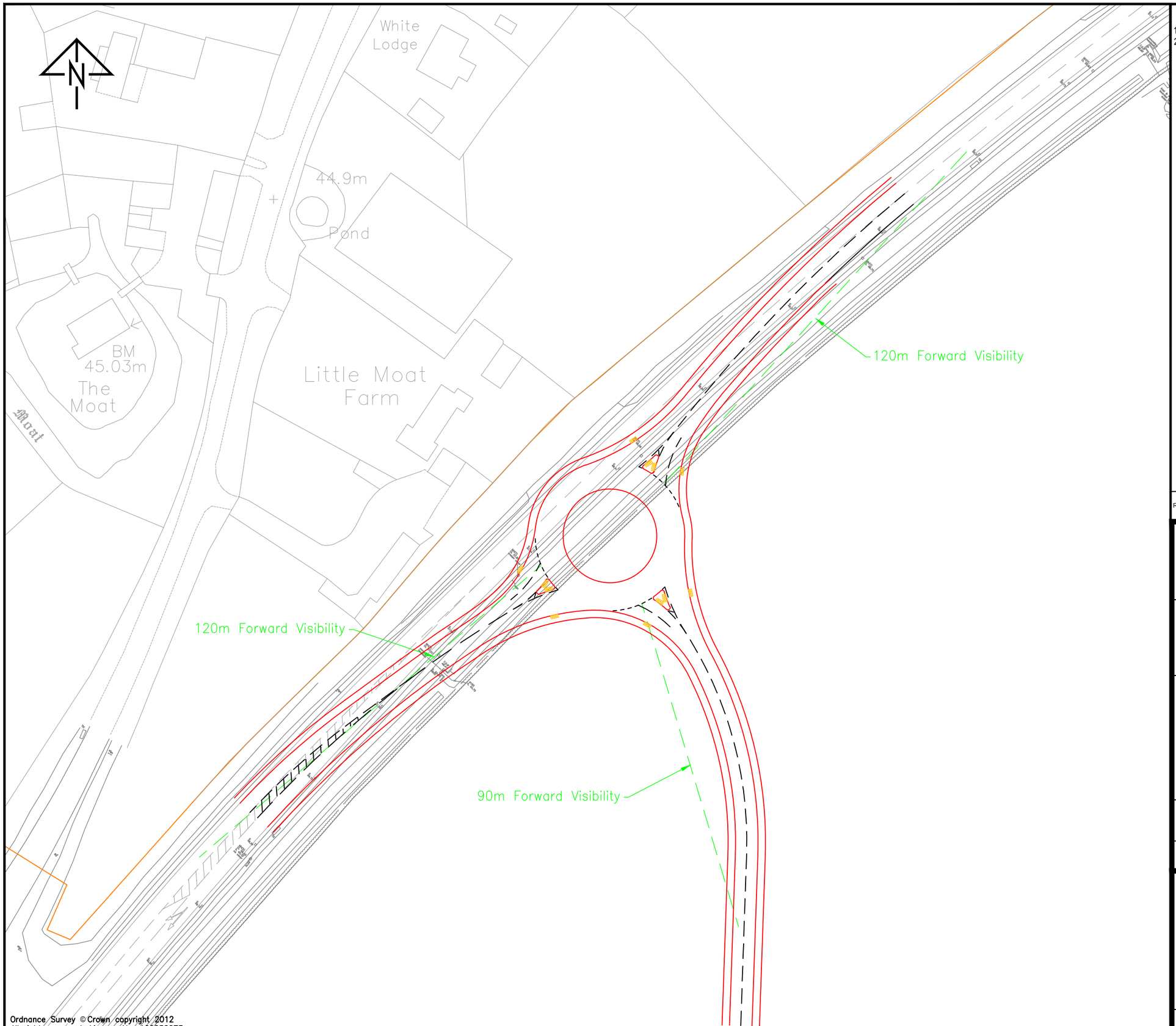
# APPENDIX D

## Revised Site Access Junction Layouts






## Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.
2. White lining is indicative only.

| REV. | DETAILS | DRAWN | CHECKED | DATE |
|---|---|---|---|---|
| A | Rndbt moved & tied into topo | JM | CS | 27/08/2013 |

CLIENT:
Chilmington Green Consortium

PROJECT:
Chilmington Green

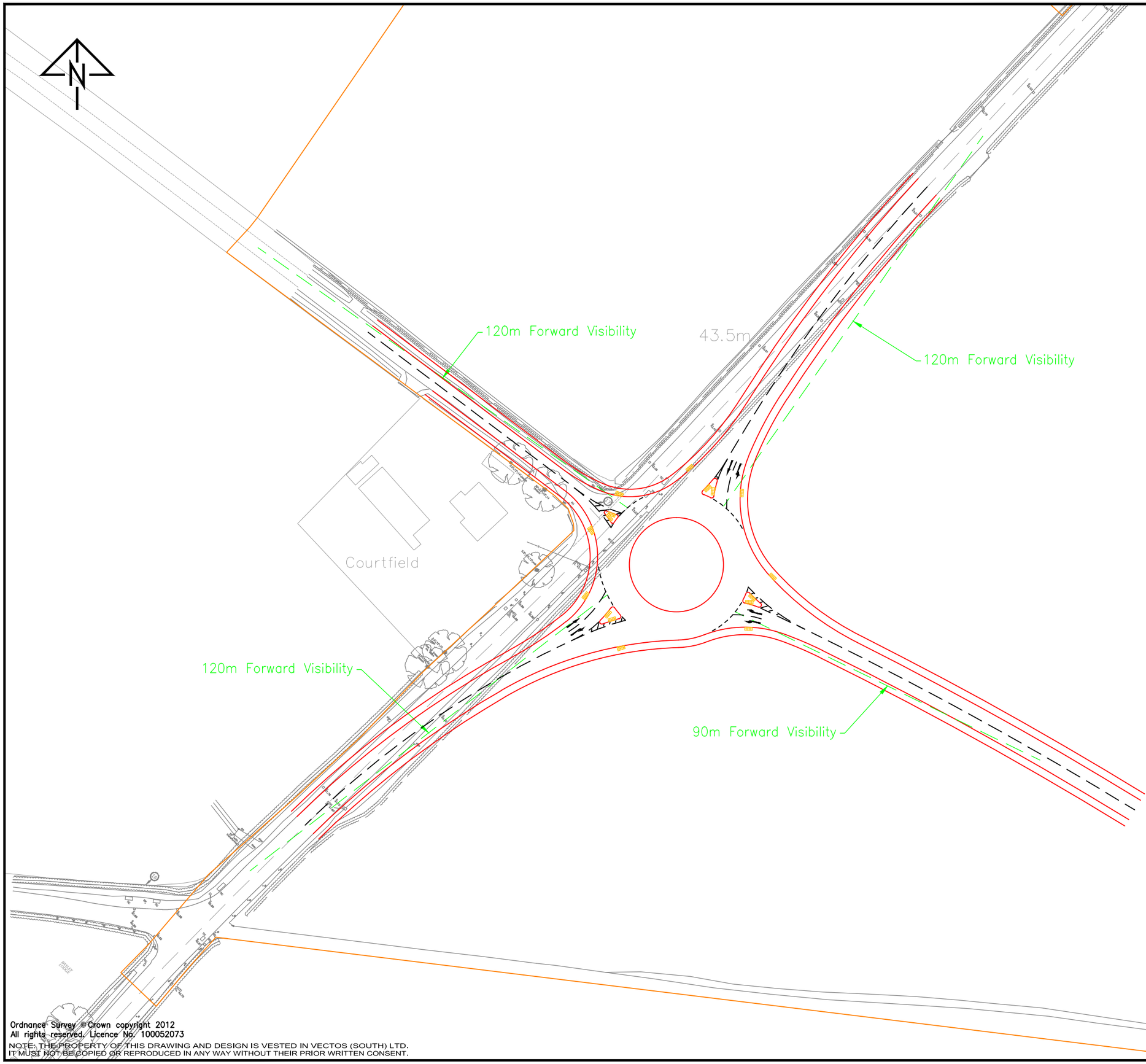
DRAWING TITLE:
Northern Site Access Roundabout
40m ICD

SCALES:
1:1000 at A3

| DRAWN: | CHECKED: | DATE: |
|---|---|---|
| JM | CS | 12/08/2013 |

vectos
transport planning specialists
Network Building, 97 Tottenham Court Road, London W1T 4TP
t: 020 7580 7373 e: enquiries@vectos.co.uk

| DRAWING NUMBER: | REVISION: |
|---|---|
| 131065/A/01 | A |




Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.
2. White lining is indicative only.

| REV. | DETAILS | DRAWN | CHECKED | DATE |
|---|---|---|---|---|
| A | Rndbt tied into topographical survey | JM | CS | 27/08/2013 |

CLIENT:

Chilmington Green Consortium

PROJECT:

Chilmington Green

DRAWING TITLE:

Southern Site Access Roundabout
40m ICD

SCALES:

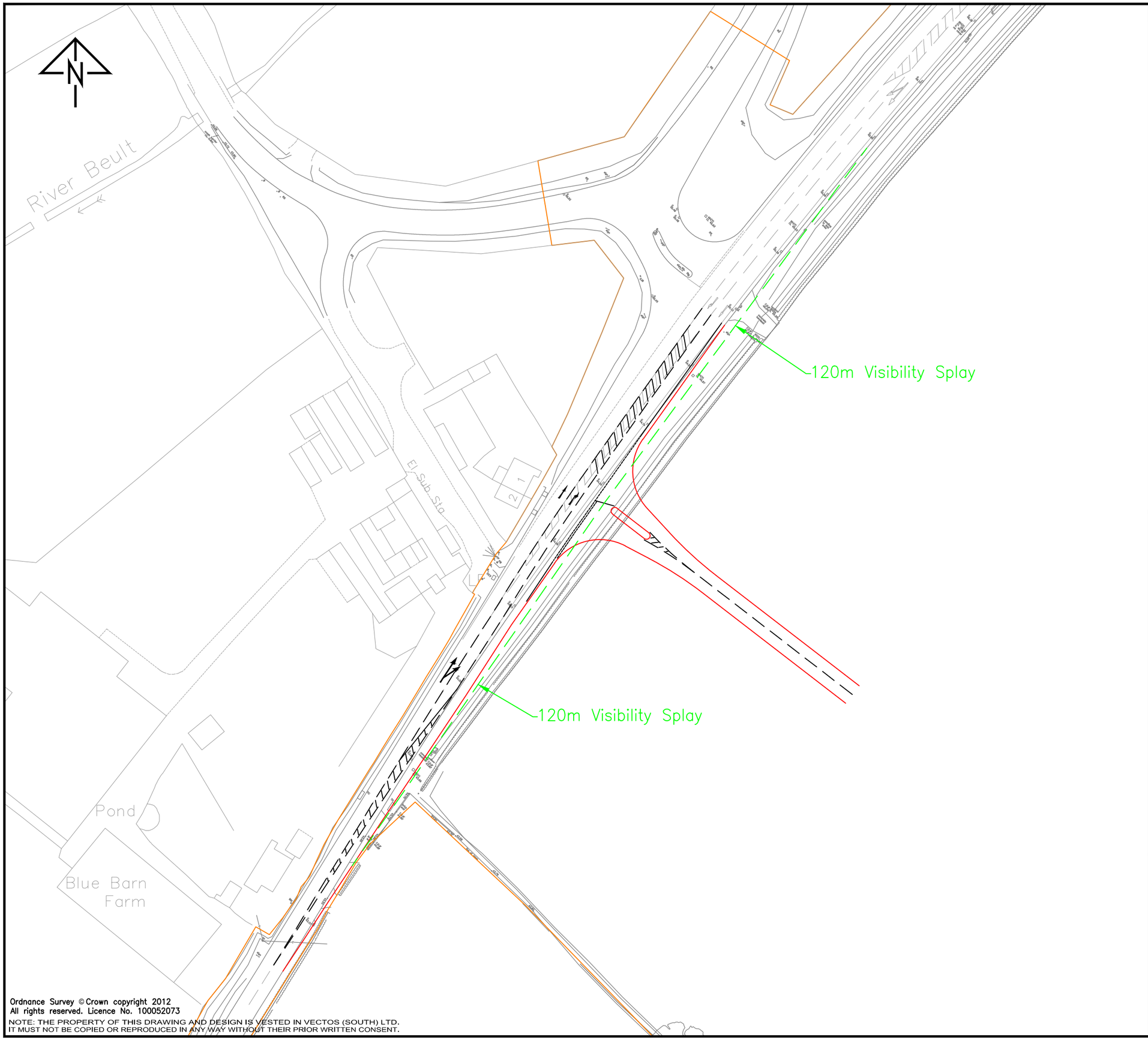
1:1000 at A3

| DRAWN: | CHECKED: | DATE: |
|---|---|---|
| JM | CS | 15/08/2013 |

vectos
transport planning specialists

Network Building, 97 Tottenham Court Road, London W1T 4TP
t: 020 7580 7373 e: enquiries@vectos.co.uk

| DRAWING NUMBER: | REVISION: |
|---|---|
| 131065/A/02 | · |






## Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.
2. White lining is indicative only.

| REV. | DETAILS | DRAWN | CHECKED | DATE |
|---|---|---|---|---|
| . | . | . | . | . |

CLIENT:

Chilmington Green Consortium

PROJECT:

Chilmington Green

DRAWING TITLE:

Priority Junction Site Access

SCALES:

1:1000 at A3

| DRAWN: | CHECKED: | DATE: |
|---|---|---|
| JM | CS | 19/08/2013 |

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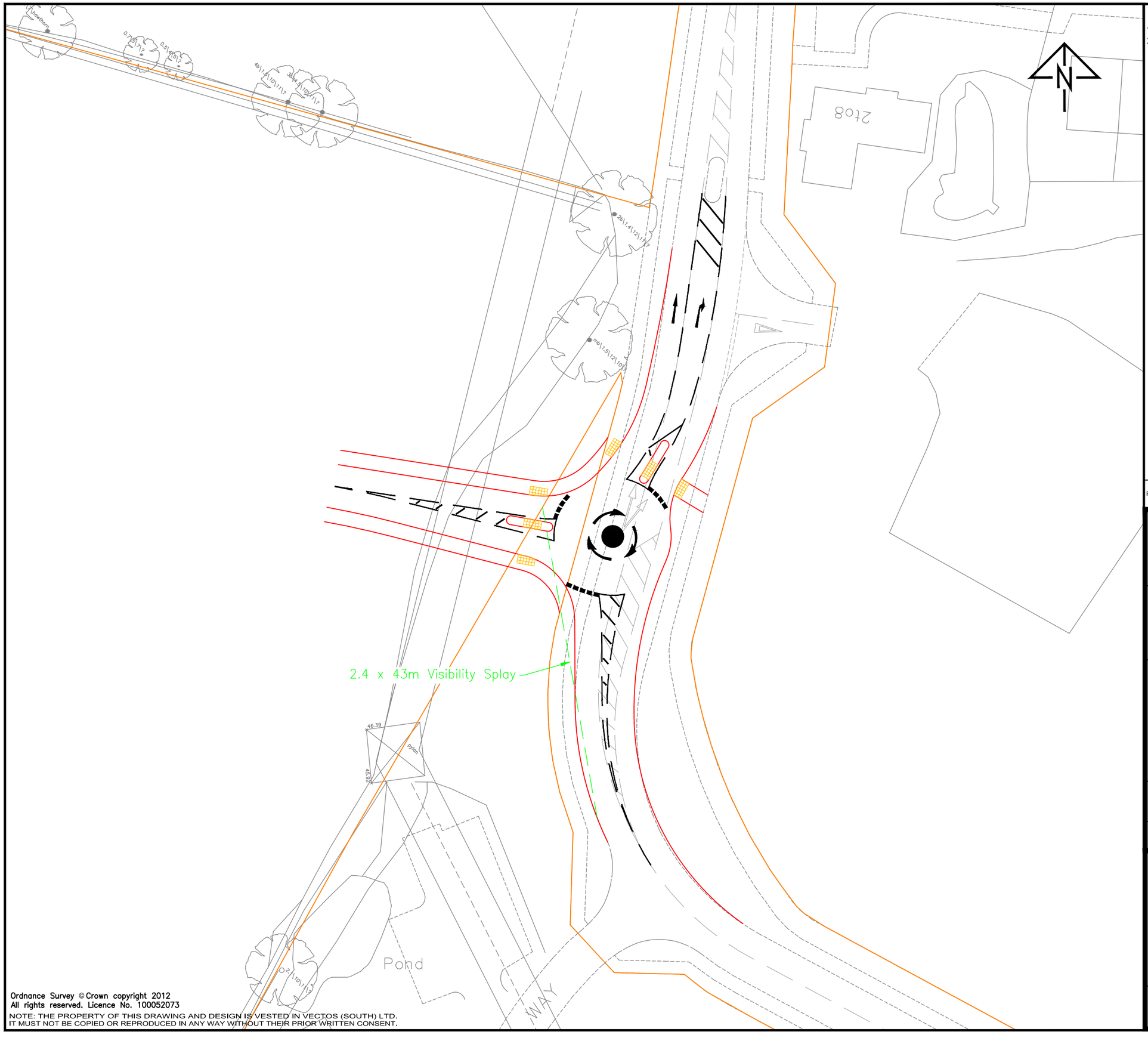
DRAWING NUMBER: 131065/A/04

REVISION: .




## Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.
2. White lining is indicative only.

| REV. | DETAILS | DRAWN | CHECKED | DATE |
|---|---|---|---|---|
| . | . | . | . | . |

CLIENT:

Chilmington Green Consortium

PROJECT:

Chilmington Green

DRAWING TITLE:

Eastern Site Access
Mini-Roundabout

SCALES:

1:500 at A3

| DRAWN: | CHECKED: | DATE: |
|---|---|---|
| JM | CS | 04/09/2013 |

vectos
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t: 020 7580 7373 e: enquiries@vectos.co.uk

| DRAWING NUMBER: | REVISION: |
|---|---|
| 131065/A/15 | . |

# APPENDIX E

## Site Access Junction Assessment Outputs

# PICADY

GUI Version: 5.1 AE
Analysis Program Release: 5.0 (MAY 2010)



For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax:+44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk



## Run Analysis

| Parameter | Values |
|---|---|
| File Run | X:\..\Site Access Priority Junction\2018 Phase 1 Alternative.vpi |
| Date Run | 29 August 2013 |
| Time Run | 15:14:19 |
| Driving Side | Drive On The Left |

### Arm Names and Flow Scaling Factors

| Arm | Arm Name | Flow Scaling Factor (%) |
|---|---|---|
| Arm A | A28 North | 100 |
| Arm B | Site Access | 100 |
| Arm C | A28 South | 100 |

### Stream Labelling Convention

Stream A-B contains traffic going from A to B etc.

## Run Information

| Parameter | Values |
|---|---|
| Run Title | Site Access Priority Junction - 2018 Phase 1 Alternative |
| Location | Chilmington Green |
| Date | 29 August 2013 |
| Enumerator | seamus.odwyer [VEC-LAPL024] |
| Job Number | 131065 |
| Status | - |
| Client | - |
| Description | - |

## Errors and Warnings

| Parameter | Values |
|---|---|
| Warning | No Errors Or Warnings |

## Geometric Data

### Geometric Parameters

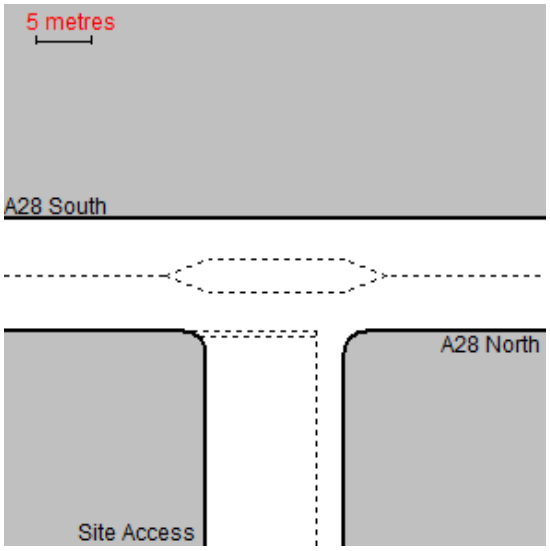
| Parameter | Minor Arm B |
|---|---|
| Major Road Carriageway Width (m) | 7.30 |
| Major Road Kerbed Central Reserve Width (m) | 0.00 |
| Major Road Right Turning Lane Width (m) | 3.00 |
| Minor Road Width 0m Back from Junction (m) | 10.00 |
| Minor Road Width 5m Back from Junction (m) | 10.00 |
| Minor Road Width 10m Back from Junction (m) | 6.10 |
| Minor Road Width 15m Back from Junction (m) | 4.59 |
| Minor Road Width 20m Back from Junction (m) | 3.85 |
| Minor Road Derived Flare Length (PCU) | 2.000 |
| Minor Road Visibility To Right (m) | 120 |
| Minor Road Visibility To Left (m) | 120 |
| Major Road Right Turn Visibility (m) | 228 |
| Major Road Right Turn Blocks Traffic | Yes (if over 11 veh) |

### Slope and Intercept Values

| Stream | Intercept for Stream | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|---|---|---|---|---|---|
| B-A | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| B-C | 0.000 | 0.000 | 0.000 | - | - |
| C-B | 767.470 | 0.281 | 0.281 | - | - |

Note: Streams may be combined in which case capacity will be adjusted
These values do not allow for any site-specific corrections

## Junction Diagram




## Demand Data

### Modelling Periods

| Parameter | Period | Duration (min) | Segment Length (min) |
|---|---|---|---|
| First Modelling Period | 07:45-09:15 | 90 | 15 |
| Second Modelling Period | 16:45-18:15 | 90 | 15 |

### ODTAB Turning Counts

**Demand Set:** Site Access Priority Junction - 2018 Phase 1 Alternative
**Modelling Period:** 07:45-09:15

| From/To | Arm A | Arm B | Arm C |
|---|---|---|---|
| Arm A | 0.0 | 181.0 | 338.0 |
| Arm B | 286.0 | 0.0 | 29.0 |
| Arm C | 312.0 | 19.0 | 0.0 |

**Demand Set:** Site Access Priority Junction - 2018 Phase 1 Alternative Demand Set
**Modelling Period:** 16:45-18:15

| From/To | Arm A | Arm B | Arm C |
|---|---|---|---|
| Arm A | 0.0 | 263.0 | 256.0 |
| Arm B | 184.0 | 0.0 | 19.0 |
| Arm C | 386.0 | 27.0 | 0.0 |

### ODTAB Synthesised Flows

**Demand Set:** Site Access Priority Junction - 2018 Phase 1 Alternative
**Modelling Period:** 07:45-09:15

| Arm | Rising Time | Rising Flow (veh/min) | Peak Time | Peak Flow (veh/min) | Falling Time | Falling Flow (veh/min) |
|---|---|---|---|---|---|---|
| Arm A | 08:00 | 6.488 | 08:30 | 9.731 | 09:00 | 6.488 |
| Arm B | 08:00 | 3.938 | 08:30 | 5.906 | 09:00 | 3.938 |
| Arm C | 08:00 | 4.137 | 08:30 | 6.206 | 09:00 | 4.137 |

### Heavy Vehicles Percentages

**Demand Set:** Site Access Priority Junction - 2018 Phase 1 Alternative
**Modelling Period:** 07:45-09:15

| From/To | Arm A | Arm B | Arm C |
|---|---|---|---|
| Arm A | - | 10.0 | 10.0 |
| Arm B | 10.0 | - | 10.0 |
| Arm C | 10.0 | 10.0 | - |

**Demand Set:** Site Access Priority Junction - 2018 Phase 1 Alternative Demand Set
**Modelling Period:** 16:45-18:15

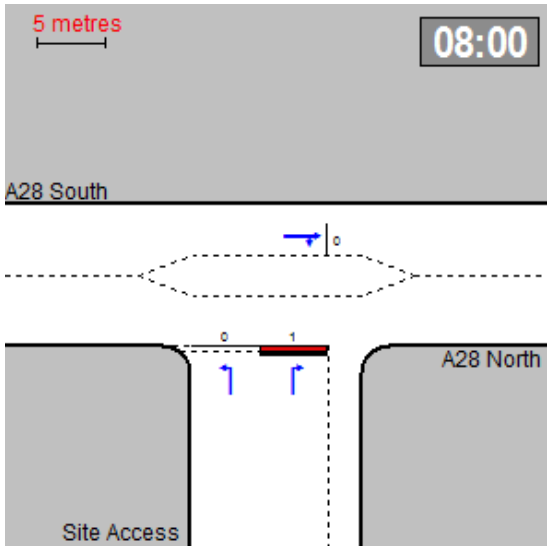
| From/To | Arm A | Arm B | Arm C |
|---|---|---|---|
| Arm A | - | 10.0 | 10.0 |
| Arm B | 10.0 | - | 10.0 |
| Arm C | 10.0 | 10.0 | - |

Default proportions of heavy vehicles are used

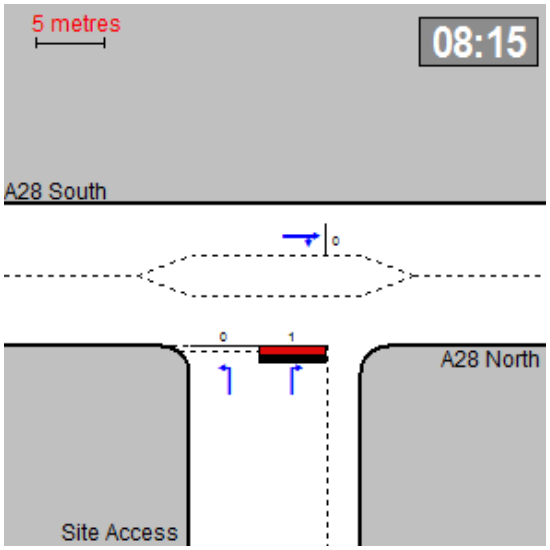
## Queue Diagrams

**Demand Set:** Sum of Demand Sets for Modelling Period: 07:45 - 09:15
**Modelling Period:** 07:45-09:15
**View Extent:** 40m

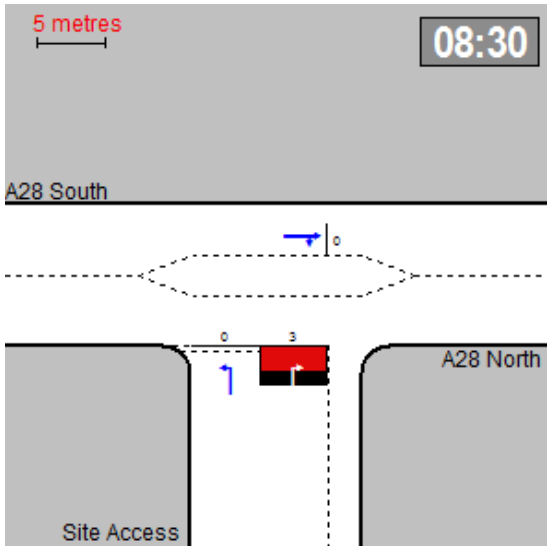
Queue Interval 1: 07:45-08:00



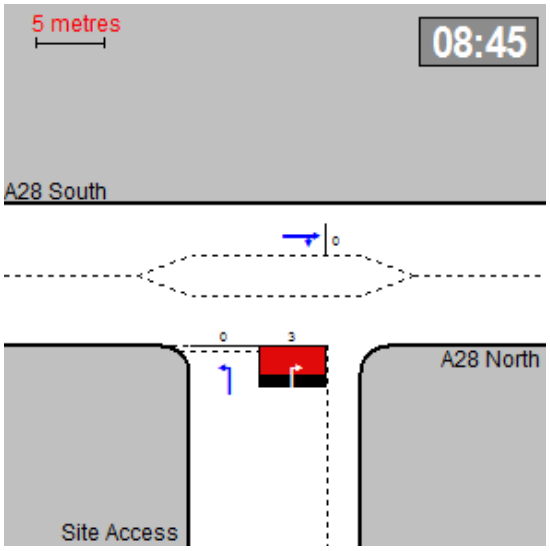

Queue Interval 2: 08:00-08:15




Queue Interval 3: 08:15-08:30

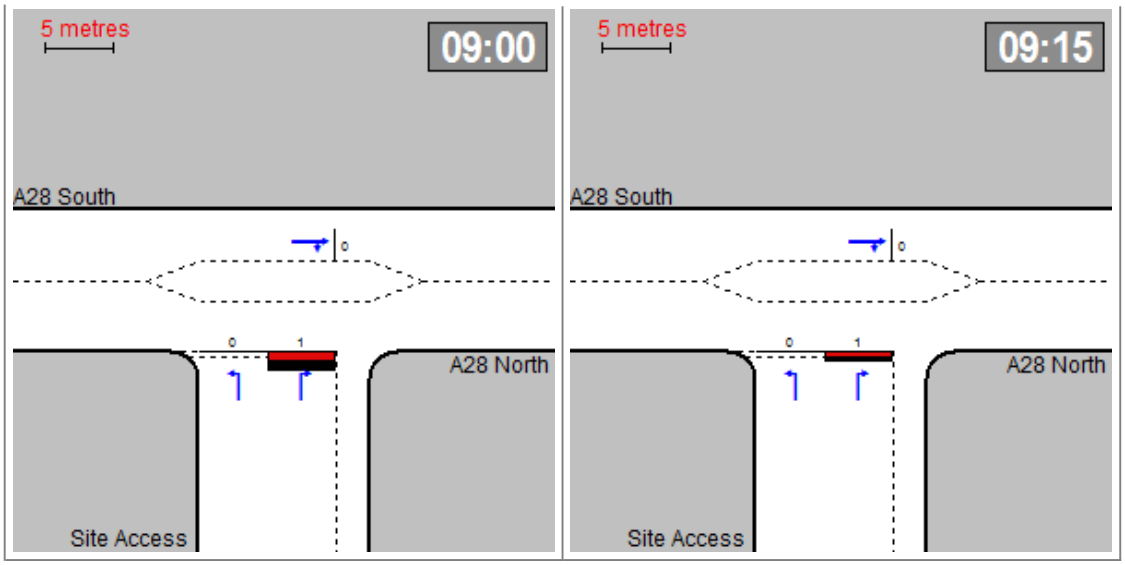



Queue Interval 4: 08:30-08:45



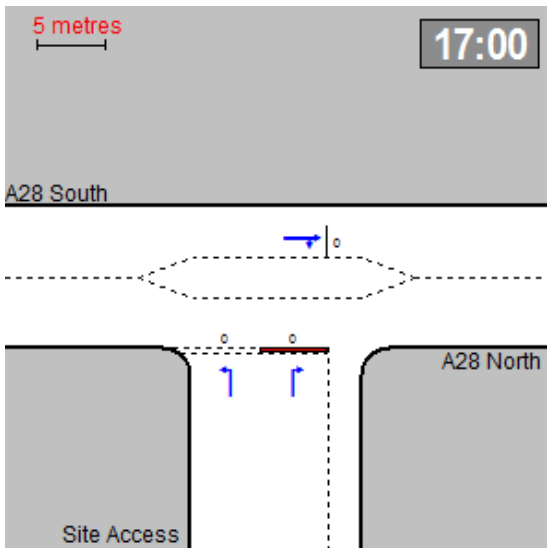

Queue Interval 5: 08:45-09:00

Queue Interval 6: 09:00-09:15

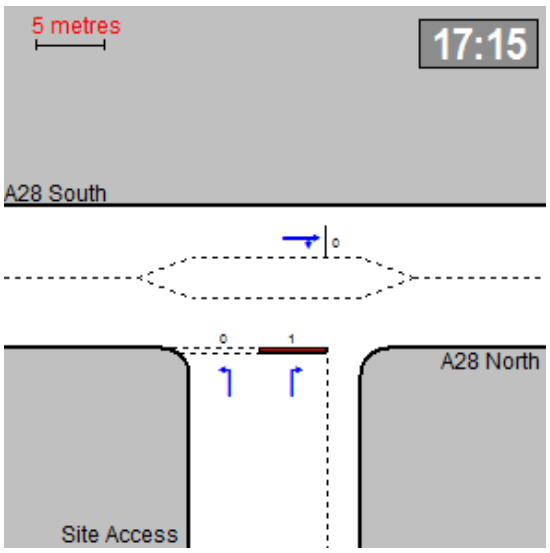

5 metres
09:00
A28 South
A28 North
Site Access
5 metres
09:15
A28 South
A28 North
Site Access

**Demand Set:** Sum of Demand Sets for Modelling Period: 16:45 - 18:15
**Modelling Period:** 16:45-18:15
**View Extent:** 40m

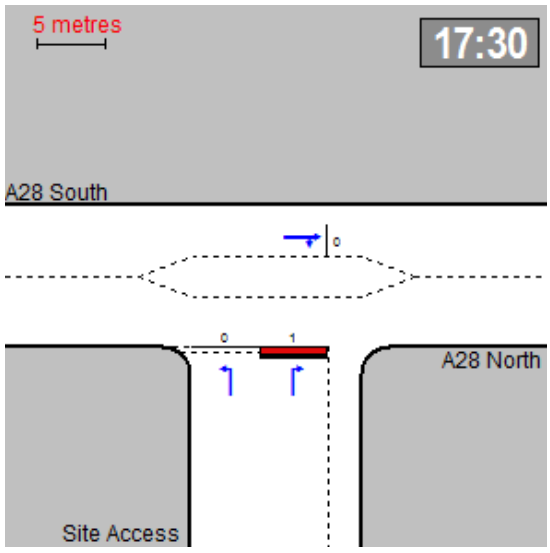
Queue Interval 1: 16:45-17:00



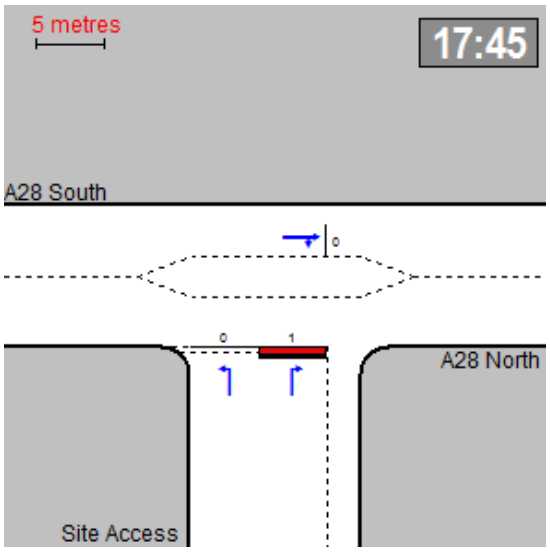

Queue Interval 2: 17:00-17:15




Queue Interval 3: 17:15-17:30

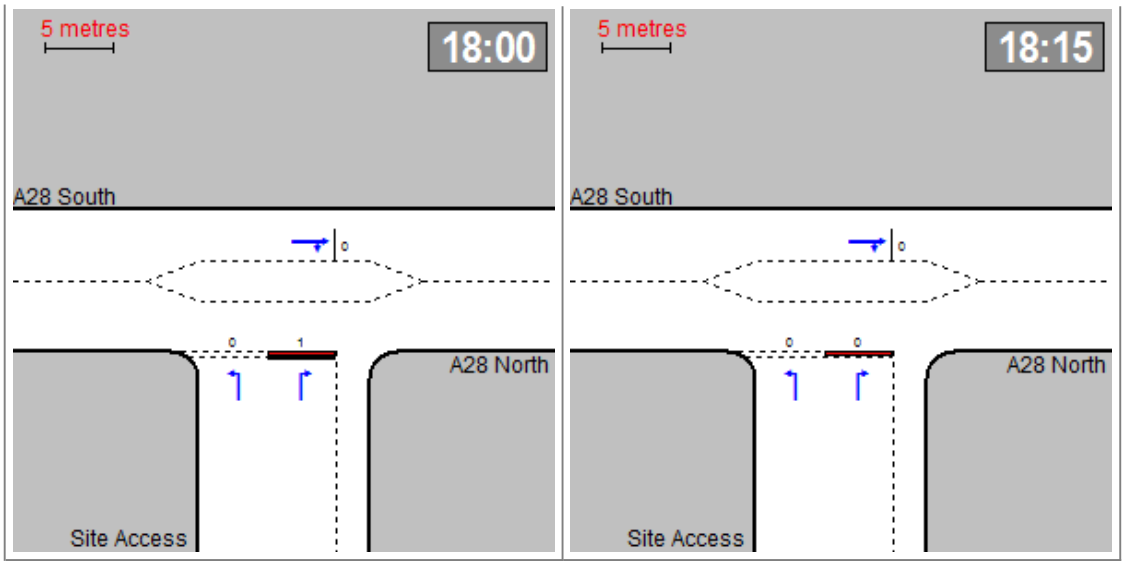



Queue Interval 4: 17:30-17:45



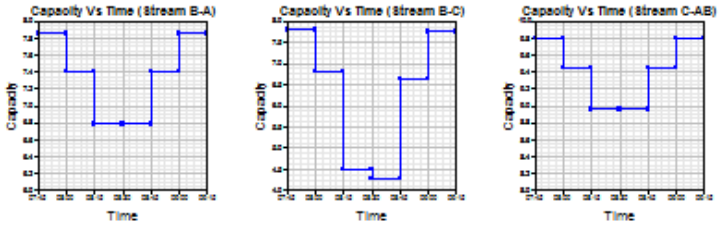

Queue Interval 5: 17:45-18:00

Queue Interval 6: 18:00-18:15

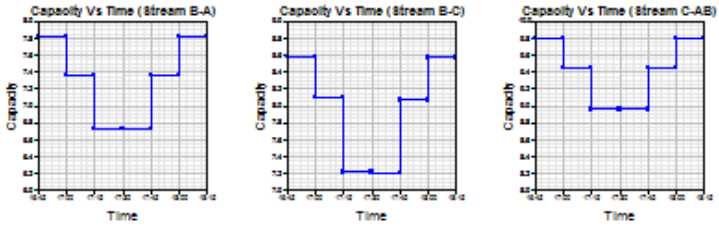

5 metres
18:00
A28 South
0
0
1
A28 North
Site Access
5 metres
18:15
A28 South
0
0
0
A28 North
Site Access

## Capacity Graph

**Demand Set:** Sum of Demand Sets for Modelling Period: 07:45 - 09:15
**Modelling Period:** 07:45-09:15

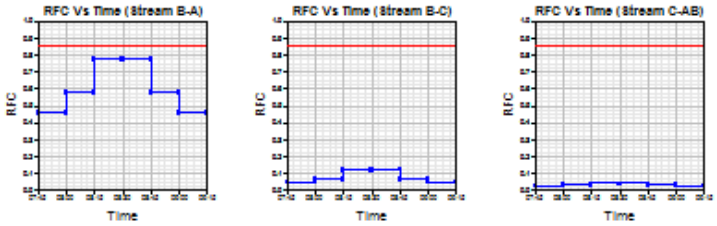



**Demand Set:** Sum of Demand Sets for Modelling Period: 16:45 - 18:15
**Modelling Period:** 16:45-18:15

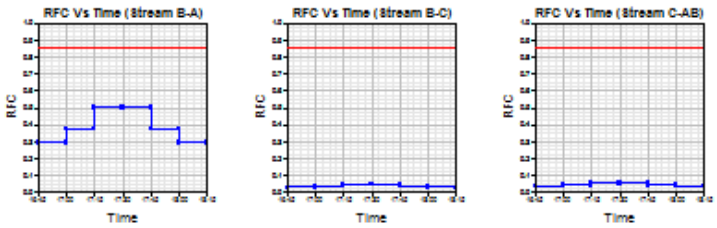



## RFC Graph

**Demand Set:** Sum of Demand Sets for Modelling Period: 07:45 - 09:15
**Modelling Period:** 07:45-09:15

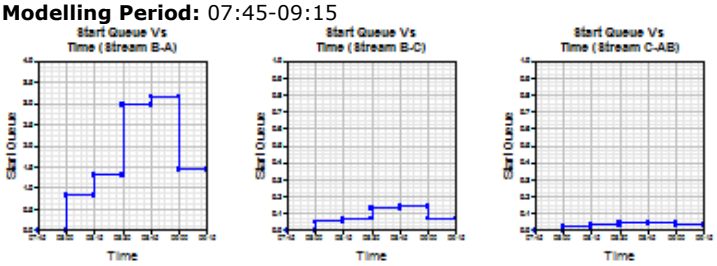



**Demand Set:** Sum of Demand Sets for Modelling Period: 16:45 - 18:15
**Modelling Period:** 16:45-18:15

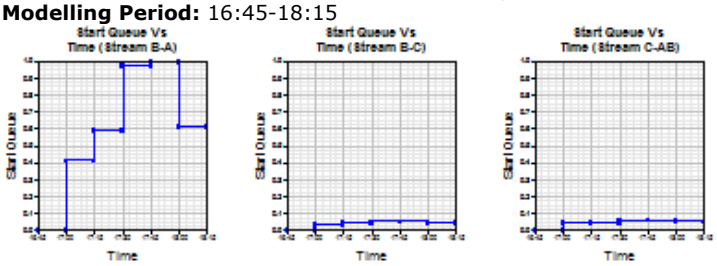


## Start Queue Graph

**Demand Set:** Sum of Demand Sets for Modelling Period: 07:45 - 09:15
**Modelling Period:** 07:45-09:15

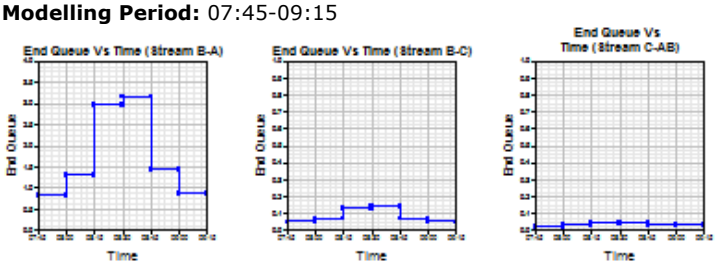



**Demand Set:** Sum of Demand Sets for Modelling Period: 16:45 - 18:15
**Modelling Period:** 16:45-18:15

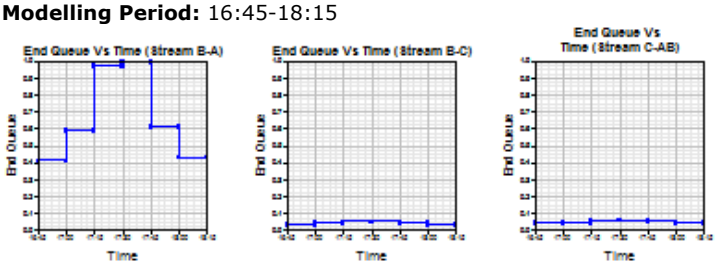



## End Queue Graph

**Demand Set:** Sum of Demand Sets for Modelling Period: 07:45 - 09:15
**Modelling Period:** 07:45-09:15

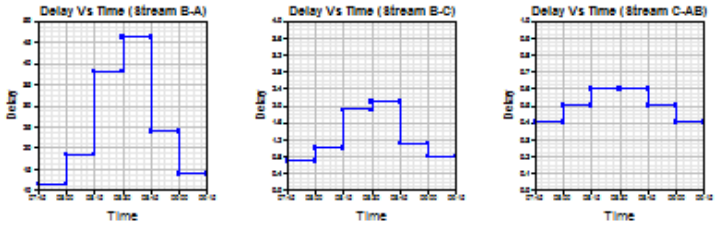



**Demand Set:** Sum of Demand Sets for Modelling Period: 16:45 - 18:15
**Modelling Period:** 16:45-18:15

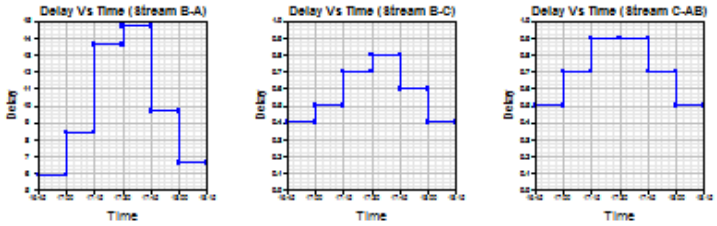


## Delay Graph

**Demand Set:** Sum of Demand Sets for Modelling Period: 07:45 - 09:15
**Modelling Period:** 07:45-09:15




**Demand Set:** Sum of Demand Sets for Modelling Period: 16:45 - 18:15
**Modelling Period:** 16:45-18:15




## Queues & Delays

**Demand Set:** Sum of Demand Sets for Modelling Period: 07:45 - 09:15
**Modelling Period:** 07:45-09:15

| Segment | Stream | Demand (veh/min) | Capacity (veh/min) | RFC | Ped. Flow (ped/min) | Start Queue (veh) | End Queue (veh) | Geometric Delay (veh.min/ segment) | Delay (veh.min/ segment) | Mean Arriving Vehicle Delay (min) |
|---|---|---|---|---|---|---|---|---|---|---|
| 07:45-08:00 | B-A | 3.59 | 7.85 | 0.457 | - | 0.00 | 0.82 | - | 11.4 | 0.23 |
| | B-C | 0.36 | 7.80 | 0.047 | - | 0.00 | 0.05 | - | 0.7 | 0.13 |
| | C-AB | 0.24 | 9.80 | 0.024 | - | 0.00 | 0.02 | - | 0.4 | 0.10 |
| | C-A | - | - | - | - | - | - | - | - | - |
| | A-B | 2.27 | - | - | - | - | - | - | - | - |
| | A-C | 4.24 | - | - | - | - | - | - | - | - |

| Segment | Stream | Demand (veh/min) | Capacity (veh/min) | RFC | Ped. Flow (ped/min) | Start Queue (veh) | End Queue (veh) | Geometric Delay (veh.min/ segment) | Delay (veh.min/ segment) | Mean Arriving Vehicle Delay (min) |
|---|---|---|---|---|---|---|---|---|---|---|
| 08:00-08:15 | B-A | 4.29 | 7.40 | 0.579 | - | 0.82 | 1.31 | - | 18.4 | 0.31 |
| | B-C | 0.43 | 6.80 | 0.064 | - | 0.05 | 0.07 | - | 1.0 | 0.16 |
| | C-AB | 0.28 | 9.45 | 0.030 | - | 0.02 | 0.03 | - | 0.5 | 0.11 |
| | C-A | - | - | - | - | - | - | - | - | - |
| | A-B | 2.71 | - | - | - | - | - | - | - | - |
| | A-C | 5.06 | - | - | - | - | - | - | - | - |

| Segment | Stream | Demand (veh/min) | Capacity (veh/min) | RFC | Ped. Flow (ped/min) | Start Queue (veh) | End Queue (veh) | Geometric Delay (veh.min/ segment) | Delay (veh.min/ segment) | Mean Arriving Vehicle Delay (min) |
|---|---|---|---|---|---|---|---|---|---|---|
| 08:15-08:30 | B-A | 5.25 | 6.78 | 0.774 | - | 1.31 | 2.95 | - | 38.1 | 0.57 |
| | B-C | 0.53 | 4.50 | 0.118 | - | 0.07 | 0.13 | - | 1.9 | 0.25 |
| | C-AB | 0.35 | 8.96 | 0.039 | - | 0.03 | 0.04 | - | 0.6 | 0.12 |
| | C-A | - | - | - | - | - | - | - | - | - |
| | A-B | 3.32 | - | - | - | - | - | - | - | - |
| | A-C | 6.20 | - | - | - | - | - | - | - | - |

| Segment | Stream | Demand (veh/min) | Capacity (veh/min) | RFC | Ped. Flow (ped/min) | Start Queue (veh) | End Queue (veh) | Geometric Delay (veh.min/ segment) | Delay (veh.min/ segment) | Mean Arriving Vehicle Delay (min) |
|---|---|---|---|---|---|---|---|---|---|---|
| 08:30-08:45 | B-A | 5.25 | 6.78 | 0.774 | - | 2.95 | 3.16 | - | 46.1 | 0.63 |
| | B-C | 0.53 | 4.27 | 0.125 | - | 0.13 | 0.14 | - | 2.1 | 0.27 |
| | C-AB | 0.35 | 8.96 | 0.039 | - | 0.04 | 0.04 | - | 0.6 | 0.12 |
| | C-A | - | - | - | - | - | - | - | - | - |
| | A-B | 3.32 | - | - | - | - | - | - | - | - |
| | A-C | 6.20 | - | - | - | - | - | - | - | - |

| Segment | Stream | Demand (veh/min) | Capacity (veh/min) | RFC | Ped. Flow (ped/min) | Start Queue (veh) | End Queue (veh) | Geometric Delay (veh.min/ segment) | Delay (veh.min/ segment) | Mean Arriving Vehicle Delay (min) |
|---|---|---|---|---|---|---|---|---|---|---|
| 08:45-09:00 | B-A | 4.29 | 7.40 | 0.579 | - | 3.16 | 1.44 | - | 24.0 | 0.34 |
| | B-C | 0.43 | 6.63 | 0.066 | - | 0.14 | 0.07 | - | 1.1 | 0.16 |
| | C-AB | 0.28 | 9.45 | 0.030 | - | 0.04 | 0.03 | - | 0.5 | 0.11 |
| | C-A | - | - | - | - | - | - | - | - | - |
| | A-B | 2.71 | - | - | - | - | - | - | - | - |
| | A-C | 5.06 | - | - | - | - | - | - | - | - |

| Segment | Stream | Demand (veh/min) | Capacity (veh/min) | RFC | Ped. Flow (ped/min) | Start Queue (veh) | End Queue (veh) | Geometric Delay (veh.min/ segment) | Delay (veh.min/ segment) | Mean Arriving Vehicle Delay (min) |
|---|---|---|---|---|---|---|---|---|---|---|
| 09:00-09:15 | B-A | 3.59 | 7.85 | 0.457 | - | 1.44 | 0.87 | - | 13.8 | 0.24 |
| | B-C | 0.36 | 7.74 | 0.047 | - | 0.07 | 0.05 | - | 0.8 | 0.14 |
| | C-AB | 0.24 | 9.80 | 0.024 | - | 0.03 | 0.03 | - | 0.4 | 0.10 |
| | C-A | - | - | - | - | - | - | - | - | - |
| | A-B | 2.27 | - | - | - | - | - | - | - | - |
| | A-C | 4.24 | - | - | - | - | - | - | - | - |

**Demand Set:** Sum of Demand Sets for Modelling Period: 16:45 - 18:15
**Modelling Period:** 16:45-18:15

| Segment | Stream | Demand (veh/min) | Capacity (veh/min) | RFC | Ped. Flow (ped/min) | Start Queue (veh) | End Queue (veh) | Geometric Delay (veh.min/ segment) | Delay (veh.min/ segment) | Mean Arriving Vehicle Delay (min) |
|---|---|---|---|---|---|---|---|---|---|---|
| 16:45-17:00 | B-A | 2.31 | 7.82 | 0.295 | - | 0.00 | 0.41 | - | 5.9 | 0.18 |
| | B-C | 0.24 | 8.58 | 0.028 | - | 0.00 | 0.03 | - | 0.4 | 0.12 |
| | C-AB | 0.34 | 9.80 | 0.035 | - | 0.00 | 0.04 | - | 0.5 | 0.11 |
| | C-A | - | - | - | - | - | - | - | - | - |
| | A-B | 3.30 | - | - | - | - | - | - | - | - |
| | A-C | 3.21 | - | - | - | - | - | - | - | - |

| Segment | Stream | Demand (veh/min) | Capacity (veh/min) | RFC | Ped. Flow (ped/min) | Start Queue (veh) | End Queue (veh) | Geometric Delay (veh.min/ segment) | Delay (veh.min/ segment) | Mean Arriving Vehicle Delay (min) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17:00-17:15 | B-A | 2.76 | 7.36 | 0.374 | - | 0.41 | 0.59 | - | 8.4 | 0.22 |
| | B-C | 0.28 | 8.10 | 0.035 | - | 0.03 | 0.04 | - | 0.5 | 0.13 |
| | C-AB | 0.40 | 9.45 | 0.043 | - | 0.04 | 0.04 | - | 0.7 | 0.11 |
| | C-A | - | - | - | - | - | - | - | - | - |
| | A-B | 3.94 | - | - | - | - | - | - | - | - |
| | A-C | 3.84 | - | - | - | - | - | - | - | - |

| Segment | Stream | Demand (veh/min) | Capacity (veh/min) | RFC | Ped. Flow (ped/min) | Start Queue (veh) | End Queue (veh) | Geometric Delay (veh.min/ segment) | Delay (veh.min/ segment) | Mean Arriving Vehicle Delay (min) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17:15-17:30 | B-A | 3.38 | 6.73 | 0.501 | - | 0.59 | 0.97 | - | 13.6 | 0.29 |
| | B-C | 0.35 | 7.22 | 0.048 | - | 0.04 | 0.05 | - | 0.7 | 0.15 |
| | C-AB | 0.50 | 8.96 | 0.055 | - | 0.04 | 0.06 | - | 0.9 | 0.12 |
| | C-A | - | - | - | - | - | - | - | - | - |
| | A-B | 4.83 | - | - | - | - | - | - | - | - |
| | A-C | 4.70 | - | - | - | - | - | - | - | - |

| Segment | Stream | Demand (veh/min) | Capacity (veh/min) | RFC | Ped. Flow (ped/min) | Start Queue (veh) | End Queue (veh) | Geometric Delay (veh.min/ segment) | Delay (veh.min/ segment) | Mean Arriving Vehicle Delay (min) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17:30-17:45 | B-A | 3.38 | 6.73 | 0.502 | - | 0.97 | 0.99 | - | 14.7 | 0.30 |
| | B-C | 0.35 | 7.20 | 0.048 | - | 0.05 | 0.05 | - | 0.8 | 0.15 |
| | C-AB | 0.50 | 8.96 | 0.055 | - | 0.06 | 0.06 | - | 0.9 | 0.12 |
| | C-A | - | - | - | - | - | - | - | - | - |
| | A-B | 4.83 | - | - | - | - | - | - | - | - |
| | A-C | 4.70 | - | - | - | - | - | - | - | - |

| Segment | Stream | Demand (veh/min) | Capacity (veh/min) | RFC | Ped. Flow (ped/min) | Start Queue (veh) | End Queue (veh) | Geometric Delay (veh.min/ segment) | Delay (veh.min/ segment) | Mean Arriving Vehicle Delay (min) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17:45-18:00 | B-A | 2.76 | 7.36 | 0.374 | - | 0.99 | 0.61 | - | 9.7 | 0.22 |
| | B-C | 0.28 | 8.07 | 0.035 | - | 0.05 | 0.04 | - | 0.6 | 0.13 |
| | C-AB | 0.40 | 9.45 | 0.043 | - | 0.06 | 0.05 | - | 0.7 | 0.11 |
| | C-A | - | - | - | - | - | - | - | - | - |
| | A-B | 3.94 | - | - | - | - | - | - | - | - |
| | A-C | 3.84 | - | - | - | - | - | - | - | - |

| Segment | Stream | Demand (veh/min) | Capacity (veh/min) | RFC | Ped. Flow (ped/min) | Start Queue (veh) | End Queue (veh) | Geometric Delay (veh.min/ segment) | Delay (veh.min/ segment) | Mean Arriving Vehicle Delay (min) |
|---|---|---|---|---|---|---|---|---|---|---|
| 18:00-18:15 | B-A | 2.31 | 7.82 | 0.295 | - | 0.61 | 0.43 | - | 6.6 | 0.18 |
| | B-C | 0.24 | 8.57 | 0.028 | - | 0.04 | 0.03 | - | 0.4 | 0.12 |
| | C-AB | 0.34 | 9.80 | 0.035 | - | 0.05 | 0.04 | - | 0.5 | 0.11 |
| | C-A | - | - | - | - | - | - | - | - | - |
| | A-B | 3.30 | - | - | - | - | - | - | - | - |
| | A-C | 3.21 | - | - | - | - | - | - | - | - |

Entry capacities marked with an '(X)' are dominated by a pedestrian crossing in that time segment.
In time segments marked with a '(B)', traffic leaving the junction may block back from a crossing so impairing normal operation of the junction.
Delays marked with '##' could not be calculated.

## Overall Queues & Delays

### Queueing Delay Information Over Whole Period

**Demand Set:** Sum of Demand Sets for Modelling Period: 07:45 - 09:15
**Modelling Period:** 07:45-09:15

| Stream | Total Demand (veh) | Total Demand (veh/h) | Queueing Delay (min) | Queueing Delay (min/veh) | Inclusive Delay (min) | Inclusive Delay (min/veh) |
|---|---|---|---|---|---|---|
| B-A | 393.7 | 262.4 | 151.7 | 0.4 | 151.8 | 0.4 |
| B-C | 39.9 | 26.6 | 7.5 | 0.2 | 7.5 | 0.2 |
| C-AB | 26.2 | 17.4 | 2.9 | 0.1 | 2.9 | 0.1 |
| C-A | - | - | - | - | - | - |
| A-B | 249.1 | 166.1 | - | - | - | - |
| A-C | 465.2 | 310.2 | - | - | - | - |
| **All** | **1603.5** | **1069.0** | **162.2** | **0.1** | **162.2** | **0.1** |

**Demand Set:** Sum of Demand Sets for Modelling Period: 16:45 - 18:15
**Modelling Period:** 16:45-18:15

| Stream | Total Demand (veh) | Total Demand (veh/h) | Queueing Delay (min) | Queueing Delay (min/veh) | Inclusive Delay (min) | Inclusive Delay (min/veh) |
|---|---|---|---|---|---|---|
| B-A | 253.3 | 168.8 | 58.9 | 0.2 | 59.0 | 0.2 |
| B-C | 26.2 | 17.4 | 3.4 | 0.1 | 3.4 | 0.1 |
| C-AB | 37.2 | 24.8 | 4.2 | 0.1 | 4.2 | 0.1 |
| C-A | - | - | - | - | - | - |
| A-B | 362.0 | 241.3 | - | - | - | - |
| A-C | 352.4 | 234.9 | - | - | - | - |
| **All** | **1562.2** | **1041.5** | **66.5** | **0.0** | **66.6** | **0.0** |

Delay is that occurring only within the time period.
Inclusive delay includes delay suffered by vehicles which are still queuing after the end of the time period.
These will only be significantly different if there is a large queue remaining at the end of the time period.

**PICADY 5 Run Successful**

# ARCADY 7

Version: 7.1.1.245 [9th June 2011]


For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 E-mail: software@trl.co.uk Web: http://www.trlsoftware.co.uk



**File:** X:\Projects\130000\131065 - Chilmington Green - Post Application\INCOMING\Chilmington Green Data\21. Junction Modelling\Arcady 7 - Converted Inputs\Northern Access Roundabout Adjusted Dimensions - AM Peak - 75% Flow.arc7
**Report generation date:** 27/08/2013 17:14:17



## Summary of roundabout performance

| | AM | | PM | |
|---|---|---|---|---|
| | Queue (Veh) | RFC | Queue (Veh) | RFC |
| | (Default Analysis Set) - 2031 AM Peak | | | |
| Arm A | 0.63 | 0.39 | | |
| Arm B | 5.42 | 0.85 | | |
| Arm C | 0.31 | 0.24 | | |
| | (Default Analysis Set) - 2031 PM Peak | | | |
| Arm A | | | 4.19 | 0.81 |
| Arm B | | | 0.44 | 0.31 |
| Arm C | | | 0.10 | 0.09 |

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

*2031 AM Peak - AM* runs from 07:45:00 to 09:15:00
*2031 PM Peak - PM* runs from 16:45:00 to 18:15:00

## File summary

### File Description

| | |
|---|---|
| Title | A28 Northern Access Roundabout |
| Location | |
| Site Number | |
| Date | 24/01/2012 |
| Version | |
| Status | |
| Identifier | |
| Client | |
| Jobnumber | |
| Enumerator | ukddd001 [W11UK0063] |
| Description | |

## Analysis Options

| RFC Threshold | Vehicle Length (m) | Do Queue Variations |
|---|---|---|
| 0.85 | 5.75 | |

## Sorting and Display

| Show Arm Names | Arm Grouping | Sorting Direction | Sorting Type | Data Matrix Style | Time Style |
|---|---|---|---|---|---|
| | Order | Ascending | Numerical | By Destination | Absolute Time |

### 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 | Veh | Veh | perHour | min | -Min | perMin |

# A1 - (Default Analysis Set) - D1 - 2031 AM Peak, AM

### Data Errors and Warnings

*No errors or warnings*

### Analysis Set Details

| Name | Description | Include In Report | Use Specific Demand Set | Demand Set | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|
| (Default Analysis Set) | | Yes | | (D1) | | 100.000 | 100.000 | |

### Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Locked | Run Automatically | Use Relationship | Relationship | Start Time (HH:mm) | Finish Time (HH:mm) | Time Period Length (min) | Time Segment Length (min) | Traffic Profile Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 AM Peak, AM | 2031 AM Peak | AM | | | Yes | | | 07:45 | 09:15 | 90 | 15 | Varies by Arm |

# Roundabout Network

### Roundabout Type(s)

| ID | Name | Arm Order | Roundabout Type | Grade Separated | Large Roundabout | Do Geometric Delay |
|---|---|---|---|---|---|---|
| 1 | (untitled) | A,B,C | Standard | | | |

### Roundabout Network Options

| Driving Side | Lighting | Road Surface | In London |
|---|---|---|---|
| Left | Normal/unknown | ((Mini-roundabouts only)) | |

# Arms

### Arms

| ID | Name | Description |
|---|---|---|
| A | A28 (SWB) | |
| B | Site Access | |
| C | A28 (NEB) | |

### Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|
| A | 0.00 | 99999.00 | | 0.00 |
| B | 0.00 | 99999.00 | | 0.00 |
| C | 0.00 | 99999.00 | | 0.00 |

### Standard Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|
| A | 3.65 | 6.92 | 11.02 | 30.00 | 40.00 | 11.05 | |
| B | 3.00 | 6.81 | 12.05 | 30.00 | 40.00 | 18.50 | |
| C | 3.65 | 6.99 | 9.54 | 30.00 | 40.00 | 31.50 | |

### Pedestrian Crossings

| Arm | Crossing Type |
|---|---|
| A | None |
| B | None |
| C | None |

### Arm Slope/ Intercept and Capacity

#### Slope and Intercept used in model

| Arm | Enter Directly | Slope | Intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|
| A | | ((calculated)) | ((calculated)) | 0.676 | 1746.630 |
| B | | ((calculated)) | ((calculated)) | 0.632 | 1566.177 |
| C | | ((calculated)) | ((calculated)) | 0.625 | 1600.808 |

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

# Traffic Flows

### Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Yes | HV Percentages | 2.00 | | | | Yes | Yes |

# Entry Flows

### General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (Veh/hr) | Flow Scaling Factor (%) | PHF |
|---|---|---|---|---|---|
| A | ONE HOUR | Yes | 610.00 | 100.000 | N/A |
| B | ONE HOUR | Yes | 1083.00 | 100.000 | N/A |
| C | ONE HOUR | Yes | 206.00 | 100.000 | N/A |

# Direct/Resultant Flows

### Direct Flows Data

| Time Segment | Arm | Direct Demand Entry Flow (Veh/hr) | DirectDemandEntryFlowInPCU (PCU/hr) | Direct Demand Exit Flow (Veh/hr) | Direct Demand Pedestrian Flow (Ped/hr) |
|---|---|---|---|---|---|
| 1 | A | 459.24 | 459.24 | N/A | N/A |
| 1 | B | 815.34 | 815.34 | N/A | N/A |
| 1 | C | 155.09 | 155.09 | N/A | N/A |
| 2 | A | 548.38 | 548.38 | N/A | N/A |
| 2 | B | 973.59 | 973.59 | N/A | N/A |
| 2 | C | 185.19 | 185.19 | N/A | N/A |
| 3 | A | 671.62 | 671.62 | N/A | N/A |

| | | | | | |
|---|---|---|---|---|---|
| 3 | B | 1192.41 | 1192.41 | N/A | N/A |
| 3 | C | 226.81 | 226.81 | N/A | N/A |
| 4 | A | 671.62 | 671.62 | N/A | N/A |
| 4 | B | 1192.41 | 1192.41 | N/A | N/A |
| 4 | C | 226.81 | 226.81 | N/A | N/A |
| 5 | A | 548.38 | 548.38 | N/A | N/A |
| 5 | B | 973.59 | 973.59 | N/A | N/A |
| 5 | C | 185.19 | 185.19 | N/A | N/A |
| 6 | A | 459.24 | 459.24 | N/A | N/A |
| 6 | B | 815.34 | 815.34 | N/A | N/A |
| 6 | C | 155.09 | 155.09 | N/A | N/A |

# Turning Proportions

### Turning Counts or Proportions (Veh/hr) - Roundabout 1 (for whole period)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 371.000 | 239.000 |
| | B | 950.000 | 0.000 | 133.000 |
| | C | 201.000 | 5.000 | 0.000 |

### Turning Proportions (Veh) - Roundabout 1 (for whole period)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.61 | 0.39 |
| | B | 0.88 | 0.00 | 0.12 |
| | C | 0.98 | 0.02 | 0.00 |

# Vehicle Mix

### Average PCU Per Vehicle - Roundabout 1 (for whole period)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.000 | 1.000 | 1.000 |
| | B | 1.000 | 1.000 | 1.000 |
| | C | 1.000 | 1.000 | 1.000 |

### Heavy Vehicle Percentages - Roundabout 1 (for whole period)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 0.000 | 0.000 |
| | B | 0.000 | 0.000 | 0.000 |
| | C | 0.000 | 0.000 | 0.000 |

# Results

## Results Summary

| Arm | Max RFC | Max Delay (min) | Max Queue (Veh) | Max LOS | Total Demand (Veh/hr) | Total Arrivals (Veh) | Total Queueing Delay (Veh-min) | Average Queueing Delay (min) | Rate Of Queueing Delay (Veh-min/min) | Inclusive Queueing Total Delay (Veh-min) | Inclusive Queueing Average Delay (min) | Slope | Intercept (PCU/hr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 0.39 | 0.06 | 0.63 | A | 559.75 | 839.62 | 43.03 | 0.05 | 0.48 | 43.03 | 0.05 | 0.676 | 1746.630 |
| B | 0.85 | 0.28 | 5.42 | C | 993.78 | 1490.67 | 250.88 | 0.17 | 2.79 | 250.91 | 0.17 | 0.632 | 1566.177 |
| C | 0.24 | 0.08 | 0.31 | A | 189.03 | 283.54 | 20.22 | 0.07 | 0.22 | 20.22 | 0.07 | 0.625 | 1600.808 |

## Main Results

### Main results: (07:45-08:00)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 459.24 | 114.81 | 457.82 | 861.51 | 3.75 | 0.00 | 1744.09 | 1730.60 | 0.263 | 0.00 | 0.36 |
| B | 815.34 | 203.83 | 810.29 | 282.19 | 179.37 | 0.00 | 1452.78 | 1137.52 | 0.561 | 0.00 | 1.26 |
| C | 155.09 | 38.77 | 154.47 | 278.88 | 710.78 | 0.00 | 1156.24 | 976.71 | 0.134 | 0.00 | 0.15 |

### Main results: (08:00-08:15)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 548.38 | 137.09 | 547.97 | 1031.65 | 4.49 | 0.00 | 1743.59 | 1730.60 | 0.315 | 0.36 | 0.46 |
| B | 973.59 | 243.40 | 970.33 | 337.77 | 214.70 | 0.00 | 1430.45 | 1137.52 | 0.681 | 1.26 | 2.08 |
| C | 185.19 | 46.30 | 184.97 | 333.86 | 851.17 | 0.00 | 1068.44 | 976.71 | 0.173 | 0.15 | 0.21 |

### Main results: (08:15-08:30)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 671.62 | 167.91 | 670.96 | 1256.08 | 5.50 | 0.00 | 1742.91 | 1730.60 | 0.385 | 0.46 | 0.62 |
| B | 1192.41 | 298.10 | 1180.10 | 413.57 | 262.88 | 0.00 | 1399.98 | 1137.52 | 0.852 | 2.08 | 5.15 |
| C | 226.81 | 56.70 | 226.40 | 407.81 | 1035.17 | 0.00 | 953.35 | 976.71 | 0.238 | 0.21 | 0.31 |

### Main results: (08:30-08:45)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 671.62 | 167.91 | 671.62 | 1266.33 | 5.50 | 0.00 | 1742.91 | 1730.60 | 0.385 | 0.62 | 0.63 |
| B | 1192.41 | 298.10 | 1191.35 | 413.98 | 263.14 | 0.00 | 1399.82 | 1137.52 | 0.852 | 5.15 | 5.42 |
| C | 226.81 | 56.70 | 226.80 | 409.45 | 1045.04 | 0.00 | 947.18 | 976.71 | 0.239 | 0.31 | 0.31 |

### Main results: (08:45-09:00)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 548.38 | 137.09 | 549.03 | 1046.45 | 4.50 | 0.00 | 1743.58 | 1730.60 | 0.315 | 0.63 | 0.46 |
| B | 973.59 | 243.40 | 986.51 | 338.43 | 215.11 | 0.00 | 1430.18 | 1137.52 | 0.681 | 5.42 | 2.19 |
| C | 185.19 | 46.30 | 185.59 | 336.26 | 865.36 | 0.00 | 1059.56 | 976.71 | 0.175 | 0.31 | 0.21 |

### Main results: (09:00-09:15)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 459.24 | 114.81 | 459.65 | 869.88 | 3.77 | 0.00 | 1744.08 | 1730.60 | 0.263 | 0.46 | 0.36 |
| B | 815.34 | 203.83 | 818.91 | 283.33 | 180.09 | 0.00 | 1452.32 | 1137.52 | 0.561 | 2.19 | 1.30 |
| C | 155.09 | 38.77 | 155.31 | 280.66 | 718.34 | 0.00 | 1151.52 | 976.71 | 0.135 | 0.21 | 0.16 |

## Queueing Delay Results

### Queueing Delay results: (07:45-08:00)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| A | 5.24 | 0.35 | 0.047 | A | A |
| B | 18.09 | 1.21 | 0.093 | A | A |
| C | 2.27 | 0.15 | 0.060 | A | A |

### Queueing Delay results: (08:00-08:15)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 6.75 | 0.45 | 0.050 | A | A |
| B | 29.59 | 1.97 | 0.129 | A | A |
| C | 3.08 | 0.21 | 0.068 | A | A |

### Queueing Delay results: (08:15-08:30)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 9.19 | 0.61 | 0.056 | A | A |
| B | 67.62 | 4.51 | 0.259 | C | B |
| C | 4.55 | 0.30 | 0.083 | A | A |

### Queueing Delay results: (08:30-08:45)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 9.36 | 0.62 | 0.056 | A | A |
| B | 79.67 | 5.31 | 0.284 | C | B |
| C | 4.68 | 0.31 | 0.083 | A | A |

### Queueing Delay results: (08:45-09:00)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 7.03 | 0.47 | 0.050 | A | A |
| B | 35.67 | 2.38 | 0.139 | A | A |
| C | 3.26 | 0.22 | 0.069 | A | A |

### Queueing Delay results: (09:00-09:15)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 5.46 | 0.36 | 0.047 | A | A |
| B | 20.24 | 1.35 | 0.095 | A | A |
| C | 2.38 | 0.16 | 0.060 | A | A |

# Overview: Standard Roundabout Geometry

## Standard 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 | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|---|---|---|---|
| A | 3.65 | 6.92 | 11.02 | 30.00 | 40.00 | 11.05 | | 0.676 | 1746.630 |
| B | 3.00 | 6.81 | 12.05 | 30.00 | 40.00 | 18.50 | | 0.632 | 1566.177 |
| C | 3.65 | 6.99 | 9.54 | 30.00 | 40.00 | 31.50 | | 0.625 | 1600.808 |

# Overview: Time Segment Results

## Time Segment Results

| Time Segment | Arm | Demand (Veh/hr) | Capacity (Veh/hr) | RFC | Pedestrian Demand (Ped/hr) | Start Queue (Veh) | End Queue (Veh) | Queueing Total Delay (Veh-min) | Geometric Total Delay (Veh-min) | Average Delay Per Arriving Vehicle (min) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A | 459.24 | 1744.09 | 0.263 | 0.00 | 0.00 | 0.36 | 5.24 | (0.02) | 0.047 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | B | 815.34 | 1452.78 | 0.561 | 0.00 | 0.00 | 1.26 | 18.09 | (0.02) | 0.093 |
| 1 | C | 155.09 | 1156.24 | 0.134 | 0.00 | 0.00 | 0.15 | 2.27 | (0.02) | 0.060 |
| 2 | A | 548.38 | 1743.59 | 0.315 | 0.00 | 0.36 | 0.46 | 6.75 | (0.02) | 0.050 |
| 2 | B | 973.59 | 1430.45 | 0.681 | 0.00 | 1.26 | 2.08 | 29.59 | (0.02) | 0.129 |
| 2 | C | 185.19 | 1068.44 | 0.173 | 0.00 | 0.15 | 0.21 | 3.08 | (0.02) | 0.068 |
| 3 | A | 671.62 | 1742.91 | 0.385 | 0.00 | 0.46 | 0.62 | 9.19 | (0.02) | 0.056 |
| 3 | B | 1192.41 | 1399.98 | 0.852 | 0.00 | 2.08 | 5.15 | 67.62 | (0.02) | 0.259 |
| 3 | C | 226.81 | 953.35 | 0.238 | 0.00 | 0.21 | 0.31 | 4.55 | (0.02) | 0.083 |
| 4 | A | 671.62 | 1742.91 | 0.385 | 0.00 | 0.62 | 0.63 | 9.36 | (0.02) | 0.056 |
| 4 | B | 1192.41 | 1399.82 | 0.852 | 0.00 | 5.15 | 5.42 | 79.67 | (0.02) | 0.284 |
| 4 | C | 226.81 | 947.18 | 0.239 | 0.00 | 0.31 | 0.31 | 4.68 | (0.02) | 0.083 |
| 5 | A | 548.38 | 1743.58 | 0.315 | 0.00 | 0.63 | 0.46 | 7.03 | (0.02) | 0.050 |
| 5 | B | 973.59 | 1430.18 | 0.681 | 0.00 | 5.42 | 2.19 | 35.67 | (0.02) | 0.139 |
| 5 | C | 185.19 | 1059.56 | 0.175 | 0.00 | 0.31 | 0.21 | 3.26 | (0.02) | 0.069 |
| 6 | A | 459.24 | 1744.08 | 0.263 | 0.00 | 0.46 | 0.36 | 5.46 | (0.02) | 0.047 |
| 6 | B | 815.34 | 1452.32 | 0.561 | 0.00 | 2.19 | 1.30 | 20.24 | (0.02) | 0.095 |
| 6 | C | 155.09 | 1151.52 | 0.135 | 0.00 | 0.21 | 0.16 | 2.38 | (0.02) | 0.060 |

# A1 - (Default Analysis Set) - D2 - 2031 PM Peak, PM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Description | Include In Report | Use Specific Demand Set | Demand Set | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|
| (Default Analysis Set) | | Yes | | (D1) | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Locked | Run Automatically | Use Relationship | Relationship | Start Time (HH:mm) | Finish Time (HH:mm) | Time Period Length (min) | Time Segment Length (min) | Traffic Profile Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 PM Peak, PM | 2031 PM Peak | PM | | | Yes | | | 16:45 | 18:15 | 90 | 15 | Varies by Arm |

# Roundabout Network

## Roundabout Type(s)

| ID | Name | Arm Order | Roundabout Type | Grade Separated | Large Roundabout | Do Geometric Delay |
|---|---|---|---|---|---|---|
| 1 | (untitled) | A,B,C | Standard | | | |

## Roundabout Network Options

| Driving Side | Lighting | Road Surface | In London |
|---|---|---|---|
| Left | Normal/unknown | ((Mini-roundabouts only)) | |

# Arms

### Arms

| ID | Name | Description |
|---|---|---|
| A | A28 (SWB) | |
| B | Site Access | |
| C | A28 (NEB) | |

### Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|
| A | 0.00 | 99999.00 | | 0.00 |
| B | 0.00 | 99999.00 | | 0.00 |
| C | 0.00 | 99999.00 | | 0.00 |

### Standard Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|
| A | 3.65 | 6.92 | 11.02 | 30.00 | 40.00 | 11.05 | |
| B | 3.00 | 6.81 | 12.05 | 30.00 | 40.00 | 18.50 | |
| C | 3.65 | 6.99 | 9.54 | 30.00 | 40.00 | 31.50 | |

### Pedestrian Crossings

| Arm | Crossing Type |
|---|---|
| A | None |
| B | None |
| C | None |

### Arm Slope/ Intercept and Capacity

#### Slope and Intercept used in model

| Arm | Enter Directly | Slope | Intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|
| A | | ((calculated)) | ((calculated)) | 0.676 | 1746.630 |
| B | | ((calculated)) | ((calculated)) | 0.632 | 1566.177 |
| C | | ((calculated)) | ((calculated)) | 0.625 | 1600.808 |

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

# Traffic Flows

### Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Yes | HV Percentages | 2.00 | | | | Yes | Yes |

# Entry Flows

### General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (Veh/hr) | Flow Scaling Factor (%) | PHF |
|---|---|---|---|---|---|
| A | ONE HOUR | Yes | 1284.00 | 100.000 | N/A |
| B | ONE HOUR | Yes | 344.00 | 100.000 | N/A |
| C | ONE HOUR | Yes | 117.00 | 100.000 | N/A |

# Direct/Resultant Flows

# Direct/Resultant Flows

## Direct Flows Data

| Time Segment | Arm | Direct Demand Entry Flow (Veh/hr) | DirectDemandEntryFlowInPCU (PCU/hr) | Direct Demand Exit Flow (Veh/hr) | Direct Demand Pedestrian Flow (Ped/hr) |
|---|---|---|---|---|---|
| 1 | A | 966.66 | 966.66 | N/A | N/A |
| 1 | B | 258.98 | 258.98 | N/A | N/A |
| 1 | C | 88.08 | 88.08 | N/A | N/A |
| 2 | A | 1154.29 | 1154.29 | N/A | N/A |
| 2 | B | 309.25 | 309.25 | N/A | N/A |
| 2 | C | 105.18 | 105.18 | N/A | N/A |
| 3 | A | 1413.71 | 1413.71 | N/A | N/A |
| 3 | B | 378.75 | 378.75 | N/A | N/A |
| 3 | C | 128.82 | 128.82 | N/A | N/A |
| 4 | A | 1413.71 | 1413.71 | N/A | N/A |
| 4 | B | 378.75 | 378.75 | N/A | N/A |
| 4 | C | 128.82 | 128.82 | N/A | N/A |
| 5 | A | 1154.29 | 1154.29 | N/A | N/A |
| 5 | B | 309.25 | 309.25 | N/A | N/A |
| 5 | C | 105.18 | 105.18 | N/A | N/A |
| 6 | A | 966.66 | 966.66 | N/A | N/A |
| 6 | B | 258.98 | 258.98 | N/A | N/A |
| 6 | C | 88.08 | 88.08 | N/A | N/A |

# Turning Proportions

### Turning Counts or Proportions (Veh/hr) - Roundabout 1 (for whole period)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 799.000 | 485.000 |
| | B | 259.000 | 0.000 | 85.000 |
| | C | 109.000 | 8.000 | 0.000 |

### Turning Proportions (Veh) - Roundabout 1 (for whole period)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.62 | 0.38 |
| | B | 0.75 | 0.00 | 0.25 |
| | C | 0.93 | 0.07 | 0.00 |

# Vehicle Mix

### Average PCU Per Vehicle - Roundabout 1 (for whole period)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.000 | 1.000 | 1.000 |
| | B | 1.000 | 1.000 | 1.000 |
| | C | 1.000 | 1.000 | 1.000 |

### Heavy Vehicle Percentages - Roundabout 1 (for whole period)

| | To |
|---|---|

| | | A | B | C |
|---|---|---|---|---|
| From | A | 0.000 | 0.000 | 0.000 |
| | B | 0.000 | 0.000 | 0.000 |
| | C | 0.000 | 0.000 | 0.000 |

# Results

## Results Summary

| Arm | Max RFC | Max Delay (min) | Max Queue (Veh) | Max LOS | Total Demand (Veh/hr) | Total Arrivals (Veh) | Total Queueing Delay (Veh-min) | Average Queueing Delay (min) | Rate Of Queueing Delay (Veh-min/min) | Inclusive Queueing Total Delay (Veh-min) | Inclusive Queueing Average Delay (min) | Slope | Intercept (PCU/hr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 0.81 | 0.18 | 4.19 | B | 1178.22 | 1767.33 | 214.75 | 0.12 | 2.39 | 214.78 | 0.12 | 0.676 | 1746.630 |
| B | 0.31 | 0.07 | 0.44 | A | 315.66 | 473.49 | 29.82 | 0.06 | 0.33 | 29.82 | 0.06 | 0.632 | 1566.177 |
| C | 0.09 | 0.05 | 0.10 | A | 107.36 | 161.04 | 7.20 | 0.04 | 0.08 | 7.20 | 0.04 | 0.625 | 1600.808 |

## Main Results

### Main results: (16:45-17:00)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 966.66 | 241.67 | 961.74 | 276.09 | 6.01 | 0.00 | 1742.57 | 1697.90 | 0.555 | 0.00 | 1.23 |
| B | 258.98 | 64.75 | 258.02 | 604.47 | 363.27 | 0.00 | 1336.52 | 1160.73 | 0.194 | 0.00 | 0.24 |
| C | 88.08 | 22.02 | 87.83 | 427.03 | 194.27 | 0.00 | 1479.30 | 1054.21 | 0.060 | 0.00 | 0.06 |

### Main results: (17:00-17:15)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 1154.29 | 288.57 | 1151.51 | 330.55 | 7.19 | 0.00 | 1741.77 | 1697.90 | 0.663 | 1.23 | 1.93 |
| B | 309.25 | 77.31 | 308.95 | 723.74 | 434.95 | 0.00 | 1291.20 | 1160.73 | 0.240 | 0.24 | 0.31 |
| C | 105.18 | 26.30 | 105.12 | 511.29 | 232.61 | 0.00 | 1455.32 | 1054.21 | 0.072 | 0.06 | 0.08 |

### Main results: (17:15-17:30)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 1413.71 | 353.43 | 1405.11 | 404.71 | 8.80 | 0.00 | 1740.68 | 1697.90 | 0.812 | 1.93 | 4.08 |
| B | 378.75 | 94.69 | 378.24 | 883.17 | 530.75 | 0.00 | 1230.64 | 1160.73 | 0.308 | 0.31 | 0.44 |
| C | 128.82 | 32.20 | 128.73 | 624.21 | 284.78 | 0.00 | 1422.69 | 1054.21 | 0.091 | 0.08 | 0.10 |

### Main results: (17:30-17:45)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 1413.71 | 353.43 | 1413.25 | 405.17 | 8.81 | 0.00 | 1740.67 | 1697.90 | 0.812 | 4.08 | 4.19 |
| B | 378.75 | 94.69 | 378.74 | 888.24 | 533.82 | 0.00 | 1228.70 | 1160.73 | 0.308 | 0.44 | 0.44 |
| C | 128.82 | 32.20 | 128.82 | 627.41 | 285.16 | 0.00 | 1422.45 | 1054.21 | 0.091 | 0.10 | 0.10 |

### Main results: (17:45-18:00)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 1154.29 | 288.57 | 1163.05 | 331.28 | 7.20 | 0.00 | 1741.76 | 1697.90 | 0.663 | 4.19 | 2.00 |
| B | 309.25 | 77.31 | 309.75 | 730.93 | 439.31 | 0.00 | 1288.45 | 1160.73 | 0.240 | 0.44 | 0.32 |
| C | 105.18 | 26.30 | 105.27 | 515.85 | 233.22 | 0.00 | 1454.94 | 1054.21 | 0.072 | 0.10 | 0.08 |

### Main results: (18:00-18:15)

Main results: (16:00-18:15)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 966.66 | 241.67 | 969.64 | 277.33 | 6.03 | 0.00 | 1742.56 | 1697.90 | 0.555 | 2.00 | 1.26 |
| B | 258.98 | 64.75 | 259.28 | 609.41 | 366.26 | 0.00 | 1334.63 | 1160.73 | 0.194 | 0.32 | 0.24 |
| C | 88.08 | 22.02 | 88.14 | 430.32 | 195.22 | 0.00 | 1478.71 | 1054.21 | 0.060 | 0.08 | 0.06 |

## Queueing Delay Results

### Queueing Delay results: (16:45-17:00)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 17.78 | 1.19 | 0.076 | A | A |
| B | 3.52 | 0.23 | 0.056 | A | A |
| C | 0.93 | 0.06 | 0.043 | A | A |

### Queueing Delay results: (17:00-17:15)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 27.73 | 1.85 | 0.101 | A | A |
| B | 4.63 | 0.31 | 0.061 | A | A |
| C | 1.15 | 0.08 | 0.044 | A | A |

### Queueing Delay results: (17:15-17:30)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 55.76 | 3.72 | 0.174 | B | B |
| B | 6.50 | 0.43 | 0.070 | A | A |
| C | 1.47 | 0.10 | 0.046 | A | A |

### Queueing Delay results: (17:30-17:45)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 62.20 | 4.15 | 0.183 | B | B |
| B | 6.65 | 0.44 | 0.071 | A | A |
| C | 1.49 | 0.10 | 0.046 | A | A |

### Queueing Delay results: (17:45-18:00)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 31.75 | 2.12 | 0.105 | A | A |
| B | 4.85 | 0.32 | 0.061 | A | A |
| C | 1.19 | 0.08 | 0.044 | A | A |

### Queueing Delay results: (18:00-18:15)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 19.53 | 1.30 | 0.078 | A | A |
| B | 3.68 | 0.25 | 0.056 | A | A |
| C | 0.96 | 0.06 | 0.043 | A | A |

# Overview: Standard Roundabout Geometry

## Standard Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| A | 3.65 | 6.92 | 11.02 | 30.00 | 40.00 | 11.05 | | 0.676 | 1746.630 |
| B | 3.00 | 6.81 | 12.05 | 30.00 | 40.00 | 18.50 | | 0.632 | 1566.177 |
| C | 3.65 | 6.99 | 9.54 | 30.00 | 40.00 | 31.50 | | 0.625 | 1600.808 |

# Overview: Time Segment Results

## Time Segment Results

| Time Segment | Arm | Demand (Veh/hr) | Capacity (Veh/hr) | RFC | Pedestrian Demand (Ped/hr) | Start Queue (Veh) | End Queue (Veh) | Queueing Total Delay (Veh-min) | Geometric Total Delay (Veh-min) | Average Delay Per Arriving Vehicle (min) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A | 966.66 | 1742.57 | 0.555 | 0.00 | 0.00 | 1.23 | 17.78 | (0.02) | 0.076 |
| 1 | B | 258.98 | 1336.52 | 0.194 | 0.00 | 0.00 | 0.24 | 3.52 | (0.02) | 0.056 |
| 1 | C | 88.08 | 1479.30 | 0.060 | 0.00 | 0.00 | 0.06 | 0.93 | (0.02) | 0.043 |
| 2 | A | 1154.29 | 1741.77 | 0.663 | 0.00 | 1.23 | 1.93 | 27.73 | (0.02) | 0.101 |
| 2 | B | 309.25 | 1291.20 | 0.240 | 0.00 | 0.24 | 0.31 | 4.63 | (0.02) | 0.061 |
| 2 | C | 105.18 | 1455.32 | 0.072 | 0.00 | 0.06 | 0.08 | 1.15 | (0.02) | 0.044 |
| 3 | A | 1413.71 | 1740.68 | 0.812 | 0.00 | 1.93 | 4.08 | 55.76 | (0.02) | 0.174 |
| 3 | B | 378.75 | 1230.64 | 0.308 | 0.00 | 0.31 | 0.44 | 6.50 | (0.02) | 0.070 |
| 3 | C | 128.82 | 1422.69 | 0.091 | 0.00 | 0.08 | 0.10 | 1.47 | (0.02) | 0.046 |
| 4 | A | 1413.71 | 1740.67 | 0.812 | 0.00 | 4.08 | 4.19 | 62.20 | (0.02) | 0.183 |
| 4 | B | 378.75 | 1228.70 | 0.308 | 0.00 | 0.44 | 0.44 | 6.65 | (0.02) | 0.071 |
| 4 | C | 128.82 | 1422.45 | 0.091 | 0.00 | 0.10 | 0.10 | 1.49 | (0.02) | 0.046 |
| 5 | A | 1154.29 | 1741.76 | 0.663 | 0.00 | 4.19 | 2.00 | 31.75 | (0.02) | 0.105 |
| 5 | B | 309.25 | 1288.45 | 0.240 | 0.00 | 0.44 | 0.32 | 4.85 | (0.02) | 0.061 |
| 5 | C | 105.18 | 1454.94 | 0.072 | 0.00 | 0.10 | 0.08 | 1.19 | (0.02) | 0.044 |
| 6 | A | 966.66 | 1742.56 | 0.555 | 0.00 | 2.00 | 1.26 | 19.53 | (0.02) | 0.078 |
| 6 | B | 258.98 | 1334.63 | 0.194 | 0.00 | 0.32 | 0.24 | 3.68 | (0.02) | 0.056 |
| 6 | C | 88.08 | 1478.71 | 0.060 | 0.00 | 0.08 | 0.06 | 0.96 | (0.02) | 0.043 |

# ARCADY 7

Version: 7.1.1.245 [9th June 2011]


For sales and distribution information, program advice and maintenance, contact TRL:
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**File:** X:\Projects\130000\131065 - Chilmington Green - Post Application\INCOMING\Chilmington Green Data\21. Junction Modelling\Arcady 7 - Converted Inputs\Southern Access Roundabout Adjusted Dimensions - AM + PM Peak - 25% Flow.arc7
**Report generation date:** 27/08/2013 17:29:43



## Summary of roundabout performance

| | AM | | PM | |
|---|---|---|---|---|
| | Queue (Veh) | RFC | Queue (Veh) | RFC |
| | (Default Analysis Set) - 2031 AM Peak | | | |
| Arm A | 0.26 | 0.20 | | |
| Arm B | 1.36 | 0.58 | | |
| Arm C | 0.61 | 0.38 | | |
| Arm D | 0.06 | 0.05 | | |
| | (Default Analysis Set) - 2031 PM Peak | | | |
| Arm A | | | 0.51 | 0.34 |
| Arm B | | | 0.30 | 0.23 |
| Arm C | | | 0.70 | 0.41 |
| Arm D | | | 0.07 | 0.06 |

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

*2031 AM Peak - AM* runs from 07:45:00 to 09:15:00
*2031 PM Peak - PM* runs from 16:45:00 to 18:15:00

## File summary

### File Description

| | |
|---|---|
| Title | A28 Southern Access Roundabout PM Peak |
| Location | |
| Site Number | |
| Date | 24/01/2012 |
| Version | |
| Status | |
| Identifier | |
| Client | |
| Jobnumber | |
| Enumerator | ukddd001 [W11UK0063] |
| Description | |

## Analysis Options

| RFC Threshold | Vehicle Length (m) | Do Queue Variations |
|---|---|---|
| 0.85 | 5.75 | |

### Sorting and Display

| Show Arm Names | Arm Grouping | Sorting Direction | Sorting Type | Data Matrix Style | Time Style |
|---|---|---|---|---|---|
| | Order | Ascending | Numerical | By Destination | Absolute Time |

### 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 | Veh | Veh | perHour | min | -Min | perMin |

# A1 - (Default Analysis Set) - D1 - 2031 AM Peak, AM

### Data Errors and Warnings

*No errors or warnings*

### Analysis Set Details

| Name | Description | Include In Report | Use Specific Demand Set | Demand Set | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|
| (Default Analysis Set) | | Yes | | (D1) | | 100.000 | 100.000 | |

### Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Locked | Run Automatically | Use Relationship | Relationship | Start Time (HH:mm) | Finish Time (HH:mm) | Time Period Length (min) | Time Segment Length (min) | Traffic Profile Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 AM Peak, AM | 2031 AM Peak | AM | | | Yes | | | 07:45 | 09:15 | 90 | 15 | Varies by Arm |

# Roundabout Network

### Roundabout Type(s)

| ID | Name | Arm Order | Roundabout Type | Grade Separated | Large Roundabout | Do Geometric Delay |
|---|---|---|---|---|---|---|
| 1 | (untitled) | A,B,C,D | Standard | | | |

### Roundabout Network Options

| Driving Side | Lighting | Road Surface | In London |
|---|---|---|---|
| Left | Normal/unknown | ((Mini-roundabouts only)) | |

# Arms

### Arms

| ID | Name | Description |
|---|---|---|
| A | A28 (SWB) | |
| B | Site Access | |
| C | A28 (NEB) | |
| D | Sandy Lane | |

### Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|
| A | | | | |

| | | | | |
|---|---|---|---|---|
| A | 0.00 | 99999.00 | | 0.00 |
| B | 0.00 | 99999.00 | | 0.00 |
| C | 0.00 | 99999.00 | | 0.00 |
| D | 0.00 | 99999.00 | | 0.00 |

### Standard Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|
| A | 3.65 | 6.40 | 19.20 | 25.00 | 40.00 | 18.00 | |
| B | 3.00 | 5.50 | 12.50 | 15.00 | 40.00 | 36.00 | |
| C | 3.65 | 5.50 | 5.50 | 25.00 | 40.00 | 24.50 | |
| D | 2.65 | 5.40 | 2.90 | 15.00 | 40.00 | 26.00 | |

### Pedestrian Crossings

| Arm | Crossing Type |
|---|---|
| A | None |
| B | None |
| C | None |
| D | None |

### Arm Slope/ Intercept and Capacity

#### Slope and Intercept used in model

| Arm | Enter Directly | Slope | Intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|
| A | | ((calculated)) | ((calculated)) | 0.670 | 1763.569 |
| B | | ((calculated)) | ((calculated)) | 0.555 | 1320.003 |
| C | | ((calculated)) | ((calculated)) | 0.594 | 1415.633 |
| D | | ((calculated)) | ((calculated)) | 0.503 | 1007.039 |

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

# Traffic Flows

### Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Yes | HV Percentages | 2.00 | | | | Yes | Yes |

# Entry Flows

### General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (Veh/hr) | Flow Scaling Factor (%) | PHF |
|---|---|---|---|---|---|
| A | ONE HOUR | Yes | 293.00 | 100.000 | N/A |
| B | ONE HOUR | Yes | 616.00 | 100.000 | N/A |
| C | ONE HOUR | Yes | 393.00 | 100.000 | N/A |
| D | ONE HOUR | Yes | 30.00 | 100.000 | N/A |

# Direct/Resultant Flows

### Direct Flows Data

| Time Segment | Arm | Direct Demand Entry Flow (Veh/hr) | DirectDemandEntryFlowInPCU (PCU/hr) | Direct Demand Exit Flow (Veh/hr) | Direct Demand Pedestrian Flow (Ped/hr) |
|---|---|---|---|---|---|
| 1 | A | 220.59 | 220.59 | N/A | N/A |
| 1 | B | 463.76 | 463.76 | N/A | N/A |
| 1 | C | 295.87 | 295.87 | N/A | N/A |
| 1 | D | 22.59 | 22.59 | N/A | N/A |
| 2 | A | 263.40 | 263.40 | N/A | N/A |
| 2 | B | 553.77 | 553.77 | N/A | N/A |
| 2 | C | 353.30 | 353.30 | N/A | N/A |
| 2 | D | 26.97 | 26.97 | N/A | N/A |
| 3 | A | 322.60 | 322.60 | N/A | N/A |
| 3 | B | 678.23 | 678.23 | N/A | N/A |
| 3 | C | 432.70 | 432.70 | N/A | N/A |
| 3 | D | 33.03 | 33.03 | N/A | N/A |
| 4 | A | 322.60 | 322.60 | N/A | N/A |
| 4 | B | 678.23 | 678.23 | N/A | N/A |
| 4 | C | 432.70 | 432.70 | N/A | N/A |
| 4 | D | 33.03 | 33.03 | N/A | N/A |
| 5 | A | 263.40 | 263.40 | N/A | N/A |
| 5 | B | 553.77 | 553.77 | N/A | N/A |
| 5 | C | 353.30 | 353.30 | N/A | N/A |
| 5 | D | 26.97 | 26.97 | N/A | N/A |
| 6 | A | 220.59 | 220.59 | N/A | N/A |
| 6 | B | 463.76 | 463.76 | N/A | N/A |
| 6 | C | 295.87 | 295.87 | N/A | N/A |
| 6 | D | 22.59 | 22.59 | N/A | N/A |

# Turning Proportions

### Turning Counts or Proportions (Veh/hr) - Roundabout 1 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 0.000 | 49.000 | 187.000 | 57.000 |
| | B | 317.000 | 0.000 | 246.000 | 53.000 |
| | C | 159.000 | 234.000 | 0.000 | 0.000 |
| | D | 16.000 | 14.000 | 0.000 | 0.000 |

### Turning Proportions (Veh) - Roundabout 1 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 0.00 | 0.17 | 0.64 | 0.19 |
| | B | 0.51 | 0.00 | 0.40 | 0.09 |
| | C | 0.40 | 0.60 | 0.00 | 0.00 |
| | D | 0.53 | 0.47 | 0.00 | 0.00 |

# Vehicle Mix

### Average PCU Per Vehicle - Roundabout 1 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 1.000 | 1.000 | 1.000 | 1.000 |
| | B | 1.000 | 1.000 | 1.000 | 1.000 |

| | | | | | |
|---|---|---|---|---|---|
| | C | 1.000 | 1.000 | 1.000 | 1.000 |
| | D | 1.000 | 1.000 | 1.000 | 1.000 |

### Heavy Vehicle Percentages - Roundabout 1 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 0.000 | 0.000 | 0.000 | 0.000 |
| | B | 0.000 | 0.000 | 0.000 | 0.000 |
| | C | 0.000 | 0.000 | 0.000 | 0.000 |
| | D | 0.000 | 0.000 | 0.000 | 0.000 |

# Results

## Results Summary

| Arm | Max RFC | Max Delay (min) | Max Queue (Veh) | Max LOS | Total Demand (Veh/hr) | Total Arrivals (Veh) | Total Queueing Delay (Veh-min) | Average Queueing Delay (min) | Rate Of Queueing Delay (Veh-min/min) | Inclusive Queueing Total Delay (Veh-min) | Inclusive Queueing Average Delay (min) | Slope | Intercept (PCU/hr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 0.20 | 0.05 | 0.26 | A | 268.86 | 403.29 | 18.13 | 0.04 | 0.20 | 18.13 | 0.04 | 0.670 | 1763.569 |
| B | 0.58 | 0.12 | 1.36 | A | 565.25 | 847.88 | 84.08 | 0.10 | 0.93 | 84.09 | 0.10 | 0.555 | 1320.003 |
| C | 0.38 | 0.09 | 0.61 | A | 360.62 | 540.94 | 40.33 | 0.07 | 0.45 | 40.33 | 0.07 | 0.594 | 1415.633 |
| D | 0.05 | 0.10 | 0.06 | A | 27.53 | 41.29 | 3.85 | 0.09 | 0.04 | 3.85 | 0.09 | 0.503 | 1007.039 |

## Main Results

### Main results: (07:45-08:00)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 220.59 | 55.15 | 219.97 | 368.57 | 185.90 | 0.00 | 1638.99 | 1264.67 | 0.135 | 0.00 | 0.16 |
| B | 463.76 | 115.94 | 461.32 | 222.68 | 183.18 | 0.00 | 1218.37 | 735.69 | 0.381 | 0.00 | 0.61 |
| C | 295.87 | 73.97 | 294.61 | 324.62 | 319.88 | 0.00 | 1225.67 | 1007.10 | 0.241 | 0.00 | 0.32 |
| D | 22.59 | 5.65 | 22.46 | 82.48 | 532.01 | 0.00 | 739.54 | 310.28 | 0.031 | 0.00 | 0.03 |

### Main results: (08:00-08:15)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 263.40 | 65.85 | 263.24 | 441.62 | 222.68 | 0.00 | 1614.34 | 1264.67 | 0.163 | 0.16 | 0.19 |
| B | 553.77 | 138.44 | 552.81 | 266.71 | 219.22 | 0.00 | 1198.38 | 735.69 | 0.462 | 0.61 | 0.85 |
| C | 353.30 | 88.32 | 352.88 | 388.77 | 383.26 | 0.00 | 1188.03 | 1007.10 | 0.297 | 0.32 | 0.42 |
| D | 26.97 | 6.74 | 26.93 | 98.77 | 637.36 | 0.00 | 686.56 | 310.28 | 0.039 | 0.03 | 0.04 |

### Main results: (08:15-08:30)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 322.60 | 80.65 | 322.35 | 540.33 | 272.58 | 0.00 | 1580.90 | 1264.67 | 0.204 | 0.19 | 0.26 |
| B | 678.23 | 169.56 | 676.22 | 326.48 | 268.45 | 0.00 | 1171.07 | 735.69 | 0.579 | 0.85 | 1.35 |
| C | 432.70 | 108.18 | 431.95 | 475.78 | 468.88 | 0.00 | 1137.18 | 1007.10 | 0.381 | 0.42 | 0.61 |
| D | 33.03 | 8.26 | 32.97 | 120.89 | 779.94 | 0.00 | 614.87 | 310.28 | 0.054 | 0.04 | 0.06 |

### Main results: (08:30-08:45)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 322.60 | 80.65 | 322.60 | 541.67 | 273.05 | 0.00 | 1580.59 | 1264.67 | 0.204 | 0.26 | 0.26 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B | 678.23 | 169.56 | 678.18 | 326.99 | 268.65 | 0.00 | 1170.95 | 735.69 | 0.579 | 1.35 | 1.36 |
| C | 432.70 | 108.18 | 432.69 | 476.72 | 470.11 | 0.00 | 1136.46 | 1007.10 | 0.381 | 0.61 | 0.61 |
| D | 33.03 | 8.26 | 33.03 | 121.11 | 781.69 | 0.00 | 613.99 | 310.28 | 0.054 | 0.06 | 0.06 |

### Main results: (08:45-09:00)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 263.40 | 65.85 | 263.64 | 443.65 | 223.42 | 0.00 | 1613.85 | 1264.67 | 0.163 | 0.26 | 0.20 |
| B | 553.77 | 138.44 | 555.75 | 267.51 | 219.55 | 0.00 | 1198.19 | 735.69 | 0.462 | 1.36 | 0.87 |
| C | 353.30 | 88.32 | 354.04 | 390.20 | 385.10 | 0.00 | 1186.94 | 1007.10 | 0.298 | 0.61 | 0.43 |
| D | 26.97 | 6.74 | 27.03 | 99.10 | 640.03 | 0.00 | 685.22 | 310.28 | 0.039 | 0.06 | 0.04 |

### Main results: (09:00-09:15)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 220.59 | 55.15 | 220.74 | 371.11 | 186.98 | 0.00 | 1638.27 | 1264.67 | 0.135 | 0.20 | 0.16 |
| B | 463.76 | 115.94 | 464.75 | 223.89 | 183.83 | 0.00 | 1218.01 | 735.69 | 0.381 | 0.87 | 0.62 |
| C | 295.87 | 73.97 | 296.30 | 326.48 | 322.10 | 0.00 | 1224.35 | 1007.10 | 0.242 | 0.43 | 0.32 |
| D | 22.59 | 5.65 | 22.62 | 82.93 | 535.46 | 0.00 | 737.80 | 310.28 | 0.031 | 0.04 | 0.03 |

## Queueing Delay Results

### Queueing Delay results: (07:45-08:00)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 2.29 | 0.15 | 0.042 | A | A |
| B | 8.86 | 0.59 | 0.079 | A | A |
| C | 4.64 | 0.31 | 0.064 | A | A |
| D | 0.46 | 0.03 | 0.084 | A | A |

### Queueing Delay results: (08:00-08:15)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 2.88 | 0.19 | 0.044 | A | A |
| B | 12.40 | 0.83 | 0.093 | A | A |
| C | 6.19 | 0.41 | 0.072 | A | A |
| D | 0.60 | 0.04 | 0.091 | A | A |

### Queueing Delay results: (08:15-08:30)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 3.78 | 0.25 | 0.048 | A | A |
| B | 19.45 | 1.30 | 0.121 | A | A |
| C | 8.91 | 0.59 | 0.085 | A | A |
| D | 0.83 | 0.06 | 0.103 | A | A |

### Queueing Delay results: (08:30-08:45)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 3.84 | 0.26 | 0.048 | A | A |
| B | 20.38 | 1.36 | 0.122 | A | A |
| C | 9.16 | 0.61 | 0.085 | A | A |
| D | 0.85 | 0.06 | 0.103 | A | A |

### Queueing Delay results: (08:45-09:00)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 2.97 | 0.20 | 0.044 | A | A |
| B | 13.47 | 0.90 | 0.094 | A | A |
| C | 6.54 | 0.44 | 0.072 | A | A |
| D | 0.63 | 0.04 | 0.091 | A | A |

### Queueing Delay results: (09:00-09:15)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 2.37 | 0.16 | 0.042 | A | A |
| B | 9.53 | 0.64 | 0.080 | A | A |
| C | 4.89 | 0.33 | 0.065 | A | A |
| D | 0.48 | 0.03 | 0.084 | A | A |

# Overview: Standard Roundabout Geometry

## Standard 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 | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|---|---|---|---|
| A | 3.65 | 6.40 | 19.20 | 25.00 | 40.00 | 18.00 | | 0.670 | 1763.569 |
| B | 3.00 | 5.50 | 12.50 | 15.00 | 40.00 | 36.00 | | 0.555 | 1320.003 |
| C | 3.65 | 5.50 | 5.50 | 25.00 | 40.00 | 24.50 | | 0.594 | 1415.633 |
| D | 2.65 | 5.40 | 2.90 | 15.00 | 40.00 | 26.00 | | 0.503 | 1007.039 |

# Overview: Time Segment Results

## Time Segment Results

| Time Segment | Arm | Demand (Veh/hr) | Capacity (Veh/hr) | RFC | Pedestrian Demand (Ped/hr) | Start Queue (Veh) | End Queue (Veh) | Queueing Total Delay (Veh-min) | Geometric Total Delay (Veh-min) | Average Delay Per Arriving Vehicle (min) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A | 220.59 | 1638.99 | 0.135 | 0.00 | 0.00 | 0.16 | 2.29 | (0.02) | 0.042 |
| 1 | B | 463.76 | 1218.37 | 0.381 | 0.00 | 0.00 | 0.61 | 8.86 | (0.02) | 0.079 |
| 1 | C | 295.87 | 1225.67 | 0.241 | 0.00 | 0.00 | 0.32 | 4.64 | (0.02) | 0.064 |
| 1 | D | 22.59 | 739.54 | 0.031 | 0.00 | 0.00 | 0.03 | 0.46 | (0.02) | 0.084 |
| 2 | A | 263.40 | 1614.34 | 0.163 | 0.00 | 0.16 | 0.19 | 2.88 | (0.02) | 0.044 |
| 2 | B | 553.77 | 1198.38 | 0.462 | 0.00 | 0.61 | 0.85 | 12.40 | (0.02) | 0.093 |
| 2 | C | 353.30 | 1188.03 | 0.297 | 0.00 | 0.32 | 0.42 | 6.19 | (0.02) | 0.072 |
| 2 | D | 26.97 | 686.56 | 0.039 | 0.00 | 0.03 | 0.04 | 0.60 | (0.02) | 0.091 |
| 3 | A | 322.60 | 1580.90 | 0.204 | 0.00 | 0.19 | 0.26 | 3.78 | (0.02) | 0.048 |
| 3 | B | 678.23 | 1171.07 | 0.579 | 0.00 | 0.85 | 1.35 | 19.45 | (0.02) | 0.121 |
| 3 | C | 432.70 | 1137.18 | 0.381 | 0.00 | 0.42 | 0.61 | 8.91 | (0.02) | 0.085 |
| 3 | D | 33.03 | 614.87 | 0.054 | 0.00 | 0.04 | 0.06 | 0.83 | (0.02) | 0.103 |
| 4 | A | 322.60 | 1580.59 | 0.204 | 0.00 | 0.26 | 0.26 | 3.84 | (0.02) | 0.048 |
| 4 | B | 678.23 | 1170.95 | 0.579 | 0.00 | 1.35 | 1.36 | 20.38 | (0.02) | 0.122 |
| 4 | C | 432.70 | 1136.46 | 0.381 | 0.00 | 0.61 | 0.61 | 9.16 | (0.02) | 0.085 |
| 4 | D | 33.03 | 613.99 | 0.054 | 0.00 | 0.06 | 0.06 | 0.85 | (0.02) | 0.103 |
| 5 | A | 263.40 | 1613.85 | 0.163 | 0.00 | 0.26 | 0.20 | 2.97 | (0.02) | 0.044 |
| 5 | B | 553.77 | 1198.19 | 0.462 | 0.00 | 1.36 | 0.87 | 13.47 | (0.02) | 0.094 |
| 5 | C | 353.30 | 1186.94 | 0.298 | 0.00 | 0.61 | 0.43 | 6.54 | (0.02) | 0.072 |
| 5 | D | 26.97 | 685.22 | 0.039 | 0.00 | 0.06 | 0.04 | 0.63 | (0.02) | 0.091 |
| 6 | A | 220.59 | 1638.27 | 0.135 | 0.00 | 0.20 | 0.16 | 2.37 | (0.02) | 0.042 |
| 6 | B | 463.76 | 1218.01 | 0.381 | 0.00 | 0.87 | 0.62 | 9.53 | (0.02) | 0.080 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | C | 295.87 | 1224.35 | 0.242 | 0.00 | 0.43 | 0.32 | 4.89 | (0.02) | 0.065 |
| 6 | D | 22.59 | 737.80 | 0.031 | 0.00 | 0.04 | 0.03 | 0.48 | (0.02) | 0.084 |

# A1 - (Default Analysis Set) - D2 - 2031 PM Peak, PM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Description | Include In Report | Use Specific Demand Set | Demand Set | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|
| (Default Analysis Set) | | Yes | | (D1) | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Locked | Run Automatically | Use Relationship | Relationship | Start Time (HH:mm) | Finish Time (HH:mm) | Time Period Length (min) | Time Segment Length (min) | Traffic Profile Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 PM Peak, PM | 2031 PM Peak | PM | | | Yes | | | 16:45 | 18:15 | 90 | 15 | Varies by Arm |

# Roundabout Network

## Roundabout Type(s)

| ID | Name | Arm Order | Roundabout Type | Grade Separated | Large Roundabout | Do Geometric Delay |
|---|---|---|---|---|---|---|
| 1 | (untitled) | A,B,C,D | Standard | | | |

## Roundabout Network Options

| Driving Side | Lighting | Road Surface | In London |
|---|---|---|---|
| Left | Normal/unknown | ((Mini-roundabouts only)) | |

# Arms

## Arms

| ID | Name | Description |
|---|---|---|
| A | A28 (SWB) | |
| B | Site Access | |
| C | A28 (NEB) | |
| D | Sandy Lane | |

## Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|
| A | 0.00 | 99999.00 | | 0.00 |
| B | 0.00 | 99999.00 | | 0.00 |
| C | 0.00 | 99999.00 | | 0.00 |
| D | 0.00 | 99999.00 | | 0.00 |

## Standard Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|
| A | 3.65 | 6.40 | 19.20 | 25.00 | 40.00 | 18.00 | |
| B | 3.00 | 5.50 | 12.50 | 15.00 | 40.00 | 36.00 | |
| C | 3.65 | 5.50 | 5.50 | 25.00 | 40.00 | 24.50 | |
| D | 2.65 | 5.40 | 2.90 | 15.00 | 40.00 | 26.00 | |

### Pedestrian Crossings

| Arm | Crossing Type |
|---|---|
| A | None |
| B | None |
| C | None |
| D | None |

### Arm Slope/ Intercept and Capacity

#### Slope and Intercept used in model

| Arm | Enter Directly | Slope | Intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|
| A | | ((calculated)) | ((calculated)) | 0.670 | 1763.569 |
| B | | ((calculated)) | ((calculated)) | 0.555 | 1320.003 |
| C | | ((calculated)) | ((calculated)) | 0.594 | 1415.633 |
| D | | ((calculated)) | ((calculated)) | 0.503 | 1007.039 |

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

# Traffic Flows

### Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Yes | HV Percentages | 2.00 | | | | Yes | Yes |

# Entry Flows

### General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (Veh/hr) | Flow Scaling Factor (%) | PHF |
|---|---|---|---|---|---|
| A | ONE HOUR | Yes | 483.00 | 100.000 | N/A |
| B | ONE HOUR | Yes | 252.00 | 100.000 | N/A |
| C | ONE HOUR | Yes | 514.00 | 100.000 | N/A |
| D | ONE HOUR | Yes | 41.00 | 100.000 | N/A |

# Direct/Resultant Flows

### Direct Flows Data

| Time Segment | Arm | Direct Demand Entry Flow (Veh/hr) | DirectDemandEntryFlowInPCU (PCU/hr) | Direct Demand Exit Flow (Veh/hr) | Direct Demand Pedestrian Flow (Ped/hr) |
|---|---|---|---|---|---|
| 1 | A | 363.63 | 363.63 | N/A | N/A |
| 1 | B | 189.72 | 189.72 | N/A | N/A |
| 1 | C | 386.97 | 386.97 | N/A | N/A |
| 1 | D | 30.87 | 30.87 | N/A | N/A |
| 2 | A | 434.21 | 434.21 | N/A | N/A |

| | | | | | |
|---|---|---|---|---|---|
| 2 | B | 226.54 | 226.54 | N/A | N/A |
| 2 | C | 462.08 | 462.08 | N/A | N/A |
| 2 | D | 36.86 | 36.86 | N/A | N/A |
| 3 | A | 531.79 | 531.79 | N/A | N/A |
| 3 | B | 277.46 | 277.46 | N/A | N/A |
| 3 | C | 565.92 | 565.92 | N/A | N/A |
| 3 | D | 45.14 | 45.14 | N/A | N/A |
| 4 | A | 531.79 | 531.79 | N/A | N/A |
| 4 | B | 277.46 | 277.46 | N/A | N/A |
| 4 | C | 565.92 | 565.92 | N/A | N/A |
| 4 | D | 45.14 | 45.14 | N/A | N/A |
| 5 | A | 434.21 | 434.21 | N/A | N/A |
| 5 | B | 226.54 | 226.54 | N/A | N/A |
| 5 | C | 462.08 | 462.08 | N/A | N/A |
| 5 | D | 36.86 | 36.86 | N/A | N/A |
| 6 | A | 363.63 | 363.63 | N/A | N/A |
| 6 | B | 189.72 | 189.72 | N/A | N/A |
| 6 | C | 386.97 | 386.97 | N/A | N/A |
| 6 | D | 30.87 | 30.87 | N/A | N/A |

# Turning Proportions

### Turning Counts or Proportions (Veh/hr) - Roundabout 1 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 0.000 | 266.000 | 194.000 | 23.000 |
| | B | 19.000 | 0.000 | 200.000 | 33.000 |
| | C | 271.000 | 243.000 | 0.000 | 0.000 |
| | D | 29.000 | 12.000 | 0.000 | 0.000 |

### Turning Proportions (Veh) - Roundabout 1 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 0.00 | 0.55 | 0.40 | 0.05 |
| | B | 0.08 | 0.00 | 0.79 | 0.13 |
| | C | 0.53 | 0.47 | 0.00 | 0.00 |
| | D | 0.71 | 0.29 | 0.00 | 0.00 |

# Vehicle Mix

### Average PCU Per Vehicle - Roundabout 1 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 1.000 | 1.000 | 1.000 | 1.000 |
| | B | 1.000 | 1.000 | 1.000 | 1.000 |
| | C | 1.000 | 1.000 | 1.000 | 1.000 |
| | D | 1.000 | 1.000 | 1.000 | 1.000 |

### Heavy Vehicle Percentages - Roundabout 1 (for whole period)

| | To | | | |
|---|---|---|---|---|
| | A | B | C | D |

| | | | | | |
|---|---|---|---|---|---|
| From | A | 0.000 | 0.000 | 0.000 | 0.000 |
| | B | 0.000 | 0.000 | 0.000 | 0.000 |
| | C | 0.000 | 0.000 | 0.000 | 0.000 |
| | D | 0.000 | 0.000 | 0.000 | 0.000 |

# Results

## Results Summary

| Arm | Max RFC | Max Delay (min) | Max Queue (Veh) | Max LOS | Total Demand (Veh/hr) | Total Arrivals (Veh) | Total Queueing Delay (Veh-min) | Average Queueing Delay (min) | Rate Of Queueing Delay (Veh-min/min) | Inclusive Queueing Total Delay (Veh-min) | Inclusive Queueing Average Delay (min) | Slope | Intercept (PCU/hr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 0.34 | 0.06 | 0.51 | A | 443.21 | 664.81 | 34.73 | 0.05 | 0.39 | 34.74 | 0.05 | 0.670 | 1763.569 |
| B | 0.23 | 0.07 | 0.30 | A | 231.24 | 346.86 | 21.39 | 0.06 | 0.24 | 21.39 | 0.06 | 0.555 | 1320.003 |
| C | 0.41 | 0.07 | 0.70 | A | 471.66 | 707.48 | 47.65 | 0.07 | 0.53 | 47.66 | 0.07 | 0.594 | 1415.633 |
| D | 0.06 | 0.09 | 0.07 | A | 37.62 | 56.43 | 4.71 | 0.08 | 0.05 | 4.71 | 0.08 | 0.503 | 1007.039 |

## Main Results

### Main results: (16:45-17:00)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 363.63 | 90.91 | 362.49 | 239.18 | 191.20 | 0.00 | 1635.44 | 1299.21 | 0.222 | 0.00 | 0.28 |
| B | 189.72 | 47.43 | 188.99 | 390.83 | 162.86 | 0.00 | 1229.65 | 996.16 | 0.154 | 0.00 | 0.18 |
| C | 386.97 | 96.74 | 385.42 | 295.59 | 56.26 | 0.00 | 1382.22 | 1256.82 | 0.280 | 0.00 | 0.39 |
| D | 30.87 | 7.72 | 30.71 | 42.01 | 399.67 | 0.00 | 806.08 | 337.32 | 0.038 | 0.00 | 0.04 |

### Main results: (17:00-17:15)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 434.21 | 108.55 | 433.88 | 286.49 | 229.01 | 0.00 | 1610.10 | 1299.21 | 0.270 | 0.28 | 0.37 |
| B | 226.54 | 56.64 | 226.35 | 467.95 | 194.93 | 0.00 | 1211.85 | 996.16 | 0.187 | 0.18 | 0.23 |
| C | 462.08 | 115.52 | 461.61 | 353.92 | 67.37 | 0.00 | 1375.63 | 1256.82 | 0.336 | 0.39 | 0.50 |
| D | 36.86 | 9.21 | 36.82 | 50.30 | 478.68 | 0.00 | 766.35 | 337.32 | 0.048 | 0.04 | 0.05 |

### Main results: (17:15-17:30)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 531.79 | 132.95 | 531.24 | 350.74 | 280.37 | 0.00 | 1575.68 | 1299.21 | 0.338 | 0.37 | 0.51 |
| B | 277.46 | 69.36 | 277.16 | 572.93 | 238.67 | 0.00 | 1187.59 | 996.16 | 0.234 | 0.23 | 0.30 |
| C | 565.92 | 141.48 | 565.13 | 433.34 | 82.49 | 0.00 | 1366.65 | 1256.82 | 0.414 | 0.50 | 0.70 |
| D | 45.14 | 11.29 | 45.07 | 61.59 | 586.03 | 0.00 | 712.37 | 337.32 | 0.063 | 0.05 | 0.07 |

### Main results: (17:30-17:45)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 531.79 | 132.95 | 531.79 | 351.22 | 280.75 | 0.00 | 1575.42 | 1299.21 | 0.338 | 0.51 | 0.51 |
| B | 277.46 | 69.36 | 277.45 | 573.62 | 238.92 | 0.00 | 1187.45 | 996.16 | 0.234 | 0.30 | 0.30 |
| C | 565.92 | 141.48 | 565.91 | 433.80 | 82.58 | 0.00 | 1366.59 | 1256.82 | 0.414 | 0.70 | 0.70 |
| D | 45.14 | 11.29 | 45.14 | 61.66 | 586.83 | 0.00 | 711.97 | 337.32 | 0.063 | 0.07 | 0.07 |

### Main results: (17:45-18:00)

| Arm | Demand | Arrivals | Entry Flow | Exit Flow | Circulating Flow | Pedestrian | Capacity | Saturation | | Start | End |
|---|---|---|---|---|---|---|---|---|---|---|---|

| Arm | (Veh/hr) | (Veh) | (Veh/hr) | (Veh/hr) | (Veh/hr) | Demand (Ped/hr) | (Veh/hr) | Capacity (Veh/hr) | RFC | Queue (Veh) | Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 434.21 | 108.55 | 434.76 | 287.25 | 229.63 | 0.00 | 1609.68 | 1299.21 | 0.270 | 0.51 | 0.37 |
| B | 226.54 | 56.64 | 226.83 | 469.06 | 195.32 | 0.00 | 1211.63 | 996.16 | 0.187 | 0.30 | 0.23 |
| C | 462.08 | 115.52 | 462.85 | 354.65 | 67.51 | 0.00 | 1375.54 | 1256.82 | 0.336 | 0.70 | 0.51 |
| D | 36.86 | 9.21 | 36.92 | 50.41 | 479.96 | 0.00 | 765.71 | 337.32 | 0.048 | 0.07 | 0.05 |

### Main results: (18:00-18:15)

| Arm | Demand (Veh/hr) | Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 363.63 | 90.91 | 363.96 | 240.45 | 192.21 | 0.00 | 1634.76 | 1299.21 | 0.222 | 0.37 | 0.29 |
| B | 189.72 | 47.43 | 189.91 | 392.66 | 163.52 | 0.00 | 1229.28 | 996.16 | 0.154 | 0.23 | 0.18 |
| C | 386.97 | 96.74 | 387.44 | 296.91 | 56.52 | 0.00 | 1382.07 | 1256.82 | 0.280 | 0.51 | 0.39 |
| D | 30.87 | 7.72 | 30.91 | 42.20 | 401.76 | 0.00 | 805.03 | 337.32 | 0.038 | 0.05 | 0.04 |

## Queueing Delay Results

### Queueing Delay results: (16:45-17:00)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 4.19 | 0.28 | 0.047 | A | A |
| B | 2.67 | 0.18 | 0.058 | A | A |
| C | 5.67 | 0.38 | 0.060 | A | A |
| D | 0.58 | 0.04 | 0.077 | A | A |

### Queueing Delay results: (17:00-17:15)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 5.44 | 0.36 | 0.051 | A | A |
| B | 3.38 | 0.23 | 0.061 | A | A |
| C | 7.41 | 0.49 | 0.066 | A | A |
| D | 0.74 | 0.05 | 0.082 | A | A |

### Queueing Delay results: (17:15-17:30)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 7.47 | 0.50 | 0.057 | A | A |
| B | 4.47 | 0.30 | 0.066 | A | A |
| C | 10.28 | 0.69 | 0.075 | A | A |
| D | 0.99 | 0.07 | 0.090 | A | A |

### Queueing Delay results: (17:30-17:45)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 7.61 | 0.51 | 0.057 | A | A |
| B | 4.56 | 0.30 | 0.066 | A | A |
| C | 10.54 | 0.70 | 0.075 | A | A |
| D | 1.01 | 0.07 | 0.090 | A | A |

### Queueing Delay results: (17:45-18:00)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 5.65 | 0.38 | 0.051 | A | A |
| B | 3.52 | 0.23 | 0.061 | A | A |
| C | 7.79 | 0.52 | 0.066 | A | A |
| D | 0.78 | 0.05 | 0.082 | A | A |

### Queueing Delay results: (18:00-18:15)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (min) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| A | 4.37 | 0.29 | 0.047 | A | A |
| B | 2.79 | 0.19 | 0.058 | A | A |
| C | 5.96 | 0.40 | 0.060 | A | A |
| D | 0.61 | 0.04 | 0.078 | A | A |

# Overview: Standard Roundabout Geometry

## Standard 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 | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|---|---|---|---|
| A | 3.65 | 6.40 | 19.20 | 25.00 | 40.00 | 18.00 | | 0.670 | 1763.569 |
| B | 3.00 | 5.50 | 12.50 | 15.00 | 40.00 | 36.00 | | 0.555 | 1320.003 |
| C | 3.65 | 5.50 | 5.50 | 25.00 | 40.00 | 24.50 | | 0.594 | 1415.633 |
| D | 2.65 | 5.40 | 2.90 | 15.00 | 40.00 | 26.00 | | 0.503 | 1007.039 |

# Overview: Time Segment Results

## Time Segment Results

| Time Segment | Arm | Demand (Veh/hr) | Capacity (Veh/hr) | RFC | Pedestrian Demand (Ped/hr) | Start Queue (Veh) | End Queue (Veh) | Queueing Total Delay (Veh-min) | Geometric Total Delay (Veh-min) | Average Delay Per Arriving Vehicle (min) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A | 363.63 | 1635.44 | 0.222 | 0.00 | 0.00 | 0.28 | 4.19 | (0.02) | 0.047 |
| 1 | B | 189.72 | 1229.65 | 0.154 | 0.00 | 0.00 | 0.18 | 2.67 | (0.02) | 0.058 |
| 1 | C | 386.97 | 1382.22 | 0.280 | 0.00 | 0.00 | 0.39 | 5.67 | (0.02) | 0.060 |
| 1 | D | 30.87 | 806.08 | 0.038 | 0.00 | 0.00 | 0.04 | 0.58 | (0.02) | 0.077 |
| 2 | A | 434.21 | 1610.10 | 0.270 | 0.00 | 0.28 | 0.37 | 5.44 | (0.02) | 0.051 |
| 2 | B | 226.54 | 1211.85 | 0.187 | 0.00 | 0.18 | 0.23 | 3.38 | (0.02) | 0.061 |
| 2 | C | 462.08 | 1375.63 | 0.336 | 0.00 | 0.39 | 0.50 | 7.41 | (0.02) | 0.066 |
| 2 | D | 36.86 | 766.35 | 0.048 | 0.00 | 0.04 | 0.05 | 0.74 | (0.02) | 0.082 |
| 3 | A | 531.79 | 1575.68 | 0.338 | 0.00 | 0.37 | 0.51 | 7.47 | (0.02) | 0.057 |
| 3 | B | 277.46 | 1187.59 | 0.234 | 0.00 | 0.23 | 0.30 | 4.47 | (0.02) | 0.066 |
| 3 | C | 565.92 | 1366.65 | 0.414 | 0.00 | 0.50 | 0.70 | 10.28 | (0.02) | 0.075 |
| 3 | D | 45.14 | 712.37 | 0.063 | 0.00 | 0.05 | 0.07 | 0.99 | (0.02) | 0.090 |
| 4 | A | 531.79 | 1575.42 | 0.338 | 0.00 | 0.51 | 0.51 | 7.61 | (0.02) | 0.057 |
| 4 | B | 277.46 | 1187.45 | 0.234 | 0.00 | 0.30 | 0.30 | 4.56 | (0.02) | 0.066 |
| 4 | C | 565.92 | 1366.59 | 0.414 | 0.00 | 0.70 | 0.70 | 10.54 | (0.02) | 0.075 |
| 4 | D | 45.14 | 711.97 | 0.063 | 0.00 | 0.07 | 0.07 | 1.01 | (0.02) | 0.090 |
| 5 | A | 434.21 | 1609.68 | 0.270 | 0.00 | 0.51 | 0.37 | 5.65 | (0.02) | 0.051 |
| 5 | B | 226.54 | 1211.63 | 0.187 | 0.00 | 0.30 | 0.23 | 3.52 | (0.02) | 0.061 |
| 5 | C | 462.08 | 1375.54 | 0.336 | 0.00 | 0.70 | 0.51 | 7.79 | (0.02) | 0.066 |
| 5 | D | 36.86 | 765.71 | 0.048 | 0.00 | 0.07 | 0.05 | 0.78 | (0.02) | 0.082 |
| 6 | A | 363.63 | 1634.76 | 0.222 | 0.00 | 0.37 | 0.29 | 4.37 | (0.02) | 0.047 |
| 6 | B | 189.72 | 1229.28 | 0.154 | 0.00 | 0.23 | 0.18 | 2.79 | (0.02) | 0.058 |
| 6 | C | 386.97 | 1382.07 | 0.280 | 0.00 | 0.51 | 0.39 | 5.96 | (0.02) | 0.060 |
| 6 | D | 30.87 | 805.03 | 0.038 | 0.00 | 0.05 | 0.04 | 0.61 | (0.02) | 0.078 |