Access      | 3                    | 0               | 4                    |
| C - Southam Road (N) | 286                  | 30              | 0                    |

## Vehicle Mix

### Heavy Vehicle Percentages

| From                 | To                   |                 |                      |
|----------------------|----------------------|-----------------|----------------------|
|                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| A - Southam Road (S) | 0                    | 4               | 4                    |
| B - Site Access      | 22                   | 0               | 22                   |
| C - Southam Road (N) | 4                    | 4               | 0                    |

## Results

### Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-C    | 0.01    | 8.52          | 0.0             | A       | 4                       | 6                             |
| B-A    | 0.01    | 14.04         | 0.0             | B       | 3                       | 5                             |
| C-AB   | 0.07    | 5.66          | 0.1             | A       | 50                      | 75                            |
| C-A    |         |               |                 |         | 266                     | 399                           |
| A-B    |         |               |                 |         | 20                      | 30                            |
| A-C    |         |               |                 |         | 585                     | 878                           |

### Main Results for each time segment

#### 06:45 - 07:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 4                     | 1                       | 520               | 0.008 | 4                   | 0.0               | 0.0             | 8.517     | A                             |
| B-A    | 3                     | 0.75                    | 316               | 0.010 | 3                   | 0.0               | 0.0             | 14.043    | B                             |
| C-AB   | 50                    | 13                      | 712               | 0.070 | 50                  | 0.0               | 0.1             | 5.651     | A                             |
| C-A    | 266                   | 66                      |                   |       | 266                 |                   |                 |           |                               |
| A-B    | 20                    | 5                       |                   |       | 20                  |                   |                 |           |                               |
| A-C    | 585                   | 146                     |                   |       | 585                 |                   |                 |           |                               |

#### 07:00 - 07:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 4                     | 1                       | 519               | 0.008 | 4                   | 0.0               | 0.0             | 8.522     | A                             |
| B-A    | 3                     | 0.75                    | 316               | 0.010 | 3                   | 0.0               | 0.0             | 14.043    | B                             |
| C-AB   | 50                    | 13                      | 712               | 0.071 | 50                  | 0.1               | 0.1             | 5.661     | A                             |
| C-A    | 266                   | 66                      |                   |       | 266                 |                   |                 |           |                               |
| A-B    | 20                    | 5                       |                   |       | 20                  |                   |                 |           |                               |
| A-C    | 585                   | 146                     |                   |       | 585                 |                   |                 |           |                               |

#### 07:15 - 07:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 4                     | 1                       | 519               | 0.008 | 4                   | 0.0               | 0.0             | 8.522     | A                             |
| B-A    | 3                     | 0.75                    | 316               | 0.010 | 3                   | 0.0               | 0.0             | 14.043    | B                             |
| C-AB   | 50                    | 13                      | 712               | 0.071 | 50                  | 0.1               | 0.1             | 5.661     | A                             |
| C-A    | 266                   | 66                      |                   |       | 266                 |                   |                 |           |                               |
| A-B    | 20                    | 5                       |                   |       | 20                  |                   |                 |           |                               |
| A-C    | 585                   | 146                     |                   |       | 585                 |                   |                 |           |                               |

## 07:30 - 07:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 4                     | 1                       | 519               | 0.008 | 4                   | 0.0               | 0.0             | 8.522     | A                             |
| B-A    | 3                     | 0.75                    | 316               | 0.010 | 3                   | 0.0               | 0.0             | 14.043    | B                             |
| C-AB   | 50                    | 13                      | 712               | 0.071 | 50                  | 0.1               | 0.1             | 5.659     | A                             |
| C-A    | 266                   | 66                      |                   |       | 266                 |                   |                 |           |                               |
| A-B    | 20                    | 5                       |                   |       | 20                  |                   |                 |           |                               |
| A-C    | 585                   | 146                     |                   |       | 585                 |                   |                 |           |                               |

## 07:45 - 08:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 4                     | 1                       | 519               | 0.008 | 4                   | 0.0               | 0.0             | 8.522     | A                             |
| B-A    | 3                     | 0.75                    | 316               | 0.010 | 3                   | 0.0               | 0.0             | 14.043    | B                             |
| C-AB   | 50                    | 13                      | 712               | 0.071 | 50                  | 0.1               | 0.1             | 5.661     | A                             |
| C-A    | 266                   | 66                      |                   |       | 266                 |                   |                 |           |                               |
| A-B    | 20                    | 5                       |                   |       | 20                  |                   |                 |           |                               |
| A-C    | 585                   | 146                     |                   |       | 585                 |                   |                 |           |                               |

## 08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 4                     | 1                       | 519               | 0.008 | 4                   | 0.0               | 0.0             | 8.522     | A                             |
| B-A    | 3                     | 0.75                    | 316               | 0.010 | 3                   | 0.0               | 0.0             | 14.043    | B                             |
| C-AB   | 50                    | 13                      | 712               | 0.071 | 50                  | 0.1               | 0.1             | 5.659     | A                             |
| C-A    | 266                   | 66                      |                   |       | 266                 |                   |                 |           |                               |
| A-B    | 20                    | 5                       |                   |       | 20                  |                   |                 |           |                               |
| A-C    | 585                   | 146                     |                   |       | 585                 |                   |                 |           |                               |

# 2021 without development, AM (8-9)

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 0.31               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name            | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|--------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D2 | 2021 without development | AM (8-9)         | FLAT                 | 07:45              | 09:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - Southam Road (S) |            | FLAT         | ✓            | 818                     | 100.000            |
| B - Site Access      |            | FLAT         | ✓            | 10                      | 100.000            |
| C - Southam Road (N) |            | FLAT         | ✓            | 433                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                 |                      |
|------|----------------------|----------------------|-----------------|----------------------|
|      |                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| From | A - Southam Road (S) | 0                    | 15              | 803                  |
|      | B - Site Access      | 4                    | 0               | 6                    |
|      | C - Southam Road (N) | 410                  | 23              | 0                    |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                 |                      |
|------|----------------------|----------------------|-----------------|----------------------|
|      |                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| From | A - Southam Road (S) | 0                    | 7               | 4                    |
|      | B - Site Access      | 21                   | 0               | 21                   |
|      | C - Southam Road (N) | 3                    | 7               | 0                    |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-C    | 0.01    | 9.42          | 0.0             | A       | 6                       | 9                             |
| B-A    | 0.02    | 17.78         | 0.0             | C       | 4                       | 6                             |
| C-AB   | 0.07    | 5.32          | 0.1             | A       | 50                      | 75                            |
| C-A    |         |               |                 |         | 383                     | 574                           |
| A-B    |         |               |                 |         | 15                      | 23                            |
| A-C    |         |               |                 |         | 803                     | 1205                          |

## Main Results for each time segment

### 07:45 - 08:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 6                     | 2                       | 469               | 0.013 | 6                   | 0.0               | 0.0             | 9.407     | A                             |
| B-A    | 4                     | 1                       | 249               | 0.016 | 4                   | 0.0               | 0.0             | 17.778    | C                             |
| C-AB   | 50                    | 12                      | 760               | 0.066 | 49                  | 0.0               | 0.1             | 5.307     | A                             |
| C-A    | 383                   | 96                      |                   |       | 383                 |                   |                 |           |                               |
| A-B    | 15                    | 4                       |                   |       | 15                  |                   |                 |           |                               |
| A-C    | 803                   | 201                     |                   |       | 803                 |                   |                 |           |                               |

### 08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 6                     | 2                       | 469               | 0.013 | 6                   | 0.0               | 0.0             | 9.417     | A                             |
| B-A    | 4                     | 1                       | 249               | 0.016 | 4                   | 0.0               | 0.0             | 17.780    | C                             |
| C-AB   | 50                    | 13                      | 760               | 0.066 | 50                  | 0.1               | 0.1             | 5.314     | A                             |
| C-A    | 383                   | 96                      |                   |       | 383                 |                   |                 |           |                               |
| A-B    | 15                    | 4                       |                   |       | 15                  |                   |                 |           |                               |
| A-C    | 803                   | 201                     |                   |       | 803                 |                   |                 |           |                               |

### 08:15 - 08:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 6                     | 2                       | 469               | 0.013 | 6                   | 0.0               | 0.0             | 9.417     | A                             |
| B-A    | 4                     | 1                       | 249               | 0.016 | 4                   | 0.0               | 0.0             | 17.780    | C                             |
| C-AB   | 50                    | 13                      | 760               | 0.066 | 50                  | 0.1               | 0.1             | 5.314     | A                             |
| C-A    | 383                   | 96                      |                   |       | 383                 |                   |                 |           |                               |
| A-B    | 15                    | 4                       |                   |       | 15                  |                   |                 |           |                               |
| A-C    | 803                   | 201                     |                   |       | 803                 |                   |                 |           |                               |

### 08:30 - 08:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 6                     | 2                       | 469               | 0.013 | 6                   | 0.0               | 0.0             | 9.417     | A                             |
| B-A    | 4                     | 1                       | 249               | 0.016 | 4                   | 0.0               | 0.0             | 17.780    | C                             |
| C-AB   | 50                    | 13                      | 760               | 0.066 | 50                  | 0.1               | 0.1             | 5.314     | A                             |
| C-A    | 383                   | 96                      |                   |       | 383                 |                   |                 |           |                               |
| A-B    | 15                    | 4                       |                   |       | 15                  |                   |                 |           |                               |
| A-C    | 803                   | 201                     |                   |       | 803                 |                   |                 |           |                               |

### 08:45 - 09:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 6                     | 2                       | 469               | 0.013 | 6                   | 0.0               | 0.0             | 9.417     | A                             |
| B-A    | 4                     | 1                       | 249               | 0.016 | 4                   | 0.0               | 0.0             | 17.780    | C                             |
| C-AB   | 50                    | 13                      | 760               | 0.066 | 50                  | 0.1               | 0.1             | 5.314     | A                             |
| C-A    | 383                   | 96                      |                   |       | 383                 |                   |                 |           |                               |
| A-B    | 15                    | 4                       |                   |       | 15                  |                   |                 |           |                               |
| A-C    | 803                   | 201                     |                   |       | 803                 |                   |                 |           |                               |



09:00 - 09:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 6                     | 2                       | 469               | 0.013 | 6                   | 0.0               | 0.0             | 9.417     | A                             |
| B-A    | 4                     | 1                       | 249               | 0.016 | 4                   | 0.0               | 0.0             | 17.780    | C                             |
| C-AB   | 50                    | 13                      | 760               | 0.066 | 50                  | 0.1               | 0.1             | 5.316     | A                             |
| C-A    | 383                   | 96                      |                   |       | 383                 |                   |                 |           |                               |
| A-B    | 15                    | 4                       |                   |       | 15                  |                   |                 |           |                               |
| A-C    | 803                   | 201                     |                   |       | 803                 |                   |                 |           |                               |

# 2021 without development, AM (9-10)

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 0.31               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name            | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|--------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D3 | 2021 without development | AM (9-10)        | FLAT                 | 08:45              | 10:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - Southam Road (S) |            | FLAT         | ✓            | 590                     | 100.000            |
| B - Site Access      |            | FLAT         | ✓            | 14                      | 100.000            |
| C - Southam Road (N) |            | FLAT         | ✓            | 315                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                 |                      |
|------|----------------------|----------------------|-----------------|----------------------|
|      |                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| From | A - Southam Road (S) | 0                    | 9               | 581                  |
|      | B - Site Access      | 6                    | 0               | 8                    |
|      | C - Southam Road (N) | 301                  | 14              | 0                    |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                 |                      |
|------|----------------------|----------------------|-----------------|----------------------|
|      |                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| From | A - Southam Road (S) | 0                    | 14              | 9                    |
|      | B - Site Access      | 18                   | 0               | 18                   |
|      | C - Southam Road (N) | 4                    | 14              | 0                    |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-C    | 0.02    | 8.29          | 0.0             | A       | 8                       | 12                            |
| B-A    | 0.02    | 13.50         | 0.0             | B       | 6                       | 9                             |
| C-AB   | 0.03    | 5.62          | 0.0             | A       | 24                      | 36                            |
| C-A    |         |               |                 |         | 291                     | 437                           |
| A-B    |         |               |                 |         | 9                       | 14                            |
| A-C    |         |               |                 |         | 581                     | 872                           |

## Main Results for each time segment

### 08:45 - 09:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 8                     | 2                       | 521               | 0.015 | 8                   | 0.0               | 0.0             | 8.286     | A                             |
| B-A    | 6                     | 2                       | 321               | 0.019 | 6                   | 0.0               | 0.0             | 13.498    | B                             |
| C-AB   | 24                    | 6                       | 726               | 0.033 | 24                  | 0.0               | 0.0             | 5.618     | A                             |
| C-A    | 291                   | 73                      |                   |       | 291                 |                   |                 |           |                               |
| A-B    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |
| A-C    | 581                   | 145                     |                   |       | 581                 |                   |                 |           |                               |

### 09:00 - 09:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 8                     | 2                       | 520               | 0.015 | 8                   | 0.0               | 0.0             | 8.293     | A                             |
| B-A    | 6                     | 2                       | 321               | 0.019 | 6                   | 0.0               | 0.0             | 13.497    | B                             |
| C-AB   | 24                    | 6                       | 726               | 0.033 | 24                  | 0.0               | 0.0             | 5.621     | A                             |
| C-A    | 291                   | 73                      |                   |       | 291                 |                   |                 |           |                               |
| A-B    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |
| A-C    | 581                   | 145                     |                   |       | 581                 |                   |                 |           |                               |

### 09:15 - 09:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 8                     | 2                       | 520               | 0.015 | 8                   | 0.0               | 0.0             | 8.293     | A                             |
| B-A    | 6                     | 2                       | 321               | 0.019 | 6                   | 0.0               | 0.0             | 13.497    | B                             |
| C-AB   | 24                    | 6                       | 726               | 0.033 | 24                  | 0.0               | 0.0             | 5.622     | A                             |
| C-A    | 291                   | 73                      |                   |       | 291                 |                   |                 |           |                               |
| A-B    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |
| A-C    | 581                   | 145                     |                   |       | 581                 |                   |                 |           |                               |

### 09:30 - 09:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 8                     | 2                       | 520               | 0.015 | 8                   | 0.0               | 0.0             | 8.293     | A                             |
| B-A    | 6                     | 2                       | 321               | 0.019 | 6                   | 0.0               | 0.0             | 13.497    | B                             |
| C-AB   | 24                    | 6                       | 726               | 0.033 | 24                  | 0.0               | 0.0             | 5.620     | A                             |
| C-A    | 291                   | 73                      |                   |       | 291                 |                   |                 |           |                               |
| A-B    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |
| A-C    | 581                   | 145                     |                   |       | 581                 |                   |                 |           |                               |

### 09:45 - 10:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 8                     | 2                       | 520               | 0.015 | 8                   | 0.0               | 0.0             | 8.293     | A                             |
| B-A    | 6                     | 2                       | 321               | 0.019 | 6                   | 0.0               | 0.0             | 13.497    | B                             |
| C-AB   | 24                    | 6                       | 726               | 0.033 | 24                  | 0.0               | 0.0             | 5.622     | A                             |
| C-A    | 291                   | 73                      |                   |       | 291                 |                   |                 |           |                               |
| A-B    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |
| A-C    | 581                   | 145                     |                   |       | 581                 |                   |                 |           |                               |

10:00 - 10:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 8                     | 2                       | 520               | 0.015 | 8                   | 0.0               | 0.0             | 8.293     | A                             |
| B-A    | 6                     | 2                       | 321               | 0.019 | 6                   | 0.0               | 0.0             | 13.497    | B                             |
| C-AB   | 24                    | 6                       | 726               | 0.033 | 24                  | 0.0               | 0.0             | 5.620     | A                             |
| C-A    | 291                   | 73                      |                   |       | 291                 |                   |                 |           |                               |
| A-B    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |
| A-C    | 581                   | 145                     |                   |       | 581                 |                   |                 |           |                               |

# 2021 without development, PM (16-17)

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 0.54               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name            | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|--------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D4 | 2021 without development | PM (16-17)       | FLAT                 | 15:45              | 17:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - Southam Road (S) |            | FLAT         | ✓            | 607                     | 100.000            |
| B - Site Access      |            | FLAT         | ✓            | 57                      | 100.000            |
| C - Southam Road (N) |            | FLAT         | ✓            | 561                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                 |                      |
|------|----------------------|----------------------|-----------------|----------------------|
|      |                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| From | A - Southam Road (S) | 0                    | 3               | 604                  |
|      | B - Site Access      | 23                   | 0               | 34                   |
|      | C - Southam Road (N) | 556                  | 5               | 0                    |
|      |                      |                      |                 |                      |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                 |                      |
|------|----------------------|----------------------|-----------------|----------------------|
|      |                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| From | A - Southam Road (S) | 0                    | 5               | 4                    |
|      | B - Site Access      | 4                    | 0               | 4                    |
|      | C - Southam Road (N) | 4                    | 5               | 0                    |
|      |                      |                      |                 |                      |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-C    | 0.07    | 7.85          | 0.1             | A       | 34                      | 51                            |
| B-A    | 0.08    | 14.57         | 0.1             | B       | 23                      | 35                            |
| C-AB   | 0.01    | 4.21          | 0.0             | A       | 13                      | 19                            |
| C-A    |         |               |                 |         | 548                     | 822                           |
| A-B    |         |               |                 |         | 3                       | 5                             |
| A-C    |         |               |                 |         | 604                     | 906                           |

## Main Results for each time segment

### 15:45 - 16:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 34                    | 9                       | 512               | 0.066 | 34                  | 0.0               | 0.1             | 7.830     | A                             |
| B-A    | 23                    | 6                       | 280               | 0.082 | 23                  | 0.0               | 0.1             | 14.541    | B                             |
| C-AB   | 13                    | 3                       | 906               | 0.014 | 13                  | 0.0               | 0.0             | 4.208     | A                             |
| C-A    | 548                   | 137                     |                   |       | 548                 |                   |                 |           |                               |
| A-B    | 3                     | 0.75                    |                   |       | 3                   |                   |                 |           |                               |
| A-C    | 604                   | 151                     |                   |       | 604                 |                   |                 |           |                               |

### 16:00 - 16:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 34                    | 9                       | 511               | 0.067 | 34                  | 0.1               | 0.1             | 7.847     | A                             |
| B-A    | 23                    | 6                       | 280               | 0.082 | 23                  | 0.1               | 0.1             | 14.570    | B                             |
| C-AB   | 13                    | 3                       | 906               | 0.014 | 13                  | 0.0               | 0.0             | 4.208     | A                             |
| C-A    | 548                   | 137                     |                   |       | 548                 |                   |                 |           |                               |
| A-B    | 3                     | 0.75                    |                   |       | 3                   |                   |                 |           |                               |
| A-C    | 604                   | 151                     |                   |       | 604                 |                   |                 |           |                               |

### 16:15 - 16:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 34                    | 9                       | 511               | 0.067 | 34                  | 0.1               | 0.1             | 7.847     | A                             |
| B-A    | 23                    | 6                       | 280               | 0.082 | 23                  | 0.1               | 0.1             | 14.570    | B                             |
| C-AB   | 13                    | 3                       | 906               | 0.014 | 13                  | 0.0               | 0.0             | 4.210     | A                             |
| C-A    | 548                   | 137                     |                   |       | 548                 |                   |                 |           |                               |
| A-B    | 3                     | 0.75                    |                   |       | 3                   |                   |                 |           |                               |
| A-C    | 604                   | 151                     |                   |       | 604                 |                   |                 |           |                               |

### 16:30 - 16:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 34                    | 9                       | 511               | 0.067 | 34                  | 0.1               | 0.1             | 7.847     | A                             |
| B-A    | 23                    | 6                       | 280               | 0.082 | 23                  | 0.1               | 0.1             | 14.570    | B                             |
| C-AB   | 13                    | 3                       | 906               | 0.014 | 13                  | 0.0               | 0.0             | 4.208     | A                             |
| C-A    | 548                   | 137                     |                   |       | 548                 |                   |                 |           |                               |
| A-B    | 3                     | 0.75                    |                   |       | 3                   |                   |                 |           |                               |
| A-C    | 604                   | 151                     |                   |       | 604                 |                   |                 |           |                               |

### 16:45 - 17:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 34                    | 9                       | 511               | 0.067 | 34                  | 0.1               | 0.1             | 7.847     | A                             |
| B-A    | 23                    | 6                       | 280               | 0.082 | 23                  | 0.1               | 0.1             | 14.570    | B                             |
| C-AB   | 13                    | 3                       | 906               | 0.014 | 13                  | 0.0               | 0.0             | 4.208     | A                             |
| C-A    | 548                   | 137                     |                   |       | 548                 |                   |                 |           |                               |
| A-B    | 3                     | 0.75                    |                   |       | 3                   |                   |                 |           |                               |
| A-C    | 604                   | 151                     |                   |       | 604                 |                   |                 |           |                               |

17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 34                    | 9                       | 511               | 0.067 | 34                  | 0.1               | 0.1             | 7.847     | A                             |
| B-A    | 23                    | 6                       | 280               | 0.082 | 23                  | 0.1               | 0.1             | 14.570    | B                             |
| C-AB   | 13                    | 3                       | 906               | 0.014 | 13                  | 0.0               | 0.0             | 4.208     | A                             |
| C-A    | 548                   | 137                     |                   |       | 548                 |                   |                 |           |                               |
| A-B    | 3                     | 0.75                    |                   |       | 3                   |                   |                 |           |                               |
| A-C    | 604                   | 151                     |                   |       | 604                 |                   |                 |           |                               |

# 2021 without development, PM (17-18)

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 0.29               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name            | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|--------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D5 | 2021 without development | PM (17-18)       | FLAT                 | 16:45              | 18:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - Southam Road (S) |            | FLAT         | ✓            | 731                     | 100.000            |
| B - Site Access      |            | FLAT         | ✓            | 33                      | 100.000            |
| C - Southam Road (N) |            | FLAT         | ✓            | 657                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                 |                      |
|------|----------------------|----------------------|-----------------|----------------------|
|      |                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| From | A - Southam Road (S) | 0                    | 3               | 728                  |
|      | B - Site Access      | 13                   | 0               | 20                   |
|      | C - Southam Road (N) | 653                  | 4               | 0                    |
|      |                      |                      |                 |                      |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                 |                      |
|------|----------------------|----------------------|-----------------|----------------------|
|      |                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| From | A - Southam Road (S) | 0                    | 0               | 3                    |
|      | B - Site Access      | 0                    | 0               | 0                    |
|      | C - Southam Road (N) | 3                    | 0               | 0                    |
|      |                      |                      |                 |                      |



# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-C    | 0.04    | 7.74          | 0.0             | A       | 20                      | 30                            |
| B-A    | 0.05    | 15.98         | 0.1             | C       | 13                      | 20                            |
| C-AB   | 0.01    | 3.90          | 0.0             | A       | 13                      | 19                            |
| C-A    |         |               |                 |         | 644                     | 967                           |
| A-B    |         |               |                 |         | 3                       | 5                             |
| A-C    |         |               |                 |         | 728                     | 1092                          |

## Main Results for each time segment

### 16:45 - 17:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 20                    | 5                       | 486               | 0.041 | 20                  | 0.0               | 0.0             | 7.725     | A                             |
| B-A    | 13                    | 3                       | 238               | 0.055 | 13                  | 0.0               | 0.1             | 15.966    | C                             |
| C-AB   | 13                    | 3                       | 956               | 0.013 | 13                  | 0.0               | 0.0             | 3.894     | A                             |
| C-A    | 644                   | 161                     |                   |       | 644                 |                   |                 |           |                               |
| A-B    | 3                     | 0.75                    |                   |       | 3                   |                   |                 |           |                               |
| A-C    | 728                   | 182                     |                   |       | 728                 |                   |                 |           |                               |

### 17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 20                    | 5                       | 485               | 0.041 | 20                  | 0.0               | 0.0             | 7.738     | A                             |
| B-A    | 13                    | 3                       | 238               | 0.055 | 13                  | 0.1               | 0.1             | 15.984    | C                             |
| C-AB   | 13                    | 3                       | 956               | 0.013 | 13                  | 0.0               | 0.0             | 3.895     | A                             |
| C-A    | 644                   | 161                     |                   |       | 644                 |                   |                 |           |                               |
| A-B    | 3                     | 0.75                    |                   |       | 3                   |                   |                 |           |                               |
| A-C    | 728                   | 182                     |                   |       | 728                 |                   |                 |           |                               |

### 17:15 - 17:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 20                    | 5                       | 485               | 0.041 | 20                  | 0.0               | 0.0             | 7.738     | A                             |
| B-A    | 13                    | 3                       | 238               | 0.055 | 13                  | 0.1               | 0.1             | 15.984    | C                             |
| C-AB   | 13                    | 3                       | 956               | 0.013 | 13                  | 0.0               | 0.0             | 3.895     | A                             |
| C-A    | 644                   | 161                     |                   |       | 644                 |                   |                 |           |                               |
| A-B    | 3                     | 0.75                    |                   |       | 3                   |                   |                 |           |                               |
| A-C    | 728                   | 182                     |                   |       | 728                 |                   |                 |           |                               |

### 17:30 - 17:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 20                    | 5                       | 485               | 0.041 | 20                  | 0.0               | 0.0             | 7.738     | A                             |
| B-A    | 13                    | 3                       | 238               | 0.055 | 13                  | 0.1               | 0.1             | 15.984    | C                             |
| C-AB   | 13                    | 3                       | 956               | 0.013 | 13                  | 0.0               | 0.0             | 3.895     | A                             |
| C-A    | 644                   | 161                     |                   |       | 644                 |                   |                 |           |                               |
| A-B    | 3                     | 0.75                    |                   |       | 3                   |                   |                 |           |                               |
| A-C    | 728                   | 182                     |                   |       | 728                 |                   |                 |           |                               |

### 17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 20                    | 5                       | 485               | 0.041 | 20                  | 0.0               | 0.0             | 7.738     | A                             |
| B-A    | 13                    | 3                       | 238               | 0.055 | 13                  | 0.1               | 0.1             | 15.984    | C                             |
| C-AB   | 13                    | 3                       | 956               | 0.013 | 13                  | 0.0               | 0.0             | 3.895     | A                             |
| C-A    | 644                   | 161                     |                   |       | 644                 |                   |                 |           |                               |
| A-B    | 3                     | 0.75                    |                   |       | 3                   |                   |                 |           |                               |
| A-C    | 728                   | 182                     |                   |       | 728                 |                   |                 |           |                               |

18:00 - 18:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 20                    | 5                       | 485               | 0.041 | 20                  | 0.0               | 0.0             | 7.738     | A                             |
| B-A    | 13                    | 3                       | 238               | 0.055 | 13                  | 0.1               | 0.1             | 15.984    | C                             |
| C-AB   | 13                    | 3                       | 956               | 0.013 | 13                  | 0.0               | 0.0             | 3.895     | A                             |
| C-A    | 644                   | 161                     |                   |       | 644                 |                   |                 |           |                               |
| A-B    | 3                     | 0.75                    |                   |       | 3                   |                   |                 |           |                               |
| A-C    | 728                   | 182                     |                   |       | 728                 |                   |                 |           |                               |

# 2021 without development, PM (18-19)

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 0.14               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name            | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|--------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D6 | 2021 without development | PM (18-19)       | FLAT                 | 17:45              | 19:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - Southam Road (S) |            | FLAT         | ✓            | 524                     | 100.000            |
| B - Site Access      |            | FLAT         | ✓            | 15                      | 100.000            |
| C - Southam Road (N) |            | FLAT         | ✓            | 468                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                 |                      |
|------|----------------------|----------------------|-----------------|----------------------|
|      |                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| From | A - Southam Road (S) | 0                    | 0               | 524                  |
|      | B - Site Access      | 6                    | 0               | 9                    |
|      | C - Southam Road (N) | 467                  | 1               | 0                    |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                 |                      |
|------|----------------------|----------------------|-----------------|----------------------|
|      |                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| From | A - Southam Road (S) | 0                    | 0               | 3                    |
|      | B - Site Access      | 0                    | 0               | 0                    |
|      | C - Southam Road (N) | 3                    | 0               | 0                    |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-C    | 0.02    | 6.76          | 0.0             | A       | 9                       | 14                            |
| B-A    | 0.02    | 11.79         | 0.0             | B       | 6                       | 9                             |
| C-AB   | 0.00    | 4.28          | 0.0             | A       | 2                       | 3                             |
| C-A    |         |               |                 |         | 466                     | 699                           |
| A-B    |         |               |                 |         | 0                       | 0                             |
| A-C    |         |               |                 |         | 524                     | 786                           |

## Main Results for each time segment

### 17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 9                     | 2                       | 542               | 0.017 | 9                   | 0.0               | 0.0             | 6.758     | A                             |
| B-A    | 6                     | 2                       | 311               | 0.019 | 6                   | 0.0               | 0.0             | 11.787    | B                             |
| C-AB   | 2                     | 0.55                    | 857               | 0.003 | 2                   | 0.0               | 0.0             | 4.278     | A                             |
| C-A    | 466                   | 116                     |                   |       | 466                 |                   |                 |           |                               |
| A-B    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-C    | 524                   | 131                     |                   |       | 524                 |                   |                 |           |                               |

### 18:00 - 18:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 9                     | 2                       | 541               | 0.017 | 9                   | 0.0               | 0.0             | 6.761     | A                             |
| B-A    | 6                     | 2                       | 311               | 0.019 | 6                   | 0.0               | 0.0             | 11.786    | B                             |
| C-AB   | 2                     | 0.55                    | 857               | 0.003 | 2                   | 0.0               | 0.0             | 4.278     | A                             |
| C-A    | 466                   | 116                     |                   |       | 466                 |                   |                 |           |                               |
| A-B    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-C    | 524                   | 131                     |                   |       | 524                 |                   |                 |           |                               |

### 18:15 - 18:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 9                     | 2                       | 541               | 0.017 | 9                   | 0.0               | 0.0             | 6.761     | A                             |
| B-A    | 6                     | 2                       | 311               | 0.019 | 6                   | 0.0               | 0.0             | 11.786    | B                             |
| C-AB   | 2                     | 0.55                    | 857               | 0.003 | 2                   | 0.0               | 0.0             | 4.278     | A                             |
| C-A    | 466                   | 116                     |                   |       | 466                 |                   |                 |           |                               |
| A-B    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-C    | 524                   | 131                     |                   |       | 524                 |                   |                 |           |                               |

### 18:30 - 18:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 9                     | 2                       | 541               | 0.017 | 9                   | 0.0               | 0.0             | 6.764     | A                             |
| B-A    | 6                     | 2                       | 311               | 0.019 | 6                   | 0.0               | 0.0             | 11.786    | B                             |
| C-AB   | 2                     | 0.55                    | 857               | 0.003 | 2                   | 0.0               | 0.0             | 4.280     | A                             |
| C-A    | 466                   | 116                     |                   |       | 466                 |                   |                 |           |                               |
| A-B    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-C    | 524                   | 131                     |                   |       | 524                 |                   |                 |           |                               |

### 18:45 - 19:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 9                     | 2                       | 541               | 0.017 | 9                   | 0.0               | 0.0             | 6.761     | A                             |
| B-A    | 6                     | 2                       | 311               | 0.019 | 6                   | 0.0               | 0.0             | 11.786    | B                             |
| C-AB   | 2                     | 0.55                    | 857               | 0.003 | 2                   | 0.0               | 0.0             | 4.278     | A                             |
| C-A    | 466                   | 116                     |                   |       | 466                 |                   |                 |           |                               |
| A-B    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-C    | 524                   | 131                     |                   |       | 524                 |                   |                 |           |                               |

19:00 - 19:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 9                     | 2                       | 541               | 0.017 | 9                   | 0.0               | 0.0             | 6.764     | A                             |
| B-A    | 6                     | 2                       | 311               | 0.019 | 6                   | 0.0               | 0.0             | 11.786    | B                             |
| C-AB   | 2                     | 0.55                    | 857               | 0.003 | 2                   | 0.0               | 0.0             | 4.278     | A                             |
| C-A    | 466                   | 116                     |                   |       | 466                 |                   |                 |           |                               |
| A-B    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-C    | 524                   | 131                     |                   |       | 524                 |                   |                 |           |                               |

# 2021 with development, AM (7-8)

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 1.89               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name         | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|-----------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D7 | 2021 with development | AM (7-8)         | FLAT                 | 06:45              | 08:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - Southam Road (S) |            | FLAT         | ✓            | 585                     | 100.000            |
| B - Site Access      |            | FLAT         | ✓            | 149                     | 100.000            |
| C - Southam Road (N) |            | FLAT         | ✓            | 367                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                 |                      |
|------|----------------------|----------------------|-----------------|----------------------|
|      |                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| From | A - Southam Road (S) | 0                    | 20              | 565                  |
|      | B - Site Access      | 0                    | 0               | 149                  |
|      | C - Southam Road (N) | 286                  | 81              | 0                    |
|      |                      |                      |                 |                      |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                 |                      |
|------|----------------------|----------------------|-----------------|----------------------|
|      |                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| From | A - Southam Road (S) | 0                    | 0               | 4                    |
|      | B - Site Access      | 0                    | 0               | 0                    |
|      | C - Southam Road (N) | 4                    | 0               | 0                    |
|      |                      |                      |                 |                      |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-C    | 0.25    | 8.21          | 0.3             | A       | 149                     | 224                           |
| B-A    | 0.00    | 0.00          | 0.0             | A       | 0                       | 0                             |
| C-AB   | 0.19    | 6.30          | 0.4             | A       | 135                     | 203                           |
| C-A    |         |               |                 |         | 232                     | 347                           |
| A-B    |         |               |                 |         | 20                      | 30                            |
| A-C    |         |               |                 |         | 565                     | 848                           |

## Main Results for each time segment

### 06:45 - 07:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 149                   | 37                      | 587               | 0.254 | 148                 | 0.0               | 0.3             | 8.164     | A                             |
| B-A    | 0                     | 0                       | 263               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-AB   | 135                   | 34                      | 716               | 0.188 | 133                 | 0.0               | 0.4             | 6.267     | A                             |
| C-A    | 232                   | 58                      |                   |       | 232                 |                   |                 |           |                               |
| A-B    | 20                    | 5                       |                   |       | 20                  |                   |                 |           |                               |
| A-C    | 565                   | 141                     |                   |       | 565                 |                   |                 |           |                               |

### 07:00 - 07:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 149                   | 37                      | 587               | 0.254 | 149                 | 0.3               | 0.3             | 8.212     | A                             |
| B-A    | 0                     | 0                       | 263               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-AB   | 135                   | 34                      | 717               | 0.189 | 135                 | 0.4               | 0.4             | 6.302     | A                             |
| C-A    | 232                   | 58                      |                   |       | 232                 |                   |                 |           |                               |
| A-B    | 20                    | 5                       |                   |       | 20                  |                   |                 |           |                               |
| A-C    | 565                   | 141                     |                   |       | 565                 |                   |                 |           |                               |

### 07:15 - 07:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 149                   | 37                      | 587               | 0.254 | 149                 | 0.3               | 0.3             | 8.212     | A                             |
| B-A    | 0                     | 0                       | 263               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-AB   | 135                   | 34                      | 717               | 0.189 | 135                 | 0.4               | 0.4             | 6.303     | A                             |
| C-A    | 232                   | 58                      |                   |       | 232                 |                   |                 |           |                               |
| A-B    | 20                    | 5                       |                   |       | 20                  |                   |                 |           |                               |
| A-C    | 565                   | 141                     |                   |       | 565                 |                   |                 |           |                               |

### 07:30 - 07:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 149                   | 37                      | 587               | 0.254 | 149                 | 0.3               | 0.3             | 8.212     | A                             |
| B-A    | 0                     | 0                       | 263               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-AB   | 135                   | 34                      | 717               | 0.189 | 135                 | 0.4               | 0.4             | 6.301     | A                             |
| C-A    | 232                   | 58                      |                   |       | 232                 |                   |                 |           |                               |
| A-B    | 20                    | 5                       |                   |       | 20                  |                   |                 |           |                               |
| A-C    | 565                   | 141                     |                   |       | 565                 |                   |                 |           |                               |

### 07:45 - 08:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 149                   | 37                      | 587               | 0.254 | 149                 | 0.3               | 0.3             | 8.212     | A                             |
| B-A    | 0                     | 0                       | 263               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-AB   | 135                   | 34                      | 717               | 0.189 | 135                 | 0.4               | 0.4             | 6.303     | A                             |
| C-A    | 232                   | 58                      |                   |       | 232                 |                   |                 |           |                               |
| A-B    | 20                    | 5                       |                   |       | 20                  |                   |                 |           |                               |
| A-C    | 565                   | 141                     |                   |       | 565                 |                   |                 |           |                               |

08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 149                   | 37                      | 587               | 0.254 | 149                 | 0.3               | 0.3             | 8.212     | A                             |
| B-A    | 0                     | 0                       | 263               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-AB   | 135                   | 34                      | 717               | 0.189 | 135                 | 0.4               | 0.4             | 6.301     | A                             |
| C-A    | 232                   | 58                      |                   |       | 232                 |                   |                 |           |                               |
| A-B    | 20                    | 5                       |                   |       | 20                  |                   |                 |           |                               |
| A-C    | 565                   | 141                     |                   |       | 565                 |                   |                 |           |                               |



# 2021 with development, AM (8-9)

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 0.52               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name         | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|-----------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D8 | 2021 with development | AM (8-9)         | FLAT                 | 07:45              | 09:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - Southam Road (S) |            | FLAT         | ✓            | 803                     | 100.000            |
| B - Site Access      |            | FLAT         | ✓            | 49                      | 100.000            |
| C - Southam Road (N) |            | FLAT         | ✓            | 437                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                 |                      |
|------|----------------------|----------------------|-----------------|----------------------|
|      |                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| From | A - Southam Road (S) | 0                    | 6               | 797                  |
|      | B - Site Access      | 0                    | 0               | 49                   |
|      | C - Southam Road (N) | 410                  | 27              | 0                    |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                 |                      |
|------|----------------------|----------------------|-----------------|----------------------|
|      |                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| From | A - Southam Road (S) | 0                    | 0               | 4                    |
|      | B - Site Access      | 0                    | 0               | 0                    |
|      | C - Southam Road (N) | 3                    | 0               | 0                    |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-C    | 0.09    | 7.60          | 0.1             | A       | 49                      | 74                            |
| B-A    | 0.00    | 0.00          | 0.0             | A       | 0                       | 0                             |
| C-AB   | 0.08    | 5.20          | 0.1             | A       | 59                      | 88                            |
| C-A    |         |               |                 |         | 378                     | 568                           |
| A-B    |         |               |                 |         | 6                       | 9                             |
| A-C    |         |               |                 |         | 797                     | 1196                          |

## Main Results for each time segment

### 07:45 - 08:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 49                    | 12                      | 523               | 0.094 | 49                  | 0.0               | 0.1             | 7.584     | A                             |
| B-A    | 0                     | 0                       | 219               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-AB   | 58                    | 15                      | 763               | 0.076 | 58                  | 0.0               | 0.1             | 5.185     | A                             |
| C-A    | 379                   | 95                      |                   |       | 379                 |                   |                 |           |                               |
| A-B    | 6                     | 2                       |                   |       | 6                   |                   |                 |           |                               |
| A-C    | 797                   | 199                     |                   |       | 797                 |                   |                 |           |                               |

### 08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 49                    | 12                      | 523               | 0.094 | 49                  | 0.1               | 0.1             | 7.596     | A                             |
| B-A    | 0                     | 0                       | 219               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-AB   | 59                    | 15                      | 763               | 0.077 | 59                  | 0.1               | 0.1             | 5.193     | A                             |
| C-A    | 378                   | 95                      |                   |       | 378                 |                   |                 |           |                               |
| A-B    | 6                     | 2                       |                   |       | 6                   |                   |                 |           |                               |
| A-C    | 797                   | 199                     |                   |       | 797                 |                   |                 |           |                               |

### 08:15 - 08:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 49                    | 12                      | 523               | 0.094 | 49                  | 0.1               | 0.1             | 7.596     | A                             |
| B-A    | 0                     | 0                       | 219               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-AB   | 59                    | 15                      | 763               | 0.077 | 59                  | 0.1               | 0.1             | 5.193     | A                             |
| C-A    | 378                   | 95                      |                   |       | 378                 |                   |                 |           |                               |
| A-B    | 6                     | 2                       |                   |       | 6                   |                   |                 |           |                               |
| A-C    | 797                   | 199                     |                   |       | 797                 |                   |                 |           |                               |

### 08:30 - 08:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 49                    | 12                      | 523               | 0.094 | 49                  | 0.1               | 0.1             | 7.596     | A                             |
| B-A    | 0                     | 0                       | 219               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-AB   | 59                    | 15                      | 763               | 0.077 | 59                  | 0.1               | 0.1             | 5.195     | A                             |
| C-A    | 378                   | 95                      |                   |       | 378                 |                   |                 |           |                               |
| A-B    | 6                     | 2                       |                   |       | 6                   |                   |                 |           |                               |
| A-C    | 797                   | 199                     |                   |       | 797                 |                   |                 |           |                               |

### 08:45 - 09:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 49                    | 12                      | 523               | 0.094 | 49                  | 0.1               | 0.1             | 7.596     | A                             |
| B-A    | 0                     | 0                       | 219               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-AB   | 59                    | 15                      | 763               | 0.077 | 59                  | 0.1               | 0.1             | 5.195     | A                             |
| C-A    | 378                   | 95                      |                   |       | 378                 |                   |                 |           |                               |
| A-B    | 6                     | 2                       |                   |       | 6                   |                   |                 |           |                               |
| A-C    | 797                   | 199                     |                   |       | 797                 |                   |                 |           |                               |

09:00 - 09:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 49                    | 12                      | 523               | 0.094 | 49                  | 0.1               | 0.1             | 7.596     | A                             |
| B-A    | 0                     | 0                       | 219               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-AB   | 59                    | 15                      | 763               | 0.077 | 59                  | 0.1               | 0.1             | 5.193     | A                             |
| C-A    | 378                   | 95                      |                   |       | 378                 |                   |                 |           |                               |
| A-B    | 6                     | 2                       |                   |       | 6                   |                   |                 |           |                               |
| A-C    | 797                   | 199                     |                   |       | 797                 |                   |                 |           |                               |

# 2021 with development, AM (9-10)

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 0.00               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name         | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|-----------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D9 | 2021 with development | AM (9-10)        | FLAT                 | 08:45              | 10:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - Southam Road (S) |            | FLAT         | ✓            | 581                     | 100.000            |
| B - Site Access      |            | FLAT         | ✓            | 0                       | 100.000            |
| C - Southam Road (N) |            | FLAT         | ✓            | 301                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                 |                      |
|------|----------------------|----------------------|-----------------|----------------------|
|      |                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| From | A - Southam Road (S) | 0                    | 0               | 581                  |
|      | B - Site Access      | 0                    | 0               | 0                    |
|      | C - Southam Road (N) | 301                  | 0               | 0                    |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                 |                      |
|------|----------------------|----------------------|-----------------|----------------------|
|      |                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| From | A - Southam Road (S) | 0                    | 0               | 9                    |
|      | B - Site Access      | 0                    | 0               | 0                    |
|      | C - Southam Road (N) | 4                    | 0               | 0                    |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-C    | 0.00    | 0.00          | 0.0             | A       | 0                       | 0                             |
| B-A    | 0.00    | 0.00          | 0.0             | A       | 0                       | 0                             |
| C-AB   | 0.00    | 0.00          | 0.0             | A       | 0                       | 0                             |
| C-A    |         |               |                 |         | 301                     | 452                           |
| A-B    |         |               |                 |         | 0                       | 0                             |
| A-C    |         |               |                 |         | 581                     | 872                           |

## Main Results for each time segment

### 08:45 - 09:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 0                     | 0                       | 510               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| B-A    | 0                     | 0                       | 335               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-AB   | 0                     | 0                       | 513               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 301                   | 75                      |                   |       | 301                 |                   |                 |           |                               |
| A-B    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-C    | 581                   | 145                     |                   |       | 581                 |                   |                 |           |                               |

### 09:00 - 09:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 0                     | 0                       | 510               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| B-A    | 0                     | 0                       | 335               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-AB   | 0                     | 0                       | 513               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 301                   | 75                      |                   |       | 301                 |                   |                 |           |                               |
| A-B    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-C    | 581                   | 145                     |                   |       | 581                 |                   |                 |           |                               |

### 09:15 - 09:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 0                     | 0                       | 510               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| B-A    | 0                     | 0                       | 335               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-AB   | 0                     | 0                       | 513               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 301                   | 75                      |                   |       | 301                 |                   |                 |           |                               |
| A-B    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-C    | 581                   | 145                     |                   |       | 581                 |                   |                 |           |                               |

### 09:30 - 09:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 0                     | 0                       | 510               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| B-A    | 0                     | 0                       | 335               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-AB   | 0                     | 0                       | 513               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 301                   | 75                      |                   |       | 301                 |                   |                 |           |                               |
| A-B    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-C    | 581                   | 145                     |                   |       | 581                 |                   |                 |           |                               |

### 09:45 - 10:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 0                     | 0                       | 510               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| B-A    | 0                     | 0                       | 335               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-AB   | 0                     | 0                       | 513               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 301                   | 75                      |                   |       | 301                 |                   |                 |           |                               |
| A-B    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-C    | 581                   | 145                     |                   |       | 581                 |                   |                 |           |                               |

10:00 - 10:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 0                     | 0                       | 510               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| B-A    | 0                     | 0                       | 335               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-AB   | 0                     | 0                       | 513               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 301                   | 75                      |                   |       | 301                 |                   |                 |           |                               |
| A-B    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-C    | 581                   | 145                     |                   |       | 581                 |                   |                 |           |                               |

# 2021 with development, PM (16-17)

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 2.42               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name         | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-----------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D10 | 2021 with development | PM (16-17)       | FLAT                 | 15:45              | 17:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - Southam Road (S) |            | FLAT         | ✓            | 618                     | 100.000            |
| B - Site Access      |            | FLAT         | ✓            | 102                     | 100.000            |
| C - Southam Road (N) |            | FLAT         | ✓            | 688                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                 |                      |
|------|----------------------|----------------------|-----------------|----------------------|
|      |                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| From | A - Southam Road (S) | 0                    | 14              | 604                  |
|      | B - Site Access      | 20                   | 0               | 82                   |
|      | C - Southam Road (N) | 552                  | 136             | 0                    |
|      |                      |                      |                 |                      |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                 |                      |
|------|----------------------|----------------------|-----------------|----------------------|
|      |                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| From | A - Southam Road (S) | 0                    | 0               | 4                    |
|      | B - Site Access      | 0                    | 0               | 0                    |
|      | C - Southam Road (N) | 4                    | 0               | 0                    |
|      |                      |                      |                 |                      |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-C    | 0.15    | 7.77          | 0.2             | A       | 82                      | 123                           |
| B-A    | 0.09    | 18.20         | 0.1             | C       | 20                      | 30                            |
| C-AB   | 0.39    | 6.78          | 1.2             | A       | 354                     | 531                           |
| C-A    |         |               |                 |         | 334                     | 501                           |
| A-B    |         |               |                 |         | 14                      | 21                            |
| A-C    |         |               |                 |         | 604                     | 906                           |

## Main Results for each time segment

### 15:45 - 16:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 82                    | 21                      | 546               | 0.150 | 81                  | 0.0               | 0.2             | 7.742     | A                             |
| B-A    | 20                    | 5                       | 219               | 0.091 | 20                  | 0.0               | 0.1             | 18.052    | C                             |
| C-AB   | 351                   | 88                      | 901               | 0.390 | 346                 | 0.0               | 1.2             | 6.644     | A                             |
| C-A    | 337                   | 84                      |                   |       | 337                 |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 604                   | 151                     |                   |       | 604                 |                   |                 |           |                               |

### 16:00 - 16:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 82                    | 21                      | 545               | 0.150 | 82                  | 0.2               | 0.2             | 7.773     | A                             |
| B-A    | 20                    | 5                       | 218               | 0.092 | 20                  | 0.1               | 0.1             | 18.196    | C                             |
| C-AB   | 355                   | 89                      | 903               | 0.393 | 354                 | 1.2               | 1.2             | 6.771     | A                             |
| C-A    | 333                   | 83                      |                   |       | 333                 |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 604                   | 151                     |                   |       | 604                 |                   |                 |           |                               |

### 16:15 - 16:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 82                    | 21                      | 545               | 0.150 | 82                  | 0.2               | 0.2             | 7.773     | A                             |
| B-A    | 20                    | 5                       | 218               | 0.092 | 20                  | 0.1               | 0.1             | 18.199    | C                             |
| C-AB   | 355                   | 89                      | 903               | 0.393 | 355                 | 1.2               | 1.2             | 6.777     | A                             |
| C-A    | 333                   | 83                      |                   |       | 333                 |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 604                   | 151                     |                   |       | 604                 |                   |                 |           |                               |

### 16:30 - 16:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 82                    | 21                      | 545               | 0.150 | 82                  | 0.2               | 0.2             | 7.774     | A                             |
| B-A    | 20                    | 5                       | 218               | 0.092 | 20                  | 0.1               | 0.1             | 18.199    | C                             |
| C-AB   | 355                   | 89                      | 903               | 0.393 | 355                 | 1.2               | 1.2             | 6.778     | A                             |
| C-A    | 333                   | 83                      |                   |       | 333                 |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 604                   | 151                     |                   |       | 604                 |                   |                 |           |                               |

### 16:45 - 17:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 82                    | 21                      | 545               | 0.150 | 82                  | 0.2               | 0.2             | 7.774     | A                             |
| B-A    | 20                    | 5                       | 218               | 0.092 | 20                  | 0.1               | 0.1             | 18.200    | C                             |
| C-AB   | 355                   | 89                      | 903               | 0.393 | 355                 | 1.2               | 1.2             | 6.778     | A                             |
| C-A    | 333                   | 83                      |                   |       | 333                 |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 604                   | 151                     |                   |       | 604                 |                   |                 |           |                               |



17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 82                    | 21                      | 545               | 0.150 | 82                  | 0.2               | 0.2             | 7.774     | A                             |
| B-A    | 20                    | 5                       | 218               | 0.092 | 20                  | 0.1               | 0.1             | 18.200    | C                             |
| C-AB   | 355                   | 89                      | 903               | 0.393 | 355                 | 1.2               | 1.2             | 6.775     | A                             |
| C-A    | 333                   | 83                      |                   |       | 333                 |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 604                   | 151                     |                   |       | 604                 |                   |                 |           |                               |

# 2021 with development, PM (17-18)

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 2.60               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name         | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-----------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D11 | 2021 with development | PM (17-18)       | FLAT                 | 16:45              | 18:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - Southam Road (S) |            | FLAT         | ✓            | 742                     | 100.000            |
| B - Site Access      |            | FLAT         | ✓            | 102                     | 100.000            |
| C - Southam Road (N) |            | FLAT         | ✓            | 785                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                 |                      |
|------|----------------------|----------------------|-----------------|----------------------|
|      |                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| From | A - Southam Road (S) | 0                    | 14              | 728                  |
|      | B - Site Access      | 20                   | 0               | 82                   |
|      | C - Southam Road (N) | 649                  | 136             | 0                    |
|      |                      |                      |                 |                      |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                 |                      |
|------|----------------------|----------------------|-----------------|----------------------|
|      |                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| From | A - Southam Road (S) | 0                    | 0               | 3                    |
|      | B - Site Access      | 0                    | 0               | 0                    |
|      | C - Southam Road (N) | 3                    | 0               | 0                    |
|      |                      |                      |                 |                      |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-C    | 0.16    | 8.44          | 0.2             | A       | 82                      | 123                           |
| B-A    | 0.11    | 22.58         | 0.1             | C       | 20                      | 30                            |
| C-AB   | 0.45    | 7.15          | 1.7             | A       | 433                     | 650                           |
| C-A    |         |               |                 |         | 352                     | 528                           |
| A-B    |         |               |                 |         | 14                      | 21                            |
| A-C    |         |               |                 |         | 728                     | 1092                          |

## Main Results for each time segment

### 16:45 - 17:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 82                    | 21                      | 509               | 0.161 | 81                  | 0.0               | 0.2             | 8.396     | A                             |
| B-A    | 20                    | 5                       | 181               | 0.111 | 20                  | 0.0               | 0.1             | 22.289    | C                             |
| C-AB   | 428                   | 107                     | 951               | 0.450 | 422                 | 0.0               | 1.7             | 6.938     | A                             |
| C-A    | 357                   | 89                      |                   |       | 357                 |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 728                   | 182                     |                   |       | 728                 |                   |                 |           |                               |

### 17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 82                    | 21                      | 509               | 0.161 | 82                  | 0.2               | 0.2             | 8.438     | A                             |
| B-A    | 20                    | 5                       | 179               | 0.111 | 20                  | 0.1               | 0.1             | 22.566    | C                             |
| C-AB   | 434                   | 108                     | 954               | 0.455 | 434                 | 1.7               | 1.7             | 7.140     | A                             |
| C-A    | 351                   | 88                      |                   |       | 351                 |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 728                   | 182                     |                   |       | 728                 |                   |                 |           |                               |

### 17:15 - 17:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 82                    | 21                      | 509               | 0.161 | 82                  | 0.2               | 0.2             | 8.439     | A                             |
| B-A    | 20                    | 5                       | 179               | 0.111 | 20                  | 0.1               | 0.1             | 22.575    | C                             |
| C-AB   | 434                   | 108                     | 955               | 0.455 | 434                 | 1.7               | 1.7             | 7.149     | A                             |
| C-A    | 351                   | 88                      |                   |       | 351                 |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 728                   | 182                     |                   |       | 728                 |                   |                 |           |                               |

### 17:30 - 17:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 82                    | 21                      | 509               | 0.161 | 82                  | 0.2               | 0.2             | 8.439     | A                             |
| B-A    | 20                    | 5                       | 179               | 0.111 | 20                  | 0.1               | 0.1             | 22.576    | C                             |
| C-AB   | 434                   | 109                     | 955               | 0.455 | 434                 | 1.7               | 1.7             | 7.150     | A                             |
| C-A    | 351                   | 88                      |                   |       | 351                 |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 728                   | 182                     |                   |       | 728                 |                   |                 |           |                               |

### 17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 82                    | 21                      | 509               | 0.161 | 82                  | 0.2               | 0.2             | 8.439     | A                             |
| B-A    | 20                    | 5                       | 179               | 0.111 | 20                  | 0.1               | 0.1             | 22.577    | C                             |
| C-AB   | 434                   | 109                     | 955               | 0.455 | 434                 | 1.7               | 1.7             | 7.148     | A                             |
| C-A    | 351                   | 88                      |                   |       | 351                 |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 728                   | 182                     |                   |       | 728                 |                   |                 |           |                               |

18:00 - 18:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 82                    | 21                      | 509               | 0.161 | 82                  | 0.2               | 0.2             | 8.439     | A                             |
| B-A    | 20                    | 5                       | 179               | 0.111 | 20                  | 0.1               | 0.1             | 22.577    | C                             |
| C-AB   | 434                   | 109                     | 955               | 0.455 | 434                 | 1.7               | 1.7             | 7.152     | A                             |
| C-A    | 351                   | 88                      |                   |       | 351                 |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 728                   | 182                     |                   |       | 728                 |                   |                 |           |                               |

# 2021 with development, PM (18-19)

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 2.32               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name         | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-----------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D12 | 2021 with development | PM (18-19)       | FLAT                 | 17:45              | 19:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - Southam Road (S) |            | FLAT         | ✓            | 538                     | 100.000            |
| B - Site Access      |            | FLAT         | ✓            | 101                     | 100.000            |
| C - Southam Road (N) |            | FLAT         | ✓            | 597                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                 |                      |
|------|----------------------|----------------------|-----------------|----------------------|
|      |                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| From | A - Southam Road (S) | 0                    | 14              | 524                  |
|      | B - Site Access      | 20                   | 0               | 81                   |
|      | C - Southam Road (N) | 463                  | 134             | 0                    |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                 |                      |
|------|----------------------|----------------------|-----------------|----------------------|
|      |                      | A - Southam Road (S) | B - Site Access | C - Southam Road (N) |
| From | A - Southam Road (S) | 0                    | 0               | 3                    |
|      | B - Site Access      | 0                    | 0               | 0                    |
|      | C - Southam Road (N) | 3                    | 0               | 0                    |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-C    | 0.14    | 7.39          | 0.2             | A       | 81                      | 122                           |
| B-A    | 0.08    | 15.88         | 0.1             | C       | 20                      | 30                            |
| C-AB   | 0.35    | 6.60          | 0.9             | A       | 295                     | 443                           |
| C-A    |         |               |                 |         | 302                     | 452                           |
| A-B    |         |               |                 |         | 14                      | 21                            |
| A-C    |         |               |                 |         | 524                     | 786                           |

## Main Results for each time segment

### 17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 81                    | 20                      | 569               | 0.142 | 80                  | 0.0               | 0.2             | 7.364     | A                             |
| B-A    | 20                    | 5                       | 247               | 0.081 | 20                  | 0.0               | 0.1             | 15.787    | C                             |
| C-AB   | 294                   | 73                      | 852               | 0.345 | 290                 | 0.0               | 0.9             | 6.505     | A                             |
| C-A    | 303                   | 76                      |                   |       | 303                 |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 524                   | 131                     |                   |       | 524                 |                   |                 |           |                               |

### 18:00 - 18:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 81                    | 20                      | 568               | 0.143 | 81                  | 0.2               | 0.2             | 7.388     | A                             |
| B-A    | 20                    | 5                       | 247               | 0.081 | 20                  | 0.1               | 0.1             | 15.880    | C                             |
| C-AB   | 296                   | 74                      | 853               | 0.347 | 296                 | 0.9               | 0.9             | 6.599     | A                             |
| C-A    | 301                   | 75                      |                   |       | 301                 |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 524                   | 131                     |                   |       | 524                 |                   |                 |           |                               |

### 18:15 - 18:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 81                    | 20                      | 568               | 0.143 | 81                  | 0.2               | 0.2             | 7.388     | A                             |
| B-A    | 20                    | 5                       | 247               | 0.081 | 20                  | 0.1               | 0.1             | 15.881    | C                             |
| C-AB   | 296                   | 74                      | 853               | 0.347 | 296                 | 0.9               | 0.9             | 6.601     | A                             |
| C-A    | 301                   | 75                      |                   |       | 301                 |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 524                   | 131                     |                   |       | 524                 |                   |                 |           |                               |

### 18:30 - 18:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 81                    | 20                      | 568               | 0.143 | 81                  | 0.2               | 0.2             | 7.388     | A                             |
| B-A    | 20                    | 5                       | 247               | 0.081 | 20                  | 0.1               | 0.1             | 15.881    | C                             |
| C-AB   | 296                   | 74                      | 853               | 0.347 | 296                 | 0.9               | 0.9             | 6.601     | A                             |
| C-A    | 301                   | 75                      |                   |       | 301                 |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 524                   | 131                     |                   |       | 524                 |                   |                 |           |                               |

### 18:45 - 19:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 81                    | 20                      | 568               | 0.143 | 81                  | 0.2               | 0.2             | 7.388     | A                             |
| B-A    | 20                    | 5                       | 247               | 0.081 | 20                  | 0.1               | 0.1             | 15.881    | C                             |
| C-AB   | 296                   | 74                      | 853               | 0.347 | 296                 | 0.9               | 0.9             | 6.602     | A                             |
| C-A    | 301                   | 75                      |                   |       | 301                 |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 524                   | 131                     |                   |       | 524                 |                   |                 |           |                               |

19:00 - 19:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-C    | 81                    | 20                      | 568               | 0.143 | 81                  | 0.2               | 0.2             | 7.388     | A                             |
| B-A    | 20                    | 5                       | 247               | 0.081 | 20                  | 0.1               | 0.1             | 15.881    | C                             |
| C-AB   | 296                   | 74                      | 853               | 0.347 | 296                 | 0.9               | 0.9             | 6.599     | A                             |
| C-A    | 301                   | 75                      |                   |       | 301                 |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 524                   | 131                     |                   |       | 524                 |                   |                 |           |                               |

|  |
|--|
| <b>Junctions 9</b>   |
| <b>ARCADY 9 - Roundabout Module</b>  |
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Filename: 194663-96 - Southam Road\_Hennef Way - V2.j9  
Path: C:\Users\alice.todd.VECTOS\Desktop  
Report generation date: 27/04/2021 15:56:40

- »2021 without Development, AM (7-8)
- »2021 without Development, AM (8-9)
- »2021 without Development, AM (9-10)
- »2021 without Development, PM (16-17)
- »2021 without Development, PM (17-18)
- »2021 without Development, PM (18-19)
- »2021 with Development, AM (7-8)
- »2021 with Development, AM (8-9)
- »2021 with Development, AM (9-10)
- »2021 with Development, PM (16-17)
- »2021 with Development, PM (17-18)
- »2021 with Development, PM (18-19)
- »2021 with Development (sensitivity), AM (7-8)
- »2021 with Development (sensitivity), AM (8-9)
- »2021 with Development (sensitivity), AM (9-10)
- »2021 with Development (sensitivity), PM (16-17)
- »2021 with Development (sensitivity), PM (17-18)
- »2021 with Development (sensitivity), PM (18-19)

**Summary of junction performance**

|  | AM (7-8)    |           |      |     | AM (8-9)    |           |      |     | AM (9-10)   |           |      |     | PM (16-17)  |           |      |     | PM (17-18)  |           |      |     | PM (18-19)  |           |      |     |
|--|-------------|-----------|------|-----|-------------|-----------|------|-----|-------------|-----------|------|-----|-------------|-----------|------|-----|-------------|-----------|------|-----|-------------|-----------|------|-----|
|  | Queue (PCU) | Delay (s) | RFC  | LOS | Queue (PCU) | Delay (s) | RFC  | LOS | Queue (PCU) | Delay (s) | RFC  | LOS | Queue (PCU) | Delay (s) | RFC  | LOS | Queue (PCU) | Delay (s) | RFC  | LOS | Queue (PCU) | Delay (s) | RFC  | LOS |
| <b>2021 without Development</b>            |             |           |      |     |             |           |      |     |             |           |      |     |             |           |      |     |             |           |      |     |             |           |      |     |
| 1 - Southam Road (N)                       | 0.4         | 2.27      | 0.26 | A   | 0.7         | 3.04      | 0.39 | A   | 0.4         | 2.33      | 0.26 | A   | 0.6         | 2.90      | 0.38 | A   | 0.9         | 3.59      | 0.47 | A   | 0.4         | 2.40      | 0.30 | A   |
| 2 - Hennef Way                             | 1.7         | 3.84      | 0.61 | A   | 6.5         | 11.00     | 0.86 | B   | 1.7         | 3.92      | 0.61 | A   | 2.0         | 4.55      | 0.65 | A   | 3.7         | 7.29      | 0.78 | A   | 1.2         | 3.22      | 0.53 | A   |
| 3 - Southam Road (S)                       | 1.0         | 5.89      | 0.48 | A   | 13.3        | 62.21     | 0.94 | F   | 1.0         | 6.15      | 0.48 | A   | 1.1         | 6.14      | 0.51 | A   | 2.3         | 11.00     | 0.69 | B   | 0.6         | 4.23      | 0.38 | A   |
| 4 - Ruscote Avenue                         | 0.8         | 3.98      | 0.42 | A   | 2.9         | 10.80     | 0.73 | B   | 0.8         | 3.99      | 0.42 | A   | 1.1         | 4.54      | 0.52 | A   | 2.0         | 7.14      | 0.67 | A   | 0.7         | 3.28      | 0.40 | A   |
| <b>2021 with Development</b>               |             |           |      |     |             |           |      |     |             |           |      |     |             |           |      |     |             |           |      |     |             |           |      |     |
| 1 - Southam Road (N)                       | 0.4         | 2.28      | 0.27 | A   | 0.7         | 3.09      | 0.41 | A   | 0.4         | 2.38      | 0.27 | A   | 0.9         | 3.40      | 0.47 | A   | 1.4         | 4.53      | 0.58 | A   | 0.6         | 2.71      | 0.37 | A   |
| 2 - Hennef Way                             | 2.4         | 4.87      | 0.70 | A   | 34.3        | 52.21     | 0.98 | F   | 2.5         | 4.96      | 0.70 | A   | 2.6         | 5.56      | 0.71 | A   | 5.8         | 10.67     | 0.85 | B   | 1.5         | 3.69      | 0.59 | A   |
| 3 - Southam Road (S)                       | 1.8         | 9.21      | 0.64 | A   | 237.5       | 1154.14   | 1.24 | F   | 1.3         | 7.79      | 0.54 | A   | 1.3         | 6.94      | 0.56 | A   | 3.4         | 15.15     | 0.77 | C   | 0.8         | 4.73      | 0.44 | A   |
| 4 - Ruscote Avenue                         | 1.0         | 5.06      | 0.48 | A   | 5.0         | 18.86     | 0.83 | C   | 0.9         | 4.73      | 0.47 | A   | 1.2         | 4.87      | 0.54 | A   | 2.4         | 8.30      | 0.70 | A   | 0.7         | 3.50      | 0.42 | A   |
| <b>2021 with Development (sensitivity)</b> |             |           |      |     |             |           |      |     |             |           |      |     |             |           |      |     |             |           |      |     |             |           |      |     |
| 1 - Southam Road (N)                       | 0.3         | 2.22      | 0.25 | A   | 0.6         | 2.98      | 0.38 | A   | 0.4         | 2.30      | 0.25 | A   | 0.7         | 3.04      | 0.40 | A   | 1.0         | 3.83      | 0.50 | A   | 0.5         | 2.51      | 0.32 | A   |
| 2 - Hennef Way                             | 1.7         | 3.80      | 0.61 | A   | 6.3         | 10.58     | 0.86 | B   | 1.7         | 3.87      | 0.61 | A   | 2.4         | 5.22      | 0.69 | A   | 4.9         | 9.30      | 0.83 | A   | 1.4         | 3.56      | 0.57 | A   |
| 3 - Southam Road (S)                       | 1.3         | 6.80      | 0.57 | A   | 20.6        | 91.55     | 0.97 | F   | 1.0         | 6.06      | 0.47 | A   | 1.3         | 6.59      | 0.55 | A   | 3.0         | 13.31     | 0.74 | B   | 0.8         | 4.59      | 0.43 | A   |
| 4 - Ruscote Avenue                         | 0.8         | 4.19      | 0.44 | A   | 3.0         | 11.15     | 0.74 | B   | 0.8         | 3.96      | 0.42 | A   | 1.1         | 4.67      | 0.53 | A   | 2.2         | 7.66      | 0.68 | A   | 0.7         | 3.41      | 0.41 | A   |

*There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.*

*Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.*



## File summary

### File Description

|             |                   |
|-------------|-------------------|
| Title       |                   |
| Location    |                   |
| Site number |                   |
| Date        | 19/01/2021        |
| Version     |                   |
| Status      | (new file)        |
| Identifier  |                   |
| Client      |                   |
| Jobnumber   |                   |
| Enumerator  | VECTOS\ellen.hill |
| Description |                   |

## Units

| Distance units | Speed units | Traffic units input | Traffic units results | Flow units | Average delay units | Total delay units | Rate of delay units |
|----------------|-------------|---------------------|-----------------------|------------|---------------------|-------------------|---------------------|
| m              | kph         | PCU                 | PCU                   | perHour    | s                   | -Min              | perMin              |

## Analysis Options

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|--------------------|-----------------------------|-----------------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
| 5.75               |                             |                                   |                             | 0.85          | 36.00                       | 20.00                 |

## Demand Set Summary

| ID  | Scenario name                       | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-------------------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D1  | 2021 without Development            | AM (7-8)         | FLAT                 | 06:45              | 08:15               | 90                       | 15                        | ✓                 |
| D2  | 2021 without Development            | AM (8-9)         | FLAT                 | 07:45              | 09:15               | 90                       | 15                        | ✓                 |
| D3  | 2021 without Development            | AM (9-10)        | FLAT                 | 08:45              | 10:15               | 90                       | 15                        | ✓                 |
| D4  | 2021 without Development            | PM (16-17)       | FLAT                 | 15:45              | 17:15               | 90                       | 15                        | ✓                 |
| D5  | 2021 without Development            | PM (17-18)       | FLAT                 | 16:45              | 18:15               | 90                       | 15                        | ✓                 |
| D6  | 2021 without Development            | PM (18-19)       | FLAT                 | 17:45              | 19:15               | 90                       | 15                        | ✓                 |
| D7  | 2021 with Development               | AM (7-8)         | FLAT                 | 06:45              | 08:15               | 90                       | 15                        | ✓                 |
| D8  | 2021 with Development               | AM (8-9)         | FLAT                 | 07:45              | 09:15               | 90                       | 15                        | ✓                 |
| D9  | 2021 with Development               | AM (9-10)        | FLAT                 | 08:45              | 10:15               | 90                       | 15                        | ✓                 |
| D10 | 2021 with Development               | PM (16-17)       | FLAT                 | 15:45              | 17:15               | 90                       | 15                        | ✓                 |
| D11 | 2021 with Development               | PM (17-18)       | FLAT                 | 16:45              | 18:15               | 90                       | 15                        | ✓                 |
| D12 | 2021 with Development               | PM (18-19)       | FLAT                 | 17:45              | 19:15               | 90                       | 15                        | ✓                 |
| D13 | 2021 with Development (sensitivity) | AM (7-8)         | FLAT                 | 06:45              | 08:15               | 90                       | 15                        | ✓                 |
| D14 | 2021 with Development (sensitivity) | AM (8-9)         | FLAT                 | 07:45              | 09:15               | 90                       | 15                        | ✓                 |
| D15 | 2021 with Development (sensitivity) | AM (9-10)        | FLAT                 | 08:45              | 10:15               | 90                       | 15                        | ✓                 |
| D16 | 2021 with Development (sensitivity) | PM (16-17)       | FLAT                 | 15:45              | 17:15               | 90                       | 15                        | ✓                 |
| D17 | 2021 with Development (sensitivity) | PM (17-18)       | FLAT                 | 16:45              | 18:15               | 90                       | 15                        | ✓                 |
| D18 | 2021 with Development (sensitivity) | PM (18-19)       | FLAT                 | 17:45              | 19:15               | 90                       | 15                        | ✓                 |

## Analysis Set Details

| ID | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|----|-------------------|---------------------------------|-------------------------------------|
| A1 | ✓                 | 100.000                         | 100.000                             |

# 2021 without Development, AM (7-8)

## Data Errors and Warnings

| Severity | Area     | Item                                       | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 1 - Southam Road (N) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Ruscote Avenue - Roundabout Geometry   | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 3.96               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Arms

### Arms

| Arm | Name             | Description |
|-----|------------------|-------------|
| 1   | Southam Road (N) |             |
| 2   | Hennef Way       |             |
| 3   | Southam Road (S) |             |
| 4   | Ruscote Avenue   |             |

### Roundabout Geometry

| Arm                  | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit only |
|----------------------|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| 1 - Southam Road (N) | 3.50                             | 10.95               | 48.5                            | 33.0                 | 62.9                              | 13.1                               |           |
| 2 - Hennef Way       | 7.38                             | 10.12               | 6.6                             | 55.2                 | 62.9                              | 21.6                               |           |
| 3 - Southam Road (S) | 3.00                             | 10.33               | 23.2                            | 65.4                 | 62.9                              | 12.5                               |           |
| 4 - Ruscote Avenue   | 3.50                             | 9.94                | 39.6                            | 77.0                 | 62.9                              | 12.8                               |           |

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

| Arm                  | Final slope | Final intercept (PCU/hr) |
|----------------------|-------------|--------------------------|
| 1 - Southam Road (N) | 0.742       | 2775                     |
| 2 - Hennef Way       | 0.733       | 2749                     |
| 3 - Southam Road (S) | 0.650       | 2204                     |
| 4 - Ruscote Avenue   | 0.712       | 2569                     |

*The slope and intercept shown above include any corrections and adjustments.*

## Traffic Demand

### Demand Set Details

| ID | Scenario name            | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|--------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D1 | 2021 without Development | AM (7-8)         | FLAT                 | 06:45              | 08:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Southam Road (N) |            | FLAT         | ✓            | 574                     | 100.000            |
| 2 - Hennef Way       |            | FLAT         | ✓            | 1578                    | 100.000            |
| 3 - Southam Road (S) |            | FLAT         | ✓            | 589                     | 100.000            |
| 4 - Ruscote Avenue   |            | FLAT         | ✓            | 704                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 400            | 170                  | 4                  |
|      | 2 - Hennef Way       | 918                  | 0              | 78                   | 582                |
|      | 3 - Southam Road (S) | 319                  | 42             | 0                    | 228                |
|      | 4 - Ruscote Avenue   | 0                    | 637            | 67                   | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 5              | 1                    | 1                  |
|      | 2 - Hennef Way       | 5                    | 0              | 13                   | 7                  |
|      | 3 - Southam Road (S) | 6                    | 5              | 0                    | 2                  |
|      | 4 - Ruscote Avenue   | 0                    | 6              | 1                    | 0                  |

## Results

### Results Summary for whole modelled period

| Arm                  | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|----------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Southam Road (N) | 0.26    | 2.27          | 0.4             | A       | 574                     | 861                           |
| 2 - Hennef Way       | 0.61    | 3.84          | 1.7             | A       | 1578                    | 2367                          |
| 3 - Southam Road (S) | 0.48    | 5.89          | 1.0             | A       | 589                     | 884                           |
| 4 - Ruscote Avenue   | 0.42    | 3.98          | 0.8             | A       | 704                     | 1056                          |

### Main Results for each time segment

#### 06:45 - 07:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 574                   | 144                     | 743                       | 2224              | 0.258 | 573                 | 1231                            | 0.0               | 0.4             | 2.259     | A                             |
| 2 - Hennef Way       | 1578                  | 395                     | 240                       | 2573              | 0.613 | 1571                | 1075                            | 0.0               | 1.7             | 3.789     | A                             |
| 3 - Southam Road (S) | 589                   | 147                     | 1498                      | 1231              | 0.479 | 585                 | 314                             | 0.0               | 0.9             | 5.788     | A                             |
| 4 - Ruscote Avenue   | 704                   | 176                     | 1273                      | 1663              | 0.423 | 701                 | 810                             | 0.0               | 0.8             | 3.935     | A                             |

#### 07:00 - 07:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 574                   | 144                     | 746                       | 2221              | 0.258 | 574                 | 1237                            | 0.4               | 0.4             | 2.266     | A                             |
| 2 - Hennef Way       | 1578                  | 395                     | 241                       | 2572              | 0.613 | 1578                | 1079                            | 1.7               | 1.7             | 3.840     | A                             |
| 3 - Southam Road (S) | 589                   | 147                     | 1504                      | 1226              | 0.480 | 589                 | 315                             | 0.9               | 1.0             | 5.891     | A                             |
| 4 - Ruscote Avenue   | 704                   | 176                     | 1279                      | 1659              | 0.424 | 704                 | 814                             | 0.8               | 0.8             | 3.978     | A                             |

#### 07:15 - 07:30

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 574                   | 144                     | 746                       | 2221              | 0.258 | 574                 | 1237                            | 0.4               | 0.4             | 2.266     | A                             |
| 2 - Hennef Way       | 1578                  | 395                     | 241                       | 2572              | 0.613 | 1578                | 1079                            | 1.7               | 1.7             | 3.840     | A                             |
| 3 - Southam Road (S) | 589                   | 147                     | 1504                      | 1226              | 0.480 | 589                 | 315                             | 1.0               | 1.0             | 5.892     | A                             |
| 4 - Ruscote Avenue   | 704                   | 176                     | 1279                      | 1659              | 0.424 | 704                 | 814                             | 0.8               | 0.8             | 3.978     | A                             |

#### 07:30 - 07:45

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 574                   | 144                     | 746                       | 2221              | 0.258 | 574                 | 1237                            | 0.4               | 0.4             | 2.266     | A                             |
| 2 - Hennef Way       | 1578                  | 395                     | 241                       | 2572              | 0.613 | 1578                | 1079                            | 1.7               | 1.7             | 3.840     | A                             |
| 3 - Southam Road (S) | 589                   | 147                     | 1504                      | 1226              | 0.480 | 589                 | 315                             | 1.0               | 1.0             | 5.892     | A                             |
| 4 - Ruscote Avenue   | 704                   | 176                     | 1279                      | 1659              | 0.424 | 704                 | 814                             | 0.8               | 0.8             | 3.978     | A                             |

07:45 - 08:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 574                   | 144                     | 746                       | 2221              | 0.258 | 574                 | 1237                            | 0.4               | 0.4             | 2.266     | A                             |
| 2 - Hennef Way       | 1578                  | 395                     | 241                       | 2572              | 0.613 | 1578                | 1079                            | 1.7               | 1.7             | 3.840     | A                             |
| 3 - Southam Road (S) | 589                   | 147                     | 1504                      | 1226              | 0.480 | 589                 | 315                             | 1.0               | 1.0             | 5.892     | A                             |
| 4 - Ruscote Avenue   | 704                   | 176                     | 1279                      | 1659              | 0.424 | 704                 | 814                             | 0.8               | 0.8             | 3.978     | A                             |

08:00 - 08:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 574                   | 144                     | 746                       | 2221              | 0.258 | 574                 | 1237                            | 0.4               | 0.4             | 2.266     | A                             |
| 2 - Hennef Way       | 1578                  | 395                     | 241                       | 2572              | 0.613 | 1578                | 1079                            | 1.7               | 1.7             | 3.840     | A                             |
| 3 - Southam Road (S) | 589                   | 147                     | 1504                      | 1226              | 0.480 | 589                 | 315                             | 1.0               | 1.0             | 5.892     | A                             |
| 4 - Ruscote Avenue   | 704                   | 176                     | 1279                      | 1659              | 0.424 | 704                 | 814                             | 0.8               | 0.8             | 3.978     | A                             |

# 2021 without Development, AM (8-9)

## Data Errors and Warnings

| Severity | Area     | Item                                       | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 1 - Southam Road (N) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Ruscote Avenue - Roundabout Geometry   | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 18.39              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name            | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|--------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D2 | 2021 without Development | AM (8-9)         | FLAT                 | 07:45              | 09:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Southam Road (N) |            | FLAT         | ✓            | 789                     | 100.000            |
| 2 - Hennef Way       |            | FLAT         | ✓            | 2167                    | 100.000            |
| 3 - Southam Road (S) |            | FLAT         | ✓            | 809                     | 100.000            |
| 4 - Ruscote Avenue   |            | FLAT         | ✓            | 967                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 550            | 234                  | 5                  |
|      | 2 - Hennef Way       | 1261                 | 0              | 107                  | 799                |
|      | 3 - Southam Road (S) | 438                  | 58             | 0                    | 313                |
|      | 4 - Ruscote Avenue   | 0                    | 875            | 92                   | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 4              | 2                    | 5                  |
|      | 2 - Hennef Way       | 3                    | 0              | 8                    | 5                  |
|      | 3 - Southam Road (S) | 4                    | 8              | 0                    | 3                  |
|      | 4 - Ruscote Avenue   | 0                    | 6              | 3                    | 0                  |

# Results

## Results Summary for whole modelled period

| Arm                  | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|----------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Southam Road (N) | 0.39    | 3.04          | 0.7             | A       | 789                     | 1184                          |
| 2 - Hennef Way       | 0.86    | 11.00         | 6.5             | B       | 2167                    | 3251                          |
| 3 - Southam Road (S) | 0.94    | 62.21         | 13.3            | F       | 809                     | 1214                          |
| 4 - Ruscote Avenue   | 0.73    | 10.80         | 2.9             | B       | 967                     | 1451                          |

## Main Results for each time segment

### 07:45 - 08:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 789                   | 197                     | 1012                      | 2024              | 0.390 | 786                 | 1667                            | 0.0               | 0.7             | 3.001     | A                             |
| 2 - Hennef Way       | 2167                  | 542                     | 329                       | 2508              | 0.864 | 2143                | 1469                            | 0.0               | 6.1             | 9.685     | A                             |
| 3 - Southam Road (S) | 809                   | 202                     | 2042                      | 877               | 0.923 | 777                 | 430                             | 0.0               | 8.1             | 31.108    | D                             |
| 4 - Ruscote Avenue   | 967                   | 242                     | 1723                      | 1343              | 0.720 | 957                 | 1096                            | 0.0               | 2.6             | 9.615     | A                             |

### 08:00 - 08:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 789                   | 197                     | 1024                      | 2015              | 0.391 | 789                 | 1693                            | 0.7               | 0.7             | 3.034     | A                             |
| 2 - Hennef Way       | 2167                  | 542                     | 331                       | 2507              | 0.865 | 2166                | 1482                            | 6.1               | 6.4             | 10.905    | B                             |
| 3 - Southam Road (S) | 809                   | 202                     | 2064                      | 862               | 0.938 | 799                 | 433                             | 8.1               | 10.5            | 49.500    | E                             |
| 4 - Ruscote Avenue   | 967                   | 242                     | 1750                      | 1323              | 0.731 | 966                 | 1113                            | 2.6               | 2.8             | 10.633    | B                             |

### 08:15 - 08:30

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 789                   | 197                     | 1024                      | 2015              | 0.392 | 789                 | 1696                            | 0.7               | 0.7             | 3.035     | A                             |
| 2 - Hennef Way       | 2167                  | 542                     | 331                       | 2507              | 0.865 | 2167                | 1482                            | 6.4               | 6.4             | 10.962    | B                             |
| 3 - Southam Road (S) | 809                   | 202                     | 2065                      | 862               | 0.938 | 804                 | 433                             | 10.5              | 11.7            | 55.521    | F                             |
| 4 - Ruscote Avenue   | 967                   | 242                     | 1754                      | 1321              | 0.732 | 967                 | 1115                            | 2.8               | 2.8             | 10.738    | B                             |

### 08:30 - 08:45

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 789                   | 197                     | 1025                      | 2015              | 0.392 | 789                 | 1697                            | 0.7               | 0.7             | 3.036     | A                             |
| 2 - Hennef Way       | 2167                  | 542                     | 331                       | 2507              | 0.865 | 2167                | 1483                            | 6.4               | 6.5             | 10.981    | B                             |
| 3 - Southam Road (S) | 809                   | 202                     | 2065                      | 862               | 0.939 | 806                 | 433                             | 11.7              | 12.4            | 58.723    | F                             |
| 4 - Ruscote Avenue   | 967                   | 242                     | 1755                      | 1320              | 0.733 | 967                 | 1116                            | 2.8               | 2.9             | 10.773    | B                             |

### 08:45 - 09:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 789                   | 197                     | 1025                      | 2015              | 0.392 | 789                 | 1698                            | 0.7               | 0.7             | 3.036     | A                             |
| 2 - Hennef Way       | 2167                  | 542                     | 331                       | 2507              | 0.865 | 2167                | 1483                            | 6.5               | 6.5             | 10.992    | B                             |
| 3 - Southam Road (S) | 809                   | 202                     | 2065                      | 862               | 0.939 | 807                 | 433                             | 12.4              | 12.9            | 60.772    | F                             |
| 4 - Ruscote Avenue   | 967                   | 242                     | 1756                      | 1319              | 0.733 | 967                 | 1116                            | 2.9               | 2.9             | 10.790    | B                             |

### 09:00 - 09:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 789                   | 197                     | 1025                      | 2015              | 0.392 | 789                 | 1698                            | 0.7               | 0.7             | 3.036     | A                             |
| 2 - Hennef Way       | 2167                  | 542                     | 331                       | 2507              | 0.865 | 2167                | 1483                            | 6.5               | 6.5             | 10.999    | B                             |
| 3 - Southam Road (S) | 809                   | 202                     | 2065                      | 862               | 0.939 | 807                 | 433                             | 12.9              | 13.3            | 62.209    | F                             |
| 4 - Ruscote Avenue   | 967                   | 242                     | 1756                      | 1319              | 0.733 | 967                 | 1116                            | 2.9               | 2.9             | 10.800    | B                             |

# 2021 without Development, AM (9-10)

## Data Errors and Warnings

| Severity | Area     | Item                                       | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 1 - Southam Road (N) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Ruscote Avenue - Roundabout Geometry   | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 4.05               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name            | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|--------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D3 | 2021 without Development | AM (9-10)        | FLAT                 | 08:45              | 10:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Southam Road (N) |            | FLAT         | ✓            | 574                     | 100.000            |
| 2 - Hennef Way       |            | FLAT         | ✓            | 1578                    | 100.000            |
| 3 - Southam Road (S) |            | FLAT         | ✓            | 589                     | 100.000            |
| 4 - Ruscote Avenue   |            | FLAT         | ✓            | 704                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 400            | 170                  | 4                  |
|      | 2 - Hennef Way       | 918                  | 0              | 78                   | 582                |
|      | 3 - Southam Road (S) | 319                  | 42             | 0                    | 228                |
|      | 4 - Ruscote Avenue   | 0                    | 637            | 67                   | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 8              | 3                    | 5                  |
|      | 2 - Hennef Way       | 9                    | 0              | 10                   | 7                  |
|      | 3 - Southam Road (S) | 12                   | 14             | 0                    | 4                  |
|      | 4 - Ruscote Avenue   | 0                    | 6              | 4                    | 0                  |

# Results

## Results Summary for whole modelled period

| Arm                  | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|----------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Southam Road (N) | 0.26    | 2.33          | 0.4             | A       | 574                     | 861                           |
| 2 - Hennef Way       | 0.61    | 3.92          | 1.7             | A       | 1578                    | 2367                          |
| 3 - Southam Road (S) | 0.48    | 6.15          | 1.0             | A       | 589                     | 884                           |
| 4 - Ruscote Avenue   | 0.42    | 3.99          | 0.8             | A       | 704                     | 1056                          |

## Main Results for each time segment

### 08:45 - 09:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 574                   | 144                     | 743                       | 2224              | 0.258 | 573                 | 1231                            | 0.0               | 0.4             | 2.318     | A                             |
| 2 - Hennef Way       | 1578                  | 395                     | 240                       | 2573              | 0.613 | 1571                | 1075                            | 0.0               | 1.7             | 3.866     | A                             |
| 3 - Southam Road (S) | 589                   | 147                     | 1498                      | 1231              | 0.479 | 585                 | 314                             | 0.0               | 1.0             | 6.037     | A                             |
| 4 - Ruscote Avenue   | 704                   | 176                     | 1273                      | 1663              | 0.423 | 701                 | 810                             | 0.0               | 0.8             | 3.946     | A                             |

### 09:00 - 09:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 574                   | 144                     | 746                       | 2221              | 0.258 | 574                 | 1237                            | 0.4               | 0.4             | 2.325     | A                             |
| 2 - Hennef Way       | 1578                  | 395                     | 241                       | 2572              | 0.613 | 1578                | 1079                            | 1.7               | 1.7             | 3.920     | A                             |
| 3 - Southam Road (S) | 589                   | 147                     | 1504                      | 1226              | 0.480 | 589                 | 315                             | 1.0               | 1.0             | 6.148     | A                             |
| 4 - Ruscote Avenue   | 704                   | 176                     | 1279                      | 1659              | 0.424 | 704                 | 814                             | 0.8               | 0.8             | 3.989     | A                             |

### 09:15 - 09:30

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 574                   | 144                     | 746                       | 2221              | 0.258 | 574                 | 1237                            | 0.4               | 0.4             | 2.325     | A                             |
| 2 - Hennef Way       | 1578                  | 395                     | 241                       | 2572              | 0.613 | 1578                | 1079                            | 1.7               | 1.7             | 3.920     | A                             |
| 3 - Southam Road (S) | 589                   | 147                     | 1504                      | 1226              | 0.480 | 589                 | 315                             | 1.0               | 1.0             | 6.148     | A                             |
| 4 - Ruscote Avenue   | 704                   | 176                     | 1279                      | 1659              | 0.424 | 704                 | 814                             | 0.8               | 0.8             | 3.989     | A                             |

### 09:30 - 09:45

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 574                   | 144                     | 746                       | 2221              | 0.258 | 574                 | 1237                            | 0.4               | 0.4             | 2.325     | A                             |
| 2 - Hennef Way       | 1578                  | 395                     | 241                       | 2572              | 0.613 | 1578                | 1079                            | 1.7               | 1.7             | 3.920     | A                             |
| 3 - Southam Road (S) | 589                   | 147                     | 1504                      | 1226              | 0.480 | 589                 | 315                             | 1.0               | 1.0             | 6.148     | A                             |
| 4 - Ruscote Avenue   | 704                   | 176                     | 1279                      | 1659              | 0.424 | 704                 | 814                             | 0.8               | 0.8             | 3.989     | A                             |

### 09:45 - 10:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 574                   | 144                     | 746                       | 2221              | 0.258 | 574                 | 1237                            | 0.4               | 0.4             | 2.325     | A                             |
| 2 - Hennef Way       | 1578                  | 395                     | 241                       | 2572              | 0.613 | 1578                | 1079                            | 1.7               | 1.7             | 3.920     | A                             |
| 3 - Southam Road (S) | 589                   | 147                     | 1504                      | 1226              | 0.480 | 589                 | 315                             | 1.0               | 1.0             | 6.148     | A                             |
| 4 - Ruscote Avenue   | 704                   | 176                     | 1279                      | 1659              | 0.424 | 704                 | 814                             | 0.8               | 0.8             | 3.989     | A                             |

### 10:00 - 10:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 574                   | 144                     | 746                       | 2221              | 0.258 | 574                 | 1237                            | 0.4               | 0.4             | 2.325     | A                             |
| 2 - Hennef Way       | 1578                  | 395                     | 241                       | 2572              | 0.613 | 1578                | 1079                            | 1.7               | 1.7             | 3.920     | A                             |
| 3 - Southam Road (S) | 589                   | 147                     | 1504                      | 1226              | 0.480 | 589                 | 315                             | 1.0               | 1.0             | 6.148     | A                             |
| 4 - Ruscote Avenue   | 704                   | 176                     | 1279                      | 1659              | 0.424 | 704                 | 814                             | 0.8               | 0.8             | 3.989     | A                             |



# 2021 without Development, PM (16-17)

## Data Errors and Warnings

| Severity | Area     | Item                                       | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 1 - Southam Road (N) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Ruscote Avenue - Roundabout Geometry   | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 4.47               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name            | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|--------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D4 | 2021 without Development | PM (16-17)       | FLAT                 | 15:45              | 17:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Southam Road (N) |            | FLAT         | ✓            | 806                     | 100.000            |
| 2 - Hennef Way       |            | FLAT         | ✓            | 1567                    | 100.000            |
| 3 - Southam Road (S) |            | FLAT         | ✓            | 638                     | 100.000            |
| 4 - Ruscote Avenue   |            | FLAT         | ✓            | 879                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 496            | 289                  | 21                 |
|      | 2 - Hennef Way       | 753                  | 0              | 118                  | 696                |
|      | 3 - Southam Road (S) | 411                  | 67             | 0                    | 160                |
|      | 4 - Ruscote Avenue   | 42                   | 682            | 155                  | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 4              | 6                    | 1                  |
|      | 2 - Hennef Way       | 7                    | 0              | 5                    | 6                  |
|      | 3 - Southam Road (S) | 4                    | 10             | 0                    | 2                  |
|      | 4 - Ruscote Avenue   | 0                    | 3              | 2                    | 0                  |

# Results

## Results Summary for whole modelled period

| Arm                  | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|----------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Southam Road (N) | 0.38    | 2.90          | 0.6             | A       | 806                     | 1209                          |
| 2 - Hennef Way       | 0.65    | 4.55          | 2.0             | A       | 1567                    | 2351                          |
| 3 - Southam Road (S) | 0.51    | 6.14          | 1.1             | A       | 638                     | 957                           |
| 4 - Ruscote Avenue   | 0.52    | 4.54          | 1.1             | A       | 879                     | 1319                          |

## Main Results for each time segment

### 15:45 - 16:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 806                   | 202                     | 899                       | 2108              | 0.382 | 803                 | 1199                            | 0.0               | 0.6             | 2.881     | A                             |
| 2 - Hennef Way       | 1567                  | 392                     | 463                       | 2410              | 0.650 | 1559                | 1240                            | 0.0               | 2.0             | 4.465     | A                             |
| 3 - Southam Road (S) | 638                   | 160                     | 1463                      | 1253              | 0.509 | 634                 | 560                             | 0.0               | 1.1             | 6.008     | A                             |
| 4 - Ruscote Avenue   | 879                   | 220                     | 1224                      | 1698              | 0.518 | 875                 | 872                             | 0.0               | 1.1             | 4.468     | A                             |

### 16:00 - 16:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 806                   | 202                     | 904                       | 2104              | 0.383 | 806                 | 1206                            | 0.6               | 0.6             | 2.900     | A                             |
| 2 - Hennef Way       | 1567                  | 392                     | 465                       | 2408              | 0.651 | 1567                | 1245                            | 2.0               | 2.0             | 4.552     | A                             |
| 3 - Southam Road (S) | 638                   | 160                     | 1470                      | 1249              | 0.511 | 638                 | 562                             | 1.1               | 1.1             | 6.135     | A                             |
| 4 - Ruscote Avenue   | 879                   | 220                     | 1231                      | 1693              | 0.519 | 879                 | 877                             | 1.1               | 1.1             | 4.541     | A                             |

### 16:15 - 16:30

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 806                   | 202                     | 904                       | 2104              | 0.383 | 806                 | 1206                            | 0.6               | 0.6             | 2.900     | A                             |
| 2 - Hennef Way       | 1567                  | 392                     | 465                       | 2408              | 0.651 | 1567                | 1245                            | 2.0               | 2.0             | 4.552     | A                             |
| 3 - Southam Road (S) | 638                   | 160                     | 1470                      | 1249              | 0.511 | 638                 | 562                             | 1.1               | 1.1             | 6.136     | A                             |
| 4 - Ruscote Avenue   | 879                   | 220                     | 1231                      | 1693              | 0.519 | 879                 | 877                             | 1.1               | 1.1             | 4.541     | A                             |

### 16:30 - 16:45

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 806                   | 202                     | 904                       | 2104              | 0.383 | 806                 | 1206                            | 0.6               | 0.6             | 2.900     | A                             |
| 2 - Hennef Way       | 1567                  | 392                     | 465                       | 2408              | 0.651 | 1567                | 1245                            | 2.0               | 2.0             | 4.552     | A                             |
| 3 - Southam Road (S) | 638                   | 160                     | 1470                      | 1249              | 0.511 | 638                 | 562                             | 1.1               | 1.1             | 6.136     | A                             |
| 4 - Ruscote Avenue   | 879                   | 220                     | 1231                      | 1693              | 0.519 | 879                 | 877                             | 1.1               | 1.1             | 4.541     | A                             |

### 16:45 - 17:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 806                   | 202                     | 904                       | 2104              | 0.383 | 806                 | 1206                            | 0.6               | 0.6             | 2.900     | A                             |
| 2 - Hennef Way       | 1567                  | 392                     | 465                       | 2408              | 0.651 | 1567                | 1245                            | 2.0               | 2.0             | 4.552     | A                             |
| 3 - Southam Road (S) | 638                   | 160                     | 1470                      | 1249              | 0.511 | 638                 | 562                             | 1.1               | 1.1             | 6.136     | A                             |
| 4 - Ruscote Avenue   | 879                   | 220                     | 1231                      | 1693              | 0.519 | 879                 | 877                             | 1.1               | 1.1             | 4.541     | A                             |

### 17:00 - 17:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 806                   | 202                     | 904                       | 2104              | 0.383 | 806                 | 1206                            | 0.6               | 0.6             | 2.900     | A                             |
| 2 - Hennef Way       | 1567                  | 392                     | 465                       | 2408              | 0.651 | 1567                | 1245                            | 2.0               | 2.0             | 4.552     | A                             |
| 3 - Southam Road (S) | 638                   | 160                     | 1470                      | 1249              | 0.511 | 638                 | 562                             | 1.1               | 1.1             | 6.136     | A                             |
| 4 - Ruscote Avenue   | 879                   | 220                     | 1231                      | 1693              | 0.519 | 879                 | 877                             | 1.1               | 1.1             | 4.541     | A                             |

# 2021 without Development, PM (17-18)

## Data Errors and Warnings

| Severity | Area     | Item                                       | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 1 - Southam Road (N) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Ruscote Avenue - Roundabout Geometry   | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 7.10               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name            | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|--------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D5 | 2021 without Development | PM (17-18)       | FLAT                 | 16:45              | 18:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Southam Road (N) |            | FLAT         | ✓            | 944                     | 100.000            |
| 2 - Hennef Way       |            | FLAT         | ✓            | 1835                    | 100.000            |
| 3 - Southam Road (S) |            | FLAT         | ✓            | 748                     | 100.000            |
| 4 - Ruscote Avenue   |            | FLAT         | ✓            | 1029                    | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 581            | 338                  | 25                 |
|      | 2 - Hennef Way       | 882                  | 0              | 138                  | 815                |
|      | 3 - Southam Road (S) | 482                  | 79             | 0                    | 187                |
|      | 4 - Ruscote Avenue   | 49                   | 799            | 181                  | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 4              | 5                    | 2                  |
|      | 2 - Hennef Way       | 5                    | 0              | 3                    | 4                  |
|      | 3 - Southam Road (S) | 3                    | 10             | 0                    | 0                  |
|      | 4 - Ruscote Avenue   | 0                    | 2              | 1                    | 0                  |

# Results

## Results Summary for whole modelled period

| Arm                  | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|----------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Southam Road (N) | 0.47    | 3.59          | 0.9             | A       | 944                     | 1416                          |
| 2 - Hennef Way       | 0.78    | 7.29          | 3.7             | A       | 1835                    | 2753                          |
| 3 - Southam Road (S) | 0.69    | 11.00         | 2.3             | B       | 748                     | 1122                          |
| 4 - Ruscote Avenue   | 0.67    | 7.14          | 2.0             | A       | 1029                    | 1544                          |

## Main Results for each time segment

### 16:45 - 17:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 944                   | 236                     | 1051                      | 1995              | 0.473 | 940                 | 1400                            | 0.0               | 0.9             | 3.547     | A                             |
| 2 - Hennef Way       | 1835                  | 459                     | 541                       | 2352              | 0.780 | 1821                | 1450                            | 0.0               | 3.6             | 6.893     | A                             |
| 3 - Southam Road (S) | 748                   | 187                     | 1709                      | 1093              | 0.684 | 739                 | 653                             | 0.0               | 2.1             | 10.233    | B                             |
| 4 - Ruscote Avenue   | 1029                  | 257                     | 1430                      | 1551              | 0.663 | 1021                | 1018                            | 0.0               | 2.0             | 6.810     | A                             |

### 17:00 - 17:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 944                   | 236                     | 1059                      | 1989              | 0.475 | 944                 | 1413                            | 0.9               | 0.9             | 3.590     | A                             |
| 2 - Hennef Way       | 1835                  | 459                     | 544                       | 2350              | 0.781 | 1835                | 1459                            | 3.6               | 3.6             | 7.276     | A                             |
| 3 - Southam Road (S) | 748                   | 187                     | 1722                      | 1085              | 0.689 | 748                 | 657                             | 2.1               | 2.2             | 10.963    | B                             |
| 4 - Ruscote Avenue   | 1029                  | 257                     | 1443                      | 1542              | 0.667 | 1029                | 1027                            | 2.0               | 2.0             | 7.127     | A                             |

### 17:15 - 17:30

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 944                   | 236                     | 1059                      | 1989              | 0.475 | 944                 | 1413                            | 0.9               | 0.9             | 3.591     | A                             |
| 2 - Hennef Way       | 1835                  | 459                     | 544                       | 2350              | 0.781 | 1835                | 1459                            | 3.6               | 3.7             | 7.285     | A                             |
| 3 - Southam Road (S) | 748                   | 187                     | 1722                      | 1085              | 0.690 | 748                 | 657                             | 2.2               | 2.3             | 10.986    | B                             |
| 4 - Ruscote Avenue   | 1029                  | 257                     | 1443                      | 1542              | 0.667 | 1029                | 1027                            | 2.0               | 2.0             | 7.135     | A                             |

### 17:30 - 17:45

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 944                   | 236                     | 1059                      | 1989              | 0.475 | 944                 | 1413                            | 0.9               | 0.9             | 3.591     | A                             |
| 2 - Hennef Way       | 1835                  | 459                     | 544                       | 2350              | 0.781 | 1835                | 1459                            | 3.7               | 3.7             | 7.288     | A                             |
| 3 - Southam Road (S) | 748                   | 187                     | 1722                      | 1085              | 0.690 | 748                 | 657                             | 2.3               | 2.3             | 10.994    | B                             |
| 4 - Ruscote Avenue   | 1029                  | 257                     | 1443                      | 1542              | 0.667 | 1029                | 1027                            | 2.0               | 2.0             | 7.139     | A                             |

### 17:45 - 18:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 944                   | 236                     | 1059                      | 1989              | 0.475 | 944                 | 1413                            | 0.9               | 0.9             | 3.591     | A                             |
| 2 - Hennef Way       | 1835                  | 459                     | 544                       | 2350              | 0.781 | 1835                | 1459                            | 3.7               | 3.7             | 7.288     | A                             |
| 3 - Southam Road (S) | 748                   | 187                     | 1722                      | 1085              | 0.690 | 748                 | 657                             | 2.3               | 2.3             | 10.996    | B                             |
| 4 - Ruscote Avenue   | 1029                  | 257                     | 1443                      | 1542              | 0.667 | 1029                | 1027                            | 2.0               | 2.0             | 7.139     | A                             |

### 18:00 - 18:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 944                   | 236                     | 1059                      | 1989              | 0.475 | 944                 | 1413                            | 0.9               | 0.9             | 3.591     | A                             |
| 2 - Hennef Way       | 1835                  | 459                     | 544                       | 2350              | 0.781 | 1835                | 1459                            | 3.7               | 3.7             | 7.288     | A                             |
| 3 - Southam Road (S) | 748                   | 187                     | 1722                      | 1085              | 0.690 | 748                 | 657                             | 2.3               | 2.3             | 10.996    | B                             |
| 4 - Ruscote Avenue   | 1029                  | 257                     | 1443                      | 1542              | 0.667 | 1029                | 1027                            | 2.0               | 2.0             | 7.139     | A                             |

# 2021 without Development, PM (18-19)

## Data Errors and Warnings

| Severity | Area     | Item                                       | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 1 - Southam Road (N) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Ruscote Avenue - Roundabout Geometry   | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 3.23               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name            | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|--------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D6 | 2021 without Development | PM (18-19)       | FLAT                 | 17:45              | 19:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Southam Road (N) |            | FLAT         | ✓            | 673                     | 100.000            |
| 2 - Hennef Way       |            | FLAT         | ✓            | 1306                    | 100.000            |
| 3 - Southam Road (S) |            | FLAT         | ✓            | 532                     | 100.000            |
| 4 - Ruscote Avenue   |            | FLAT         | ✓            | 733                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 414            | 241                  | 18                 |
|      | 2 - Hennef Way       | 628                  | 0              | 98                   | 580                |
|      | 3 - Southam Road (S) | 343                  | 56             | 0                    | 133                |
|      | 4 - Ruscote Avenue   | 35                   | 569            | 129                  | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 3              | 3                    | 1                  |
|      | 2 - Hennef Way       | 3                    | 0              | 6                    | 4                  |
|      | 3 - Southam Road (S) | 2                    | 13             | 0                    | 1                  |
|      | 4 - Ruscote Avenue   | 0                    | 1              | 0                    | 0                  |

# Results

## Results Summary for whole modelled period

| Arm                  | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|----------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Southam Road (N) | 0.30    | 2.40          | 0.4             | A       | 673                     | 1010                          |
| 2 - Hennef Way       | 0.53    | 3.22          | 1.2             | A       | 1306                    | 1959                          |
| 3 - Southam Road (S) | 0.38    | 4.23          | 0.6             | A       | 532                     | 798                           |
| 4 - Ruscote Avenue   | 0.40    | 3.28          | 0.7             | A       | 733                     | 1100                          |

## Main Results for each time segment

### 17:45 - 18:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 673                   | 168                     | 751                       | 2218              | 0.303 | 671                 | 1002                            | 0.0               | 0.4             | 2.395     | A                             |
| 2 - Hennef Way       | 1306                  | 327                     | 387                       | 2466              | 0.530 | 1301                | 1036                            | 0.0               | 1.2             | 3.192     | A                             |
| 3 - Southam Road (S) | 532                   | 133                     | 1222                      | 1410              | 0.377 | 530                 | 467                             | 0.0               | 0.6             | 4.191     | A                             |
| 4 - Ruscote Avenue   | 733                   | 183                     | 1023                      | 1841              | 0.398 | 730                 | 728                             | 0.0               | 0.7             | 3.258     | A                             |

### 18:00 - 18:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 673                   | 168                     | 754                       | 2216              | 0.304 | 673                 | 1006                            | 0.4               | 0.4             | 2.402     | A                             |
| 2 - Hennef Way       | 1306                  | 327                     | 388                       | 2465              | 0.530 | 1306                | 1039                            | 1.2               | 1.2             | 3.219     | A                             |
| 3 - Southam Road (S) | 532                   | 133                     | 1226                      | 1407              | 0.378 | 532                 | 468                             | 0.6               | 0.6             | 4.228     | A                             |
| 4 - Ruscote Avenue   | 733                   | 183                     | 1027                      | 1838              | 0.399 | 733                 | 731                             | 0.7               | 0.7             | 3.282     | A                             |

### 18:15 - 18:30

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 673                   | 168                     | 754                       | 2216              | 0.304 | 673                 | 1006                            | 0.4               | 0.4             | 2.402     | A                             |
| 2 - Hennef Way       | 1306                  | 327                     | 388                       | 2465              | 0.530 | 1306                | 1039                            | 1.2               | 1.2             | 3.219     | A                             |
| 3 - Southam Road (S) | 532                   | 133                     | 1226                      | 1407              | 0.378 | 532                 | 468                             | 0.6               | 0.6             | 4.228     | A                             |
| 4 - Ruscote Avenue   | 733                   | 183                     | 1027                      | 1838              | 0.399 | 733                 | 731                             | 0.7               | 0.7             | 3.282     | A                             |

### 18:30 - 18:45

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 673                   | 168                     | 754                       | 2215              | 0.304 | 673                 | 1006                            | 0.4               | 0.4             | 2.402     | A                             |
| 2 - Hennef Way       | 1306                  | 327                     | 388                       | 2465              | 0.530 | 1306                | 1039                            | 1.2               | 1.2             | 3.219     | A                             |
| 3 - Southam Road (S) | 532                   | 133                     | 1226                      | 1407              | 0.378 | 532                 | 468                             | 0.6               | 0.6             | 4.228     | A                             |
| 4 - Ruscote Avenue   | 733                   | 183                     | 1027                      | 1838              | 0.399 | 733                 | 731                             | 0.7               | 0.7             | 3.282     | A                             |

### 18:45 - 19:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 673                   | 168                     | 754                       | 2215              | 0.304 | 673                 | 1006                            | 0.4               | 0.4             | 2.402     | A                             |
| 2 - Hennef Way       | 1306                  | 327                     | 388                       | 2465              | 0.530 | 1306                | 1039                            | 1.2               | 1.2             | 3.219     | A                             |
| 3 - Southam Road (S) | 532                   | 133                     | 1226                      | 1407              | 0.378 | 532                 | 468                             | 0.6               | 0.6             | 4.228     | A                             |
| 4 - Ruscote Avenue   | 733                   | 183                     | 1027                      | 1838              | 0.399 | 733                 | 731                             | 0.7               | 0.7             | 3.282     | A                             |

### 19:00 - 19:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 673                   | 168                     | 754                       | 2215              | 0.304 | 673                 | 1006                            | 0.4               | 0.4             | 2.402     | A                             |
| 2 - Hennef Way       | 1306                  | 327                     | 388                       | 2465              | 0.530 | 1306                | 1039                            | 1.2               | 1.2             | 3.219     | A                             |
| 3 - Southam Road (S) | 532                   | 133                     | 1226                      | 1407              | 0.378 | 532                 | 468                             | 0.6               | 0.6             | 4.228     | A                             |
| 4 - Ruscote Avenue   | 733                   | 183                     | 1027                      | 1838              | 0.399 | 733                 | 731                             | 0.7               | 0.7             | 3.282     | A                             |

# 2021 with Development, AM (7-8)

## Data Errors and Warnings

| Severity | Area     | Item                                       | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 1 - Southam Road (N) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.                                       |
| Warning  | Geometry | 4 - Ruscote Avenue - Roundabout Geometry   | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.                                       |
| Warning  | O-D data |  | O-D matrix contains negative demand. Matrix should only be used as a development matrix for Demand Set relationships and should not be run on its own. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 5.31               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name         | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|-----------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D7 | 2021 with Development | AM (7-8)         | FLAT                 | 06:45              | 08:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Southam Road (N) |            | FLAT         | ✓            | 601                     | 100.000            |
| 2 - Hennef Way       |            | FLAT         | ✓            | 1789                    | 100.000            |
| 3 - Southam Road (S) |            | FLAT         | ✓            | 715                     | 100.000            |
| 4 - Ruscote Avenue   |            | FLAT         | ✓            | 703                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 440            | 157                  | 4                  |
|      | 2 - Hennef Way       | 1084                 | 0              | 123                  | 582                |
|      | 3 - Southam Road (S) | 446                  | 41             | 0                    | 228                |
|      | 4 - Ruscote Avenue   | -21                  | 637            | 87                   | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 5              | 0                    | 1                  |
|      | 2 - Hennef Way       | 5                    | 0              | 7                    | 7                  |
|      | 3 - Southam Road (S) | 4                    | 3              | 0                    | 2                  |
|      | 4 - Ruscote Avenue   | 0                    | 6              | 1                    | 0                  |

# Results

## Results Summary for whole modelled period

| Arm                  | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|----------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Southam Road (N) | 0.27    | 2.28          | 0.4             | A       | 601                     | 902                           |
| 2 - Hennef Way       | 0.70    | 4.87          | 2.4             | A       | 1789                    | 2684                          |
| 3 - Southam Road (S) | 0.64    | 9.21          | 1.8             | A       | 715                     | 1073                          |
| 4 - Ruscote Avenue   | 0.48    | 5.06          | 1.0             | A       | 703                     | 1055                          |

## Main Results for each time segment

### 06:45 - 07:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 601                   | 150                     | 720                       | 2241              | 0.268 | 599                 | 1540                            | 0.0               | 0.4             | 2.271     | A                             |
| 2 - Hennef Way       | 1789                  | 447                     | 242                       | 2572              | 0.696 | 1779                | 1077                            | 0.0               | 2.4             | 4.753     | A                             |
| 3 - Southam Road (S) | 715                   | 179                     | 1661                      | 1124              | 0.636 | 708                 | 361                             | 0.0               | 1.8             | 8.791     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1560                      | 1458              | 0.482 | 699                 | 809                             | 0.0               | 1.0             | 4.965     | A                             |

### 07:00 - 07:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 601                   | 150                     | 724                       | 2238              | 0.269 | 601                 | 1550                            | 0.4               | 0.4             | 2.278     | A                             |
| 2 - Hennef Way       | 1789                  | 447                     | 243                       | 2571              | 0.696 | 1789                | 1082                            | 2.4               | 2.4             | 4.867     | A                             |
| 3 - Southam Road (S) | 715                   | 179                     | 1670                      | 1119              | 0.639 | 715                 | 362                             | 1.8               | 1.8             | 9.200     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1571                      | 1451              | 0.485 | 703                 | 814                             | 1.0               | 1.0             | 5.063     | A                             |

### 07:15 - 07:30

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 601                   | 150                     | 724                       | 2238              | 0.269 | 601                 | 1550                            | 0.4               | 0.4             | 2.278     | A                             |
| 2 - Hennef Way       | 1789                  | 447                     | 243                       | 2571              | 0.696 | 1789                | 1082                            | 2.4               | 2.4             | 4.869     | A                             |
| 3 - Southam Road (S) | 715                   | 179                     | 1670                      | 1119              | 0.639 | 715                 | 362                             | 1.8               | 1.8             | 9.210     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1571                      | 1451              | 0.485 | 703                 | 814                             | 1.0               | 1.0             | 5.064     | A                             |

### 07:30 - 07:45

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 601                   | 150                     | 724                       | 2238              | 0.269 | 601                 | 1550                            | 0.4               | 0.4             | 2.278     | A                             |
| 2 - Hennef Way       | 1789                  | 447                     | 243                       | 2571              | 0.696 | 1789                | 1082                            | 2.4               | 2.4             | 4.869     | A                             |
| 3 - Southam Road (S) | 715                   | 179                     | 1670                      | 1119              | 0.639 | 715                 | 362                             | 1.8               | 1.8             | 9.212     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1571                      | 1451              | 0.485 | 703                 | 814                             | 1.0               | 1.0             | 5.064     | A                             |

### 07:45 - 08:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 601                   | 150                     | 724                       | 2238              | 0.269 | 601                 | 1550                            | 0.4               | 0.4             | 2.278     | A                             |
| 2 - Hennef Way       | 1789                  | 447                     | 243                       | 2571              | 0.696 | 1789                | 1082                            | 2.4               | 2.4             | 4.869     | A                             |
| 3 - Southam Road (S) | 715                   | 179                     | 1670                      | 1119              | 0.639 | 715                 | 362                             | 1.8               | 1.8             | 9.212     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1571                      | 1451              | 0.485 | 703                 | 814                             | 1.0               | 1.0             | 5.064     | A                             |

### 08:00 - 08:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 601                   | 150                     | 724                       | 2238              | 0.269 | 601                 | 1550                            | 0.4               | 0.4             | 2.278     | A                             |
| 2 - Hennef Way       | 1789                  | 447                     | 243                       | 2571              | 0.696 | 1789                | 1082                            | 2.4               | 2.4             | 4.869     | A                             |
| 3 - Southam Road (S) | 715                   | 179                     | 1670                      | 1119              | 0.639 | 715                 | 362                             | 1.8               | 1.8             | 9.212     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1571                      | 1451              | 0.485 | 703                 | 814                             | 1.0               | 1.0             | 5.064     | A                             |



# 2021 with Development, AM (8-9)

## Data Errors and Warnings

| Severity | Area     | Item                                       | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 1 - Southam Road (N) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.                                       |
| Warning  | Geometry | 4 - Ruscote Avenue - Roundabout Geometry   | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.                                       |
| Warning  | O-D data |  | O-D matrix contains negative demand. Matrix should only be used as a development matrix for Demand Set relationships and should not be run on its own. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 220.56             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name         | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|-----------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D8 | 2021 with Development | AM (8-9)         | FLAT                 | 07:45              | 09:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Southam Road (N) |            | FLAT         | ✓            | 830                     | 100.000            |
| 2 - Hennef Way       |            | FLAT         | ✓            | 2462                    | 100.000            |
| 3 - Southam Road (S) |            | FLAT         | ✓            | 846                     | 100.000            |
| 4 - Ruscote Avenue   |            | FLAT         | ✓            | 966                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 604            | 221                  | 5                  |
|      | 2 - Hennef Way       | 1545                 | 0              | 118                  | 799                |
|      | 3 - Southam Road (S) | 477                  | 56             | 0                    | 313                |
|      | 4 - Ruscote Avenue   | -7                   | 875            | 98                   | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 4              | 1                    | 5                  |
|      | 2 - Hennef Way       | 3                    | 0              | 6                    | 5                  |
|      | 3 - Southam Road (S) | 4                    | 7              | 0                    | 3                  |
|      | 4 - Ruscote Avenue   | 0                    | 6              | 3                    | 0                  |

# Results

## Results Summary for whole modelled period

| Arm                  | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|----------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Southam Road (N) | 0.41    | 3.09          | 0.7             | A       | 830                     | 1245                          |
| 2 - Hennef Way       | 0.98    | 52.21         | 34.3            | F       | 2462                    | 3693                          |
| 3 - Southam Road (S) | 1.24    | 1154.14       | 237.5           | F       | 846                     | 1269                          |
| 4 - Ruscote Avenue   | 0.83    | 18.86         | 5.0             | C       | 966                     | 1449                          |

## Main Results for each time segment

### 07:45 - 08:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 830                   | 208                     | 989                       | 2041              | 0.407 | 827                 | 1901                            | 0.0               | 0.7             | 3.054     | A                             |
| 2 - Hennef Way       | 2462                  | 616                     | 320                       | 2514              | 0.979 | 2385                | 1496                            | 0.0               | 19.2            | 22.205    | C                             |
| 3 - Southam Road (S) | 846                   | 212                     | 2276                      | 725               | 1.167 | 704                 | 429                             | 0.0               | 35.5            | 103.740   | F                             |
| 4 - Ruscote Avenue   | 966                   | 242                     | 1940                      | 1188              | 0.813 | 949                 | 1040                            | 0.0               | 4.2             | 15.029    | C                             |

### 08:00 - 08:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 830                   | 208                     | 1003                      | 2031              | 0.409 | 830                 | 1927                            | 0.7               | 0.7             | 3.092     | A                             |
| 2 - Hennef Way       | 2462                  | 616                     | 322                       | 2513              | 0.980 | 2439                | 1511                            | 19.2              | 24.8            | 37.628    | E                             |
| 3 - Southam Road (S) | 846                   | 212                     | 2328                      | 691               | 1.224 | 690                 | 434                             | 35.5              | 74.5            | 299.665   | F                             |
| 4 - Ruscote Avenue   | 966                   | 242                     | 1966                      | 1170              | 0.826 | 964                 | 1052                            | 4.2               | 4.7             | 18.180    | C                             |

### 08:15 - 08:30

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 830                   | 208                     | 1004                      | 2030              | 0.409 | 830                 | 1930                            | 0.7               | 0.7             | 3.094     | A                             |
| 2 - Hennef Way       | 2462                  | 616                     | 323                       | 2513              | 0.980 | 2448                | 1511                            | 24.8              | 28.3            | 43.364    | E                             |
| 3 - Southam Road (S) | 846                   | 212                     | 2336                      | 686               | 1.233 | 686                 | 435                             | 74.5              | 114.6           | 506.809   | F                             |
| 4 - Ruscote Avenue   | 966                   | 242                     | 1968                      | 1168              | 0.827 | 965                 | 1053                            | 4.7               | 4.8             | 18.581    | C                             |

### 08:30 - 08:45

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 830                   | 208                     | 1004                      | 2030              | 0.409 | 830                 | 1931                            | 0.7               | 0.7             | 3.094     | A                             |
| 2 - Hennef Way       | 2462                  | 616                     | 323                       | 2513              | 0.980 | 2452                | 1511                            | 28.3              | 30.9            | 47.175    | E                             |
| 3 - Southam Road (S) | 846                   | 212                     | 2339                      | 684               | 1.238 | 683                 | 435                             | 114.6             | 155.3           | 720.125   | F                             |
| 4 - Ruscote Avenue   | 966                   | 242                     | 1969                      | 1167              | 0.827 | 966                 | 1054                            | 4.8               | 4.9             | 18.729    | C                             |

### 08:45 - 09:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 830                   | 208                     | 1004                      | 2030              | 0.409 | 830                 | 1932                            | 0.7               | 0.7             | 3.094     | A                             |
| 2 - Hennef Way       | 2462                  | 616                     | 323                       | 2513              | 0.980 | 2454                | 1511                            | 30.9              | 32.8            | 49.999    | E                             |
| 3 - Southam Road (S) | 846                   | 212                     | 2342                      | 682               | 1.240 | 682                 | 435                             | 155.3             | 196.3           | 936.559   | F                             |
| 4 - Ruscote Avenue   | 966                   | 242                     | 1970                      | 1167              | 0.828 | 966                 | 1054                            | 4.9               | 4.9             | 18.807    | C                             |

### 09:00 - 09:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 830                   | 208                     | 1004                      | 2030              | 0.409 | 830                 | 1932                            | 0.7               | 0.7             | 3.094     | A                             |
| 2 - Hennef Way       | 2462                  | 616                     | 323                       | 2513              | 0.980 | 2456                | 1511                            | 32.8              | 34.3            | 52.211    | F                             |
| 3 - Southam Road (S) | 846                   | 212                     | 2343                      | 681               | 1.242 | 681                 | 435                             | 196.3             | 237.5           | 1154.143  | F                             |
| 4 - Ruscote Avenue   | 966                   | 242                     | 1970                      | 1167              | 0.828 | 966                 | 1054                            | 4.9               | 5.0             | 18.858    | C                             |

# 2021 with Development, AM (9-10)

## Data Errors and Warnings

| Severity | Area     | Item                                       | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 1 - Southam Road (N) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Ruscote Avenue - Roundabout Geometry   | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 4.94               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name         | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|-----------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D9 | 2021 with Development | AM (9-10)        | FLAT                 | 08:45              | 10:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Southam Road (N) |            | FLAT         | ✓            | 605                     | 100.000            |
| 2 - Hennef Way       |            | FLAT         | ✓            | 1794                    | 100.000            |
| 3 - Southam Road (S) |            | FLAT         | ✓            | 581                     | 100.000            |
| 4 - Ruscote Avenue   |            | FLAT         | ✓            | 703                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 440            | 161                  | 4                  |
|      | 2 - Hennef Way       | 1138                 | 0              | 74                   | 582                |
|      | 3 - Southam Road (S) | 313                  | 40             | 0                    | 228                |
|      | 4 - Ruscote Avenue   | 0                    | 637            | 66                   | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 8              | 4                    | 5                  |
|      | 2 - Hennef Way       | 9                    | 0              | 9                    | 7                  |
|      | 3 - Southam Road (S) | 12                   | 12             | 0                    | 4                  |
|      | 4 - Ruscote Avenue   | 0                    | 6              | 3                    | 0                  |

# Results

## Results Summary for whole modelled period

| Arm                  | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|----------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Southam Road (N) | 0.27    | 2.38          | 0.4             | A       | 605                     | 908                           |
| 2 - Hennef Way       | 0.70    | 4.96          | 2.5             | A       | 1794                    | 2691                          |
| 3 - Southam Road (S) | 0.54    | 7.79          | 1.3             | A       | 581                     | 872                           |
| 4 - Ruscote Avenue   | 0.47    | 4.73          | 0.9             | A       | 703                     | 1055                          |

## Main Results for each time segment

### 08:45 - 09:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 605                   | 151                     | 739                       | 2227              | 0.272 | 603                 | 1442                            | 0.0               | 0.4             | 2.368     | A                             |
| 2 - Hennef Way       | 1794                  | 449                     | 230                       | 2580              | 0.695 | 1784                | 1112                            | 0.0               | 2.4             | 4.843     | A                             |
| 3 - Southam Road (S) | 581                   | 145                     | 1715                      | 1090              | 0.533 | 576                 | 300                             | 0.0               | 1.2             | 7.554     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1482                      | 1514              | 0.464 | 699                 | 809                             | 0.0               | 0.9             | 4.650     | A                             |

### 09:00 - 09:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 605                   | 151                     | 743                       | 2224              | 0.272 | 605                 | 1451                            | 0.4               | 0.4             | 2.376     | A                             |
| 2 - Hennef Way       | 1794                  | 449                     | 231                       | 2580              | 0.695 | 1794                | 1117                            | 2.4               | 2.5             | 4.960     | A                             |
| 3 - Southam Road (S) | 581                   | 145                     | 1724                      | 1084              | 0.536 | 581                 | 301                             | 1.2               | 1.2             | 7.785     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1491                      | 1508              | 0.466 | 703                 | 814                             | 0.9               | 0.9             | 4.728     | A                             |

### 09:15 - 09:30

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 605                   | 151                     | 743                       | 2224              | 0.272 | 605                 | 1451                            | 0.4               | 0.4             | 2.376     | A                             |
| 2 - Hennef Way       | 1794                  | 449                     | 231                       | 2580              | 0.695 | 1794                | 1117                            | 2.5               | 2.5             | 4.962     | A                             |
| 3 - Southam Road (S) | 581                   | 145                     | 1724                      | 1083              | 0.536 | 581                 | 301                             | 1.2               | 1.2             | 7.787     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1491                      | 1508              | 0.466 | 703                 | 814                             | 0.9               | 0.9             | 4.728     | A                             |

### 09:30 - 09:45

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 605                   | 151                     | 743                       | 2224              | 0.272 | 605                 | 1451                            | 0.4               | 0.4             | 2.376     | A                             |
| 2 - Hennef Way       | 1794                  | 449                     | 231                       | 2580              | 0.695 | 1794                | 1117                            | 2.5               | 2.5             | 4.962     | A                             |
| 3 - Southam Road (S) | 581                   | 145                     | 1724                      | 1083              | 0.536 | 581                 | 301                             | 1.2               | 1.3             | 7.788     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1491                      | 1508              | 0.466 | 703                 | 814                             | 0.9               | 0.9             | 4.728     | A                             |

### 09:45 - 10:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 605                   | 151                     | 743                       | 2224              | 0.272 | 605                 | 1451                            | 0.4               | 0.4             | 2.376     | A                             |
| 2 - Hennef Way       | 1794                  | 449                     | 231                       | 2580              | 0.695 | 1794                | 1117                            | 2.5               | 2.5             | 4.962     | A                             |
| 3 - Southam Road (S) | 581                   | 145                     | 1724                      | 1083              | 0.536 | 581                 | 301                             | 1.3               | 1.3             | 7.788     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1491                      | 1508              | 0.466 | 703                 | 814                             | 0.9               | 0.9             | 4.728     | A                             |

### 10:00 - 10:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 605                   | 151                     | 743                       | 2224              | 0.272 | 605                 | 1451                            | 0.4               | 0.4             | 2.376     | A                             |
| 2 - Hennef Way       | 1794                  | 449                     | 231                       | 2580              | 0.695 | 1794                | 1117                            | 2.5               | 2.5             | 4.962     | A                             |
| 3 - Southam Road (S) | 581                   | 145                     | 1724                      | 1083              | 0.536 | 581                 | 301                             | 1.3               | 1.3             | 7.788     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1491                      | 1508              | 0.466 | 703                 | 814                             | 0.9               | 0.9             | 4.728     | A                             |

# 2021 with Development, PM (16-17)

## Data Errors and Warnings

| Severity | Area     | Item                                       | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 1 - Southam Road (N) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Ruscote Avenue - Roundabout Geometry   | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 5.15               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name         | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-----------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D10 | 2021 with Development | PM (16-17)       | FLAT                 | 15:45              | 17:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Southam Road (N) |            | FLAT         | ✓            | 964                     | 100.000            |
| 2 - Hennef Way       |            | FLAT         | ✓            | 1690                    | 100.000            |
| 3 - Southam Road (S) |            | FLAT         | ✓            | 686                     | 100.000            |
| 4 - Ruscote Avenue   |            | FLAT         | ✓            | 883                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 615            | 332                  | 17                 |
|      | 2 - Hennef Way       | 797                  | 0              | 197                  | 696                |
|      | 3 - Southam Road (S) | 395                  | 112            | 0                    | 179                |
|      | 4 - Ruscote Avenue   | 42                   | 682            | 159                  | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 4              | 5                    | 1                  |
|      | 2 - Hennef Way       | 7                    | 0              | 3                    | 6                  |
|      | 3 - Southam Road (S) | 4                    | 6              | 0                    | 1                  |
|      | 4 - Ruscote Avenue   | 0                    | 3              | 1                    | 0                  |

# Results

## Results Summary for whole modelled period

| Arm                  | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|----------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Southam Road (N) | 0.47    | 3.40          | 0.9             | A       | 964                     | 1446                          |
| 2 - Hennef Way       | 0.71    | 5.56          | 2.6             | A       | 1690                    | 2535                          |
| 3 - Southam Road (S) | 0.56    | 6.94          | 1.3             | A       | 686                     | 1029                          |
| 4 - Ruscote Avenue   | 0.54    | 4.87          | 1.2             | A       | 883                     | 1325                          |

## Main Results for each time segment

### 15:45 - 16:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 964                   | 241                     | 948                       | 2072              | 0.465 | 960                 | 1226                            | 0.0               | 0.9             | 3.366     | A                             |
| 2 - Hennef Way       | 1690                  | 423                     | 506                       | 2378              | 0.711 | 1680                | 1402                            | 0.0               | 2.6             | 5.392     | A                             |
| 3 - Southam Road (S) | 686                   | 172                     | 1501                      | 1228              | 0.558 | 681                 | 685                             | 0.0               | 1.3             | 6.745     | A                             |
| 4 - Ruscote Avenue   | 883                   | 221                     | 1295                      | 1647              | 0.536 | 878                 | 886                             | 0.0               | 1.2             | 4.772     | A                             |

### 16:00 - 16:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 964                   | 241                     | 953                       | 2068              | 0.466 | 964                 | 1234                            | 0.9               | 0.9             | 3.400     | A                             |
| 2 - Hennef Way       | 1690                  | 423                     | 508                       | 2377              | 0.711 | 1690                | 1409                            | 2.6               | 2.6             | 5.558     | A                             |
| 3 - Southam Road (S) | 686                   | 172                     | 1510                      | 1223              | 0.561 | 686                 | 688                             | 1.3               | 1.3             | 6.940     | A                             |
| 4 - Ruscote Avenue   | 883                   | 221                     | 1304                      | 1641              | 0.538 | 883                 | 892                             | 1.2               | 1.2             | 4.867     | A                             |

### 16:15 - 16:30

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 964                   | 241                     | 953                       | 2068              | 0.466 | 964                 | 1234                            | 0.9               | 0.9             | 3.400     | A                             |
| 2 - Hennef Way       | 1690                  | 423                     | 508                       | 2377              | 0.711 | 1690                | 1409                            | 2.6               | 2.6             | 5.561     | A                             |
| 3 - Southam Road (S) | 686                   | 172                     | 1510                      | 1223              | 0.561 | 686                 | 688                             | 1.3               | 1.3             | 6.944     | A                             |
| 4 - Ruscote Avenue   | 883                   | 221                     | 1304                      | 1641              | 0.538 | 883                 | 892                             | 1.2               | 1.2             | 4.868     | A                             |

### 16:30 - 16:45

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 964                   | 241                     | 953                       | 2068              | 0.466 | 964                 | 1234                            | 0.9               | 0.9             | 3.400     | A                             |
| 2 - Hennef Way       | 1690                  | 423                     | 508                       | 2377              | 0.711 | 1690                | 1409                            | 2.6               | 2.6             | 5.561     | A                             |
| 3 - Southam Road (S) | 686                   | 172                     | 1510                      | 1223              | 0.561 | 686                 | 688                             | 1.3               | 1.3             | 6.944     | A                             |
| 4 - Ruscote Avenue   | 883                   | 221                     | 1304                      | 1641              | 0.538 | 883                 | 892                             | 1.2               | 1.2             | 4.868     | A                             |

### 16:45 - 17:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 964                   | 241                     | 953                       | 2068              | 0.466 | 964                 | 1234                            | 0.9               | 0.9             | 3.400     | A                             |
| 2 - Hennef Way       | 1690                  | 423                     | 508                       | 2377              | 0.711 | 1690                | 1409                            | 2.6               | 2.6             | 5.561     | A                             |
| 3 - Southam Road (S) | 686                   | 172                     | 1510                      | 1223              | 0.561 | 686                 | 688                             | 1.3               | 1.3             | 6.944     | A                             |
| 4 - Ruscote Avenue   | 883                   | 221                     | 1304                      | 1641              | 0.538 | 883                 | 892                             | 1.2               | 1.2             | 4.868     | A                             |

### 17:00 - 17:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 964                   | 241                     | 953                       | 2068              | 0.466 | 964                 | 1234                            | 0.9               | 0.9             | 3.400     | A                             |
| 2 - Hennef Way       | 1690                  | 423                     | 508                       | 2377              | 0.711 | 1690                | 1409                            | 2.6               | 2.6             | 5.561     | A                             |
| 3 - Southam Road (S) | 686                   | 172                     | 1510                      | 1223              | 0.561 | 686                 | 688                             | 1.3               | 1.3             | 6.944     | A                             |
| 4 - Ruscote Avenue   | 883                   | 221                     | 1304                      | 1641              | 0.538 | 883                 | 892                             | 1.2               | 1.2             | 4.868     | A                             |

# 2021 with Development, PM (17-18)

## Data Errors and Warnings

| Severity | Area     | Item                                       | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 1 - Southam Road (N) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Ruscote Avenue - Roundabout Geometry   | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 9.51               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name         | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-----------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D11 | 2021 with Development | PM (17-18)       | FLAT                 | 16:45              | 18:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Southam Road (N) |            | FLAT         | ✓            | 1124                    | 100.000            |
| 2 - Hennef Way       |            | FLAT         | ✓            | 1967                    | 100.000            |
| 3 - Southam Road (S) |            | FLAT         | ✓            | 810                     | 100.000            |
| 4 - Ruscote Avenue   |            | FLAT         | ✓            | 1034                    | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 722            | 381                  | 21                 |
|      | 2 - Hennef Way       | 934                  | 0              | 218                  | 815                |
|      | 3 - Southam Road (S) | 475                  | 128            | 0                    | 207                |
|      | 4 - Ruscote Avenue   | 49                   | 799            | 186                  | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 4              | 4                    | 2                  |
|      | 2 - Hennef Way       | 5                    | 0              | 2                    | 4                  |
|      | 3 - Southam Road (S) | 3                    | 6              | 0                    | 0                  |
|      | 4 - Ruscote Avenue   | 0                    | 2              | 1                    | 0                  |

# Results

## Results Summary for whole modelled period

| Arm                  | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|----------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Southam Road (N) | 0.58    | 4.53          | 1.4             | A       | 1124                    | 1686                          |
| 2 - Hennef Way       | 0.85    | 10.67         | 5.8             | B       | 1967                    | 2951                          |
| 3 - Southam Road (S) | 0.77    | 15.15         | 3.4             | C       | 810                     | 1215                          |
| 4 - Ruscote Avenue   | 0.70    | 8.30          | 2.4             | A       | 1034                    | 1551                          |

## Main Results for each time segment

### 16:45 - 17:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 1124                  | 281                     | 1103                      | 1957              | 0.574 | 1118                | 1440                            | 0.0               | 1.4             | 4.434     | A                             |
| 2 - Hennef Way       | 1967                  | 492                     | 584                       | 2321              | 0.848 | 1945                | 1637                            | 0.0               | 5.4             | 9.512     | A                             |
| 3 - Southam Road (S) | 810                   | 203                     | 1751                      | 1066              | 0.760 | 798                 | 779                             | 0.0               | 3.1             | 13.235    | B                             |
| 4 - Ruscote Avenue   | 1034                  | 259                     | 1518                      | 1489              | 0.695 | 1025                | 1031                            | 0.0               | 2.2             | 7.755     | A                             |

### 17:00 - 17:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 1124                  | 281                     | 1113                      | 1950              | 0.577 | 1124                | 1457                            | 1.4               | 1.4             | 4.533     | A                             |
| 2 - Hennef Way       | 1967                  | 492                     | 588                       | 2318              | 0.848 | 1966                | 1649                            | 5.4               | 5.6             | 10.594    | B                             |
| 3 - Southam Road (S) | 810                   | 203                     | 1769                      | 1054              | 0.768 | 809                 | 785                             | 3.1               | 3.3             | 14.992    | B                             |
| 4 - Ruscote Avenue   | 1034                  | 259                     | 1536                      | 1476              | 0.701 | 1034                | 1042                            | 2.2               | 2.3             | 8.272     | A                             |

### 17:15 - 17:30

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 1124                  | 281                     | 1113                      | 1949              | 0.577 | 1124                | 1458                            | 1.4               | 1.4             | 4.534     | A                             |
| 2 - Hennef Way       | 1967                  | 492                     | 588                       | 2318              | 0.849 | 1967                | 1649                            | 5.6               | 5.7             | 10.639    | B                             |
| 3 - Southam Road (S) | 810                   | 203                     | 1770                      | 1054              | 0.769 | 810                 | 785                             | 3.3               | 3.3             | 15.101    | C                             |
| 4 - Ruscote Avenue   | 1034                  | 259                     | 1537                      | 1475              | 0.701 | 1034                | 1043                            | 2.3               | 2.4             | 8.293     | A                             |

### 17:30 - 17:45

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 1124                  | 281                     | 1113                      | 1949              | 0.577 | 1124                | 1458                            | 1.4               | 1.4             | 4.534     | A                             |
| 2 - Hennef Way       | 1967                  | 492                     | 588                       | 2318              | 0.849 | 1967                | 1649                            | 5.7               | 5.7             | 10.654    | B                             |
| 3 - Southam Road (S) | 810                   | 203                     | 1770                      | 1054              | 0.769 | 810                 | 785                             | 3.3               | 3.3             | 15.130    | C                             |
| 4 - Ruscote Avenue   | 1034                  | 259                     | 1537                      | 1475              | 0.701 | 1034                | 1043                            | 2.4               | 2.4             | 8.298     | A                             |

### 17:45 - 18:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 1124                  | 281                     | 1113                      | 1949              | 0.577 | 1124                | 1458                            | 1.4               | 1.4             | 4.534     | A                             |
| 2 - Hennef Way       | 1967                  | 492                     | 588                       | 2318              | 0.849 | 1967                | 1649                            | 5.7               | 5.7             | 10.663    | B                             |
| 3 - Southam Road (S) | 810                   | 203                     | 1770                      | 1054              | 0.769 | 810                 | 785                             | 3.3               | 3.4             | 15.141    | C                             |
| 4 - Ruscote Avenue   | 1034                  | 259                     | 1537                      | 1475              | 0.701 | 1034                | 1043                            | 2.4               | 2.4             | 8.301     | A                             |

### 18:00 - 18:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 1124                  | 281                     | 1113                      | 1949              | 0.577 | 1124                | 1458                            | 1.4               | 1.4             | 4.534     | A                             |
| 2 - Hennef Way       | 1967                  | 492                     | 588                       | 2318              | 0.849 | 1967                | 1649                            | 5.7               | 5.8             | 10.667    | B                             |
| 3 - Southam Road (S) | 810                   | 203                     | 1770                      | 1054              | 0.769 | 810                 | 785                             | 3.4               | 3.4             | 15.151    | C                             |
| 4 - Ruscote Avenue   | 1034                  | 259                     | 1537                      | 1475              | 0.701 | 1034                | 1043                            | 2.4               | 2.4             | 8.301     | A                             |



# 2021 with Development, PM (18-19)

## Data Errors and Warnings

| Severity | Area     | Item                                       | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 1 - Southam Road (N) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Ruscote Avenue - Roundabout Geometry   | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 3.60               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name         | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-----------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D12 | 2021 with Development | PM (18-19)       | FLAT                 | 17:45              | 19:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Southam Road (N) |            | FLAT         | ✓            | 811                     | 100.000            |
| 2 - Hennef Way       |            | FLAT         | ✓            | 1423                    | 100.000            |
| 3 - Southam Road (S) |            | FLAT         | ✓            | 605                     | 100.000            |
| 4 - Ruscote Avenue   |            | FLAT         | ✓            | 738                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 511            | 286                  | 14                 |
|      | 2 - Hennef Way       | 665                  | 0              | 178                  | 580                |
|      | 3 - Southam Road (S) | 344                  | 107            | 0                    | 154                |
|      | 4 - Ruscote Avenue   | 35                   | 569            | 134                  | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 3              | 2                    | 2                  |
|      | 2 - Hennef Way       | 3                    | 0              | 3                    | 4                  |
|      | 3 - Southam Road (S) | 2                    | 7              | 0                    | 1                  |
|      | 4 - Ruscote Avenue   | 0                    | 1              | 0                    | 0                  |

# Results

## Results Summary for whole modelled period

| Arm                  | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|----------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Southam Road (N) | 0.37    | 2.71          | 0.6             | A       | 811                     | 1217                          |
| 2 - Hennef Way       | 0.59    | 3.69          | 1.5             | A       | 1423                    | 2135                          |
| 3 - Southam Road (S) | 0.44    | 4.73          | 0.8             | A       | 605                     | 908                           |
| 4 - Ruscote Avenue   | 0.42    | 3.50          | 0.7             | A       | 738                     | 1107                          |

## Main Results for each time segment

### 17:45 - 18:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 811                   | 203                     | 807                       | 2176              | 0.373 | 809                 | 1039                            | 0.0               | 0.6             | 2.696     | A                             |
| 2 - Hennef Way       | 1423                  | 356                     | 433                       | 2432              | 0.585 | 1417                | 1183                            | 0.0               | 1.4             | 3.647     | A                             |
| 3 - Southam Road (S) | 605                   | 151                     | 1254                      | 1389              | 0.436 | 602                 | 596                             | 0.0               | 0.8             | 4.673     | A                             |
| 4 - Ruscote Avenue   | 738                   | 185                     | 1111                      | 1778              | 0.415 | 735                 | 745                             | 0.0               | 0.7             | 3.470     | A                             |

### 18:00 - 18:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 811                   | 203                     | 810                       | 2174              | 0.373 | 811                 | 1044                            | 0.6               | 0.6             | 2.710     | A                             |
| 2 - Hennef Way       | 1423                  | 356                     | 434                       | 2431              | 0.585 | 1423                | 1187                            | 1.4               | 1.5             | 3.691     | A                             |
| 3 - Southam Road (S) | 605                   | 151                     | 1259                      | 1386              | 0.437 | 605                 | 598                             | 0.8               | 0.8             | 4.730     | A                             |
| 4 - Ruscote Avenue   | 738                   | 185                     | 1116                      | 1775              | 0.416 | 738                 | 748                             | 0.7               | 0.7             | 3.498     | A                             |

### 18:15 - 18:30

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 811                   | 203                     | 810                       | 2174              | 0.373 | 811                 | 1044                            | 0.6               | 0.6             | 2.710     | A                             |
| 2 - Hennef Way       | 1423                  | 356                     | 434                       | 2431              | 0.585 | 1423                | 1187                            | 1.5               | 1.5             | 3.691     | A                             |
| 3 - Southam Road (S) | 605                   | 151                     | 1259                      | 1386              | 0.437 | 605                 | 598                             | 0.8               | 0.8             | 4.730     | A                             |
| 4 - Ruscote Avenue   | 738                   | 185                     | 1116                      | 1775              | 0.416 | 738                 | 748                             | 0.7               | 0.7             | 3.498     | A                             |

### 18:30 - 18:45

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 811                   | 203                     | 810                       | 2174              | 0.373 | 811                 | 1044                            | 0.6               | 0.6             | 2.710     | A                             |
| 2 - Hennef Way       | 1423                  | 356                     | 434                       | 2431              | 0.585 | 1423                | 1187                            | 1.5               | 1.5             | 3.691     | A                             |
| 3 - Southam Road (S) | 605                   | 151                     | 1259                      | 1386              | 0.437 | 605                 | 598                             | 0.8               | 0.8             | 4.730     | A                             |
| 4 - Ruscote Avenue   | 738                   | 185                     | 1116                      | 1775              | 0.416 | 738                 | 748                             | 0.7               | 0.7             | 3.498     | A                             |

### 18:45 - 19:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 811                   | 203                     | 810                       | 2174              | 0.373 | 811                 | 1044                            | 0.6               | 0.6             | 2.710     | A                             |
| 2 - Hennef Way       | 1423                  | 356                     | 434                       | 2431              | 0.585 | 1423                | 1187                            | 1.5               | 1.5             | 3.691     | A                             |
| 3 - Southam Road (S) | 605                   | 151                     | 1259                      | 1386              | 0.437 | 605                 | 598                             | 0.8               | 0.8             | 4.730     | A                             |
| 4 - Ruscote Avenue   | 738                   | 185                     | 1116                      | 1775              | 0.416 | 738                 | 748                             | 0.7               | 0.7             | 3.498     | A                             |

### 19:00 - 19:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 811                   | 203                     | 810                       | 2174              | 0.373 | 811                 | 1044                            | 0.6               | 0.6             | 2.710     | A                             |
| 2 - Hennef Way       | 1423                  | 356                     | 434                       | 2431              | 0.585 | 1423                | 1187                            | 1.5               | 1.5             | 3.691     | A                             |
| 3 - Southam Road (S) | 605                   | 151                     | 1259                      | 1386              | 0.437 | 605                 | 598                             | 0.8               | 0.8             | 4.730     | A                             |
| 4 - Ruscote Avenue   | 738                   | 185                     | 1116                      | 1775              | 0.416 | 738                 | 748                             | 0.7               | 0.7             | 3.498     | A                             |

# 2021 with Development (sensitivity), AM (7-8)

## Data Errors and Warnings

| Severity | Area     | Item                                       | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 1 - Southam Road (N) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.                                       |
| Warning  | Geometry | 4 - Ruscote Avenue - Roundabout Geometry   | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.                                       |
| Warning  | O-D data |  | O-D matrix contains negative demand. Matrix should only be used as a development matrix for Demand Set relationships and should not be run on its own. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 4.23               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name                       | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-------------------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D13 | 2021 with Development (sensitivity) | AM (7-8)         | FLAT                 | 06:45              | 08:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Southam Road (N) |            | FLAT         | ✓            | 561                     | 100.000            |
| 2 - Hennef Way       |            | FLAT         | ✓            | 1569                    | 100.000            |
| 3 - Southam Road (S) |            | FLAT         | ✓            | 715                     | 100.000            |
| 4 - Ruscote Avenue   |            | FLAT         | ✓            | 703                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 400            | 157                  | 4                  |
|      | 2 - Hennef Way       | 864                  | 0              | 123                  | 582                |
|      | 3 - Southam Road (S) | 446                  | 41             | 0                    | 228                |
|      | 4 - Ruscote Avenue   | -21                  | 637            | 87                   | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 5              | 0                    | 1                  |
|      | 2 - Hennef Way       | 5                    | 0              | 7                    | 7                  |
|      | 3 - Southam Road (S) | 4                    | 3              | 0                    | 2                  |
|      | 4 - Ruscote Avenue   | 0                    | 6              | 1                    | 0                  |

# Results

## Results Summary for whole modelled period

| Arm                  | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|----------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Southam Road (N) | 0.25    | 2.22          | 0.3             | A       | 561                     | 842                           |
| 2 - Hennef Way       | 0.61    | 3.80          | 1.7             | A       | 1569                    | 2354                          |
| 3 - Southam Road (S) | 0.57    | 6.80          | 1.3             | A       | 715                     | 1073                          |
| 4 - Ruscote Avenue   | 0.44    | 4.19          | 0.8             | A       | 703                     | 1055                          |

## Main Results for each time segment

### 06:45 - 07:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 561                   | 140                     | 721                       | 2240              | 0.250 | 560                 | 1323                            | 0.0               | 0.3             | 2.215     | A                             |
| 2 - Hennef Way       | 1569                  | 392                     | 242                       | 2572              | 0.610 | 1562                | 1038                            | 0.0               | 1.6             | 3.753     | A                             |
| 3 - Southam Road (S) | 715                   | 179                     | 1444                      | 1265              | 0.565 | 710                 | 361                             | 0.0               | 1.3             | 6.630     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1344                      | 1612              | 0.436 | 700                 | 810                             | 0.0               | 0.8             | 4.136     | A                             |

### 07:00 - 07:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 561                   | 140                     | 724                       | 2238              | 0.251 | 561                 | 1330                            | 0.3               | 0.3             | 2.222     | A                             |
| 2 - Hennef Way       | 1569                  | 392                     | 243                       | 2571              | 0.610 | 1569                | 1042                            | 1.6               | 1.6             | 3.803     | A                             |
| 3 - Southam Road (S) | 715                   | 179                     | 1450                      | 1262              | 0.567 | 715                 | 362                             | 1.3               | 1.3             | 6.800     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1351                      | 1607              | 0.437 | 703                 | 814                             | 0.8               | 0.8             | 4.187     | A                             |

### 07:15 - 07:30

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 561                   | 140                     | 724                       | 2238              | 0.251 | 561                 | 1330                            | 0.3               | 0.3             | 2.222     | A                             |
| 2 - Hennef Way       | 1569                  | 392                     | 243                       | 2571              | 0.610 | 1569                | 1042                            | 1.6               | 1.7             | 3.803     | A                             |
| 3 - Southam Road (S) | 715                   | 179                     | 1450                      | 1262              | 0.567 | 715                 | 362                             | 1.3               | 1.3             | 6.802     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1351                      | 1607              | 0.437 | 703                 | 814                             | 0.8               | 0.8             | 4.187     | A                             |

### 07:30 - 07:45

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 561                   | 140                     | 724                       | 2238              | 0.251 | 561                 | 1330                            | 0.3               | 0.3             | 2.222     | A                             |
| 2 - Hennef Way       | 1569                  | 392                     | 243                       | 2571              | 0.610 | 1569                | 1042                            | 1.7               | 1.7             | 3.803     | A                             |
| 3 - Southam Road (S) | 715                   | 179                     | 1450                      | 1262              | 0.567 | 715                 | 362                             | 1.3               | 1.3             | 6.802     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1351                      | 1607              | 0.437 | 703                 | 814                             | 0.8               | 0.8             | 4.187     | A                             |

### 07:45 - 08:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 561                   | 140                     | 724                       | 2238              | 0.251 | 561                 | 1330                            | 0.3               | 0.3             | 2.222     | A                             |
| 2 - Hennef Way       | 1569                  | 392                     | 243                       | 2571              | 0.610 | 1569                | 1042                            | 1.7               | 1.7             | 3.803     | A                             |
| 3 - Southam Road (S) | 715                   | 179                     | 1450                      | 1262              | 0.567 | 715                 | 362                             | 1.3               | 1.3             | 6.802     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1351                      | 1607              | 0.437 | 703                 | 814                             | 0.8               | 0.8             | 4.188     | A                             |

### 08:00 - 08:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 561                   | 140                     | 724                       | 2238              | 0.251 | 561                 | 1330                            | 0.3               | 0.3             | 2.222     | A                             |
| 2 - Hennef Way       | 1569                  | 392                     | 243                       | 2571              | 0.610 | 1569                | 1042                            | 1.7               | 1.7             | 3.803     | A                             |
| 3 - Southam Road (S) | 715                   | 179                     | 1450                      | 1262              | 0.567 | 715                 | 362                             | 1.3               | 1.3             | 6.802     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1351                      | 1607              | 0.437 | 703                 | 814                             | 0.8               | 0.8             | 4.188     | A                             |

# 2021 with Development (sensitivity), AM (8-9)

## Data Errors and Warnings

| Severity | Area     | Item                                       | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 1 - Southam Road (N) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.                                       |
| Warning  | Geometry | 4 - Ruscote Avenue - Roundabout Geometry   | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.                                       |
| Warning  | O-D data |  | O-D matrix contains negative demand. Matrix should only be used as a development matrix for Demand Set relationships and should not be run on its own. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 23.88              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name                       | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-------------------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D14 | 2021 with Development (sensitivity) | AM (8-9)         | FLAT                 | 07:45              | 09:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Southam Road (N) |            | FLAT         | ✓            | 776                     | 100.000            |
| 2 - Hennef Way       |            | FLAT         | ✓            | 2160                    | 100.000            |
| 3 - Southam Road (S) |            | FLAT         | ✓            | 846                     | 100.000            |
| 4 - Ruscote Avenue   |            | FLAT         | ✓            | 966                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 550            | 221                  | 5                  |
|      | 2 - Hennef Way       | 1243                 | 0              | 118                  | 799                |
|      | 3 - Southam Road (S) | 477                  | 56             | 0                    | 313                |
|      | 4 - Ruscote Avenue   | -7                   | 875            | 98                   | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 4              | 1                    | 5                  |
|      | 2 - Hennef Way       | 3                    | 0              | 6                    | 5                  |
|      | 3 - Southam Road (S) | 4                    | 7              | 0                    | 3                  |
|      | 4 - Ruscote Avenue   | 0                    | 6              | 3                    | 0                  |

# Results

## Results Summary for whole modelled period

| Arm                  | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|----------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Southam Road (N) | 0.38    | 2.98          | 0.6             | A       | 776                     | 1164                          |
| 2 - Hennef Way       | 0.86    | 10.58         | 6.3             | B       | 2160                    | 3240                          |
| 3 - Southam Road (S) | 0.97    | 91.55         | 20.6            | F       | 846                     | 1269                          |
| 4 - Ruscote Avenue   | 0.74    | 11.15         | 3.0             | B       | 966                     | 1449                          |

## Main Results for each time segment

### 07:45 - 08:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 776                   | 194                     | 1002                      | 2032              | 0.382 | 773                 | 1690                            | 0.0               | 0.6             | 2.944     | A                             |
| 2 - Hennef Way       | 2160                  | 540                     | 321                       | 2514              | 0.859 | 2136                | 1454                            | 0.0               | 5.9             | 9.394     | A                             |
| 3 - Southam Road (S) | 846                   | 212                     | 2025                      | 888               | 0.953 | 805                 | 433                             | 0.0               | 10.1            | 35.815    | E                             |
| 4 - Ruscote Avenue   | 966                   | 242                     | 1737                      | 1333              | 0.725 | 955                 | 1093                            | 0.0               | 2.7             | 9.820     | A                             |

### 08:00 - 08:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 776                   | 194                     | 1013                      | 2023              | 0.384 | 776                 | 1717                            | 0.6               | 0.6             | 2.976     | A                             |
| 2 - Hennef Way       | 2160                  | 540                     | 323                       | 2513              | 0.860 | 2159                | 1467                            | 5.9               | 6.1             | 10.505    | B                             |
| 3 - Southam Road (S) | 846                   | 212                     | 2046                      | 874               | 0.968 | 830                 | 435                             | 10.1              | 14.1            | 62.389    | F                             |
| 4 - Ruscote Avenue   | 966                   | 242                     | 1766                      | 1312              | 0.736 | 965                 | 1111                            | 2.7               | 2.9             | 10.918    | B                             |

### 08:15 - 08:30

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 776                   | 194                     | 1014                      | 2022              | 0.384 | 776                 | 1721                            | 0.6               | 0.6             | 2.978     | A                             |
| 2 - Hennef Way       | 2160                  | 540                     | 323                       | 2513              | 0.860 | 2160                | 1468                            | 6.1               | 6.2             | 10.551    | B                             |
| 3 - Southam Road (S) | 846                   | 212                     | 2047                      | 874               | 0.968 | 836                 | 436                             | 14.1              | 16.5            | 74.007    | F                             |
| 4 - Ruscote Avenue   | 966                   | 242                     | 1770                      | 1309              | 0.738 | 966                 | 1113                            | 2.9               | 2.9             | 11.050    | B                             |

### 08:30 - 08:45

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 776                   | 194                     | 1015                      | 2022              | 0.384 | 776                 | 1723                            | 0.6               | 0.6             | 2.978     | A                             |
| 2 - Hennef Way       | 2160                  | 540                     | 323                       | 2513              | 0.860 | 2160                | 1468                            | 6.2               | 6.2             | 10.568    | B                             |
| 3 - Southam Road (S) | 846                   | 212                     | 2047                      | 874               | 0.968 | 839                 | 436                             | 16.5              | 18.2            | 81.579    | F                             |
| 4 - Ruscote Avenue   | 966                   | 242                     | 1772                      | 1308              | 0.739 | 966                 | 1114                            | 2.9               | 2.9             | 11.101    | B                             |

### 08:45 - 09:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 776                   | 194                     | 1015                      | 2022              | 0.384 | 776                 | 1724                            | 0.6               | 0.6             | 2.978     | A                             |
| 2 - Hennef Way       | 2160                  | 540                     | 323                       | 2513              | 0.860 | 2160                | 1468                            | 6.2               | 6.3             | 10.579    | B                             |
| 3 - Southam Road (S) | 846                   | 212                     | 2047                      | 874               | 0.968 | 841                 | 436                             | 18.2              | 19.5            | 87.168    | F                             |
| 4 - Ruscote Avenue   | 966                   | 242                     | 1773                      | 1307              | 0.739 | 966                 | 1115                            | 2.9               | 3.0             | 11.130    | B                             |

### 09:00 - 09:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 776                   | 194                     | 1015                      | 2022              | 0.384 | 776                 | 1724                            | 0.6               | 0.6             | 2.978     | A                             |
| 2 - Hennef Way       | 2160                  | 540                     | 323                       | 2513              | 0.860 | 2160                | 1468                            | 6.3               | 6.3             | 10.583    | B                             |
| 3 - Southam Road (S) | 846                   | 212                     | 2047                      | 874               | 0.968 | 842                 | 436                             | 19.5              | 20.6            | 91.553    | F                             |
| 4 - Ruscote Avenue   | 966                   | 242                     | 1773                      | 1307              | 0.739 | 966                 | 1115                            | 3.0               | 3.0             | 11.150    | B                             |

# 2021 with Development (sensitivity), AM (9-10)

## Data Errors and Warnings

| Severity | Area     | Item                                       | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 1 - Southam Road (N) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Ruscote Avenue - Roundabout Geometry   | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 4.00               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name                       | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-------------------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D15 | 2021 with Development (sensitivity) | AM (9-10)        | FLAT                 | 08:45              | 10:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Southam Road (N) |            | FLAT         | ✓            | 565                     | 100.000            |
| 2 - Hennef Way       |            | FLAT         | ✓            | 1574                    | 100.000            |
| 3 - Southam Road (S) |            | FLAT         | ✓            | 581                     | 100.000            |
| 4 - Ruscote Avenue   |            | FLAT         | ✓            | 703                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 400            | 161                  | 4                  |
|      | 2 - Hennef Way       | 918                  | 0              | 74                   | 582                |
|      | 3 - Southam Road (S) | 313                  | 40             | 0                    | 228                |
|      | 4 - Ruscote Avenue   | 0                    | 637            | 66                   | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 8              | 1                    | 5                  |
|      | 2 - Hennef Way       | 9                    | 0              | 9                    | 7                  |
|      | 3 - Southam Road (S) | 12                   | 12             | 0                    | 4                  |
|      | 4 - Ruscote Avenue   | 0                    | 6              | 3                    | 0                  |

# Results

## Results Summary for whole modelled period

| Arm                  | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|----------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Southam Road (N) | 0.25    | 2.30          | 0.4             | A       | 565                     | 848                           |
| 2 - Hennef Way       | 0.61    | 3.87          | 1.7             | A       | 1574                    | 2361                          |
| 3 - Southam Road (S) | 0.47    | 6.06          | 1.0             | A       | 581                     | 872                           |
| 4 - Ruscote Avenue   | 0.42    | 3.96          | 0.8             | A       | 703                     | 1055                          |

## Main Results for each time segment

### 08:45 - 09:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 565                   | 141                     | 740                       | 2226              | 0.254 | 564                 | 1225                            | 0.0               | 0.4             | 2.290     | A                             |
| 2 - Hennef Way       | 1574                  | 394                     | 230                       | 2580              | 0.610 | 1567                | 1073                            | 0.0               | 1.7             | 3.822     | A                             |
| 3 - Southam Road (S) | 581                   | 145                     | 1498                      | 1231              | 0.472 | 577                 | 300                             | 0.0               | 1.0             | 5.955     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1265                      | 1669              | 0.421 | 700                 | 810                             | 0.0               | 0.8             | 3.928     | A                             |

### 09:00 - 09:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 565                   | 141                     | 743                       | 2224              | 0.254 | 565                 | 1231                            | 0.4               | 0.4             | 2.297     | A                             |
| 2 - Hennef Way       | 1574                  | 394                     | 231                       | 2580              | 0.610 | 1574                | 1077                            | 1.7               | 1.7             | 3.874     | A                             |
| 3 - Southam Road (S) | 581                   | 145                     | 1504                      | 1226              | 0.474 | 581                 | 301                             | 1.0               | 1.0             | 6.062     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1271                      | 1664              | 0.422 | 703                 | 814                             | 0.8               | 0.8             | 3.958     | A                             |

### 09:15 - 09:30

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 565                   | 141                     | 743                       | 2224              | 0.254 | 565                 | 1231                            | 0.4               | 0.4             | 2.297     | A                             |
| 2 - Hennef Way       | 1574                  | 394                     | 231                       | 2580              | 0.610 | 1574                | 1077                            | 1.7               | 1.7             | 3.874     | A                             |
| 3 - Southam Road (S) | 581                   | 145                     | 1504                      | 1226              | 0.474 | 581                 | 301                             | 1.0               | 1.0             | 6.062     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1271                      | 1664              | 0.422 | 703                 | 814                             | 0.8               | 0.8             | 3.958     | A                             |

### 09:30 - 09:45

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 565                   | 141                     | 743                       | 2224              | 0.254 | 565                 | 1231                            | 0.4               | 0.4             | 2.297     | A                             |
| 2 - Hennef Way       | 1574                  | 394                     | 231                       | 2580              | 0.610 | 1574                | 1077                            | 1.7               | 1.7             | 3.874     | A                             |
| 3 - Southam Road (S) | 581                   | 145                     | 1504                      | 1226              | 0.474 | 581                 | 301                             | 1.0               | 1.0             | 6.062     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1271                      | 1664              | 0.422 | 703                 | 814                             | 0.8               | 0.8             | 3.958     | A                             |

### 09:45 - 10:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 565                   | 141                     | 743                       | 2224              | 0.254 | 565                 | 1231                            | 0.4               | 0.4             | 2.297     | A                             |
| 2 - Hennef Way       | 1574                  | 394                     | 231                       | 2580              | 0.610 | 1574                | 1077                            | 1.7               | 1.7             | 3.874     | A                             |
| 3 - Southam Road (S) | 581                   | 145                     | 1504                      | 1226              | 0.474 | 581                 | 301                             | 1.0               | 1.0             | 6.062     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1271                      | 1664              | 0.422 | 703                 | 814                             | 0.8               | 0.8             | 3.958     | A                             |

### 10:00 - 10:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 565                   | 141                     | 743                       | 2224              | 0.254 | 565                 | 1231                            | 0.4               | 0.4             | 2.297     | A                             |
| 2 - Hennef Way       | 1574                  | 394                     | 231                       | 2580              | 0.610 | 1574                | 1077                            | 1.7               | 1.7             | 3.874     | A                             |
| 3 - Southam Road (S) | 581                   | 145                     | 1504                      | 1226              | 0.474 | 581                 | 301                             | 1.0               | 1.0             | 6.062     | A                             |
| 4 - Ruscote Avenue   | 703                   | 176                     | 1271                      | 1664              | 0.422 | 703                 | 814                             | 0.8               | 0.8             | 3.958     | A                             |



# 2021 with Development (sensitivity), PM (16-17)

## Data Errors and Warnings

| Severity | Area     | Item                                       | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 1 - Southam Road (N) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Ruscote Avenue - Roundabout Geometry   | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 4.89               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name                       | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-------------------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D16 | 2021 with Development (sensitivity) | PM (16-17)       | FLAT                 | 15:45              | 17:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Southam Road (N) |            | FLAT         | ✓            | 834                     | 100.000            |
| 2 - Hennef Way       |            | FLAT         | ✓            | 1646                    | 100.000            |
| 3 - Southam Road (S) |            | FLAT         | ✓            | 686                     | 100.000            |
| 4 - Ruscote Avenue   |            | FLAT         | ✓            | 883                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 485            | 332                  | 17                 |
|      | 2 - Hennef Way       | 753                  | 0              | 197                  | 696                |
|      | 3 - Southam Road (S) | 395                  | 112            | 0                    | 179                |
|      | 4 - Ruscote Avenue   | 42                   | 682            | 159                  | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 4              | 5                    | 1                  |
|      | 2 - Hennef Way       | 7                    | 0              | 3                    | 6                  |
|      | 3 - Southam Road (S) | 4                    | 6              | 0                    | 1                  |
|      | 4 - Ruscote Avenue   | 0                    | 3              | 1                    | 0                  |

# Results

## Results Summary for whole modelled period

| Arm                  | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|----------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Southam Road (N) | 0.40    | 3.04          | 0.7             | A       | 834                     | 1251                          |
| 2 - Hennef Way       | 0.69    | 5.22          | 2.4             | A       | 1646                    | 2469                          |
| 3 - Southam Road (S) | 0.55    | 6.59          | 1.3             | A       | 686                     | 1029                          |
| 4 - Ruscote Avenue   | 0.53    | 4.67          | 1.1             | A       | 883                     | 1325                          |

## Main Results for each time segment

### 15:45 - 16:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 834                   | 209                     | 948                       | 2072              | 0.403 | 831                 | 1183                            | 0.0               | 0.7             | 3.022     | A                             |
| 2 - Hennef Way       | 1646                  | 412                     | 506                       | 2378              | 0.692 | 1637                | 1273                            | 0.0               | 2.3             | 5.088     | A                             |
| 3 - Southam Road (S) | 686                   | 172                     | 1458                      | 1257              | 0.546 | 681                 | 685                             | 0.0               | 1.2             | 6.423     | A                             |
| 4 - Ruscote Avenue   | 883                   | 221                     | 1252                      | 1678              | 0.526 | 878                 | 887                             | 0.0               | 1.1             | 4.591     | A                             |

### 16:00 - 16:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 834                   | 209                     | 953                       | 2068              | 0.403 | 834                 | 1190                            | 0.7               | 0.7             | 3.043     | A                             |
| 2 - Hennef Way       | 1646                  | 412                     | 508                       | 2377              | 0.693 | 1646                | 1279                            | 2.3               | 2.4             | 5.223     | A                             |
| 3 - Southam Road (S) | 686                   | 172                     | 1466                      | 1251              | 0.548 | 686                 | 688                             | 1.2               | 1.2             | 6.589     | A                             |
| 4 - Ruscote Avenue   | 883                   | 221                     | 1260                      | 1672              | 0.528 | 883                 | 892                             | 1.1               | 1.1             | 4.674     | A                             |

### 16:15 - 16:30

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 834                   | 209                     | 953                       | 2068              | 0.403 | 834                 | 1190                            | 0.7               | 0.7             | 3.043     | A                             |
| 2 - Hennef Way       | 1646                  | 412                     | 508                       | 2377              | 0.693 | 1646                | 1279                            | 2.4               | 2.4             | 5.225     | A                             |
| 3 - Southam Road (S) | 686                   | 172                     | 1466                      | 1251              | 0.548 | 686                 | 688                             | 1.2               | 1.2             | 6.592     | A                             |
| 4 - Ruscote Avenue   | 883                   | 221                     | 1260                      | 1672              | 0.528 | 883                 | 892                             | 1.1               | 1.1             | 4.675     | A                             |

### 16:30 - 16:45

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 834                   | 209                     | 953                       | 2068              | 0.403 | 834                 | 1190                            | 0.7               | 0.7             | 3.043     | A                             |
| 2 - Hennef Way       | 1646                  | 412                     | 508                       | 2377              | 0.693 | 1646                | 1279                            | 2.4               | 2.4             | 5.225     | A                             |
| 3 - Southam Road (S) | 686                   | 172                     | 1466                      | 1251              | 0.548 | 686                 | 688                             | 1.2               | 1.3             | 6.593     | A                             |
| 4 - Ruscote Avenue   | 883                   | 221                     | 1260                      | 1672              | 0.528 | 883                 | 892                             | 1.1               | 1.1             | 4.675     | A                             |

### 16:45 - 17:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 834                   | 209                     | 953                       | 2068              | 0.403 | 834                 | 1190                            | 0.7               | 0.7             | 3.043     | A                             |
| 2 - Hennef Way       | 1646                  | 412                     | 508                       | 2377              | 0.693 | 1646                | 1279                            | 2.4               | 2.4             | 5.225     | A                             |
| 3 - Southam Road (S) | 686                   | 172                     | 1466                      | 1251              | 0.548 | 686                 | 688                             | 1.3               | 1.3             | 6.593     | A                             |
| 4 - Ruscote Avenue   | 883                   | 221                     | 1260                      | 1672              | 0.528 | 883                 | 892                             | 1.1               | 1.1             | 4.675     | A                             |

### 17:00 - 17:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 834                   | 209                     | 953                       | 2068              | 0.403 | 834                 | 1190                            | 0.7               | 0.7             | 3.043     | A                             |
| 2 - Hennef Way       | 1646                  | 412                     | 508                       | 2377              | 0.693 | 1646                | 1279                            | 2.4               | 2.4             | 5.225     | A                             |
| 3 - Southam Road (S) | 686                   | 172                     | 1466                      | 1251              | 0.548 | 686                 | 688                             | 1.3               | 1.3             | 6.593     | A                             |
| 4 - Ruscote Avenue   | 883                   | 221                     | 1260                      | 1672              | 0.528 | 883                 | 892                             | 1.1               | 1.1             | 4.675     | A                             |

# 2021 with Development (sensitivity), PM (17-18)

## Data Errors and Warnings

| Severity | Area     | Item                                       | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 1 - Southam Road (N) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Ruscote Avenue - Roundabout Geometry   | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 8.50               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name                       | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-------------------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D17 | 2021 with Development (sensitivity) | PM (17-18)       | FLAT                 | 16:45              | 18:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Southam Road (N) |            | FLAT         | ✓            | 972                     | 100.000            |
| 2 - Hennef Way       |            | FLAT         | ✓            | 1915                    | 100.000            |
| 3 - Southam Road (S) |            | FLAT         | ✓            | 810                     | 100.000            |
| 4 - Ruscote Avenue   |            | FLAT         | ✓            | 1034                    | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 570            | 381                  | 21                 |
|      | 2 - Hennef Way       | 882                  | 0              | 218                  | 815                |
|      | 3 - Southam Road (S) | 475                  | 128            | 0                    | 207                |
|      | 4 - Ruscote Avenue   | 49                   | 799            | 186                  | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 4              | 4                    | 2                  |
|      | 2 - Hennef Way       | 5                    | 0              | 2                    | 4                  |
|      | 3 - Southam Road (S) | 3                    | 6              | 0                    | 0                  |
|      | 4 - Ruscote Avenue   | 0                    | 2              | 1                    | 0                  |

# Results

## Results Summary for whole modelled period

| Arm                  | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|----------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Southam Road (N) | 0.50    | 3.83          | 1.0             | A       | 972                     | 1458                          |
| 2 - Hennef Way       | 0.83    | 9.30          | 4.9             | A       | 1915                    | 2873                          |
| 3 - Southam Road (S) | 0.74    | 13.31         | 3.0             | B       | 810                     | 1215                          |
| 4 - Ruscote Avenue   | 0.68    | 7.66          | 2.2             | A       | 1034                    | 1551                          |

## Main Results for each time segment

### 16:45 - 17:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 972                   | 243                     | 1103                      | 1956              | 0.497 | 968                 | 1391                            | 0.0               | 1.0             | 3.770     | A                             |
| 2 - Hennef Way       | 1915                  | 479                     | 585                       | 2321              | 0.825 | 1896                | 1486                            | 0.0               | 4.7             | 8.507     | A                             |
| 3 - Southam Road (S) | 810                   | 203                     | 1701                      | 1098              | 0.738 | 799                 | 780                             | 0.0               | 2.7             | 11.956    | B                             |
| 4 - Ruscote Avenue   | 1034                  | 259                     | 1468                      | 1524              | 0.679 | 1026                | 1032                            | 0.0               | 2.1             | 7.234     | A                             |

### 17:00 - 17:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 972                   | 243                     | 1113                      | 1949              | 0.499 | 972                 | 1405                            | 1.0               | 1.0             | 3.827     | A                             |
| 2 - Hennef Way       | 1915                  | 479                     | 588                       | 2318              | 0.826 | 1914                | 1497                            | 4.7               | 4.8             | 9.257     | A                             |
| 3 - Southam Road (S) | 810                   | 203                     | 1717                      | 1088              | 0.745 | 809                 | 785                             | 2.7               | 2.9             | 13.223    | B                             |
| 4 - Ruscote Avenue   | 1034                  | 259                     | 1484                      | 1512              | 0.684 | 1034                | 1043                            | 2.1               | 2.2             | 7.640     | A                             |

### 17:15 - 17:30

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 972                   | 243                     | 1113                      | 1949              | 0.499 | 972                 | 1406                            | 1.0               | 1.0             | 3.828     | A                             |
| 2 - Hennef Way       | 1915                  | 479                     | 588                       | 2318              | 0.826 | 1915                | 1497                            | 4.8               | 4.9             | 9.282     | A                             |
| 3 - Southam Road (S) | 810                   | 203                     | 1718                      | 1087              | 0.745 | 810                 | 785                             | 2.9               | 2.9             | 13.285    | B                             |
| 4 - Ruscote Avenue   | 1034                  | 259                     | 1485                      | 1512              | 0.684 | 1034                | 1043                            | 2.2               | 2.2             | 7.655     | A                             |

### 17:30 - 17:45

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 972                   | 243                     | 1113                      | 1949              | 0.499 | 972                 | 1406                            | 1.0               | 1.0             | 3.828     | A                             |
| 2 - Hennef Way       | 1915                  | 479                     | 588                       | 2318              | 0.826 | 1915                | 1497                            | 4.9               | 4.9             | 9.291     | A                             |
| 3 - Southam Road (S) | 810                   | 203                     | 1718                      | 1087              | 0.745 | 810                 | 785                             | 2.9               | 2.9             | 13.301    | B                             |
| 4 - Ruscote Avenue   | 1034                  | 259                     | 1485                      | 1512              | 0.684 | 1034                | 1043                            | 2.2               | 2.2             | 7.659     | A                             |

### 17:45 - 18:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 972                   | 243                     | 1113                      | 1949              | 0.499 | 972                 | 1406                            | 1.0               | 1.0             | 3.828     | A                             |
| 2 - Hennef Way       | 1915                  | 479                     | 588                       | 2318              | 0.826 | 1915                | 1497                            | 4.9               | 4.9             | 9.295     | A                             |
| 3 - Southam Road (S) | 810                   | 203                     | 1718                      | 1087              | 0.745 | 810                 | 785                             | 2.9               | 3.0             | 13.307    | B                             |
| 4 - Ruscote Avenue   | 1034                  | 259                     | 1485                      | 1512              | 0.684 | 1034                | 1043                            | 2.2               | 2.2             | 7.659     | A                             |

### 18:00 - 18:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 972                   | 243                     | 1113                      | 1949              | 0.499 | 972                 | 1406                            | 1.0               | 1.0             | 3.828     | A                             |
| 2 - Hennef Way       | 1915                  | 479                     | 588                       | 2318              | 0.826 | 1915                | 1497                            | 4.9               | 4.9             | 9.297     | A                             |
| 3 - Southam Road (S) | 810                   | 203                     | 1718                      | 1087              | 0.745 | 810                 | 785                             | 3.0               | 3.0             | 13.313    | B                             |
| 4 - Ruscote Avenue   | 1034                  | 259                     | 1485                      | 1512              | 0.684 | 1034                | 1043                            | 2.2               | 2.2             | 7.659     | A                             |

# 2021 with Development (sensitivity), PM (18-19)

## Data Errors and Warnings

| Severity | Area     | Item                                       | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 1 - Southam Road (N) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Ruscote Avenue - Roundabout Geometry   | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 3.49               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name                       | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-------------------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D18 | 2021 with Development (sensitivity) | PM (18-19)       | FLAT                 | 17:45              | 19:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                  | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Southam Road (N) |            | FLAT         | ✓            | 703                     | 100.000            |
| 2 - Hennef Way       |            | FLAT         | ✓            | 1386                    | 100.000            |
| 3 - Southam Road (S) |            | FLAT         | ✓            | 605                     | 100.000            |
| 4 - Ruscote Avenue   |            | FLAT         | ✓            | 738                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 403            | 286                  | 14                 |
|      | 2 - Hennef Way       | 628                  | 0              | 178                  | 580                |
|      | 3 - Southam Road (S) | 344                  | 107            | 0                    | 154                |
|      | 4 - Ruscote Avenue   | 35                   | 569            | 134                  | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                      | To                   |                |                      |                    |
|------|----------------------|----------------------|----------------|----------------------|--------------------|
|      |                      | 1 - Southam Road (N) | 2 - Hennef Way | 3 - Southam Road (S) | 4 - Ruscote Avenue |
| From | 1 - Southam Road (N) | 0                    | 3              | 2                    | 2                  |
|      | 2 - Hennef Way       | 3                    | 0              | 3                    | 4                  |
|      | 3 - Southam Road (S) | 2                    | 7              | 0                    | 1                  |
|      | 4 - Ruscote Avenue   | 0                    | 1              | 0                    | 0                  |

# Results

## Results Summary for whole modelled period

| Arm                  | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|----------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Southam Road (N) | 0.32    | 2.51          | 0.5             | A       | 703                     | 1055                          |
| 2 - Hennef Way       | 0.57    | 3.56          | 1.4             | A       | 1386                    | 2079                          |
| 3 - Southam Road (S) | 0.43    | 4.59          | 0.8             | A       | 605                     | 908                           |
| 4 - Ruscote Avenue   | 0.41    | 3.41          | 0.7             | A       | 738                     | 1107                          |

## Main Results for each time segment

### 17:45 - 18:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 703                   | 176                     | 807                       | 2176              | 0.323 | 701                 | 1003                            | 0.0               | 0.5             | 2.499     | A                             |
| 2 - Hennef Way       | 1386                  | 347                     | 433                       | 2432              | 0.570 | 1381                | 1075                            | 0.0               | 1.4             | 3.522     | A                             |
| 3 - Southam Road (S) | 605                   | 151                     | 1217                      | 1413              | 0.428 | 602                 | 596                             | 0.0               | 0.8             | 4.539     | A                             |
| 4 - Ruscote Avenue   | 738                   | 185                     | 1074                      | 1804              | 0.409 | 735                 | 745                             | 0.0               | 0.7             | 3.385     | A                             |

### 18:00 - 18:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 703                   | 176                     | 810                       | 2174              | 0.323 | 703                 | 1007                            | 0.5               | 0.5             | 2.509     | A                             |
| 2 - Hennef Way       | 1386                  | 347                     | 434                       | 2431              | 0.570 | 1386                | 1079                            | 1.4               | 1.4             | 3.561     | A                             |
| 3 - Southam Road (S) | 605                   | 151                     | 1222                      | 1410              | 0.429 | 605                 | 598                             | 0.8               | 0.8             | 4.588     | A                             |
| 4 - Ruscote Avenue   | 738                   | 185                     | 1079                      | 1801              | 0.410 | 738                 | 748                             | 0.7               | 0.7             | 3.412     | A                             |

### 18:15 - 18:30

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 703                   | 176                     | 810                       | 2174              | 0.323 | 703                 | 1007                            | 0.5               | 0.5             | 2.509     | A                             |
| 2 - Hennef Way       | 1386                  | 347                     | 434                       | 2431              | 0.570 | 1386                | 1079                            | 1.4               | 1.4             | 3.561     | A                             |
| 3 - Southam Road (S) | 605                   | 151                     | 1222                      | 1410              | 0.429 | 605                 | 598                             | 0.8               | 0.8             | 4.588     | A                             |
| 4 - Ruscote Avenue   | 738                   | 185                     | 1079                      | 1801              | 0.410 | 738                 | 748                             | 0.7               | 0.7             | 3.412     | A                             |

### 18:30 - 18:45

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 703                   | 176                     | 810                       | 2174              | 0.323 | 703                 | 1007                            | 0.5               | 0.5             | 2.509     | A                             |
| 2 - Hennef Way       | 1386                  | 347                     | 434                       | 2431              | 0.570 | 1386                | 1079                            | 1.4               | 1.4             | 3.561     | A                             |
| 3 - Southam Road (S) | 605                   | 151                     | 1222                      | 1410              | 0.429 | 605                 | 598                             | 0.8               | 0.8             | 4.588     | A                             |
| 4 - Ruscote Avenue   | 738                   | 185                     | 1079                      | 1801              | 0.410 | 738                 | 748                             | 0.7               | 0.7             | 3.412     | A                             |

### 18:45 - 19:00

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 703                   | 176                     | 810                       | 2174              | 0.323 | 703                 | 1007                            | 0.5               | 0.5             | 2.509     | A                             |
| 2 - Hennef Way       | 1386                  | 347                     | 434                       | 2431              | 0.570 | 1386                | 1079                            | 1.4               | 1.4             | 3.561     | A                             |
| 3 - Southam Road (S) | 605                   | 151                     | 1222                      | 1410              | 0.429 | 605                 | 598                             | 0.8               | 0.8             | 4.588     | A                             |
| 4 - Ruscote Avenue   | 738                   | 185                     | 1079                      | 1801              | 0.410 | 738                 | 748                             | 0.7               | 0.7             | 3.412     | A                             |

### 19:00 - 19:15

| Arm                  | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Southam Road (N) | 703                   | 176                     | 810                       | 2174              | 0.323 | 703                 | 1007                            | 0.5               | 0.5             | 2.509     | A                             |
| 2 - Hennef Way       | 1386                  | 347                     | 434                       | 2431              | 0.570 | 1386                | 1079                            | 1.4               | 1.4             | 3.561     | A                             |
| 3 - Southam Road (S) | 605                   | 151                     | 1222                      | 1410              | 0.429 | 605                 | 598                             | 0.8               | 0.8             | 4.588     | A                             |
| 4 - Ruscote Avenue   | 738                   | 185                     | 1079                      | 1801              | 0.410 | 738                 | 748                             | 0.7               | 0.7             | 3.412     | A                             |

|  |
|--|
| Junctions 9  |
| ARCADY 9 - Roundabout Module   |
| Version: 9.5.1.7462<br>© Copyright TRL Limited, 2019   |
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Filename: 194663-96 - Hennef Way\_A4260 - V2.j9  
 Path: C:\Users\alice.todd.VECTOS\Desktop  
 Report generation date: 27/04/2021 16:54:57

- »2021 without development, PM (16-17)
- »2021 without development, PM (17-18)
- »2021 without development, PM (18-19)
- »2021 with development, PM (16-17)
- »2021 with development, PM (17-18)
- »2021 with development, PM (18-19)
- »2021 with development (sensitivity), PM (16-17)
- »2021 with development (sensitivity), PM (17-18)
- »2021 with development (sensitivity), PM (18-19)

**Summary of junction performance**

|  | PM (16-17)  |           |      |     | PM (17-18)  |           |      |     | PM (18-19)  |           |      |     |
|--|-------------|-----------|------|-----|-------------|-----------|------|-----|-------------|-----------|------|-----|
|  | Queue (PCU) | Delay (s) | RFC  | LOS | Queue (PCU) | Delay (s) | RFC  | LOS | Queue (PCU) | Delay (s) | RFC  | LOS |
| <b>2021 without development</b>            |             |           |      |     |             |           |      |     |             |           |      |     |
| 1 - Grimsbury Green                        | 0.0         | 0.00      | 0.00 | A   | 0.0         | 0.00      | 0.00 | A   | 0.0         | 0.00      | 0.00 | A   |
| 2 - Hennef Way (E)                         | 2.8         | 4.73      | 0.73 | A   | 6.6         | 9.42      | 0.87 | A   | 1.5         | 3.06      | 0.60 | A   |
| 3 - Concorde Avenue                        | 1.5         | 4.96      | 0.59 | A   | 3.4         | 9.81      | 0.77 | A   | 0.8         | 3.27      | 0.45 | A   |
| 4 - Hennef Way (W)                         | 2.5         | 6.70      | 0.70 | A   | 7.2         | 17.06     | 0.88 | C   | 1.3         | 4.13      | 0.55 | A   |
| <b>2021 with development</b>               |             |           |      |     |             |           |      |     |             |           |      |     |
| 1 - Grimsbury Green                        | 0.0         | 0.00      | 0.00 | A   | 0.0         | 0.00      | 0.00 | A   | 0.0         | 0.00      | 0.00 | A   |
| 2 - Hennef Way (E)                         | 3.5         | 5.55      | 0.77 | A   | 10.1        | 13.88     | 0.91 | B   | 1.8         | 3.39      | 0.64 | A   |
| 3 - Concorde Avenue                        | 1.7         | 5.71      | 0.62 | A   | 4.8         | 13.68     | 0.83 | B   | 0.9         | 3.57      | 0.47 | A   |
| 4 - Hennef Way (W)                         | 3.9         | 9.36      | 0.79 | A   | 34.4        | 73.37     | 0.98 | F   | 1.7         | 4.95      | 0.63 | A   |
| <b>2021 with development (sensitivity)</b> |             |           |      |     |             |           |      |     |             |           |      |     |
| 1 - Grimsbury Green                        | 0.0         | 0.00      | 0.00 | A   | 0.0         | 0.00      | 0.00 | A   | 0.0         | 0.00      | 0.00 | A   |
| 2 - Hennef Way (E)                         | 3.2         | 5.21      | 0.75 | A   | 8.4         | 11.71     | 0.89 | B   | 1.7         | 3.28      | 0.63 | A   |
| 3 - Concorde Avenue                        | 1.6         | 5.41      | 0.61 | A   | 4.1         | 11.84     | 0.80 | B   | 0.9         | 3.47      | 0.46 | A   |
| 4 - Hennef Way (W)                         | 2.7         | 7.13      | 0.72 | A   | 8.9         | 20.53     | 0.90 | C   | 1.4         | 4.32      | 0.57 | A   |

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

## File summary

### File Description

|             |                   |
|-------------|-------------------|
| Title       |                   |
| Location    |                   |
| Site number |                   |
| Date        | 19/01/2021        |
| Version     |                   |
| Status      | (new file)        |
| Identifier  |                   |
| Client      |                   |
| Jobnumber   |                   |
| Enumerator  | VECTOS\ellen.hill |
| Description |                   |

### Units

| Distance units | Speed units | Traffic units input | Traffic units results | Flow units | Average delay units | Total delay units | Rate of delay units |
|----------------|-------------|---------------------|-----------------------|------------|---------------------|-------------------|---------------------|
| m              | kph         | PCU                 | PCU                   | perHour    | s                   | -Min              | perMin              |

### Analysis Options

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|--------------------|-----------------------------|-----------------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
| 5.75               |                             |                                   |                             | 0.85          | 36.00                       | 20.00                 |

### Demand Set Summary

| ID  | Scenario name                       | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-------------------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D4  | 2021 without development            | PM (16-17)       | FLAT                 | 15:45              | 17:15               | 90                       | 15                        | ✓                 |
| D5  | 2021 without development            | PM (17-18)       | FLAT                 | 16:45              | 18:15               | 90                       | 15                        | ✓                 |
| D6  | 2021 without development            | PM (18-19)       | FLAT                 | 17:45              | 19:15               | 90                       | 15                        | ✓                 |
| D10 | 2021 with development               | PM (16-17)       | FLAT                 | 15:45              | 17:15               | 90                       | 15                        | ✓                 |
| D11 | 2021 with development               | PM (17-18)       | FLAT                 | 16:45              | 18:15               | 90                       | 15                        | ✓                 |
| D12 | 2021 with development               | PM (18-19)       | FLAT                 | 17:45              | 19:15               | 90                       | 15                        | ✓                 |
| D16 | 2021 with development (sensitivity) | PM (16-17)       | FLAT                 | 15:45              | 17:15               | 90                       | 15                        | ✓                 |
| D17 | 2021 with development (sensitivity) | PM (17-18)       | FLAT                 | 16:45              | 18:15               | 90                       | 15                        | ✓                 |
| D18 | 2021 with development (sensitivity) | PM (18-19)       | FLAT                 | 17:45              | 19:15               | 90                       | 15                        | ✓                 |

### Analysis Set Details

| ID | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|----|-------------------|---------------------------------|-------------------------------------|
| A1 | ✓                 | 100.000                         | 100.000                             |



# 2021 without development, PM (16-17)

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 5.35               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Arms

### Arms

| Arm | Name            | Description |
|-----|-----------------|-------------|
| 1   | Grimsbury Green |             |
| 2   | Hennef Way (E)  |             |
| 3   | Concorde Avenue |             |
| 4   | Hennef Way (W)  |             |

### Roundabout Geometry

| Arm                 | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit only |
|---------------------|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| 1 - Grimsbury Green | 3.75                             | 7.24                | 6.9                             | 26.6                 | 58.2                              | 28.4                               |           |
| 2 - Hennef Way (E)  | 7.30                             | 11.79               | 20.7                            | 58.7                 | 58.2                              | 18.4                               |           |
| 3 - Concorde Avenue | 6.71                             | 10.58               | 22.8                            | 41.2                 | 58.2                              | 19.8                               |           |
| 4 - Hennef Way (W)  | 7.16                             | 8.50                | 4.5                             | 48.4                 | 58.2                              | 14.6                               |           |

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

| Arm                 | Final slope | Final intercept (PCU/hr) |
|---------------------|-------------|--------------------------|
| 1 - Grimsbury Green | 0.548       | 1566                     |
| 2 - Hennef Way (E)  | 0.857       | 3233                     |
| 3 - Concorde Avenue | 0.806       | 2962                     |
| 4 - Hennef Way (W)  | 0.743       | 2572                     |

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

| ID | Scenario name            | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|--------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D4 | 2021 without development | PM (16-17)       | FLAT                 | 15:45              | 17:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                 | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Grimsbury Green |            | FLAT         | ✓            | 0                       | 100.000            |
| 2 - Hennef Way (E)  |            | FLAT         | ✓            | 2169                    | 100.000            |
| 3 - Concorde Avenue |            | FLAT         | ✓            | 1085                    | 100.000            |
| 4 - Hennef Way (W)  |            | FLAT         | ✓            | 1331                    | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                     | To                  |                    |                     |                    |
|------|---------------------|---------------------|--------------------|---------------------|--------------------|
|      |                     | 1 - Grimsbury Green | 2 - Hennef Way (E) | 3 - Concorde Avenue | 4 - Hennef Way (W) |
| From | 1 - Grimsbury Green | 0                   | 0                  | 0                   | 0                  |
|      | 2 - Hennef Way (E)  | 0                   | 0                  | 774                 | 1395               |
|      | 3 - Concorde Avenue | 0                   | 913                | 0                   | 172                |
|      | 4 - Hennef Way (W)  | 0                   | 1036               | 295                 | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                     | To                  |                    |                     |                    |
|------|---------------------|---------------------|--------------------|---------------------|--------------------|
|      |                     | 1 - Grimsbury Green | 2 - Hennef Way (E) | 3 - Concorde Avenue | 4 - Hennef Way (W) |
| From | 1 - Grimsbury Green | 0                   | 0                  | 0                   | 0                  |
|      | 2 - Hennef Way (E)  | 0                   | 0                  | 4                   | 8                  |
|      | 3 - Concorde Avenue | 0                   | 4                  | 0                   | 2                  |
|      | 4 - Hennef Way (W)  | 0                   | 6                  | 1                   | 0                  |

## Results

### Results Summary for whole modelled period

| Arm                 | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Grimsbury Green | 0.00    | 0.00          | 0.0             | A       | 0                       | 0                             |
| 2 - Hennef Way (E)  | 0.73    | 4.73          | 2.8             | A       | 2169                    | 3254                          |
| 3 - Concorde Avenue | 0.59    | 4.96          | 1.5             | A       | 1085                    | 1628                          |
| 4 - Hennef Way (W)  | 0.70    | 6.70          | 2.5             | A       | 1331                    | 1997                          |

### Main Results for each time segment

#### 15:45 - 16:00

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2229                      | 344               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2169                  | 542                     | 293                       | 2982              | 0.727 | 2158                | 1937                            | 0.0               | 2.8             | 4.594     | A                             |
| 3 - Concorde Avenue | 1085                  | 271                     | 1388                      | 1844              | 0.588 | 1079                | 1063                            | 0.0               | 1.5             | 4.845     | A                             |
| 4 - Hennef Way (W)  | 1331                  | 333                     | 908                       | 1898              | 0.701 | 1321                | 1559                            | 0.0               | 2.4             | 6.443     | A                             |

**16:00 - 16:15**

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2244                      | 336               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2169                  | 542                     | 295                       | 2980              | 0.728 | 2169                | 1949                            | 2.8               | 2.8             | 4.726     | A                             |
| 3 - Concorde Avenue | 1085                  | 271                     | 1395                      | 1838              | 0.590 | 1085                | 1069                            | 1.5               | 1.5             | 4.955     | A                             |
| 4 - Hennef Way (W)  | 1331                  | 333                     | 913                       | 1894              | 0.703 | 1331                | 1567                            | 2.4               | 2.4             | 6.694     | A                             |

**16:15 - 16:30**

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2244                      | 336               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2169                  | 542                     | 295                       | 2980              | 0.728 | 2169                | 1949                            | 2.8               | 2.8             | 4.728     | A                             |
| 3 - Concorde Avenue | 1085                  | 271                     | 1395                      | 1838              | 0.590 | 1085                | 1069                            | 1.5               | 1.5             | 4.956     | A                             |
| 4 - Hennef Way (W)  | 1331                  | 333                     | 913                       | 1894              | 0.703 | 1331                | 1567                            | 2.4               | 2.5             | 6.697     | A                             |

**16:30 - 16:45**

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2244                      | 336               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2169                  | 542                     | 295                       | 2980              | 0.728 | 2169                | 1949                            | 2.8               | 2.8             | 4.728     | A                             |
| 3 - Concorde Avenue | 1085                  | 271                     | 1395                      | 1838              | 0.590 | 1085                | 1069                            | 1.5               | 1.5             | 4.956     | A                             |
| 4 - Hennef Way (W)  | 1331                  | 333                     | 913                       | 1894              | 0.703 | 1331                | 1567                            | 2.5               | 2.5             | 6.699     | A                             |

**16:45 - 17:00**

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2244                      | 336               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2169                  | 542                     | 295                       | 2980              | 0.728 | 2169                | 1949                            | 2.8               | 2.8             | 4.728     | A                             |
| 3 - Concorde Avenue | 1085                  | 271                     | 1395                      | 1838              | 0.590 | 1085                | 1069                            | 1.5               | 1.5             | 4.956     | A                             |
| 4 - Hennef Way (W)  | 1331                  | 333                     | 913                       | 1894              | 0.703 | 1331                | 1567                            | 2.5               | 2.5             | 6.699     | A                             |

**17:00 - 17:15**

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2244                      | 336               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2169                  | 542                     | 295                       | 2980              | 0.728 | 2169                | 1949                            | 2.8               | 2.8             | 4.728     | A                             |
| 3 - Concorde Avenue | 1085                  | 271                     | 1395                      | 1838              | 0.590 | 1085                | 1069                            | 1.5               | 1.5             | 4.956     | A                             |
| 4 - Hennef Way (W)  | 1331                  | 333                     | 913                       | 1894              | 0.703 | 1331                | 1567                            | 2.5               | 2.5             | 6.699     | A                             |

# 2021 without development, PM (17-18)

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 11.73              | B            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name            | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|--------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D5 | 2021 without development | PM (17-18)       | FLAT                 | 16:45              | 18:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                 | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Grimsbury Green |            | FLAT         | ✓            | 0                       | 100.000            |
| 2 - Hennef Way (E)  |            | FLAT         | ✓            | 2541                    | 100.000            |
| 3 - Concorde Avenue |            | FLAT         | ✓            | 1272                    | 100.000            |
| 4 - Hennef Way (W)  |            | FLAT         | ✓            | 1559                    | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                     | To                  |                    |                     |                    |
|------|---------------------|---------------------|--------------------|---------------------|--------------------|
|      |                     | 1 - Grimsbury Green | 2 - Hennef Way (E) | 3 - Concorde Avenue | 4 - Hennef Way (W) |
| From | 1 - Grimsbury Green | 0                   | 0                  | 0                   | 0                  |
|      | 2 - Hennef Way (E)  | 0                   | 0                  | 907                 | 1634               |
|      | 3 - Concorde Avenue | 0                   | 1070               | 0                   | 202                |
|      | 4 - Hennef Way (W)  | 0                   | 1214               | 345                 | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                     | To                  |                    |                     |                    |
|------|---------------------|---------------------|--------------------|---------------------|--------------------|
|      |                     | 1 - Grimsbury Green | 2 - Hennef Way (E) | 3 - Concorde Avenue | 4 - Hennef Way (W) |
| From | 1 - Grimsbury Green | 0                   | 0                  | 0                   | 0                  |
|      | 2 - Hennef Way (E)  | 0                   | 0                  | 2                   | 5                  |
|      | 3 - Concorde Avenue | 0                   | 2                  | 0                   | 1                  |
|      | 4 - Hennef Way (W)  | 0                   | 5                  | 2                   | 0                  |

## Results

### Results Summary for whole modelled period

| Arm                 | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Grimsbury Green | 0.00    | 0.00          | 0.0             | A       | 0                       | 0                             |
| 2 - Hennef Way (E)  | 0.87    | 9.42          | 6.6             | A       | 2541                    | 3812                          |
| 3 - Concorde Avenue | 0.77    | 9.81          | 3.4             | A       | 1272                    | 1908                          |
| 4 - Hennef Way (W)  | 0.88    | 17.06         | 7.2             | C       | 1559                    | 2339                          |

### Main Results for each time segment

#### 16:45 - 17:00

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2593                      | 145               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2541                  | 635                     | 339                       | 2942              | 0.864 | 2516                | 2253                            | 0.0               | 6.1             | 8.360     | A                             |
| 3 - Concorde Avenue | 1272                  | 318                     | 1618                      | 1658              | 0.767 | 1259                | 1238                            | 0.0               | 3.2             | 8.921     | A                             |
| 4 - Hennef Way (W)  | 1559                  | 390                     | 1059                      | 1786              | 0.873 | 1534                | 1818                            | 0.0               | 6.3             | 13.758    | B                             |

#### 17:00 - 17:15

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2626                      | 127               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2541                  | 635                     | 345                       | 2938              | 0.865 | 2540                | 2282                            | 6.1               | 6.4             | 9.346     | A                             |
| 3 - Concorde Avenue | 1272                  | 318                     | 1633                      | 1646              | 0.773 | 1271                | 1251                            | 3.2               | 3.4             | 9.756     | A                             |
| 4 - Hennef Way (W)  | 1559                  | 390                     | 1069                      | 1778              | 0.877 | 1557                | 1835                            | 6.3               | 6.9             | 16.639    | C                             |

#### 17:15 - 17:30

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2628                      | 126               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2541                  | 635                     | 345                       | 2937              | 0.865 | 2541                | 2283                            | 6.4               | 6.5             | 9.393     | A                             |
| 3 - Concorde Avenue | 1272                  | 318                     | 1634                      | 1646              | 0.773 | 1272                | 1252                            | 3.4               | 3.4             | 9.792     | A                             |
| 4 - Hennef Way (W)  | 1559                  | 390                     | 1070                      | 1778              | 0.877 | 1558                | 1836                            | 6.9               | 7.1             | 16.898    | C                             |

#### 17:30 - 17:45

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2629                      | 125               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2541                  | 635                     | 345                       | 2937              | 0.865 | 2541                | 2284                            | 6.5               | 6.5             | 9.409     | A                             |
| 3 - Concorde Avenue | 1272                  | 318                     | 1634                      | 1646              | 0.773 | 1272                | 1252                            | 3.4               | 3.4             | 9.802     | A                             |
| 4 - Hennef Way (W)  | 1559                  | 390                     | 1070                      | 1778              | 0.877 | 1559                | 1836                            | 7.1               | 7.1             | 16.988    | C                             |

17:45 - 18:00

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2629                      | 125               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2541                  | 635                     | 345                       | 2937              | 0.865 | 2541                | 2284                            | 6.5               | 6.6             | 9.417     | A                             |
| 3 - Concorde Avenue | 1272                  | 318                     | 1634                      | 1646              | 0.773 | 1272                | 1252                            | 3.4               | 3.4             | 9.807     | A                             |
| 4 - Hennef Way (W)  | 1559                  | 390                     | 1070                      | 1778              | 0.877 | 1559                | 1836                            | 7.1               | 7.2             | 17.033    | C                             |

18:00 - 18:15

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2629                      | 125               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2541                  | 635                     | 345                       | 2937              | 0.865 | 2541                | 2284                            | 6.6               | 6.6             | 9.421     | A                             |
| 3 - Concorde Avenue | 1272                  | 318                     | 1634                      | 1645              | 0.773 | 1272                | 1252                            | 3.4               | 3.4             | 9.809     | A                             |
| 4 - Hennef Way (W)  | 1559                  | 390                     | 1070                      | 1778              | 0.877 | 1559                | 1836                            | 7.2               | 7.2             | 17.060    | C                             |

# 2021 without development, PM (18-19)

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 3.42               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name            | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|--------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D6 | 2021 without development | PM (18-19)       | FLAT                 | 17:45              | 19:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                 | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Grimsbury Green |            | FLAT         | ✓            | 0                       | 100.000            |
| 2 - Hennef Way (E)  |            | FLAT         | ✓            | 1809                    | 100.000            |
| 3 - Concorde Avenue |            | FLAT         | ✓            | 906                     | 100.000            |
| 4 - Hennef Way (W)  |            | FLAT         | ✓            | 1110                    | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                     | To                  |                    |                     |                    |
|------|---------------------|---------------------|--------------------|---------------------|--------------------|
|      |                     | 1 - Grimsbury Green | 2 - Hennef Way (E) | 3 - Concorde Avenue | 4 - Hennef Way (W) |
| From | 1 - Grimsbury Green | 0                   | 0                  | 0                   | 0                  |
|      | 2 - Hennef Way (E)  | 0                   | 0                  | 646                 | 1163               |
|      | 3 - Concorde Avenue | 0                   | 762                | 0                   | 144                |
|      | 4 - Hennef Way (W)  | 0                   | 864                | 246                 | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                     | To                  |                    |                     |                    |
|------|---------------------|---------------------|--------------------|---------------------|--------------------|
|      |                     | 1 - Grimsbury Green | 2 - Hennef Way (E) | 3 - Concorde Avenue | 4 - Hennef Way (W) |
| From | 1 - Grimsbury Green | 0                   | 0                  | 0                   | 0                  |
|      | 2 - Hennef Way (E)  | 0                   | 0                  | 2                   | 4                  |
|      | 3 - Concorde Avenue | 0                   | 2                  | 0                   | 0                  |
|      | 4 - Hennef Way (W)  | 0                   | 3                  | 2                   | 0                  |

## Results

### Results Summary for whole modelled period

| Arm                 | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Grimsbury Green | 0.00    | 0.00          | 0.0             | A       | 0                       | 0                             |
| 2 - Hennef Way (E)  | 0.60    | 3.06          | 1.5             | A       | 1809                    | 2714                          |
| 3 - Concorde Avenue | 0.45    | 3.27          | 0.8             | A       | 906                     | 1359                          |
| 4 - Hennef Way (W)  | 0.55    | 4.13          | 1.3             | A       | 1110                    | 1665                          |

### Main Results for each time segment

#### 17:45 - 18:00

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 1864                      | 544               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 1809                  | 452                     | 245                       | 3023              | 0.598 | 1803                | 1619                            | 0.0               | 1.5             | 3.033     | A                             |
| 3 - Concorde Avenue | 906                   | 227                     | 1159                      | 2028              | 0.447 | 903                 | 889                             | 0.0               | 0.8             | 3.243     | A                             |
| 4 - Hennef Way (W)  | 1110                  | 278                     | 759                       | 2009              | 0.553 | 1105                | 1303                            | 0.0               | 1.3             | 4.072     | A                             |

#### 18:00 - 18:15

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 1872                      | 540               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 1809                  | 452                     | 246                       | 3022              | 0.599 | 1809                | 1626                            | 1.5               | 1.5             | 3.064     | A                             |
| 3 - Concorde Avenue | 906                   | 227                     | 1163                      | 2025              | 0.447 | 906                 | 892                             | 0.8               | 0.8             | 3.270     | A                             |
| 4 - Hennef Way (W)  | 1110                  | 278                     | 762                       | 2006              | 0.553 | 1110                | 1307                            | 1.3               | 1.3             | 4.126     | A                             |

#### 18:15 - 18:30

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 1872                      | 540               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 1809                  | 452                     | 246                       | 3022              | 0.599 | 1809                | 1626                            | 1.5               | 1.5             | 3.064     | A                             |
| 3 - Concorde Avenue | 906                   | 227                     | 1163                      | 2025              | 0.447 | 906                 | 892                             | 0.8               | 0.8             | 3.270     | A                             |
| 4 - Hennef Way (W)  | 1110                  | 278                     | 762                       | 2006              | 0.553 | 1110                | 1307                            | 1.3               | 1.3             | 4.126     | A                             |

#### 18:30 - 18:45

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 1872                      | 540               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 1809                  | 452                     | 246                       | 3022              | 0.599 | 1809                | 1626                            | 1.5               | 1.5             | 3.064     | A                             |
| 3 - Concorde Avenue | 906                   | 227                     | 1163                      | 2025              | 0.447 | 906                 | 892                             | 0.8               | 0.8             | 3.270     | A                             |
| 4 - Hennef Way (W)  | 1110                  | 278                     | 762                       | 2006              | 0.553 | 1110                | 1307                            | 1.3               | 1.3             | 4.126     | A                             |



18:45 - 19:00

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 1872                      | 540               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 1809                  | 452                     | 246                       | 3022              | 0.599 | 1809                | 1626                            | 1.5               | 1.5             | 3.064     | A                             |
| 3 - Concorde Avenue | 906                   | 227                     | 1163                      | 2025              | 0.447 | 906                 | 892                             | 0.8               | 0.8             | 3.270     | A                             |
| 4 - Hennef Way (W)  | 1110                  | 278                     | 762                       | 2006              | 0.553 | 1110                | 1307                            | 1.3               | 1.3             | 4.126     | A                             |

19:00 - 19:15

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 1872                      | 540               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 1809                  | 452                     | 246                       | 3022              | 0.599 | 1809                | 1626                            | 1.5               | 1.5             | 3.064     | A                             |
| 3 - Concorde Avenue | 906                   | 227                     | 1163                      | 2025              | 0.447 | 906                 | 892                             | 0.8               | 0.8             | 3.270     | A                             |
| 4 - Hennef Way (W)  | 1110                  | 278                     | 762                       | 2006              | 0.553 | 1110                | 1307                            | 1.3               | 1.3             | 4.126     | A                             |

# 2021 with development, PM (16-17)

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 6.76               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name         | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-----------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D10 | 2021 with development | PM (16-17)       | FLAT                 | 15:45              | 17:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                 | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Grimsbury Green |            | FLAT         | ✓            | 0                       | 100.000            |
| 2 - Hennef Way (E)  |            | FLAT         | ✓            | 2293                    | 100.000            |
| 3 - Concorde Avenue |            | FLAT         | ✓            | 1085                    | 100.000            |
| 4 - Hennef Way (W)  |            | FLAT         | ✓            | 1494                    | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                     | To                  |                    |                     |                    |
|------|---------------------|---------------------|--------------------|---------------------|--------------------|
|      |                     | 1 - Grimsbury Green | 2 - Hennef Way (E) | 3 - Concorde Avenue | 4 - Hennef Way (W) |
| From | 1 - Grimsbury Green | 0                   | 0                  | 0                   | 0                  |
|      | 2 - Hennef Way (E)  | 0                   | 0                  | 774                 | 1519               |
|      | 3 - Concorde Avenue | 0                   | 913                | 0                   | 172                |
|      | 4 - Hennef Way (W)  | 0                   | 1199               | 295                 | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                     | To                  |                    |                     |                    |
|------|---------------------|---------------------|--------------------|---------------------|--------------------|
|      |                     | 1 - Grimsbury Green | 2 - Hennef Way (E) | 3 - Concorde Avenue | 4 - Hennef Way (W) |
| From | 1 - Grimsbury Green | 0                   | 0                  | 0                   | 0                  |
|      | 2 - Hennef Way (E)  | 0                   | 0                  | 4                   | 7                  |
|      | 3 - Concorde Avenue | 0                   | 4                  | 0                   | 2                  |
|      | 4 - Hennef Way (W)  | 0                   | 5                  | 1                   | 0                  |

## Results

### Results Summary for whole modelled period

| Arm                 | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Grimsbury Green | 0.00    | 0.00          | 0.0             | A       | 0                       | 0                             |
| 2 - Hennef Way (E)  | 0.77    | 5.55          | 3.5             | A       | 2293                    | 3440                          |
| 3 - Concorde Avenue | 0.62    | 5.71          | 1.7             | A       | 1085                    | 1628                          |
| 4 - Hennef Way (W)  | 0.79    | 9.36          | 3.9             | A       | 1494                    | 2241                          |

### Main Results for each time segment

#### 15:45 - 16:00

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2387                      | 258               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2293                  | 573                     | 292                       | 2983              | 0.769 | 2279                | 2095                            | 0.0               | 3.4             | 5.326     | A                             |
| 3 - Concorde Avenue | 1085                  | 271                     | 1510                      | 1745              | 0.622 | 1078                | 1061                            | 0.0               | 1.7             | 5.540     | A                             |
| 4 - Hennef Way (W)  | 1494                  | 374                     | 907                       | 1899              | 0.787 | 1479                | 1681                            | 0.0               | 3.7             | 8.666     | A                             |

#### 16:00 - 16:15

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2406                      | 247               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2293                  | 573                     | 295                       | 2980              | 0.769 | 2293                | 2112                            | 3.4               | 3.5             | 5.546     | A                             |
| 3 - Concorde Avenue | 1085                  | 271                     | 1519                      | 1738              | 0.624 | 1085                | 1069                            | 1.7               | 1.7             | 5.710     | A                             |
| 4 - Hennef Way (W)  | 1494                  | 374                     | 913                       | 1894              | 0.789 | 1494                | 1691                            | 3.7               | 3.8             | 9.332     | A                             |

#### 16:15 - 16:30

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2407                      | 247               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2293                  | 573                     | 295                       | 2980              | 0.769 | 2293                | 2112                            | 3.5               | 3.5             | 5.549     | A                             |
| 3 - Concorde Avenue | 1085                  | 271                     | 1519                      | 1738              | 0.624 | 1085                | 1069                            | 1.7               | 1.7             | 5.713     | A                             |
| 4 - Hennef Way (W)  | 1494                  | 374                     | 913                       | 1894              | 0.789 | 1494                | 1691                            | 3.8               | 3.8             | 9.351     | A                             |

#### 16:30 - 16:45

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2407                      | 247               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2293                  | 573                     | 295                       | 2980              | 0.769 | 2293                | 2112                            | 3.5               | 3.5             | 5.551     | A                             |
| 3 - Concorde Avenue | 1085                  | 271                     | 1519                      | 1738              | 0.624 | 1085                | 1069                            | 1.7               | 1.7             | 5.714     | A                             |
| 4 - Hennef Way (W)  | 1494                  | 374                     | 913                       | 1894              | 0.789 | 1494                | 1691                            | 3.8               | 3.8             | 9.357     | A                             |

16:45 - 17:00

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2407                      | 247               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2293                  | 573                     | 295                       | 2980              | 0.769 | 2293                | 2112                            | 3.5               | 3.5             | 5.551     | A                             |
| 3 - Concorde Avenue | 1085                  | 271                     | 1519                      | 1738              | 0.624 | 1085                | 1069                            | 1.7               | 1.7             | 5.714     | A                             |
| 4 - Hennef Way (W)  | 1494                  | 374                     | 913                       | 1894              | 0.789 | 1494                | 1691                            | 3.8               | 3.8             | 9.361     | A                             |

17:00 - 17:15

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2407                      | 247               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2293                  | 573                     | 295                       | 2980              | 0.769 | 2293                | 2112                            | 3.5               | 3.5             | 5.551     | A                             |
| 3 - Concorde Avenue | 1085                  | 271                     | 1519                      | 1738              | 0.624 | 1085                | 1069                            | 1.7               | 1.7             | 5.714     | A                             |
| 4 - Hennef Way (W)  | 1494                  | 374                     | 913                       | 1894              | 0.789 | 1494                | 1691                            | 3.8               | 3.9             | 9.363     | A                             |

# 2021 with development, PM (17-18)

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 32.11              | D            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name         | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-----------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D11 | 2021 with development | PM (17-18)       | FLAT                 | 16:45              | 18:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                 | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Grimsbury Green |            | FLAT         | ✓            | 0                       | 100.000            |
| 2 - Hennef Way (E)  |            | FLAT         | ✓            | 2673                    | 100.000            |
| 3 - Concorde Avenue |            | FLAT         | ✓            | 1272                    | 100.000            |
| 4 - Hennef Way (W)  |            | FLAT         | ✓            | 1749                    | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                     | To                  |                    |                     |                    |
|------|---------------------|---------------------|--------------------|---------------------|--------------------|
|      |                     | 1 - Grimsbury Green | 2 - Hennef Way (E) | 3 - Concorde Avenue | 4 - Hennef Way (W) |
| From | 1 - Grimsbury Green | 0                   | 0                  | 0                   | 0                  |
|      | 2 - Hennef Way (E)  | 0                   | 0                  | 907                 | 1766               |
|      | 3 - Concorde Avenue | 0                   | 1070               | 0                   | 202                |
|      | 4 - Hennef Way (W)  | 0                   | 1404               | 345                 | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                     | To                  |                    |                     |                    |
|------|---------------------|---------------------|--------------------|---------------------|--------------------|
|      |                     | 1 - Grimsbury Green | 2 - Hennef Way (E) | 3 - Concorde Avenue | 4 - Hennef Way (W) |
| From | 1 - Grimsbury Green | 0                   | 0                  | 0                   | 0                  |
|      | 2 - Hennef Way (E)  | 0                   | 0                  | 2                   | 4                  |
|      | 3 - Concorde Avenue | 0                   | 2                  | 0                   | 1                  |
|      | 4 - Hennef Way (W)  | 0                   | 5                  | 2                   | 0                  |

## Results

### Results Summary for whole modelled period

| Arm                 | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Grimsbury Green | 0.00    | 0.00          | 0.0             | A       | 0                       | 0                             |
| 2 - Hennef Way (E)  | 0.91    | 13.88         | 10.1            | B       | 2673                    | 4010                          |
| 3 - Concorde Avenue | 0.83    | 13.68         | 4.8             | B       | 1272                    | 1908                          |
| 4 - Hennef Way (W)  | 0.98    | 73.37         | 34.4            | F       | 1749                    | 2624                          |

### Main Results for each time segment

#### 16:45 - 17:00

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2738                      | 65                | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2673                  | 668                     | 332                       | 2949              | 0.907 | 2638                | 2406                            | 0.0               | 8.8             | 10.967    | B                             |
| 3 - Concorde Avenue | 1272                  | 318                     | 1743                      | 1558              | 0.817 | 1255                | 1227                            | 0.0               | 4.2             | 11.544    | B                             |
| 4 - Hennef Way (W)  | 1749                  | 437                     | 1056                      | 1788              | 0.978 | 1683                | 1942                            | 0.0               | 16.6            | 27.109    | D                             |

#### 17:00 - 17:15

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2793                      | 35                | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2673                  | 668                     | 340                       | 2941              | 0.909 | 2670                | 2453                            | 8.8               | 9.5             | 13.400    | B                             |
| 3 - Concorde Avenue | 1272                  | 318                     | 1764                      | 1541              | 0.826 | 1271                | 1246                            | 4.2               | 4.6             | 13.444    | B                             |
| 4 - Hennef Way (W)  | 1749                  | 437                     | 1069                      | 1779              | 0.983 | 1724                | 1966                            | 16.6              | 22.8            | 48.046    | E                             |

#### 17:15 - 17:30

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2802                      | 30                | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2673                  | 668                     | 342                       | 2940              | 0.909 | 2672                | 2461                            | 9.5               | 9.8             | 13.665    | B                             |
| 3 - Concorde Avenue | 1272                  | 318                     | 1765                      | 1540              | 0.826 | 1272                | 1248                            | 4.6               | 4.7             | 13.605    | B                             |
| 4 - Hennef Way (W)  | 1749                  | 437                     | 1070                      | 1778              | 0.984 | 1733                | 1967                            | 22.8              | 26.8            | 57.422    | F                             |

#### 17:30 - 17:45

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2807                      | 28                | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2673                  | 668                     | 343                       | 2939              | 0.909 | 2672                | 2464                            | 9.8               | 9.9             | 13.777    | B                             |
| 3 - Concorde Avenue | 1272                  | 318                     | 1766                      | 1539              | 0.826 | 1272                | 1249                            | 4.7               | 4.7             | 13.651    | B                             |
| 4 - Hennef Way (W)  | 1749                  | 437                     | 1070                      | 1778              | 0.984 | 1737                | 1968                            | 26.8              | 29.9            | 64.034    | F                             |

**17:45 - 18:00**

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2809                      | 26                | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2673                  | 668                     | 343                       | 2939              | 0.910 | 2673                | 2466                            | 9.9               | 10.0            | 13.839    | B                             |
| 3 - Concorde Avenue | 1272                  | 318                     | 1766                      | 1539              | 0.826 | 1272                | 1250                            | 4.7               | 4.8             | 13.673    | B                             |
| 4 - Hennef Way (W)  | 1749                  | 437                     | 1070                      | 1778              | 0.984 | 1739                | 1968                            | 29.9              | 32.4            | 69.171    | F                             |

**18:00 - 18:15**

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2811                      | 26                | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2673                  | 668                     | 343                       | 2939              | 0.910 | 2673                | 2467                            | 10.0              | 10.1            | 13.881    | B                             |
| 3 - Concorde Avenue | 1272                  | 318                     | 1766                      | 1539              | 0.826 | 1272                | 1250                            | 4.8               | 4.8             | 13.685    | B                             |
| 4 - Hennef Way (W)  | 1749                  | 437                     | 1070                      | 1778              | 0.984 | 1741                | 1968                            | 32.4              | 34.4            | 73.368    | F                             |

# 2021 with development, PM (18-19)

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 3.91               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name         | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-----------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D12 | 2021 with development | PM (18-19)       | FLAT                 | 17:45              | 19:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                 | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Grimsbury Green |            | FLAT         | ✓            | 0                       | 100.000            |
| 2 - Hennef Way (E)  |            | FLAT         | ✓            | 1926                    | 100.000            |
| 3 - Concorde Avenue |            | FLAT         | ✓            | 906                     | 100.000            |
| 4 - Hennef Way (W)  |            | FLAT         | ✓            | 1259                    | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                     | To                  |                    |                     |                    |
|------|---------------------|---------------------|--------------------|---------------------|--------------------|
|      |                     | 1 - Grimsbury Green | 2 - Hennef Way (E) | 3 - Concorde Avenue | 4 - Hennef Way (W) |
| From | 1 - Grimsbury Green | 0                   | 0                  | 0                   | 0                  |
|      | 2 - Hennef Way (E)  | 0                   | 0                  | 646                 | 1280               |
|      | 3 - Concorde Avenue | 0                   | 762                | 0                   | 144                |
|      | 4 - Hennef Way (W)  | 0                   | 1013               | 246                 | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                     | To                  |                    |                     |                    |
|------|---------------------|---------------------|--------------------|---------------------|--------------------|
|      |                     | 1 - Grimsbury Green | 2 - Hennef Way (E) | 3 - Concorde Avenue | 4 - Hennef Way (W) |
| From | 1 - Grimsbury Green | 0                   | 0                  | 0                   | 0                  |
|      | 2 - Hennef Way (E)  | 0                   | 0                  | 2                   | 4                  |
|      | 3 - Concorde Avenue | 0                   | 2                  | 0                   | 0                  |
|      | 4 - Hennef Way (W)  | 0                   | 3                  | 2                   | 0                  |



## Results

### Results Summary for whole modelled period

| Arm                 | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Grimsbury Green | 0.00    | 0.00          | 0.0             | A       | 0                       | 0                             |
| 2 - Hennef Way (E)  | 0.64    | 3.39          | 1.8             | A       | 1926                    | 2889                          |
| 3 - Concorde Avenue | 0.47    | 3.57          | 0.9             | A       | 906                     | 1359                          |
| 4 - Hennef Way (W)  | 0.63    | 4.95          | 1.7             | A       | 1259                    | 1889                          |

### Main Results for each time segment

#### 17:45 - 18:00

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2011                      | 464               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 1926                  | 482                     | 245                       | 3023              | 0.637 | 1919                | 1767                            | 0.0               | 1.8             | 3.346     | A                             |
| 3 - Concorde Avenue | 906                   | 227                     | 1275                      | 1935              | 0.468 | 902                 | 888                             | 0.0               | 0.9             | 3.535     | A                             |
| 4 - Hennef Way (W)  | 1259                  | 315                     | 759                       | 2009              | 0.627 | 1252                | 1419                            | 0.0               | 1.7             | 4.849     | A                             |

#### 18:00 - 18:15

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2021                      | 458               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 1926                  | 482                     | 246                       | 3022              | 0.637 | 1926                | 1775                            | 1.8               | 1.8             | 3.392     | A                             |
| 3 - Concorde Avenue | 906                   | 227                     | 1280                      | 1931              | 0.469 | 906                 | 892                             | 0.9               | 0.9             | 3.571     | A                             |
| 4 - Hennef Way (W)  | 1259                  | 315                     | 762                       | 2006              | 0.627 | 1259                | 1424                            | 1.7               | 1.7             | 4.950     | A                             |

#### 18:15 - 18:30

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2021                      | 458               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 1926                  | 482                     | 246                       | 3022              | 0.637 | 1926                | 1775                            | 1.8               | 1.8             | 3.392     | A                             |
| 3 - Concorde Avenue | 906                   | 227                     | 1280                      | 1931              | 0.469 | 906                 | 892                             | 0.9               | 0.9             | 3.571     | A                             |
| 4 - Hennef Way (W)  | 1259                  | 315                     | 762                       | 2006              | 0.627 | 1259                | 1424                            | 1.7               | 1.7             | 4.950     | A                             |

#### 18:30 - 18:45

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2021                      | 458               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 1926                  | 482                     | 246                       | 3022              | 0.637 | 1926                | 1775                            | 1.8               | 1.8             | 3.392     | A                             |
| 3 - Concorde Avenue | 906                   | 227                     | 1280                      | 1931              | 0.469 | 906                 | 892                             | 0.9               | 0.9             | 3.571     | A                             |
| 4 - Hennef Way (W)  | 1259                  | 315                     | 762                       | 2006              | 0.627 | 1259                | 1424                            | 1.7               | 1.7             | 4.950     | A                             |

18:45 - 19:00

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2021                      | 458               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 1926                  | 482                     | 246                       | 3022              | 0.637 | 1926                | 1775                            | 1.8               | 1.8             | 3.392     | A                             |
| 3 - Concorde Avenue | 906                   | 227                     | 1280                      | 1931              | 0.469 | 906                 | 892                             | 0.9               | 0.9             | 3.571     | A                             |
| 4 - Hennef Way (W)  | 1259                  | 315                     | 762                       | 2006              | 0.627 | 1259                | 1424                            | 1.7               | 1.7             | 4.950     | A                             |

19:00 - 19:15

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2021                      | 458               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 1926                  | 482                     | 246                       | 3022              | 0.637 | 1926                | 1775                            | 1.8               | 1.8             | 3.392     | A                             |
| 3 - Concorde Avenue | 906                   | 227                     | 1280                      | 1931              | 0.469 | 906                 | 892                             | 0.9               | 0.9             | 3.571     | A                             |
| 4 - Hennef Way (W)  | 1259                  | 315                     | 762                       | 2006              | 0.627 | 1259                | 1424                            | 1.7               | 1.7             | 4.950     | A                             |

# 2021 with development (sensitivity), PM (16-17)

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 5.81               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name                       | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-------------------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D16 | 2021 with development (sensitivity) | PM (16-17)       | FLAT                 | 15:45              | 17:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                 | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Grimsbury Green |            | FLAT         | ✓            | 0                       | 100.000            |
| 2 - Hennef Way (E)  |            | FLAT         | ✓            | 2248                    | 100.000            |
| 3 - Concorde Avenue |            | FLAT         | ✓            | 1085                    | 100.000            |
| 4 - Hennef Way (W)  |            | FLAT         | ✓            | 1365                    | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                     | To                  |                    |                     |                    |
|------|---------------------|---------------------|--------------------|---------------------|--------------------|
|      |                     | 1 - Grimsbury Green | 2 - Hennef Way (E) | 3 - Concorde Avenue | 4 - Hennef Way (W) |
| From | 1 - Grimsbury Green | 0                   | 0                  | 0                   | 0                  |
|      | 2 - Hennef Way (E)  | 0                   | 0                  | 774                 | 1474               |
|      | 3 - Concorde Avenue | 0                   | 913                | 0                   | 172                |
|      | 4 - Hennef Way (W)  | 0                   | 1070               | 295                 | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                     | To                  |                    |                     |                    |
|------|---------------------|---------------------|--------------------|---------------------|--------------------|
|      |                     | 1 - Grimsbury Green | 2 - Hennef Way (E) | 3 - Concorde Avenue | 4 - Hennef Way (W) |
| From | 1 - Grimsbury Green | 0                   | 0                  | 0                   | 0                  |
|      | 2 - Hennef Way (E)  | 0                   | 0                  | 4                   | 7                  |
|      | 3 - Concorde Avenue | 0                   | 4                  | 0                   | 2                  |
|      | 4 - Hennef Way (W)  | 0                   | 6                  | 1                   | 0                  |

## Results

### Results Summary for whole modelled period

| Arm                 | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Grimsbury Green | 0.00    | 0.00          | 0.0             | A       | 0                       | 0                             |
| 2 - Hennef Way (E)  | 0.75    | 5.21          | 3.2             | A       | 2248                    | 3372                          |
| 3 - Concorde Avenue | 0.61    | 5.41          | 1.6             | A       | 1085                    | 1628                          |
| 4 - Hennef Way (W)  | 0.72    | 7.13          | 2.7             | A       | 1365                    | 2048                          |

### Main Results for each time segment

#### 15:45 - 16:00

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2262                      | 326               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2248                  | 562                     | 293                       | 2982              | 0.754 | 2235                | 1969                            | 0.0               | 3.2             | 5.027     | A                             |
| 3 - Concorde Avenue | 1085                  | 271                     | 1466                      | 1781              | 0.609 | 1079                | 1062                            | 0.0               | 1.6             | 5.267     | A                             |
| 4 - Hennef Way (W)  | 1365                  | 341                     | 908                       | 1898              | 0.719 | 1355                | 1637                            | 0.0               | 2.6             | 6.818     | A                             |

#### 16:00 - 16:15

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2278                      | 318               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2248                  | 562                     | 295                       | 2980              | 0.754 | 2248                | 1983                            | 3.2               | 3.2             | 5.204     | A                             |
| 3 - Concorde Avenue | 1085                  | 271                     | 1474                      | 1774              | 0.611 | 1085                | 1069                            | 1.6               | 1.6             | 5.410     | A                             |
| 4 - Hennef Way (W)  | 1365                  | 341                     | 913                       | 1894              | 0.721 | 1365                | 1646                            | 2.6               | 2.7             | 7.122     | A                             |

#### 16:15 - 16:30

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2278                      | 318               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2248                  | 562                     | 295                       | 2980              | 0.754 | 2248                | 1983                            | 3.2               | 3.2             | 5.207     | A                             |
| 3 - Concorde Avenue | 1085                  | 271                     | 1474                      | 1774              | 0.611 | 1085                | 1069                            | 1.6               | 1.6             | 5.413     | A                             |
| 4 - Hennef Way (W)  | 1365                  | 341                     | 913                       | 1894              | 0.721 | 1365                | 1646                            | 2.7               | 2.7             | 7.129     | A                             |

#### 16:30 - 16:45

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2278                      | 317               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2248                  | 562                     | 295                       | 2980              | 0.754 | 2248                | 1983                            | 3.2               | 3.2             | 5.209     | A                             |
| 3 - Concorde Avenue | 1085                  | 271                     | 1474                      | 1774              | 0.611 | 1085                | 1069                            | 1.6               | 1.6             | 5.413     | A                             |
| 4 - Hennef Way (W)  | 1365                  | 341                     | 913                       | 1894              | 0.721 | 1365                | 1646                            | 2.7               | 2.7             | 7.131     | A                             |

**16:45 - 17:00**

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2278                      | 317               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2248                  | 562                     | 295                       | 2980              | 0.754 | 2248                | 1983                            | 3.2               | 3.2             | 5.209     | A                             |
| 3 - Concorde Avenue | 1085                  | 271                     | 1474                      | 1774              | 0.611 | 1085                | 1069                            | 1.6               | 1.6             | 5.413     | A                             |
| 4 - Hennef Way (W)  | 1365                  | 341                     | 913                       | 1894              | 0.721 | 1365                | 1646                            | 2.7               | 2.7             | 7.132     | A                             |

**17:00 - 17:15**

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2278                      | 317               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2248                  | 562                     | 295                       | 2980              | 0.754 | 2248                | 1983                            | 3.2               | 3.2             | 5.209     | A                             |
| 3 - Concorde Avenue | 1085                  | 271                     | 1474                      | 1774              | 0.611 | 1085                | 1069                            | 1.6               | 1.6             | 5.413     | A                             |
| 4 - Hennef Way (W)  | 1365                  | 341                     | 913                       | 1894              | 0.721 | 1365                | 1646                            | 2.7               | 2.7             | 7.132     | A                             |

# 2021 with development (sensitivity), PM (17-18)

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 14.30              | B            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name                       | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-------------------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D17 | 2021 with development (sensitivity) | PM (17-18)       | FLAT                 | 16:45              | 18:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                 | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Grimsbury Green |            | FLAT         | ✓            | 0                       | 100.000            |
| 2 - Hennef Way (E)  |            | FLAT         | ✓            | 2621                    | 100.000            |
| 3 - Concorde Avenue |            | FLAT         | ✓            | 1272                    | 100.000            |
| 4 - Hennef Way (W)  |            | FLAT         | ✓            | 1597                    | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                     | To                  |                    |                     |                    |
|------|---------------------|---------------------|--------------------|---------------------|--------------------|
|      |                     | 1 - Grimsbury Green | 2 - Hennef Way (E) | 3 - Concorde Avenue | 4 - Hennef Way (W) |
| From | 1 - Grimsbury Green | 0                   | 0                  | 0                   | 0                  |
|      | 2 - Hennef Way (E)  | 0                   | 0                  | 907                 | 1714               |
|      | 3 - Concorde Avenue | 0                   | 1070               | 0                   | 202                |
|      | 4 - Hennef Way (W)  | 0                   | 1252               | 345                 | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                     | To                  |                    |                     |                    |
|------|---------------------|---------------------|--------------------|---------------------|--------------------|
|      |                     | 1 - Grimsbury Green | 2 - Hennef Way (E) | 3 - Concorde Avenue | 4 - Hennef Way (W) |
| From | 1 - Grimsbury Green | 0                   | 0                  | 0                   | 0                  |
|      | 2 - Hennef Way (E)  | 0                   | 0                  | 2                   | 4                  |
|      | 3 - Concorde Avenue | 0                   | 2                  | 0                   | 1                  |
|      | 4 - Hennef Way (W)  | 0                   | 5                  | 2                   | 0                  |

## Results

### Results Summary for whole modelled period

| Arm                 | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Grimsbury Green | 0.00    | 0.00          | 0.0             | A       | 0                       | 0                             |
| 2 - Hennef Way (E)  | 0.89    | 11.71         | 8.4             | B       | 2621                    | 3932                          |
| 3 - Concorde Avenue | 0.80    | 11.84         | 4.1             | B       | 1272                    | 1908                          |
| 4 - Hennef Way (W)  | 0.90    | 20.53         | 8.9             | C       | 1597                    | 2396                          |

### Main Results for each time segment

#### 16:45 - 17:00

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2625                      | 128               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2621                  | 655                     | 339                       | 2943              | 0.891 | 2591                | 2286                            | 0.0               | 7.6             | 9.840     | A                             |
| 3 - Concorde Avenue | 1272                  | 318                     | 1694                      | 1597              | 0.796 | 1257                | 1235                            | 0.0               | 3.8             | 10.367    | B                             |
| 4 - Hennef Way (W)  | 1597                  | 399                     | 1057                      | 1787              | 0.894 | 1567                | 1894                            | 0.0               | 7.4             | 15.450    | C                             |

#### 17:00 - 17:15

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2663                      | 107               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2621                  | 655                     | 344                       | 2938              | 0.892 | 2619                | 2319                            | 7.6               | 8.1             | 11.514    | B                             |
| 3 - Concorde Avenue | 1272                  | 318                     | 1713                      | 1582              | 0.804 | 1271                | 1251                            | 3.8               | 4.0             | 11.718    | B                             |
| 4 - Hennef Way (W)  | 1597                  | 399                     | 1069                      | 1778              | 0.898 | 1594                | 1915                            | 7.4               | 8.2             | 19.651    | C                             |

#### 17:15 - 17:30

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2666                      | 105               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2621                  | 655                     | 345                       | 2938              | 0.892 | 2620                | 2321                            | 8.1               | 8.2             | 11.631    | B                             |
| 3 - Concorde Avenue | 1272                  | 318                     | 1714                      | 1581              | 0.804 | 1272                | 1252                            | 4.0               | 4.1             | 11.804    | B                             |
| 4 - Hennef Way (W)  | 1597                  | 399                     | 1070                      | 1778              | 0.898 | 1596                | 1916                            | 8.2               | 8.6             | 20.169    | C                             |

#### 17:30 - 17:45

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2666                      | 105               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2621                  | 655                     | 345                       | 2937              | 0.892 | 2621                | 2321                            | 8.2               | 8.3             | 11.672    | B                             |
| 3 - Concorde Avenue | 1272                  | 318                     | 1714                      | 1581              | 0.804 | 1272                | 1252                            | 4.1               | 4.1             | 11.829    | B                             |
| 4 - Hennef Way (W)  | 1597                  | 399                     | 1070                      | 1778              | 0.898 | 1596                | 1916                            | 8.6               | 8.7             | 20.364    | C                             |

17:45 - 18:00

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2667                      | 105               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2621                  | 655                     | 345                       | 2937              | 0.892 | 2621                | 2322                            | 8.3               | 8.4             | 11.694    | B                             |
| 3 - Concorde Avenue | 1272                  | 318                     | 1714                      | 1581              | 0.805 | 1272                | 1252                            | 4.1               | 4.1             | 11.838    | B                             |
| 4 - Hennef Way (W)  | 1597                  | 399                     | 1070                      | 1778              | 0.898 | 1597                | 1916                            | 8.7               | 8.8             | 20.465    | C                             |

18:00 - 18:15

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 2667                      | 104               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 2621                  | 655                     | 345                       | 2937              | 0.892 | 2621                | 2322                            | 8.4               | 8.4             | 11.707    | B                             |
| 3 - Concorde Avenue | 1272                  | 318                     | 1714                      | 1581              | 0.805 | 1272                | 1252                            | 4.1               | 4.1             | 11.844    | B                             |
| 4 - Hennef Way (W)  | 1597                  | 399                     | 1070                      | 1778              | 0.898 | 1597                | 1916                            | 8.8               | 8.9             | 20.528    | C                             |



# 2021 with development (sensitivity), PM (18-19)

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 3.63               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name                       | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-------------------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D18 | 2021 with development (sensitivity) | PM (18-19)       | FLAT                 | 17:45              | 19:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                 | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Grimsbury Green |            | FLAT         | ✓            | 0                       | 100.000            |
| 2 - Hennef Way (E)  |            | FLAT         | ✓            | 1889                    | 100.000            |
| 3 - Concorde Avenue |            | FLAT         | ✓            | 906                     | 100.000            |
| 4 - Hennef Way (W)  |            | FLAT         | ✓            | 1151                    | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                     | To                  |                    |                     |                    |
|------|---------------------|---------------------|--------------------|---------------------|--------------------|
|      |                     | 1 - Grimsbury Green | 2 - Hennef Way (E) | 3 - Concorde Avenue | 4 - Hennef Way (W) |
| From | 1 - Grimsbury Green | 0                   | 0                  | 0                   | 0                  |
|      | 2 - Hennef Way (E)  | 0                   | 0                  | 646                 | 1243               |
|      | 3 - Concorde Avenue | 0                   | 762                | 0                   | 144                |
|      | 4 - Hennef Way (W)  | 0                   | 905                | 246                 | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                     | To                  |                    |                     |                    |
|------|---------------------|---------------------|--------------------|---------------------|--------------------|
|      |                     | 1 - Grimsbury Green | 2 - Hennef Way (E) | 3 - Concorde Avenue | 4 - Hennef Way (W) |
| From | 1 - Grimsbury Green | 0                   | 0                  | 0                   | 0                  |
|      | 2 - Hennef Way (E)  | 0                   | 0                  | 2                   | 4                  |
|      | 3 - Concorde Avenue | 0                   | 2                  | 0                   | 0                  |
|      | 4 - Hennef Way (W)  | 0                   | 3                  | 2                   | 0                  |

## Results

### Results Summary for whole modelled period

| Arm                 | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Grimsbury Green | 0.00    | 0.00          | 0.0             | A       | 0                       | 0                             |
| 2 - Hennef Way (E)  | 0.63    | 3.28          | 1.7             | A       | 1889                    | 2834                          |
| 3 - Concorde Avenue | 0.46    | 3.47          | 0.9             | A       | 906                     | 1359                          |
| 4 - Hennef Way (W)  | 0.57    | 4.32          | 1.4             | A       | 1151                    | 1727                          |

### Main Results for each time segment

#### 17:45 - 18:00

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 1905                      | 522               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 1889                  | 472                     | 245                       | 3023              | 0.625 | 1882                | 1660                            | 0.0               | 1.7             | 3.240     | A                             |
| 3 - Concorde Avenue | 906                   | 227                     | 1239                      | 1964              | 0.461 | 903                 | 889                             | 0.0               | 0.9             | 3.436     | A                             |
| 4 - Hennef Way (W)  | 1151                  | 288                     | 759                       | 2009              | 0.573 | 1146                | 1382                            | 0.0               | 1.4             | 4.261     | A                             |

#### 18:00 - 18:15

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 1913                      | 518               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 1889                  | 472                     | 246                       | 3022              | 0.625 | 1889                | 1667                            | 1.7               | 1.7             | 3.281     | A                             |
| 3 - Concorde Avenue | 906                   | 227                     | 1243                      | 1960              | 0.462 | 906                 | 892                             | 0.9               | 0.9             | 3.470     | A                             |
| 4 - Hennef Way (W)  | 1151                  | 288                     | 762                       | 2006              | 0.574 | 1151                | 1387                            | 1.4               | 1.4             | 4.324     | A                             |

#### 18:15 - 18:30

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 1913                      | 517               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 1889                  | 472                     | 246                       | 3022              | 0.625 | 1889                | 1667                            | 1.7               | 1.7             | 3.281     | A                             |
| 3 - Concorde Avenue | 906                   | 227                     | 1243                      | 1960              | 0.462 | 906                 | 892                             | 0.9               | 0.9             | 3.470     | A                             |
| 4 - Hennef Way (W)  | 1151                  | 288                     | 762                       | 2006              | 0.574 | 1151                | 1387                            | 1.4               | 1.4             | 4.325     | A                             |

#### 18:30 - 18:45

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 1913                      | 517               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 1889                  | 472                     | 246                       | 3022              | 0.625 | 1889                | 1667                            | 1.7               | 1.7             | 3.281     | A                             |
| 3 - Concorde Avenue | 906                   | 227                     | 1243                      | 1960              | 0.462 | 906                 | 892                             | 0.9               | 0.9             | 3.470     | A                             |
| 4 - Hennef Way (W)  | 1151                  | 288                     | 762                       | 2006              | 0.574 | 1151                | 1387                            | 1.4               | 1.4             | 4.325     | A                             |

18:45 - 19:00

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 1913                      | 517               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 1889                  | 472                     | 246                       | 3022              | 0.625 | 1889                | 1667                            | 1.7               | 1.7             | 3.281     | A                             |
| 3 - Concorde Avenue | 906                   | 227                     | 1243                      | 1960              | 0.462 | 906                 | 892                             | 0.9               | 0.9             | 3.470     | A                             |
| 4 - Hennef Way (W)  | 1151                  | 288                     | 762                       | 2006              | 0.574 | 1151                | 1387                            | 1.4               | 1.4             | 4.325     | A                             |

19:00 - 19:15

| Arm                 | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------|-----------------------|-------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| 1 - Grimsbury Green | 0                     | 0                       | 1913                      | 517               | 0.000 | 0                   | 0                               | 0.0               | 0.0             | 0.000     | A                             |
| 2 - Hennef Way (E)  | 1889                  | 472                     | 246                       | 3022              | 0.625 | 1889                | 1667                            | 1.7               | 1.7             | 3.281     | A                             |
| 3 - Concorde Avenue | 906                   | 227                     | 1243                      | 1960              | 0.462 | 906                 | 892                             | 0.9               | 0.9             | 3.470     | A                             |
| 4 - Hennef Way (W)  | 1151                  | 288                     | 762                       | 2006              | 0.574 | 1151                | 1387                            | 1.4               | 1.4             | 4.325     | A                             |

|  |
|--|
| Junctions 9  |
| ARCADY 9 - Roundabout Module   |
| Version: 9.5.1.7462<br>© Copyright TRL Limited, 2019   |
| For sales and distribution information, program advice and maintenance, contact TRL:<br>+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk              |
| The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution |

Filename: 194663-96 - Hennef Way\_Ermont Way - V2.j9  
 Path: C:\Users\alice.todd.VECTOS\Desktop  
 Report generation date: 27/04/2021 16:54:00

- »2021 without development, PM (16-17)
- »2021 without development, PM (17-18)
- »2021 without development, PM (18-19)
- »2021 with development, PM (16-17)
- »2021 with development, PM (17-18)
- »2021 with development, PM (18-19)
- »2021 with development (sensitivity), PM (16-17)
- »2021 with development (sensitivity), PM (17-18)
- »2021 with development (sensitivity), PM (18-19)

**Summary of junction performance**

|  | PM (16-17)  |           |      |     | PM (17-18)  |           |      |     | PM (18-19)  |           |      |     |
|--|-------------|-----------|------|-----|-------------|-----------|------|-----|-------------|-----------|------|-----|
|  | Queue (PCU) | Delay (s) | RFC  | LOS | Queue (PCU) | Delay (s) | RFC  | LOS | Queue (PCU) | Delay (s) | RFC  | LOS |
| <b>2021 without development</b>            |             |           |      |     |             |           |      |     |             |           |      |     |
| 1 - Wildmere Road                          | 1.5         | 9.53      | 0.59 | A   | 11.2        | 63.90     | 0.93 | F   | 0.7         | 5.25      | 0.40 | A   |
| 2 - Hennef Way (E)                         | 3.3         | 6.55      | 0.75 | A   | 9.8         | 17.13     | 0.90 | C   | 1.6         | 3.90      | 0.61 | A   |
| 3 - Ermont Way                             | 1.0         | 7.12      | 0.47 | A   | 2.8         | 18.11     | 0.73 | C   | 0.5         | 4.34      | 0.32 | A   |
| 4 - Hennef Way (W)                         | 1.9         | 3.30      | 0.65 | A   | 3.5         | 5.22      | 0.77 | A   | 1.1         | 2.37      | 0.53 | A   |
| <b>2021 with development</b>               |             |           |      |     |             |           |      |     |             |           |      |     |
| 1 - Wildmere Road                          | 1.6         | 10.06     | 0.61 | B   | 16.6        | 94.49     | 0.96 | F   | 0.7         | 5.45      | 0.41 | A   |
| 2 - Hennef Way (E)                         | 3.9         | 7.49      | 0.78 | A   | 15.0        | 25.62     | 0.94 | D   | 1.9         | 4.25      | 0.64 | A   |
| 3 - Ermont Way                             | 1.1         | 7.88      | 0.49 | A   | 3.6         | 23.76     | 0.78 | C   | 0.5         | 4.62      | 0.33 | A   |
| 4 - Hennef Way (W)                         | 2.0         | 3.37      | 0.66 | A   | 3.8         | 5.52      | 0.79 | A   | 1.2         | 2.43      | 0.54 | A   |
| <b>2021 with development (sensitivity)</b> |             |           |      |     |             |           |      |     |             |           |      |     |
| 1 - Wildmere Road                          | 1.3         | 8.25      | 0.56 | A   | 5.4         | 29.92     | 0.84 | D   | 0.6         | 4.96      | 0.38 | A   |
| 2 - Hennef Way (E)                         | 3.5         | 6.90      | 0.76 | A   | 11.3        | 19.56     | 0.92 | C   | 1.7         | 4.08      | 0.63 | A   |
| 3 - Ermont Way                             | 1.0         | 7.43      | 0.48 | A   | 3.1         | 19.87     | 0.75 | C   | 0.5         | 4.48      | 0.32 | A   |
| 4 - Hennef Way (W)                         | 1.7         | 3.04      | 0.62 | A   | 2.9         | 4.50      | 0.74 | A   | 1.0         | 2.27      | 0.51 | A   |

*There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.*

*Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.*

## File summary

### File Description

|             |                   |
|-------------|-------------------|
| Title       |                   |
| Location    |                   |
| Site number |                   |
| Date        | 19/01/2021        |
| Version     |                   |
| Status      | (new file)        |
| Identifier  |                   |
| Client      |                   |
| Jobnumber   |                   |
| Enumerator  | VECTOS\ellen.hill |
| Description |                   |

## Units

| Distance units | Speed units | Traffic units input | Traffic units results | Flow units | Average delay units | Total delay units | Rate of delay units |
|----------------|-------------|---------------------|-----------------------|------------|---------------------|-------------------|---------------------|
| m              | kph         | PCU                 | PCU                   | perHour    | s                   | -Min              | perMin              |

## Analysis Options

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|--------------------|-----------------------------|-----------------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
| 5.75               |                             |                                   |                             | 0.85          | 36.00                       | 20.00                 |

## Demand Set Summary

| ID  | Scenario name                       | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-------------------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D4  | 2021 without development            | PM (16-17)       | FLAT                 | 15:45              | 17:15               | 90                       | 15                        | ✓                 |
| D5  | 2021 without development            | PM (17-18)       | FLAT                 | 16:45              | 18:15               | 90                       | 15                        | ✓                 |
| D6  | 2021 without development            | PM (18-19)       | FLAT                 | 17:45              | 19:15               | 90                       | 15                        | ✓                 |
| D10 | 2021 with development               | PM (16-17)       | FLAT                 | 15:45              | 17:15               | 90                       | 15                        | ✓                 |
| D11 | 2021 with development               | PM (17-18)       | FLAT                 | 16:45              | 18:15               | 90                       | 15                        | ✓                 |
| D12 | 2021 with development               | PM (18-19)       | FLAT                 | 17:45              | 19:15               | 90                       | 15                        | ✓                 |
| D16 | 2021 with development (sensitivity) | PM (16-17)       | FLAT                 | 15:45              | 17:15               | 90                       | 15                        | ✓                 |
| D17 | 2021 with development (sensitivity) | PM (17-18)       | FLAT                 | 16:45              | 18:15               | 90                       | 15                        | ✓                 |
| D18 | 2021 with development (sensitivity) | PM (18-19)       | FLAT                 | 17:45              | 19:15               | 90                       | 15                        | ✓                 |

## Analysis Set Details

| ID | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|----|-------------------|---------------------------------|-------------------------------------|
| A1 | ✓                 | 100.000                         | 100.000                             |

# 2021 without development, PM (16-17)

## Data Errors and Warnings

| Severity | Area     | Item                                     | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 3 - Ermont Way - Roundabout Geometry     | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Hennef Way (W) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 5.84               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Arms

### Arms

| Arm | Name           | Description |
|-----|----------------|-------------|
| 1   | Wildmere Road  |             |
| 2   | Hennef Way (E) |             |
| 3   | Ermont Way     |             |
| 4   | Hennef Way (W) |             |

### Roundabout Geometry

| Arm                | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit only |
|--------------------|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| 1 - Wildmere Road  | 6.00                             | 8.00                | 13.7                            | 40.4                 | 70.3                              | 21.7                               |           |
| 2 - Hennef Way (E) | 7.69                             | 12.00               | 11.2                            | 24.7                 | 70.3                              | 43.0                               |           |
| 3 - Ermont Way     | 4.03                             | 9.25                | 37.2                            | 143.1                | 70.3                              | 18.6                               |           |
| 4 - Hennef Way (W) | 7.30                             | 12.51               | 48.8                            | 70.4                 | 70.3                              | 15.7                               |           |

### Bypass

| Arm                | Arm has bypass | Bypass utilisation (%) |
|--------------------|----------------|------------------------|
| 1 - Wildmere Road  | ✓              | 100                    |
| 2 - Hennef Way (E) | ✓              | 100                    |
| 3 - Ermont Way     |                |                        |
| 4 - Hennef Way (W) |                |                        |

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

| Arm                | Final slope | Final intercept (PCU/hr) |
|--------------------|-------------|--------------------------|
| 1 - Wildmere Road  | 0.619       | 2350                     |
| 2 - Hennef Way (E) | 0.670       | 2811                     |
| 3 - Ermont Way     | 0.649       | 2501                     |
| 4 - Hennef Way (W) | 0.834       | 3675                     |

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

| ID | Scenario name            | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|--------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D4 | 2021 without development | PM (16-17)       | FLAT                 | 15:45              | 17:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|--------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Wildmere Road  |            | FLAT         | ✓            | 825                     | 100.000            |
| 2 - Hennef Way (E) |            | FLAT         | ✓            | 2280                    | 100.000            |
| 3 - Ermont Way     |            | FLAT         | ✓            | 482                     | 100.000            |
| 4 - Hennef Way (W) |            | FLAT         | ✓            | 2081                    | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                    | To                |                    |                |                    |
|------|--------------------|-------------------|--------------------|----------------|--------------------|
|      |                    | 1 - Wildmere Road | 2 - Hennef Way (E) | 3 - Ermont Way | 4 - Hennef Way (W) |
| From | 1 - Wildmere Road  | 0                 | 259                | 96             | 470                |
|      | 2 - Hennef Way (E) | 216               | 0                  | 478            | 1586               |
|      | 3 - Ermont Way     | 56                | 269                | 0              | 157                |
|      | 4 - Hennef Way (W) | 93                | 1944               | 44             | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                    | To                |                    |                |                    |
|------|--------------------|-------------------|--------------------|----------------|--------------------|
|      |                    | 1 - Wildmere Road | 2 - Hennef Way (E) | 3 - Ermont Way | 4 - Hennef Way (W) |
| From | 1 - Wildmere Road  | 0                 | 7                  | 5              | 2                  |
|      | 2 - Hennef Way (E) | 19                | 0                  | 19             | 8                  |
|      | 3 - Ermont Way     | 24                | 7                  | 0              | 4                  |
|      | 4 - Hennef Way (W) | 0                 | 5                  | 8              | 0                  |

## Results

### Results Summary for whole modelled period

| Arm                | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Wildmere Road  | 0.59    | 9.53          | 1.5             | A       | 825                     | 849                           |
| 2 - Hennef Way (E) | 0.75    | 6.55          | 3.3             | A       | 2280                    | 2703                          |
| 3 - Ermont Way     | 0.47    | 7.12          | 1.0             | A       | 482                     | 723                           |
| 4 - Hennef Way (W) | 0.65    | 3.30          | 1.9             | A       | 2081                    | 3122                          |

## Main Results for each time segment

### 15:45 - 16:00

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 825                   | 566                      | 142                     | 259                    | 0                         | 2248                      | 959               | 0.590 | 560                 | 363                             | 0.0               | 1.4             | 9.128     |               |
| 2 - Hennef Way (E) | 2280                  | 1802                     | 451                     | 478                    | 259                       | 604                       | 2406              | 0.749 | 1789                | 2204                            | 0.0               | 3.2             | 6.254     |               |
| 3 - Ermont Way     | 482                   | 482                      | 121                     | 0                      | 478                       | 2255                      | 1038              | 0.465 | 478                 | 139                             | 0.0               | 0.9             | 6.888     |               |
| 4 - Hennef Way (W) | 2081                  | 2081                     | 520                     | 0                      | 0                         | 537                       | 3227              | 0.645 | 2073                | 2196                            | 0.0               | 1.9             | 3.250     |               |

### 16:00 - 16:15

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 825                   | 566                      | 142                     | 259                    | 0                         | 2257                      | 953               | 0.594 | 566                 | 365                             | 1.4               | 1.5             | 9.517     |               |
| 2 - Hennef Way (E) | 2280                  | 1802                     | 451                     | 478                    | 259                       | 610                       | 2402              | 0.750 | 1802                | 2213                            | 3.2               | 3.2             | 6.543     |               |
| 3 - Ermont Way     | 482                   | 482                      | 121                     | 0                      | 478                       | 2272                      | 1026              | 0.470 | 482                 | 140                             | 0.9               | 0.9             | 7.117     |               |
| 4 - Hennef Way (W) | 2081                  | 2081                     | 520                     | 0                      | 0                         | 541                       | 3224              | 0.645 | 2081                | 2213                            | 1.9               | 1.9             | 3.300     |               |

### 16:15 - 16:30

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 825                   | 566                      | 142                     | 259                    | 0                         | 2257                      | 953               | 0.594 | 566                 | 365                             | 1.5               | 1.5             | 9.523     |               |
| 2 - Hennef Way (E) | 2280                  | 1802                     | 451                     | 478                    | 259                       | 610                       | 2402              | 0.750 | 1802                | 2213                            | 3.2               | 3.2             | 6.548     |               |
| 3 - Ermont Way     | 482                   | 482                      | 121                     | 0                      | 478                       | 2272                      | 1026              | 0.470 | 482                 | 140                             | 0.9               | 0.9             | 7.122     |               |
| 4 - Hennef Way (W) | 2081                  | 2081                     | 520                     | 0                      | 0                         | 541                       | 3224              | 0.645 | 2081                | 2213                            | 1.9               | 1.9             | 3.301     |               |

### 16:30 - 16:45

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 825                   | 566                      | 142                     | 259                    | 0                         | 2257                      | 953               | 0.594 | 566                 | 365                             | 1.5               | 1.5             | 9.525     |               |
| 2 - Hennef Way (E) | 2280                  | 1802                     | 451                     | 478                    | 259                       | 610                       | 2402              | 0.750 | 1802                | 2213                            | 3.2               | 3.3             | 6.549     |               |
| 3 - Ermont Way     | 482                   | 482                      | 121                     | 0                      | 478                       | 2272                      | 1026              | 0.470 | 482                 | 140                             | 0.9               | 0.9             | 7.123     |               |
| 4 - Hennef Way (W) | 2081                  | 2081                     | 520                     | 0                      | 0                         | 541                       | 3224              | 0.645 | 2081                | 2213                            | 1.9               | 1.9             | 3.301     |               |

### 16:45 - 17:00

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 825                   | 566                      | 142                     | 259                    | 0                         | 2257                      | 953               | 0.594 | 566                 | 365                             | 1.5               | 1.5             | 9.525     |               |
| 2 - Hennef Way (E) | 2280                  | 1802                     | 451                     | 478                    | 259                       | 610                       | 2402              | 0.750 | 1802                | 2213                            | 3.3               | 3.3             | 6.551     |               |
| 3 - Ermont Way     | 482                   | 482                      | 121                     | 0                      | 478                       | 2272                      | 1026              | 0.470 | 482                 | 140                             | 0.9               | 1.0             | 7.123     |               |
| 4 - Hennef Way (W) | 2081                  | 2081                     | 520                     | 0                      | 0                         | 541                       | 3224              | 0.645 | 2081                | 2213                            | 1.9               | 1.9             | 3.301     |               |

### 17:00 - 17:15

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 825                   | 566                      | 142                     | 259                    | 0                         | 2257                      | 953               | 0.594 | 566                 | 365                             | 1.5               | 1.5             | 9.527     |               |
| 2 - Hennef Way (E) | 2280                  | 1802                     | 451                     | 478                    | 259                       | 610                       | 2402              | 0.750 | 1802                | 2213                            | 3.3               | 3.3             | 6.551     |               |
| 3 - Ermont Way     | 482                   | 482                      | 121                     | 0                      | 478                       | 2272                      | 1026              | 0.470 | 482                 | 140                             | 1.0               | 1.0             | 7.123     |               |
| 4 - Hennef Way (W) | 2081                  | 2081                     | 520                     | 0                      | 0                         | 541                       | 3224              | 0.645 | 2081                | 2213                            | 1.9               | 1.9             | 3.301     |               |



# 2021 without development, PM (17-18)

## Data Errors and Warnings

| Severity | Area     | Item                                     | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 3 - Ermont Way - Roundabout Geometry     | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Hennef Way (W) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 19.64              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name            | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|--------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D5 | 2021 without development | PM (17-18)       | FLAT                 | 16:45              | 18:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|--------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Wildmere Road  |            | FLAT         | ✓            | 965                     | 100.000            |
| 2 - Hennef Way (E) |            | FLAT         | ✓            | 2671                    | 100.000            |
| 3 - Ermont Way     |            | FLAT         | ✓            | 565                     | 100.000            |
| 4 - Hennef Way (W) |            | FLAT         | ✓            | 2437                    | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                    | To                |                    |                |                    |
|------|--------------------|-------------------|--------------------|----------------|--------------------|
|      |                    | 1 - Wildmere Road | 2 - Hennef Way (E) | 3 - Ermont Way | 4 - Hennef Way (W) |
| From | 1 - Wildmere Road  | 0                 | 303                | 112            | 550                |
|      | 2 - Hennef Way (E) | 253               | 0                  | 560            | 1858               |
|      | 3 - Ermont Way     | 66                | 315                | 0              | 184                |
|      | 4 - Hennef Way (W) | 109               | 2277               | 51             | 0                  |
|      |                    |                   |                    |                |                    |

## Vehicle Mix

### Heavy Vehicle Percentages

| From               | To                |                    |                |                    |
|--------------------|-------------------|--------------------|----------------|--------------------|
|                    | 1 - Wildmere Road | 2 - Hennef Way (E) | 3 - Ermont Way | 4 - Hennef Way (W) |
| 1 - Wildmere Road  | 0                 | 3                  | 5              | 3                  |
| 2 - Hennef Way (E) | 27                | 0                  | 13             | 5                  |
| 3 - Ermont Way     | 25                | 5                  | 0              | 1                  |
| 4 - Hennef Way (W) | 0                 | 3                  | 6              | 0                  |

## Results

### Results Summary for whole modelled period

| Arm                | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Wildmere Road  | 0.93    | 63.90         | 11.2            | F       | 965                     | 993                           |
| 2 - Hennef Way (E) | 0.90    | 17.13         | 9.8             | C       | 2671                    | 3167                          |
| 3 - Ermont Way     | 0.73    | 18.11         | 2.8             | C       | 565                     | 848                           |
| 4 - Hennef Way (W) | 0.77    | 5.22          | 3.5             | A       | 2437                    | 3656                          |

### Main Results for each time segment

#### 16:45 - 17:00

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig level |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------|
| 1 - Wildmere Road  | 965                   | 662                      | 166                     | 303                    | 0                         | 2625                      | 726               | 0.912 | 634                 | 422                             | 0.0               | 7.1             | 33.837    |             |
| 2 - Hennef Way (E) | 2671                  | 2111                     | 528                     | 560                    | 303                       | 684                       | 2352              | 0.897 | 2078                | 2574                            | 0.0               | 8.1             | 12.870    |             |
| 3 - Ermont Way     | 565                   | 565                      | 141                     | 0                      | 560                       | 2605                      | 810               | 0.697 | 556                 | 158                             | 0.0               | 2.3             | 14.471    |             |
| 4 - Hennef Way (W) | 2437                  | 2437                     | 609                     | 0                      | 0                         | 624                       | 3155              | 0.772 | 2423                | 2537                            | 0.0               | 3.4             | 4.978     |             |

#### 17:00 - 17:15

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig level |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------|
| 1 - Wildmere Road  | 965                   | 662                      | 166                     | 303                    | 0                         | 2642                      | 715               | 0.926 | 654                 | 427                             | 7.1               | 9.0             | 52.355    |             |
| 2 - Hennef Way (E) | 2671                  | 2111                     | 528                     | 560                    | 303                       | 705                       | 2338              | 0.903 | 2107                | 2591                            | 8.1               | 9.0             | 16.234    |             |
| 3 - Ermont Way     | 565                   | 565                      | 141                     | 0                      | 560                       | 2651                      | 780               | 0.724 | 564                 | 162                             | 2.3               | 2.6             | 17.410    |             |
| 4 - Hennef Way (W) | 2437                  | 2437                     | 609                     | 0                      | 0                         | 633                       | 3147              | 0.774 | 2437                | 2582                            | 3.4               | 3.5             | 5.208     |             |

#### 17:15 - 17:30

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig level |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------|
| 1 - Wildmere Road  | 965                   | 662                      | 166                     | 303                    | 0                         | 2643                      | 715               | 0.926 | 658                 | 428                             | 9.0               | 10.0            | 57.935    |             |
| 2 - Hennef Way (E) | 2671                  | 2111                     | 528                     | 560                    | 303                       | 709                       | 2336              | 0.904 | 2110                | 2592                            | 9.0               | 9.4             | 16.740    |             |
| 3 - Ermont Way     | 565                   | 565                      | 141                     | 0                      | 560                       | 2656                      | 777               | 0.727 | 565                 | 162                             | 2.6               | 2.7             | 17.856    |             |
| 4 - Hennef Way (W) | 2437                  | 2437                     | 609                     | 0                      | 0                         | 634                       | 3147              | 0.774 | 2437                | 2587                            | 3.5               | 3.5             | 5.218     |             |

#### 17:30 - 17:45

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig level |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------|
| 1 - Wildmere Road  | 965                   | 662                      | 166                     | 303                    | 0                         | 2643                      | 714               | 0.927 | 660                 | 428                             | 10.0              | 10.5            | 60.830    |             |
| 2 - Hennef Way (E) | 2671                  | 2111                     | 528                     | 560                    | 303                       | 711                       | 2335              | 0.904 | 2110                | 2592                            | 9.4               | 9.6             | 16.949    |             |
| 3 - Ermont Way     | 565                   | 565                      | 141                     | 0                      | 560                       | 2658                      | 775               | 0.729 | 565                 | 163                             | 2.7               | 2.8             | 18.000    |             |
| 4 - Hennef Way (W) | 2437                  | 2437                     | 609                     | 0                      | 0                         | 634                       | 3147              | 0.775 | 2437                | 2589                            | 3.5               | 3.5             | 5.221     |             |

**17:45 - 18:00**

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev se |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|--------------|
| 1 - Wildmere Road  | 965                   | 662                      | 166                     | 303                    | 0                         | 2643                      | 714               | 0.927 | 660                 | 428                             | 10.5              | 10.9            | 62.645    |              |
| 2 - Hennef Way (E) | 2671                  | 2111                     | 528                     | 560                    | 303                       | 711                       | 2334              | 0.904 | 2111                | 2592                            | 9.6               | 9.7             | 17.061    |              |
| 3 - Ermont Way     | 565                   | 565                      | 141                     | 0                      | 560                       | 2659                      | 775               | 0.729 | 565                 | 163                             | 2.8               | 2.8             | 18.070    |              |
| 4 - Hennef Way (W) | 2437                  | 2437                     | 609                     | 0                      | 0                         | 634                       | 3146              | 0.775 | 2437                | 2590                            | 3.5               | 3.5             | 5.222     |              |

**18:00 - 18:15**

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev se |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|--------------|
| 1 - Wildmere Road  | 965                   | 662                      | 166                     | 303                    | 0                         | 2643                      | 714               | 0.927 | 661                 | 428                             | 10.9              | 11.2            | 63.898    |              |
| 2 - Hennef Way (E) | 2671                  | 2111                     | 528                     | 560                    | 303                       | 712                       | 2334              | 0.905 | 2111                | 2592                            | 9.7               | 9.8             | 17.128    |              |
| 3 - Ermont Way     | 565                   | 565                      | 141                     | 0                      | 560                       | 2660                      | 775               | 0.730 | 565                 | 163                             | 2.8               | 2.8             | 18.109    |              |
| 4 - Hennef Way (W) | 2437                  | 2437                     | 609                     | 0                      | 0                         | 634                       | 3146              | 0.775 | 2437                | 2591                            | 3.5               | 3.5             | 5.222     |              |

# 2021 without development, PM (18-19)

## Data Errors and Warnings

| Severity | Area     | Item                                     | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 3 - Ermont Way - Roundabout Geometry     | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Hennef Way (W) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 3.57               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name            | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|----|--------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D6 | 2021 without development | PM (18-19)       | FLAT                 | 17:45              | 19:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|--------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Wildmere Road  |            | FLAT         | ✓            | 688                     | 100.000            |
| 2 - Hennef Way (E) |            | FLAT         | ✓            | 1902                    | 100.000            |
| 3 - Ermont Way     |            | FLAT         | ✓            | 402                     | 100.000            |
| 4 - Hennef Way (W) |            | FLAT         | ✓            | 1735                    | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                    | To                |                    |                |                    |
|------|--------------------|-------------------|--------------------|----------------|--------------------|
|      |                    | 1 - Wildmere Road | 2 - Hennef Way (E) | 3 - Ermont Way | 4 - Hennef Way (W) |
| From | 1 - Wildmere Road  | 0                 | 216                | 80             | 392                |
|      | 2 - Hennef Way (E) | 180               | 0                  | 399            | 1323               |
|      | 3 - Ermont Way     | 47                | 224                | 0              | 131                |
|      | 4 - Hennef Way (W) | 78                | 1621               | 36             | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      |                    | To                |                    |                |                    |
|------|--------------------|-------------------|--------------------|----------------|--------------------|
|      |                    | 1 - Wildmere Road | 2 - Hennef Way (E) | 3 - Ermont Way | 4 - Hennef Way (W) |
| From | 1 - Wildmere Road  | 0                 | 6                  | 5              | 4                  |
|      | 2 - Hennef Way (E) | 12                | 0                  | 13             | 4                  |
|      | 3 - Ermont Way     | 19                | 4                  | 0              | 2                  |
|      | 4 - Hennef Way (W) | 0                 | 3                  | 3              | 0                  |

## Results

### Results Summary for whole modelled period

| Arm                | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Wildmere Road  | 0.40    | 5.25          | 0.7             | A       | 688                     | 708                           |
| 2 - Hennef Way (E) | 0.61    | 3.90          | 1.6             | A       | 1902                    | 2255                          |
| 3 - Ermont Way     | 0.32    | 4.34          | 0.5             | A       | 402                     | 603                           |
| 4 - Hennef Way (W) | 0.53    | 2.37          | 1.1             | A       | 1735                    | 2603                          |

### Main Results for each time segment

#### 17:45 - 18:00

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 688                   | 472                      | 118                     | 216                    | 0                         | 1876                      | 1189              | 0.397 | 469                 | 304                             | 0.0               | 0.7             | 5.188     |               |
| 2 - Hennef Way (E) | 1902                  | 1503                     | 376                     | 399                    | 216                       | 505                       | 2472              | 0.608 | 1497                | 1840                            | 0.0               | 1.6             | 3.845     |               |
| 3 - Ermont Way     | 402                   | 402                      | 101                     | 0                      | 399                       | 1886                      | 1277              | 0.315 | 400                 | 115                             | 0.0               | 0.5             | 4.297     |               |
| 4 - Hennef Way (W) | 1735                  | 1735                     | 434                     | 0                      | 0                         | 449                       | 3301              | 0.526 | 1730                | 1837                            | 0.0               | 1.1             | 2.351     |               |

#### 18:00 - 18:15

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 688                   | 472                      | 118                     | 216                    | 0                         | 1881                      | 1186              | 0.398 | 472                 | 305                             | 0.7               | 0.7             | 5.252     |               |
| 2 - Hennef Way (E) | 1902                  | 1503                     | 376                     | 399                    | 216                       | 508                       | 2470              | 0.608 | 1503                | 1845                            | 1.6               | 1.6             | 3.903     |               |
| 3 - Ermont Way     | 402                   | 402                      | 101                     | 0                      | 399                       | 1895                      | 1271              | 0.316 | 402                 | 116                             | 0.5               | 0.5             | 4.344     |               |
| 4 - Hennef Way (W) | 1735                  | 1735                     | 434                     | 0                      | 0                         | 451                       | 3299              | 0.526 | 1735                | 1846                            | 1.1               | 1.1             | 2.367     |               |

#### 18:15 - 18:30

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 688                   | 472                      | 118                     | 216                    | 0                         | 1881                      | 1186              | 0.398 | 472                 | 305                             | 0.7               | 0.7             | 5.252     |               |
| 2 - Hennef Way (E) | 1902                  | 1503                     | 376                     | 399                    | 216                       | 508                       | 2470              | 0.608 | 1503                | 1845                            | 1.6               | 1.6             | 3.903     |               |
| 3 - Ermont Way     | 402                   | 402                      | 101                     | 0                      | 399                       | 1895                      | 1271              | 0.316 | 402                 | 116                             | 0.5               | 0.5             | 4.344     |               |
| 4 - Hennef Way (W) | 1735                  | 1735                     | 434                     | 0                      | 0                         | 451                       | 3299              | 0.526 | 1735                | 1846                            | 1.1               | 1.1             | 2.367     |               |

#### 18:30 - 18:45

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 688                   | 472                      | 118                     | 216                    | 0                         | 1881                      | 1186              | 0.398 | 472                 | 305                             | 0.7               | 0.7             | 5.252     |               |
| 2 - Hennef Way (E) | 1902                  | 1503                     | 376                     | 399                    | 216                       | 508                       | 2470              | 0.608 | 1503                | 1845                            | 1.6               | 1.6             | 3.903     |               |
| 3 - Ermont Way     | 402                   | 402                      | 101                     | 0                      | 399                       | 1895                      | 1271              | 0.316 | 402                 | 116                             | 0.5               | 0.5             | 4.344     |               |
| 4 - Hennef Way (W) | 1735                  | 1735                     | 434                     | 0                      | 0                         | 451                       | 3299              | 0.526 | 1735                | 1846                            | 1.1               | 1.1             | 2.367     |               |

18:45 - 19:00

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 688                   | 472                      | 118                     | 216                    | 0                         | 1881                      | 1186              | 0.398 | 472                 | 305                             | 0.7               | 0.7             | 5.252     |               |
| 2 - Hennef Way (E) | 1902                  | 1503                     | 376                     | 399                    | 216                       | 508                       | 2470              | 0.608 | 1503                | 1845                            | 1.6               | 1.6             | 3.903     |               |
| 3 - Ermont Way     | 402                   | 402                      | 101                     | 0                      | 399                       | 1895                      | 1271              | 0.316 | 402                 | 116                             | 0.5               | 0.5             | 4.344     |               |
| 4 - Hennef Way (W) | 1735                  | 1735                     | 434                     | 0                      | 0                         | 451                       | 3299              | 0.526 | 1735                | 1846                            | 1.1               | 1.1             | 2.367     |               |

19:00 - 19:15

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 688                   | 472                      | 118                     | 216                    | 0                         | 1881                      | 1186              | 0.398 | 472                 | 305                             | 0.7               | 0.7             | 5.252     |               |
| 2 - Hennef Way (E) | 1902                  | 1503                     | 376                     | 399                    | 216                       | 508                       | 2470              | 0.608 | 1503                | 1845                            | 1.6               | 1.6             | 3.903     |               |
| 3 - Ermont Way     | 402                   | 402                      | 101                     | 0                      | 399                       | 1895                      | 1271              | 0.316 | 402                 | 116                             | 0.5               | 0.5             | 4.344     |               |
| 4 - Hennef Way (W) | 1735                  | 1735                     | 434                     | 0                      | 0                         | 451                       | 3299              | 0.526 | 1735                | 1846                            | 1.1               | 1.1             | 2.367     |               |

# 2021 with development, PM (16-17)

## Data Errors and Warnings

| Severity | Area     | Item                                     | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 3 - Ermont Way - Roundabout Geometry     | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Hennef Way (W) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 6.38               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name         | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-----------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D10 | 2021 with development | PM (16-17)       | FLAT                 | 15:45              | 17:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|--------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Wildmere Road  |            | FLAT         | ✓            | 825                     | 100.000            |
| 2 - Hennef Way (E) |            | FLAT         | ✓            | 2360                    | 100.000            |
| 3 - Ermont Way     |            | FLAT         | ✓            | 482                     | 100.000            |
| 4 - Hennef Way (W) |            | FLAT         | ✓            | 2114                    | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                    | To                |                    |                |                    |
|------|--------------------|-------------------|--------------------|----------------|--------------------|
|      |                    | 1 - Wildmere Road | 2 - Hennef Way (E) | 3 - Ermont Way | 4 - Hennef Way (W) |
| From | 1 - Wildmere Road  | 0                 | 259                | 96             | 470                |
|      | 2 - Hennef Way (E) | 216               | 0                  | 478            | 1666               |
|      | 3 - Ermont Way     | 56                | 269                | 0              | 157                |
|      | 4 - Hennef Way (W) | 93                | 1977               | 44             | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

| From               | To                |                    |                |                    |
|--------------------|-------------------|--------------------|----------------|--------------------|
|                    | 1 - Wildmere Road | 2 - Hennef Way (E) | 3 - Ermont Way | 4 - Hennef Way (W) |
| 1 - Wildmere Road  | 0                 | 7                  | 5              | 2                  |
| 2 - Hennef Way (E) | 19                | 0                  | 19             | 7                  |
| 3 - Ermont Way     | 24                | 7                  | 0              | 4                  |
| 4 - Hennef Way (W) | 0                 | 4                  | 8              | 0                  |

## Results

### Results Summary for whole modelled period

| Arm                | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Wildmere Road  | 0.61    | 10.06         | 1.6             | B       | 825                     | 849                           |
| 2 - Hennef Way (E) | 0.78    | 7.49          | 3.9             | A       | 2360                    | 2823                          |
| 3 - Ermont Way     | 0.49    | 7.88          | 1.1             | A       | 482                     | 723                           |
| 4 - Hennef Way (W) | 0.66    | 3.37          | 2.0             | A       | 2114                    | 3171                          |

### Main Results for each time segment

#### 15:45 - 16:00

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 825                   | 566                      | 142                     | 259                    | 0                         | 2280                      | 939               | 0.603 | 560                 | 362                             | 0.0               | 1.5             | 9.592     |               |
| 2 - Hennef Way (E) | 2360                  | 1882                     | 471                     | 478                    | 259                       | 604                       | 2406              | 0.782 | 1867                | 2236                            | 0.0               | 3.7             | 7.044     |               |
| 3 - Ermont Way     | 482                   | 482                      | 121                     | 0                      | 478                       | 2332                      | 987               | 0.488 | 478                 | 139                             | 0.0               | 1.0             | 7.555     |               |
| 4 - Hennef Way (W) | 2114                  | 2114                     | 529                     | 0                      | 0                         | 537                       | 3228              | 0.655 | 2106                | 2273                            | 0.0               | 2.0             | 3.313     |               |

#### 16:00 - 16:15

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev se |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|--------------|
| 1 - Wildmere Road  | 825                   | 566                      | 142                     | 259                    | 0                         | 2290                      | 933               | 0.607 | 566                 | 365                             | 1.5               | 1.6             | 10.042    |              |
| 2 - Hennef Way (E) | 2360                  | 1882                     | 471                     | 478                    | 259                       | 610                       | 2402              | 0.783 | 1882                | 2246                            | 3.7               | 3.8             | 7.474     |              |
| 3 - Ermont Way     | 482                   | 482                      | 121                     | 0                      | 478                       | 2352                      | 975               | 0.495 | 482                 | 140                             | 1.0               | 1.0             | 7.866     |              |
| 4 - Hennef Way (W) | 2114                  | 2114                     | 529                     | 0                      | 0                         | 541                       | 3224              | 0.656 | 2114                | 2293                            | 2.0               | 2.0             | 3.368     |              |

#### 16:15 - 16:30

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev se |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|--------------|
| 1 - Wildmere Road  | 825                   | 566                      | 142                     | 259                    | 0                         | 2290                      | 933               | 0.607 | 566                 | 365                             | 1.6               | 1.6             | 10.053    |              |
| 2 - Hennef Way (E) | 2360                  | 1882                     | 471                     | 478                    | 259                       | 610                       | 2402              | 0.784 | 1882                | 2246                            | 3.8               | 3.9             | 7.487     |              |
| 3 - Ermont Way     | 482                   | 482                      | 121                     | 0                      | 478                       | 2352                      | 974               | 0.495 | 482                 | 140                             | 1.0               | 1.0             | 7.872     |              |
| 4 - Hennef Way (W) | 2114                  | 2114                     | 529                     | 0                      | 0                         | 541                       | 3224              | 0.656 | 2114                | 2293                            | 2.0               | 2.0             | 3.369     |              |

#### 16:30 - 16:45

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev se |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|--------------|
| 1 - Wildmere Road  | 825                   | 566                      | 142                     | 259                    | 0                         | 2290                      | 933               | 0.607 | 566                 | 365                             | 1.6               | 1.6             | 10.056    |              |
| 2 - Hennef Way (E) | 2360                  | 1882                     | 471                     | 478                    | 259                       | 610                       | 2402              | 0.784 | 1882                | 2246                            | 3.9               | 3.9             | 7.490     |              |
| 3 - Ermont Way     | 482                   | 482                      | 121                     | 0                      | 478                       | 2352                      | 974               | 0.495 | 482                 | 140                             | 1.0               | 1.0             | 7.875     |              |
| 4 - Hennef Way (W) | 2114                  | 2114                     | 529                     | 0                      | 0                         | 541                       | 3224              | 0.656 | 2114                | 2293                            | 2.0               | 2.0             | 3.369     |              |



**16:45 - 17:00**

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev se |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|--------------|
| 1 - Wildmere Road  | 825                   | 566                      | 142                     | 259                    | 0                         | 2290                      | 933               | 0.607 | 566                 | 365                             | 1.6               | 1.6             | 10.056    |              |
| 2 - Hennef Way (E) | 2360                  | 1882                     | 471                     | 478                    | 259                       | 610                       | 2402              | 0.784 | 1882                | 2246                            | 3.9               | 3.9             | 7.490     |              |
| 3 - Ermont Way     | 482                   | 482                      | 121                     | 0                      | 478                       | 2352                      | 974               | 0.495 | 482                 | 140                             | 1.0               | 1.1             | 7.875     |              |
| 4 - Hennef Way (W) | 2114                  | 2114                     | 529                     | 0                      | 0                         | 541                       | 3224              | 0.656 | 2114                | 2293                            | 2.0               | 2.0             | 3.369     |              |

**17:00 - 17:15**

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev se |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|--------------|
| 1 - Wildmere Road  | 825                   | 566                      | 142                     | 259                    | 0                         | 2290                      | 933               | 0.607 | 566                 | 365                             | 1.6               | 1.6             | 10.056    |              |
| 2 - Hennef Way (E) | 2360                  | 1882                     | 471                     | 478                    | 259                       | 610                       | 2402              | 0.784 | 1882                | 2246                            | 3.9               | 3.9             | 7.490     |              |
| 3 - Ermont Way     | 482                   | 482                      | 121                     | 0                      | 478                       | 2352                      | 974               | 0.495 | 482                 | 140                             | 1.1               | 1.1             | 7.875     |              |
| 4 - Hennef Way (W) | 2114                  | 2114                     | 529                     | 0                      | 0                         | 541                       | 3224              | 0.656 | 2114                | 2293                            | 2.0               | 2.0             | 3.369     |              |

# 2021 with development, PM (17-18)

## Data Errors and Warnings

| Severity | Area     | Item                                     | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 3 - Ermont Way - Roundabout Geometry     | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Hennef Way (W) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 27.93              | D            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name         | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-----------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D11 | 2021 with development | PM (17-18)       | FLAT                 | 16:45              | 18:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|--------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Wildmere Road  |            | FLAT         | ✓            | 965                     | 100.000            |
| 2 - Hennef Way (E) |            | FLAT         | ✓            | 2751                    | 100.000            |
| 3 - Ermont Way     |            | FLAT         | ✓            | 565                     | 100.000            |
| 4 - Hennef Way (W) |            | FLAT         | ✓            | 2475                    | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                    | To                |                    |                |                    |
|------|--------------------|-------------------|--------------------|----------------|--------------------|
|      |                    | 1 - Wildmere Road | 2 - Hennef Way (E) | 3 - Ermont Way | 4 - Hennef Way (W) |
| From | 1 - Wildmere Road  | 0                 | 303                | 112            | 550                |
|      | 2 - Hennef Way (E) | 253               | 0                  | 560            | 1938               |
|      | 3 - Ermont Way     | 66                | 315                | 0              | 184                |
|      | 4 - Hennef Way (W) | 109               | 2315               | 51             | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|                    | To                |                    |                |                    |
|--------------------|-------------------|--------------------|----------------|--------------------|
|                    | 1 - Wildmere Road | 2 - Hennef Way (E) | 3 - Ermont Way | 4 - Hennef Way (W) |
| From               |                   |                    |                |                    |
| 1 - Wildmere Road  | 0                 | 3                  | 5              | 3                  |
| 2 - Hennef Way (E) | 27                | 0                  | 13             | 5                  |
| 3 - Ermont Way     | 25                | 5                  | 0              | 1                  |
| 4 - Hennef Way (W) | 0                 | 3                  | 6              | 0                  |

## Results

### Results Summary for whole modelled period

| Arm                | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Wildmere Road  | 0.96    | 94.49         | 16.6            | F       | 965                     | 993                           |
| 2 - Hennef Way (E) | 0.94    | 25.62         | 15.0            | D       | 2751                    | 3287                          |
| 3 - Ermont Way     | 0.78    | 23.76         | 3.6             | C       | 565                     | 848                           |
| 4 - Hennef Way (W) | 0.79    | 5.52          | 3.8             | A       | 2475                    | 3713                          |

### Main Results for each time segment

#### 16:45 - 17:00

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig level |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------|
| 1 - Wildmere Road  | 965                   | 662                      | 166                     | 303                    | 0                         | 2661                      | 703               | 0.941 | 628                 | 421                             | 0.0               | 8.6             | 39.365    |             |
| 2 - Hennef Way (E) | 2751                  | 2191                     | 548                     | 560                    | 303                       | 678                       | 2356              | 0.930 | 2147                | 2610                            | 0.0               | 11.0            | 16.032    |             |
| 3 - Ermont Way     | 565                   | 565                      | 141                     | 0                      | 560                       | 2668                      | 769               | 0.735 | 554                 | 157                             | 0.0               | 2.7             | 16.948    |             |
| 4 - Hennef Way (W) | 2475                  | 2475                     | 619                     | 0                      | 0                         | 622                       | 3157              | 0.784 | 2460                | 2601                            | 0.0               | 3.6             | 5.218     |             |

#### 17:00 - 17:15

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig level |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------|
| 1 - Wildmere Road  | 965                   | 662                      | 166                     | 303                    | 0                         | 2679                      | 692               | 0.957 | 650                 | 427                             | 8.6               | 11.7            | 66.827    |             |
| 2 - Hennef Way (E) | 2751                  | 2191                     | 548                     | 560                    | 303                       | 701                       | 2341              | 0.936 | 2183                | 2628                            | 11.0              | 12.9            | 22.545    |             |
| 3 - Ermont Way     | 565                   | 565                      | 141                     | 0                      | 560                       | 2723                      | 733               | 0.770 | 563                 | 161                             | 2.7               | 3.3             | 21.879    |             |
| 4 - Hennef Way (W) | 2475                  | 2475                     | 619                     | 0                      | 0                         | 632                       | 3148              | 0.786 | 2475                | 2654                            | 3.6               | 3.7             | 5.493     |             |

#### 17:15 - 17:30

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig level |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------|
| 1 - Wildmere Road  | 965                   | 662                      | 166                     | 303                    | 0                         | 2681                      | 691               | 0.958 | 655                 | 427                             | 11.7              | 13.5            | 78.194    |             |
| 2 - Hennef Way (E) | 2751                  | 2191                     | 548                     | 560                    | 303                       | 706                       | 2338              | 0.937 | 2187                | 2630                            | 12.9              | 13.8            | 24.066    |             |
| 3 - Ermont Way     | 565                   | 565                      | 141                     | 0                      | 560                       | 2731                      | 728               | 0.776 | 564                 | 162                             | 3.3               | 3.5             | 22.965    |             |
| 4 - Hennef Way (W) | 2475                  | 2475                     | 619                     | 0                      | 0                         | 633                       | 3147              | 0.786 | 2475                | 2662                            | 3.7               | 3.7             | 5.511     |             |

#### 17:30 - 17:45

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig level |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------|
| 1 - Wildmere Road  | 965                   | 662                      | 166                     | 303                    | 0                         | 2681                      | 691               | 0.958 | 657                 | 428                             | 13.5              | 14.8            | 85.380    |             |
| 2 - Hennef Way (E) | 2751                  | 2191                     | 548                     | 560                    | 303                       | 708                       | 2336              | 0.938 | 2189                | 2630                            | 13.8              | 14.4            | 24.832    |             |
| 3 - Ermont Way     | 565                   | 565                      | 141                     | 0                      | 560                       | 2735                      | 726               | 0.778 | 565                 | 162                             | 3.5               | 3.5             | 23.388    |             |
| 4 - Hennef Way (W) | 2475                  | 2475                     | 619                     | 0                      | 0                         | 634                       | 3147              | 0.787 | 2475                | 2666                            | 3.7               | 3.8             | 5.513     |             |

**17:45 - 18:00**

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev se |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|--------------|
| 1 - Wildmere Road  | 965                   | 662                      | 166                     | 303                    | 0                         | 2681                      | 691               | 0.958 | 658                 | 428                             | 14.8              | 15.8            | 90.539    |              |
| 2 - Hennef Way (E) | 2751                  | 2191                     | 548                     | 560                    | 303                       | 709                       | 2336              | 0.938 | 2190                | 2630                            | 14.4              | 14.7            | 25.301    |              |
| 3 - Ermont Way     | 565                   | 565                      | 141                     | 0                      | 560                       | 2736                      | 725               | 0.780 | 565                 | 162                             | 3.5               | 3.6             | 23.618    |              |
| 4 - Hennef Way (W) | 2475                  | 2475                     | 619                     | 0                      | 0                         | 634                       | 3147              | 0.787 | 2475                | 2667                            | 3.8               | 3.8             | 5.516     |              |

**18:00 - 18:15**

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev se |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|--------------|
| 1 - Wildmere Road  | 965                   | 662                      | 166                     | 303                    | 0                         | 2681                      | 691               | 0.958 | 659                 | 428                             | 15.8              | 16.6            | 94.487    |              |
| 2 - Hennef Way (E) | 2751                  | 2191                     | 548                     | 560                    | 303                       | 710                       | 2335              | 0.938 | 2190                | 2630                            | 14.7              | 15.0            | 25.616    |              |
| 3 - Ermont Way     | 565                   | 565                      | 141                     | 0                      | 560                       | 2737                      | 724               | 0.780 | 565                 | 162                             | 3.6               | 3.6             | 23.759    |              |
| 4 - Hennef Way (W) | 2475                  | 2475                     | 619                     | 0                      | 0                         | 634                       | 3147              | 0.787 | 2475                | 2668                            | 3.8               | 3.8             | 5.517     |              |

# 2021 with development, PM (18-19)

## Data Errors and Warnings

| Severity | Area     | Item                                     | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 3 - Ermont Way - Roundabout Geometry     | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Hennef Way (W) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 3.79               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name         | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-----------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D12 | 2021 with development | PM (18-19)       | FLAT                 | 17:45              | 19:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|--------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Wildmere Road  |            | FLAT         | ✓            | 688                     | 100.000            |
| 2 - Hennef Way (E) |            | FLAT         | ✓            | 1982                    | 100.000            |
| 3 - Ermont Way     |            | FLAT         | ✓            | 402                     | 100.000            |
| 4 - Hennef Way (W) |            | FLAT         | ✓            | 1776                    | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                    | To                |                    |                |                    |
|------|--------------------|-------------------|--------------------|----------------|--------------------|
|      |                    | 1 - Wildmere Road | 2 - Hennef Way (E) | 3 - Ermont Way | 4 - Hennef Way (W) |
| From | 1 - Wildmere Road  | 0                 | 216                | 80             | 392                |
|      | 2 - Hennef Way (E) | 180               | 0                  | 399            | 1403               |
|      | 3 - Ermont Way     | 47                | 224                | 0              | 131                |
|      | 4 - Hennef Way (W) | 78                | 1662               | 36             | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|                    | To                |                    |                |                    |
|--------------------|-------------------|--------------------|----------------|--------------------|
|                    | 1 - Wildmere Road | 2 - Hennef Way (E) | 3 - Ermont Way | 4 - Hennef Way (W) |
| From               |                   |                    |                |                    |
| 1 - Wildmere Road  | 0                 | 6                  | 5              | 4                  |
| 2 - Hennef Way (E) | 12                | 0                  | 13             | 4                  |
| 3 - Ermont Way     | 19                | 4                  | 0              | 2                  |
| 4 - Hennef Way (W) | 0                 | 3                  | 3              | 0                  |

## Results

### Results Summary for whole modelled period

| Arm                | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Wildmere Road  | 0.41    | 5.45          | 0.7             | A       | 688                     | 708                           |
| 2 - Hennef Way (E) | 0.64    | 4.25          | 1.9             | A       | 1982                    | 2375                          |
| 3 - Ermont Way     | 0.33    | 4.62          | 0.5             | A       | 402                     | 603                           |
| 4 - Hennef Way (W) | 0.54    | 2.43          | 1.2             | A       | 1776                    | 2664                          |

### Main Results for each time segment

#### 17:45 - 18:00

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 688                   | 472                      | 118                     | 216                    | 0                         | 1916                      | 1164              | 0.405 | 469                 | 304                             | 0.0               | 0.7             | 5.375     |               |
| 2 - Hennef Way (E) | 1982                  | 1583                     | 396                     | 399                    | 216                       | 505                       | 2472              | 0.640 | 1576                | 1880                            | 0.0               | 1.8             | 4.176     |               |
| 3 - Ermont Way     | 402                   | 402                      | 101                     | 0                      | 399                       | 1965                      | 1225              | 0.328 | 400                 | 115                             | 0.0               | 0.5             | 4.563     |               |
| 4 - Hennef Way (W) | 1776                  | 1776                     | 444                     | 0                      | 0                         | 449                       | 3301              | 0.538 | 1771                | 1916                            | 0.0               | 1.2             | 2.414     |               |

#### 18:00 - 18:15

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 688                   | 472                      | 118                     | 216                    | 0                         | 1922                      | 1161              | 0.407 | 472                 | 305                             | 0.7               | 0.7             | 5.445     |               |
| 2 - Hennef Way (E) | 1982                  | 1583                     | 396                     | 399                    | 216                       | 508                       | 2470              | 0.641 | 1583                | 1886                            | 1.8               | 1.9             | 4.253     |               |
| 3 - Ermont Way     | 402                   | 402                      | 101                     | 0                      | 399                       | 1975                      | 1219              | 0.330 | 402                 | 116                             | 0.5               | 0.5             | 4.620     |               |
| 4 - Hennef Way (W) | 1776                  | 1776                     | 444                     | 0                      | 0                         | 451                       | 3299              | 0.538 | 1776                | 1926                            | 1.2               | 1.2             | 2.431     |               |

#### 18:15 - 18:30

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 688                   | 472                      | 118                     | 216                    | 0                         | 1922                      | 1161              | 0.407 | 472                 | 305                             | 0.7               | 0.7             | 5.445     |               |
| 2 - Hennef Way (E) | 1982                  | 1583                     | 396                     | 399                    | 216                       | 508                       | 2470              | 0.641 | 1583                | 1886                            | 1.9               | 1.9             | 4.253     |               |
| 3 - Ermont Way     | 402                   | 402                      | 101                     | 0                      | 399                       | 1975                      | 1219              | 0.330 | 402                 | 116                             | 0.5               | 0.5             | 4.620     |               |
| 4 - Hennef Way (W) | 1776                  | 1776                     | 444                     | 0                      | 0                         | 451                       | 3299              | 0.538 | 1776                | 1926                            | 1.2               | 1.2             | 2.431     |               |

#### 18:30 - 18:45

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 688                   | 472                      | 118                     | 216                    | 0                         | 1922                      | 1161              | 0.407 | 472                 | 305                             | 0.7               | 0.7             | 5.445     |               |
| 2 - Hennef Way (E) | 1982                  | 1583                     | 396                     | 399                    | 216                       | 508                       | 2470              | 0.641 | 1583                | 1886                            | 1.9               | 1.9             | 4.253     |               |
| 3 - Ermont Way     | 402                   | 402                      | 101                     | 0                      | 399                       | 1975                      | 1219              | 0.330 | 402                 | 116                             | 0.5               | 0.5             | 4.620     |               |
| 4 - Hennef Way (W) | 1776                  | 1776                     | 444                     | 0                      | 0                         | 451                       | 3299              | 0.538 | 1776                | 1926                            | 1.2               | 1.2             | 2.431     |               |

18:45 - 19:00

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 688                   | 472                      | 118                     | 216                    | 0                         | 1922                      | 1161              | 0.407 | 472                 | 305                             | 0.7               | 0.7             | 5.445     |               |
| 2 - Hennef Way (E) | 1982                  | 1583                     | 396                     | 399                    | 216                       | 508                       | 2470              | 0.641 | 1583                | 1886                            | 1.9               | 1.9             | 4.253     |               |
| 3 - Ermont Way     | 402                   | 402                      | 101                     | 0                      | 399                       | 1975                      | 1219              | 0.330 | 402                 | 116                             | 0.5               | 0.5             | 4.620     |               |
| 4 - Hennef Way (W) | 1776                  | 1776                     | 444                     | 0                      | 0                         | 451                       | 3299              | 0.538 | 1776                | 1926                            | 1.2               | 1.2             | 2.431     |               |

19:00 - 19:15

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 688                   | 472                      | 118                     | 216                    | 0                         | 1922                      | 1161              | 0.407 | 472                 | 305                             | 0.7               | 0.7             | 5.445     |               |
| 2 - Hennef Way (E) | 1982                  | 1583                     | 396                     | 399                    | 216                       | 508                       | 2470              | 0.641 | 1583                | 1886                            | 1.9               | 1.9             | 4.253     |               |
| 3 - Ermont Way     | 402                   | 402                      | 101                     | 0                      | 399                       | 1975                      | 1219              | 0.330 | 402                 | 116                             | 0.5               | 0.5             | 4.620     |               |
| 4 - Hennef Way (W) | 1776                  | 1776                     | 444                     | 0                      | 0                         | 451                       | 3299              | 0.538 | 1776                | 1926                            | 1.2               | 1.2             | 2.431     |               |

# 2021 with development (sensitivity), PM (16-17)

## Data Errors and Warnings

| Severity | Area     | Item                                     | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 3 - Ermont Way - Roundabout Geometry     | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Hennef Way (W) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 5.78               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name                       | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-------------------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D16 | 2021 with development (sensitivity) | PM (16-17)       | FLAT                 | 15:45              | 17:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|--------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Wildmere Road  |            | FLAT         | ✓            | 825                     | 100.000            |
| 2 - Hennef Way (E) |            | FLAT         | ✓            | 2315                    | 100.000            |
| 3 - Ermont Way     |            | FLAT         | ✓            | 482                     | 100.000            |
| 4 - Hennef Way (W) |            | FLAT         | ✓            | 1984                    | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                    | To                |                    |                |                    |
|------|--------------------|-------------------|--------------------|----------------|--------------------|
|      |                    | 1 - Wildmere Road | 2 - Hennef Way (E) | 3 - Ermont Way | 4 - Hennef Way (W) |
| From | 1 - Wildmere Road  | 0                 | 259                | 96             | 470                |
|      | 2 - Hennef Way (E) | 216               | 0                  | 478            | 1621               |
|      | 3 - Ermont Way     | 56                | 269                | 0              | 157                |
|      | 4 - Hennef Way (W) | 93                | 1847               | 44             | 0                  |

## Vehicle Mix



### Heavy Vehicle Percentages

| From               | To                |                    |                |                    |
|--------------------|-------------------|--------------------|----------------|--------------------|
|                    | 1 - Wildmere Road | 2 - Hennef Way (E) | 3 - Ermont Way | 4 - Hennef Way (W) |
| 1 - Wildmere Road  | 0                 | 7                  | 5              | 2                  |
| 2 - Hennef Way (E) | 19                | 0                  | 19             | 7                  |
| 3 - Ermont Way     | 24                | 7                  | 0              | 4                  |
| 4 - Hennef Way (W) | 0                 | 5                  | 8              | 0                  |

## Results

### Results Summary for whole modelled period

| Arm                | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Wildmere Road  | 0.56    | 8.25          | 1.3             | A       | 825                     | 849                           |
| 2 - Hennef Way (E) | 0.76    | 6.90          | 3.5             | A       | 2315                    | 2756                          |
| 3 - Ermont Way     | 0.48    | 7.43          | 1.0             | A       | 482                     | 723                           |
| 4 - Hennef Way (W) | 0.62    | 3.04          | 1.7             | A       | 1984                    | 2976                          |

### Main Results for each time segment

#### 15:45 - 16:00

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 825                   | 566                      | 142                     | 259                    | 0                         | 2152                      | 1019              | 0.556 | 561                 | 363                             | 0.0               | 1.3             | 7.980     |               |
| 2 - Hennef Way (E) | 2315                  | 1837                     | 459                     | 478                    | 259                       | 605                       | 2405              | 0.764 | 1823                | 2108                            | 0.0               | 3.4             | 6.553     |               |
| 3 - Ermont Way     | 482                   | 482                      | 121                     | 0                      | 478                       | 2289                      | 1015              | 0.475 | 478                 | 139                             | 0.0               | 1.0             | 7.173     |               |
| 4 - Hennef Way (W) | 1984                  | 1984                     | 496                     | 0                      | 0                         | 537                       | 3227              | 0.615 | 1977                | 2231                            | 0.0               | 1.7             | 3.003     |               |

#### 16:00 - 16:15

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 825                   | 566                      | 142                     | 259                    | 0                         | 2160                      | 1013              | 0.559 | 566                 | 365                             | 1.3               | 1.3             | 8.243     |               |
| 2 - Hennef Way (E) | 2315                  | 1837                     | 459                     | 478                    | 259                       | 610                       | 2402              | 0.765 | 1837                | 2116                            | 3.4               | 3.5             | 6.886     |               |
| 3 - Ermont Way     | 482                   | 482                      | 121                     | 0                      | 478                       | 2307                      | 1004              | 0.480 | 482                 | 140                             | 1.0               | 1.0             | 7.427     |               |
| 4 - Hennef Way (W) | 1984                  | 1984                     | 496                     | 0                      | 0                         | 541                       | 3224              | 0.615 | 1984                | 2248                            | 1.7               | 1.7             | 3.042     |               |

#### 16:15 - 16:30

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 825                   | 566                      | 142                     | 259                    | 0                         | 2160                      | 1013              | 0.559 | 566                 | 365                             | 1.3               | 1.3             | 8.247     |               |
| 2 - Hennef Way (E) | 2315                  | 1837                     | 459                     | 478                    | 259                       | 610                       | 2402              | 0.765 | 1837                | 2116                            | 3.5               | 3.5             | 6.892     |               |
| 3 - Ermont Way     | 482                   | 482                      | 121                     | 0                      | 478                       | 2307                      | 1004              | 0.480 | 482                 | 140                             | 1.0               | 1.0             | 7.432     |               |
| 4 - Hennef Way (W) | 1984                  | 1984                     | 496                     | 0                      | 0                         | 541                       | 3224              | 0.615 | 1984                | 2248                            | 1.7               | 1.7             | 3.042     |               |

#### 16:30 - 16:45

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 825                   | 566                      | 142                     | 259                    | 0                         | 2160                      | 1013              | 0.559 | 566                 | 365                             | 1.3               | 1.3             | 8.249     |               |
| 2 - Hennef Way (E) | 2315                  | 1837                     | 459                     | 478                    | 259                       | 610                       | 2402              | 0.765 | 1837                | 2116                            | 3.5               | 3.5             | 6.895     |               |
| 3 - Ermont Way     | 482                   | 482                      | 121                     | 0                      | 478                       | 2307                      | 1004              | 0.480 | 482                 | 140                             | 1.0               | 1.0             | 7.433     |               |
| 4 - Hennef Way (W) | 1984                  | 1984                     | 496                     | 0                      | 0                         | 541                       | 3224              | 0.615 | 1984                | 2248                            | 1.7               | 1.7             | 3.042     |               |

**16:45 - 17:00**

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 825                   | 566                      | 142                     | 259                    | 0                         | 2160                      | 1013              | 0.559 | 566                 | 365                             | 1.3               | 1.3             | 8.249     |               |
| 2 - Hennef Way (E) | 2315                  | 1837                     | 459                     | 478                    | 259                       | 610                       | 2402              | 0.765 | 1837                | 2116                            | 3.5               | 3.5             | 6.895     |               |
| 3 - Ermont Way     | 482                   | 482                      | 121                     | 0                      | 478                       | 2307                      | 1004              | 0.480 | 482                 | 140                             | 1.0               | 1.0             | 7.433     |               |
| 4 - Hennef Way (W) | 1984                  | 1984                     | 496                     | 0                      | 0                         | 541                       | 3224              | 0.615 | 1984                | 2248                            | 1.7               | 1.7             | 3.042     |               |

**17:00 - 17:15**

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 825                   | 566                      | 142                     | 259                    | 0                         | 2160                      | 1013              | 0.559 | 566                 | 365                             | 1.3               | 1.3             | 8.249     |               |
| 2 - Hennef Way (E) | 2315                  | 1837                     | 459                     | 478                    | 259                       | 610                       | 2402              | 0.765 | 1837                | 2116                            | 3.5               | 3.5             | 6.898     |               |
| 3 - Ermont Way     | 482                   | 482                      | 121                     | 0                      | 478                       | 2307                      | 1004              | 0.480 | 482                 | 140                             | 1.0               | 1.0             | 7.433     |               |
| 4 - Hennef Way (W) | 1984                  | 1984                     | 496                     | 0                      | 0                         | 541                       | 3224              | 0.615 | 1984                | 2248                            | 1.7               | 1.7             | 3.042     |               |

# 2021 with development (sensitivity), PM (17-18)

## Data Errors and Warnings

| Severity | Area     | Item                                     | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 3 - Ermont Way - Roundabout Geometry     | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Hennef Way (W) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 15.77              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name                       | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-------------------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D17 | 2021 with development (sensitivity) | PM (17-18)       | FLAT                 | 16:45              | 18:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|--------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Wildmere Road  |            | FLAT         | ✓            | 965                     | 100.000            |
| 2 - Hennef Way (E) |            | FLAT         | ✓            | 2699                    | 100.000            |
| 3 - Ermont Way     |            | FLAT         | ✓            | 565                     | 100.000            |
| 4 - Hennef Way (W) |            | FLAT         | ✓            | 2323                    | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                    | To                |                    |                |                    |
|------|--------------------|-------------------|--------------------|----------------|--------------------|
|      |                    | 1 - Wildmere Road | 2 - Hennef Way (E) | 3 - Ermont Way | 4 - Hennef Way (W) |
| From | 1 - Wildmere Road  | 0                 | 303                | 112            | 550                |
|      | 2 - Hennef Way (E) | 253               | 0                  | 560            | 1886               |
|      | 3 - Ermont Way     | 66                | 315                | 0              | 184                |
|      | 4 - Hennef Way (W) | 109               | 2163               | 51             | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

| From               | To                |                    |                |                    |
|--------------------|-------------------|--------------------|----------------|--------------------|
|                    | 1 - Wildmere Road | 2 - Hennef Way (E) | 3 - Ermont Way | 4 - Hennef Way (W) |
| 1 - Wildmere Road  | 0                 | 3                  | 5              | 3                  |
| 2 - Hennef Way (E) | 27                | 0                  | 13             | 5                  |
| 3 - Ermont Way     | 25                | 5                  | 0              | 1                  |
| 4 - Hennef Way (W) | 0                 | 3                  | 6              | 0                  |

## Results

### Results Summary for whole modelled period

| Arm                | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Wildmere Road  | 0.84    | 29.92         | 5.4             | D       | 965                     | 993                           |
| 2 - Hennef Way (E) | 0.92    | 19.56         | 11.3            | C       | 2699                    | 3209                          |
| 3 - Ermont Way     | 0.75    | 19.87         | 3.1             | C       | 565                     | 848                           |
| 4 - Hennef Way (W) | 0.74    | 4.50          | 2.9             | A       | 2323                    | 3485                          |

### Main Results for each time segment

#### 16:45 - 17:00

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig level |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------|
| 1 - Wildmere Road  | 965                   | 662                      | 166                     | 303                    | 0                         | 2513                      | 795               | 0.833 | 644                 | 422                             | 0.0               | 4.4             | 22.588    |             |
| 2 - Hennef Way (E) | 2699                  | 2139                     | 535                     | 560                    | 303                       | 695                       | 2345              | 0.912 | 2102                | 2462                            | 0.0               | 9.3             | 14.212    |             |
| 3 - Ermont Way     | 565                   | 565                      | 141                     | 0                      | 560                       | 2637                      | 789               | 0.716 | 555                 | 160                             | 0.0               | 2.5             | 15.641    |             |
| 4 - Hennef Way (W) | 2323                  | 2323                     | 581                     | 0                      | 0                         | 623                       | 3156              | 0.736 | 2312                | 2569                            | 0.0               | 2.8             | 4.334     |             |

#### 17:00 - 17:15

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig level |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------|
| 1 - Wildmere Road  | 965                   | 662                      | 166                     | 303                    | 0                         | 2528                      | 786               | 0.843 | 660                 | 427                             | 4.4               | 5.0             | 28.627    |             |
| 2 - Hennef Way (E) | 2699                  | 2139                     | 535                     | 560                    | 303                       | 711                       | 2334              | 0.916 | 2135                | 2477                            | 9.3               | 10.4            | 18.492    |             |
| 3 - Ermont Way     | 565                   | 565                      | 141                     | 0                      | 560                       | 2683                      | 760               | 0.744 | 563                 | 163                             | 2.5               | 2.9             | 19.161    |             |
| 4 - Hennef Way (W) | 2323                  | 2323                     | 581                     | 0                      | 0                         | 632                       | 3148              | 0.738 | 2323                | 2614                            | 2.8               | 2.9             | 4.490     |             |

#### 17:15 - 17:30

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig level |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------|
| 1 - Wildmere Road  | 965                   | 662                      | 166                     | 303                    | 0                         | 2529                      | 785               | 0.843 | 661                 | 428                             | 5.0               | 5.2             | 29.423    |             |
| 2 - Hennef Way (E) | 2699                  | 2139                     | 535                     | 560                    | 303                       | 712                       | 2334              | 0.917 | 2137                | 2478                            | 10.4              | 10.8            | 19.103    |             |
| 3 - Ermont Way     | 565                   | 565                      | 141                     | 0                      | 560                       | 2687                      | 757               | 0.746 | 565                 | 163                             | 2.9               | 3.0             | 19.643    |             |
| 4 - Hennef Way (W) | 2323                  | 2323                     | 581                     | 0                      | 0                         | 634                       | 3147              | 0.738 | 2323                | 2618                            | 2.9               | 2.9             | 4.497     |             |

#### 17:30 - 17:45

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig level |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------|
| 1 - Wildmere Road  | 965                   | 662                      | 166                     | 303                    | 0                         | 2529                      | 785               | 0.843 | 662                 | 428                             | 5.2               | 5.3             | 29.699    |             |
| 2 - Hennef Way (E) | 2699                  | 2139                     | 535                     | 560                    | 303                       | 713                       | 2333              | 0.917 | 2138                | 2478                            | 10.8              | 11.1            | 19.346    |             |
| 3 - Ermont Way     | 565                   | 565                      | 141                     | 0                      | 560                       | 2688                      | 756               | 0.747 | 565                 | 163                             | 3.0               | 3.0             | 19.779    |             |
| 4 - Hennef Way (W) | 2323                  | 2323                     | 581                     | 0                      | 0                         | 634                       | 3147              | 0.738 | 2323                | 2619                            | 2.9               | 2.9             | 4.498     |             |

17:45 - 18:00

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev se |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|--------------|
| 1 - Wildmere Road  | 965                   | 662                      | 166                     | 303                    | 0                         | 2529                      | 785               | 0.843 | 662                 | 428                             | 5.3               | 5.3             | 29.840    |              |
| 2 - Hennef Way (E) | 2699                  | 2139                     | 535                     | 560                    | 303                       | 713                       | 2333              | 0.917 | 2138                | 2478                            | 11.1              | 11.2            | 19.475    |              |
| 3 - Ermont Way     | 565                   | 565                      | 141                     | 0                      | 560                       | 2688                      | 756               | 0.747 | 565                 | 163                             | 3.0               | 3.1             | 19.838    |              |
| 4 - Hennef Way (W) | 2323                  | 2323                     | 581                     | 0                      | 0                         | 634                       | 3146              | 0.738 | 2323                | 2619                            | 2.9               | 2.9             | 4.499     |              |

18:00 - 18:15

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev se |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|--------------|
| 1 - Wildmere Road  | 965                   | 662                      | 166                     | 303                    | 0                         | 2529                      | 785               | 0.843 | 662                 | 428                             | 5.3               | 5.4             | 29.923    |              |
| 2 - Hennef Way (E) | 2699                  | 2139                     | 535                     | 560                    | 303                       | 713                       | 2333              | 0.917 | 2139                | 2478                            | 11.2              | 11.3            | 19.556    |              |
| 3 - Ermont Way     | 565                   | 565                      | 141                     | 0                      | 560                       | 2688                      | 756               | 0.748 | 565                 | 163                             | 3.1               | 3.1             | 19.870    |              |
| 4 - Hennef Way (W) | 2323                  | 2323                     | 581                     | 0                      | 0                         | 634                       | 3146              | 0.738 | 2323                | 2619                            | 2.9               | 2.9             | 4.499     |              |

# 2021 with development (sensitivity), PM (18-19)

## Data Errors and Warnings

| Severity | Area     | Item                                     | Description  |
|----------|----------|--|--|
| Warning  | Geometry | 3 - Ermont Way - Roundabout Geometry     | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry | 4 - Hennef Way (W) - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Junction Network

### Junctions

| Junction | Name     | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout |                       | 1, 2, 3, 4 | 3.60               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name                       | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time period length (min) | Time segment length (min) | Run automatically |
|-----|-------------------------------------|------------------|----------------------|--------------------|---------------------|--------------------------|---------------------------|-------------------|
| D18 | 2021 with development (sensitivity) | PM (18-19)       | FLAT                 | 17:45              | 19:15               | 90                       | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|--------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - Wildmere Road  |            | FLAT         | ✓            | 688                     | 100.000            |
| 2 - Hennef Way (E) |            | FLAT         | ✓            | 1944                    | 100.000            |
| 3 - Ermont Way     |            | FLAT         | ✓            | 402                     | 100.000            |
| 4 - Hennef Way (W) |            | FLAT         | ✓            | 1667                    | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |                    | To                |                    |                |                    |
|------|--------------------|-------------------|--------------------|----------------|--------------------|
|      |                    | 1 - Wildmere Road | 2 - Hennef Way (E) | 3 - Ermont Way | 4 - Hennef Way (W) |
| From | 1 - Wildmere Road  | 0                 | 216                | 80             | 392                |
|      | 2 - Hennef Way (E) | 180               | 0                  | 399            | 1365               |
|      | 3 - Ermont Way     | 47                | 224                | 0              | 131                |
|      | 4 - Hennef Way (W) | 78                | 1553               | 36             | 0                  |

## Vehicle Mix

### Heavy Vehicle Percentages

|                    | To                |                    |                |                    |
|--------------------|-------------------|--------------------|----------------|--------------------|
|                    | 1 - Wildmere Road | 2 - Hennef Way (E) | 3 - Ermont Way | 4 - Hennef Way (W) |
| From               |                   |                    |                |                    |
| 1 - Wildmere Road  | 0                 | 6                  | 5              | 4                  |
| 2 - Hennef Way (E) | 12                | 0                  | 13             | 4                  |
| 3 - Ermont Way     | 19                | 4                  | 0              | 2                  |
| 4 - Hennef Way (W) | 0                 | 3                  | 3              | 0                  |

## Results

### Results Summary for whole modelled period

| Arm                | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - Wildmere Road  | 0.38    | 4.96          | 0.6             | A       | 688                     | 708                           |
| 2 - Hennef Way (E) | 0.63    | 4.08          | 1.7             | A       | 1944                    | 2318                          |
| 3 - Ermont Way     | 0.32    | 4.48          | 0.5             | A       | 402                     | 603                           |
| 4 - Hennef Way (W) | 0.51    | 2.27          | 1.0             | A       | 1667                    | 2501                          |

### Main Results for each time segment

#### 17:45 - 18:00

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 688                   | 472                      | 118                     | 216                    | 0                         | 1808                      | 1231              | 0.383 | 469                 | 304                             | 0.0               | 0.6             | 4.906     |               |
| 2 - Hennef Way (E) | 1944                  | 1545                     | 386                     | 399                    | 216                       | 505                       | 2472              | 0.625 | 1538                | 1772                            | 0.0               | 1.7             | 4.013     |               |
| 3 - Ermont Way     | 402                   | 402                      | 101                     | 0                      | 399                       | 1928                      | 1250              | 0.322 | 400                 | 115                             | 0.0               | 0.5             | 4.434     |               |
| 4 - Hennef Way (W) | 1667                  | 1667                     | 417                     | 0                      | 0                         | 449                       | 3301              | 0.505 | 1663                | 1879                            | 0.0               | 1.0             | 2.255     |               |

#### 18:00 - 18:15

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 688                   | 472                      | 118                     | 216                    | 0                         | 1813                      | 1228              | 0.384 | 472                 | 305                             | 0.6               | 0.6             | 4.959     |               |
| 2 - Hennef Way (E) | 1944                  | 1545                     | 386                     | 399                    | 216                       | 508                       | 2470              | 0.625 | 1545                | 1777                            | 1.7               | 1.7             | 4.079     |               |
| 3 - Ermont Way     | 402                   | 402                      | 101                     | 0                      | 399                       | 1937                      | 1244              | 0.323 | 402                 | 116                             | 0.5               | 0.5             | 4.484     |               |
| 4 - Hennef Way (W) | 1667                  | 1667                     | 417                     | 0                      | 0                         | 451                       | 3299              | 0.505 | 1667                | 1888                            | 1.0               | 1.0             | 2.268     |               |

#### 18:15 - 18:30

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 688                   | 472                      | 118                     | 216                    | 0                         | 1813                      | 1228              | 0.384 | 472                 | 305                             | 0.6               | 0.6             | 4.959     |               |
| 2 - Hennef Way (E) | 1944                  | 1545                     | 386                     | 399                    | 216                       | 508                       | 2470              | 0.625 | 1545                | 1777                            | 1.7               | 1.7             | 4.079     |               |
| 3 - Ermont Way     | 402                   | 402                      | 101                     | 0                      | 399                       | 1937                      | 1244              | 0.323 | 402                 | 116                             | 0.5               | 0.5             | 4.485     |               |
| 4 - Hennef Way (W) | 1667                  | 1667                     | 417                     | 0                      | 0                         | 451                       | 3299              | 0.505 | 1667                | 1888                            | 1.0               | 1.0             | 2.268     |               |

#### 18:30 - 18:45

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 688                   | 472                      | 118                     | 216                    | 0                         | 1813                      | 1228              | 0.384 | 472                 | 305                             | 0.6               | 0.6             | 4.959     |               |
| 2 - Hennef Way (E) | 1944                  | 1545                     | 386                     | 399                    | 216                       | 508                       | 2470              | 0.625 | 1545                | 1777                            | 1.7               | 1.7             | 4.079     |               |
| 3 - Ermont Way     | 402                   | 402                      | 101                     | 0                      | 399                       | 1937                      | 1244              | 0.323 | 402                 | 116                             | 0.5               | 0.5             | 4.485     |               |
| 4 - Hennef Way (W) | 1667                  | 1667                     | 417                     | 0                      | 0                         | 451                       | 3299              | 0.505 | 1667                | 1888                            | 1.0               | 1.0             | 2.268     |               |

18:45 - 19:00

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 688                   | 472                      | 118                     | 216                    | 0                         | 1813                      | 1228              | 0.384 | 472                 | 305                             | 0.6               | 0.6             | 4.959     |               |
| 2 - Hennef Way (E) | 1944                  | 1545                     | 386                     | 399                    | 216                       | 508                       | 2470              | 0.625 | 1545                | 1777                            | 1.7               | 1.7             | 4.079     |               |
| 3 - Ermont Way     | 402                   | 402                      | 101                     | 0                      | 399                       | 1937                      | 1244              | 0.323 | 402                 | 116                             | 0.5               | 0.5             | 4.485     |               |
| 4 - Hennef Way (W) | 1667                  | 1667                     | 417                     | 0                      | 0                         | 451                       | 3299              | 0.505 | 1667                | 1888                            | 1.0               | 1.0             | 2.268     |               |

19:00 - 19:15

| Arm                | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsig lev ser |
|--------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|---------------|
| 1 - Wildmere Road  | 688                   | 472                      | 118                     | 216                    | 0                         | 1813                      | 1228              | 0.384 | 472                 | 305                             | 0.6               | 0.6             | 4.959     |               |
| 2 - Hennef Way (E) | 1944                  | 1545                     | 386                     | 399                    | 216                       | 508                       | 2470              | 0.625 | 1545                | 1777                            | 1.7               | 1.7             | 4.079     |               |
| 3 - Ermont Way     | 402                   | 402                      | 101                     | 0                      | 399                       | 1937                      | 1244              | 0.323 | 402                 | 116                             | 0.5               | 0.5             | 4.485     |               |
| 4 - Hennef Way (W) | 1667                  | 1667                     | 417                     | 0                      | 0                         | 451                       | 3299              | 0.505 | 1667                | 1888                            | 1.0               | 1.0             | 2.268     |               |





## Annex F

## Southam Road, Banbury Summary of Key Results

194663-95/N03

### Junction A - Site Access

**Table 1: Junction A Modelling Result Differences – RFC**

| without development/ with development |             |             |             |
|---------------------------------------|-------------|-------------|-------------|
| Arm                                   | 07:00-08:00 | 08:00-09:00 | 09:00-10:00 |
| Site Access to Southam Rd (N)         | 0.24        | 0.08        | -0.02       |
| Site Access to Southam Rd (S)         | -0.01       | -0.02       | -0.02       |
| From Southam Rd (N)                   | 0.12        | 0.01        | -0.03       |
| Arm                                   | 16:00-17:00 | 17:00-18:00 | 18:00-19:00 |
| Site Access to Southam Rd (N)         | 0.08        | 0.12        | 0.12        |
| Site Access to Southam Rd (S)         | 0.01        | 0.06        | 0.06        |
| From Southam Rd (N)                   | 0.38        | 0.44        | 0.35        |

**Table 2: Junction A Modelling Result Differences – Delay**

| without development/ with development |             |             |             |
|---------------------------------------|-------------|-------------|-------------|
| Arm                                   | 07:00-08:00 | 08:00-09:00 | 09:00-10:00 |
| Site Access to Southam Rd (N)         | -0.31       | -1.82       | -8.29       |
| Site Access to Southam Rd (S)         | -14.04      | -17.78      | -13.50      |
| From Southam Rd (N)                   | 0.64        | -0.12       | -5.62       |
| Arm                                   | 16:00-17:00 | 17:00-18:00 | 18:00-19:00 |
| Site Access to Southam Rd (N)         | -0.08       | 0.70        | 0.63        |
| Site Access to Southam Rd (S)         | 3.63        | 6.60        | 4.09        |
| From Southam Rd (N)                   | 2.57        | 3.25        | 2.32        |

**Junction B - Hennef Way/ Southam Road**

**Table 3: Junction B Modelling Result Differences – RFC**

| <b>without development/ with development</b>               |                    |                    |                    |
|--|--------------------|--------------------|--------------------|
| <b>Arm</b>   | <b>07:00-08:00</b> | <b>08:00-09:00</b> | <b>09:00-10:00</b> |
| <b>Southam Road (A423)</b>                                 | 0.01               | 0.02               | 0.01               |
| <b>Hennef Way (A422)</b>                                   | 0.09               | 0.12               | 0.09               |
| <b>Southam Road (A361)</b>                                 | 0.16               | 0.30               | 0.06               |
| <b>Ruscote Avenue (A422)</b>                               | 0.06               | 0.10               | 0.05               |
| <b>Arm</b>   | <b>16:00-17:00</b> | <b>17:00-18:00</b> | <b>18:00-19:00</b> |
| <b>Southam Road (A423)</b>                                 | 0.09               | 0.11               | 0.07               |
| <b>Hennef Way (A422)</b>                                   | 0.07               | 0.07               | 0.06               |
| <b>Southam Road (A361)</b>                                 | 0.08               | 0.08               | 0.06               |
| <b>Ruscote Avenue (A422)</b>                               | 0.03               | 0.03               | 0.02               |
| <b>without development/ with development (Sensitivity)</b> |                    |                    |                    |
| <b>Arm</b>   | <b>07:00-08:00</b> | <b>08:00-09:00</b> | <b>09:00-10:00</b> |
| <b>Southam Road (A423)</b>                                 | -0.01              | -0.01              | -0.01              |
| <b>Hennef Way (A422)</b>                                   | 0.00               | 0.00               | 0.00               |
| <b>Southam Road (A361)</b>                                 | 0.09               | 0.03               | -0.01              |
| <b>Ruscote Avenue (A422)</b>                               | 0.02               | 0.01               | 0.00               |
| <b>Arm</b>   | <b>16:00-17:00</b> | <b>17:00-18:00</b> | <b>18:00-19:00</b> |
| <b>Southam Road (A423)</b>                                 | 0.02               | 0.03               | 0.02               |
| <b>Hennef Way (A422)</b>                                   | 0.04               | 0.05               | 0.04               |
| <b>Southam Road (A361)</b>                                 | 0.04               | 0.05               | 0.05               |
| <b>Ruscote Avenue (A422)</b>                               | 0.01               | 0.01               | 0.01               |

**Table 4: Junction B Modelling Result Differences – Delay**

| <b>without development/ with development</b>               |                    |                    |                    |
|--|--------------------|--------------------|--------------------|
| <b>Arm</b>   | <b>07:00-08:00</b> | <b>08:00-09:00</b> | <b>09:00-10:00</b> |
| <b>Southam Road (A423)</b>                                 | 0.01               | 0.05               | 0.05               |
| <b>Hennef Way (A422)</b>                                   | 1.03               | 41.21              | 1.04               |
| <b>Southam Road (A361)</b>                                 | 3.32               | 1091.93            | 1.64               |
| <b>Ruscote Avenue (A422)</b>                               | 1.08               | 8.06               | 0.74               |
| <b>Arm</b>   | <b>16:00-17:00</b> | <b>17:00-18:00</b> | <b>18:00-19:00</b> |
| <b>Southam Road (A423)</b>                                 | 0.50               | 0.94               | 0.31               |
| <b>Hennef Way (A422)</b>                                   | 1.01               | 3.38               | 0.47               |
| <b>Southam Road (A361)</b>                                 | 0.80               | 4.15               | 0.50               |
| <b>Ruscote Avenue (A422)</b>                               | 0.33               | 1.16               | 0.22               |
| <b>without development/ with development (Sensitivity)</b> |                    |                    |                    |
| <b>Arm</b>   | <b>07:00-08:00</b> | <b>08:00-09:00</b> | <b>09:00-10:00</b> |
| <b>Southam Road (A423)</b>                                 | -0.05              | -0.04              | -0.03              |
| <b>Hennef Way (A422)</b>                                   | -0.04              | -0.42              | -0.05              |
| <b>Southam Road (A361)</b>                                 | 0.91               | 29.34              | -0.09              |
| <b>Ruscote Avenue (A422)</b>                               | 0.21               | 0.35               | -0.03              |
| <b>Arm</b>   | <b>16:00-17:00</b> | <b>17:00-18:00</b> | <b>18:00-19:00</b> |
| <b>Southam Road (A423)</b>                                 | 0.14               | 0.24               | 0.11               |
| <b>Hennef Way (A422)</b>                                   | 0.67               | 2.01               | 0.34               |
| <b>Southam Road (A361)</b>                                 | 0.45               | 2.31               | 0.36               |
| <b>Ruscote Avenue (A422)</b>                               | 0.13               | 0.52               | 0.13               |

**Junction C - Hennef Way/ Concord Avenue**

**Table 5: Junction C Modelling Result Differences – RFC**

| without development/ with development               |             |             |             |
|---|-------------|-------------|-------------|
| Arm   | 16:00-17:00 | 17:00-18:00 | 18:00-19:00 |
| Grimsbury Green                                     | 0.00        | 0.00        | 0.00        |
| Hennef Way East (A422)                              | 0.04        | 0.04        | 0.04        |
| Concord Avenue (A4260)                              | 0.03        | 0.06        | 0.02        |
| Hennef Way West (A422)                              | 0.09        | 0.10        | 0.08        |
| without development/ with development (Sensitivity) |             |             |             |
| Arm   | 16:00-17:00 | 17:00-18:00 | 18:00-19:00 |
| Grimsbury Green                                     | 0.00        | 0.00        | 0.00        |
| Hennef Way East (A422)                              | 0.02        | 0.02        | 0.03        |
| Concord Avenue (A4260)                              | 0.02        | 0.03        | 0.01        |
| Hennef Way West (A422)                              | 0.02        | 0.02        | 0.02        |

**Table 6: Junction C Modelling Result Differences – Delay**

| without development/ with development               |             |             |             |
|---|-------------|-------------|-------------|
| Arm   | 16:00-17:00 | 17:00-18:00 | 18:00-19:00 |
| Grimsbury Green                                     | 0.00        | 0.00        | 0.00        |
| Hennef Way East (A422)                              | 0.82        | 4.46        | 0.33        |
| Concord Avenue (A4260)                              | 0.75        | 3.87        | 0.30        |
| Hennef Way West (A422)                              | 2.66        | 56.31       | 0.82        |
| without development/ with development (Sensitivity) |             |             |             |
| Arm   | 16:00-17:00 | 17:00-18:00 | 18:00-19:00 |
| Grimsbury Green                                     | 0.00        | 0.00        | 0.00        |
| Hennef Way East (A422)                              | 0.48        | 2.29        | 0.22        |
| Concord Avenue (A4260)                              | 0.75        | 2.03        | 0.20        |
| Hennef Way West (A422)                              | 0.43        | 3.47        | 0.19        |

**Junction D - Hennef Way/ Wildmere Road**

**Table 7: Junction D Modelling Result Differences – RFC**

| without development/ with development               |             |             |             |
|---|-------------|-------------|-------------|
| Arm   | 16:00-17:00 | 17:00-18:00 | 18:00-19:00 |
| Wildmere Road                                       | 0.02        | 0.03        | 0.01        |
| Hennef Way East (A422)                              | 0.03        | 0.04        | 0.03        |
| Ermont Way  | 0.02        | 0.05        | 0.01        |
| Hennef Way West (A422)                              | 0.01        | 0.02        | 0.01        |
| without development/ with development (Sensitivity) |             |             |             |
| Arm   | 16:00-17:00 | 17:00-18:00 | 18:00-19:00 |
| Wildmere Road                                       | -0.03       | -0.09       | -0.02       |
| Hennef Way East (A422)                              | 0.01        | 0.02        | 0.02        |
| Ermont Way  | 0.01        | 0.02        | 0.00        |
| Hennef Way West (A422)                              | -0.03       | -0.03       | -0.02       |

**Table 8: Junction D Modelling Result Differences – Delay**

| without development/ with development               |             |             |             |
|---|-------------|-------------|-------------|
| Arm   | 16:00-17:00 | 17:00-18:00 | 18:00-19:00 |
| Wildmere Road                                       | 0.53        | 30.59       | 0.20        |
| Hennef Way East (A422)                              | 0.94        | 8.49        | 0.35        |
| Ermont Way  | 0.76        | 5.65        | 0.28        |
| Hennef Way West (A422)                              | 0.07        | 0.30        | 0.06        |
| without development/ with development (Sensitivity) |             |             |             |
| Arm   | 16:00-17:00 | 17:00-18:00 | 18:00-19:00 |
| Wildmere Road                                       | -1.28       | -33.98      | -0.29       |
| Hennef Way East (A422)                              | 0.35        | 2.43        | 0.18        |
| Ermont Way  | 0.31        | 1.76        | 0.14        |
| Hennef Way West (A422)                              | -0.26       | -0.70       | -0.10       |

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