Appendix 12
TN7: A45 Queen Eleanor Gyratory and Wootton Interchange Technical Note

M1J15 NORTHAMPTON GATEWAY
STRATEGIC RAIL FREIGHT INTERCHANGE

TECHNICAL NOTE 7: A45 QUEEN ELEANOR GYRATORY AND WOOTTON INTERCHANGE

ADC Infrastructure Limited
Western House
Western Street
Nottingham
NG1 3AZ

www.ADCinfrastructure.com

project number: ADC1475			report reference: ADC1475 TN7
version	date	author	comments
1	18/08/2017	Mark Higgins	internal draft
2	21/08/2017	Mark Higgins	Client draft
3	31/08/2017	Mark Higgins	issue to Transport Working Group

CONTENTS

DRAWINGS

ADC-1475-SK03 C - Queen Eleanor Improvement

APPENDICES

Appendix A	NSTM2 traffic data
Appendix B	Wootton interchange Arcady modelling results
Appendix C	Northampton Growth Management Scheme proposals
Appendix D	Queen Eleanor LinSig modelling results

1.0 INTRODUCTION

1.1 ADC Infrastructure Ltd is commissioned by Roxhill (Junction 15) Ltd to provide transport advice with regards to their Nationally Significant Infrastructure Project (NSIP) for the development of a Strategic Rail Freight Interchange (SRFI) facility adjacent to M1 Junction 15 in Northamptonshire (known as Northampton Gateway SRFI).

1.2 It was agreed with the Transport Working Group that the transport impacts of the Northampton Gateway SRFI development be modelled using the Northamptonshire Strategic Transport Model (NSTM2) which is maintained on Northamptonshire County Council's (NCC's) behalf by WSP.

1.3 Full details of the modelling methodology and the NSTM2 scenarios to be tested are provided at Technical Note 1(ref. ADC1475 TN1 v2). The outputs of the NSTM2 are being analysed to identify the impacts of the proposed development and judge the requirements for mitigation across the transport network.

1.4 This Technical Note therefore presents a summary of the analysis of the A45 corridor between M1 Junction 15, the Wootton Interchange and the Queen Elanor gyratory, based on NSTM2 traffic data taken from modelling scenarios 2031 D1 (reference case) and 2031 J1c (development case). Please note that the traffic data used will change following further iterations of the NSTM2 and/or the availability of the 02/2013 Circular compliant assessment scenarios. Therefore, this document is intended to remain 'live' during the period of the Environmental Impact Assessment for the development, detailing the interactive refinement of the design.

2.0 NSTM2 TRAFFIC FLOWS

2.1 Traffic flows for the 2031 reference case (scenario D1 – no development and no mitigation) and 2031 development case (scenario J1c – with development and the proposed M1J15, M1J15a, Roade bypass and A508/Courteenhall left-in left-out mitigation schemes) have been provided by WSP at all junctions of interest within the current study area of the development. Also provided are:

- flow difference plots showing the change in traffic flows between the D1 and J1c scenarios,
- reassignment plots showing the reassignment of background traffic in the J1c scenario due to the effects of the development scheme (including highway mitigation), and
- development traffic plots showing where the development traffic is routeing.

2.2 This data (provided at **Appendix A**), along with volume to capacity assessment plots, has been interrogated to determine the scale, location and cause of any remaining material impacts due to the combination of the development and associated highway mitigation schemes. This indicates potential impacts at the A45 Wootton Interchange and the A45 Queen Eleanor Interchange. Turning counts for these junctions were therefore extracted from the NSTM2. These are also provided at **Appendix A.**

Assessment of traffic reassignment

2.3 The development traffic plots show that the morning peak hour is busier than the evening peak hour in terms of arrivals at the site with circa. 350 vehicles arriving via the A45 (of which, circa. 250 vehicles are already on the A45 north of the Queen Eleanor gyratory).

2.4 Analysis of the data shows that the presence of the development traffic on the A45 in the morning peak hour, combined with the proposed schemes at M1J15 and M1J15a, results in some background traffic reassigning from the A45. Predominantly this traffic is now travelling on Newport Pagnell Road and the A5067 Mere Way via the Queen Eleanor gyratory, although some traffic is also using Rowtree Road via the Wootton Interchange. An extract from the flow reassignment plot is shown in **Figure 1**.

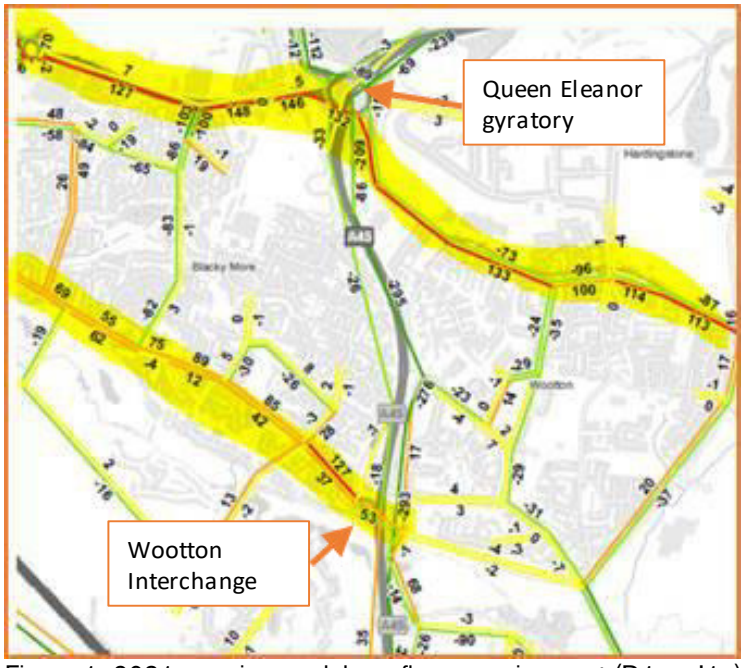


Figure 1: 2031 morning peak hour flow reassignment (D1 vs J1c)

2.5 When the changes to traffic flows at both M1J15 and M1J15a are considered it becomes clear that the majority of the A45 reassigned traffic intends to head north on the M1 and is now choosing to use M1J15a rather than M1J15. The proposed improvement to M1J15a will be attracting some of this traffic. However, further analysis of the data from the strategic model shows that whilst the A45 approach to M1J15 can accommodate some of the additional development traffic in the morning peak, it cannot accommodate it all and so some of the background traffic reassigns away from the A45.

2.6 It should be noted that whilst the NSTM2 (strategic) model indicates that the A45 approach to M1J15 would remain stressed in the morning peak, the VISSIM modelling (using an advanced traffic control system similar to that which will be employed on street) shows that much of the queueing on the A45 approach would be eliminated and therefore traffic might not choose to reassign away from the A45 as predicted by the more limited strategic model.

2.7 The evening peak is busiest for departures from the site, with the majority of development traffic routing to the A45. With the improvements to the A508 and M1J15, development and background traffic can reach the A45 much quicker and therefore background traffic is less likely to reassign, as shown on the extract from the evening peak reassignment plot at **Figure 2**. Indeed, the flow difference plot shown at **Appendix A** shows an overall reduction in traffic using the Queen Eleanor gyratory and Wootton Interchange junctions in the 2031 evening peak with the development in place.

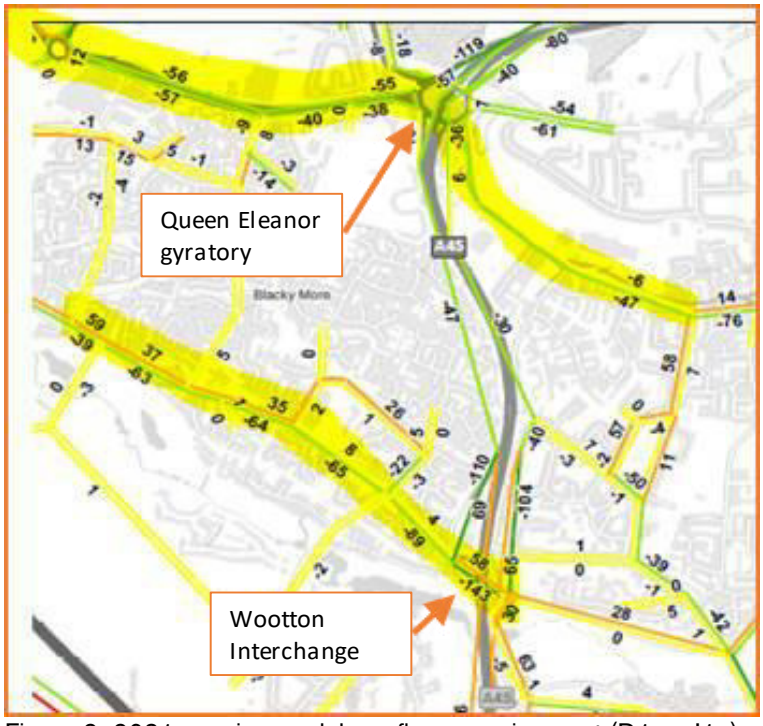


Figure 2: 2031 evening peak hour flow reassignment (D1 vs J1c)

2.8 Notwithstanding the above comments regarding the findings of the VISSIM modelling, the NSTM2 shows that traffic has reassigned to routes which use the Queen Eleanor gyratory and the Wootton interchange and therefore it is necessary to assess the operation of these junctions in more detail.

3.0 WOOTTON INTERCHANGE

3.1 The Wootton Interchange is a grade separated junction with a 'dumbbell' arrangement. There are relatively small priority roundabouts either side of the A45 with a single carriageway bridge connecting them. The junction provides access to the A45 and local residential areas to the east and west of the A45.

3.2 The junction has been modelled using Junctions 8 (Arcady) software and the 2031 reference case (D1) and 2031 development case (J1c) traffic flows extracted from the NSTM2. The results, provided at **Appendix B** and summarised below, show that the traffic demand would be significantly higher than capacity for both the northern and southern roundabouts in all modelled 2031 scenarios.

Northern Roundabout					
scenario		Wooldale Road	Rowtree Road	London Road	A45 N'bnd
2031 reference D1 - AM	RFC	93%	105%	0%	125%
	max queue (veh)	10.45	36.72	0	98.08
	max delay (secs)	36.00	119.56	0	479.80
2031 reference D1 - PM	RFC	117%	60%	0%	133%
	max queue (veh)	208.40	1.51	0	157.43
	max delay (secs)	630.71	7.78	0	604.73
2031 development J1c - AM	RFC	85%	120%	0%	123%
	max queue (veh)	5.23	111.63	0	98.82
	max delay (secs)	19.25	354.47	0	506.13
2031 development J1c - PM	RFC	118%	62%	0%	137%
	max queue (veh)	215.99	1.63	0	177.32
	max delay (secs)	649.46	8.10	0	678.52

Southern Roundabout					
scenario		Wooldale Road East	A45 S'bnd	Wooldale Road West	Berry Lane
2031 reference D1 - AM	RFC	30%	99%	110%	156%
	max queue (veh)	0.42	17.68	106.00	171.00
	max delay (secs)	6.26	79.06	256.89	1402.72
2031 reference D1 - PM	RFC	77%	128%	97%	208%
	max queue (veh)	3.23	93.90	16.82	389.50
	max delay (secs)	18.52	518.44	48.93	2974.52
2031 development J1c - AM	RFC	29%	89%	110%	163%
	max queue (veh)	0.41	6.74	157.13	222.69
	max delay (secs)	6.08	34.47	371.39	1765.80
2031 development J1c - PM	RFC	79%	127%	97%	178%
	max queue (veh)	3.62	89.02	18.57	248.70
	max delay (secs)	20.29	493.20	53.03	1950.89

3.3 In the 2031 development case morning peak hour the effect of the development is a further worsening in operation of both the northern and southern roundabouts, with the Rowtree Road, A45 northbound offslip and Berry Lane approaches particularly effected. During the morning peak period traffic flows across the whole junction increase by only 71 vehicles. However, with the Rowtree Road, A45 northbound offslip and Berry Lane approaches being already

significantly over capacity in the reference case, just a small increase in flow can lead to significant increases in queuing and delay.

3.4 Traffic flows at the southern roundabout are predicted to decrease during the 2031 development case in the evening peak (with the flows at the northern roundabout broadly remaining consistent) and therefore the performance of the southern roundabout improves. The improved performance of the southern roundabout releases more traffic across the bridge to the northern roundabout which suffers a slight drop in performance.

3.5 Mitigating the impact of the development on junction performance in the morning peak hour would not be simple. Most approaches to the junction are geometrically constrained, and improving one approach would simply push the problem onto another approach to the junction. In addition, the single carriageway bridge deck connecting the two roundabouts is a major constraint, particularly because most mitigation options would require two exit lanes onto the bridge.

3.6 As discussed in Section 2, the arm of the junction which experiences the largest increase in flow in the 2031 development case is Rowtree Road which is a traffic calmed route leading through a residential area and it would therefore not be desirable to promote an improvement scheme on this approach that could attract further increases in traffic flows. It is important to consider that the actual increases in traffic flow at this junction are relatively small and are largely due to reassigning traffic, not development traffic, and any proposals should seek to take traffic away from the Wootton Interchange, not draw more traffic in.

3.7 When also considering the findings of the VISSIM modelling, which shows that much of the queueing on the A45 approach would be eliminated and therefore traffic might not choose to reassign away from the A45 as predicted by the strategic model, it is not considered to be appropriate to provide physical mitigation measures at this location.

4.0 QUEEN ELEANOR GYRATORY

4.1 The Queen Eleanor gyratory is a partially signalised grade separated junction on the A45, south of Northampton City Centre. Both A45 offslip approaches, the Newport Pagnell approach and the A5067 Mere Way approach are subject to traffic signal control, with the London Road and Hardingstone Lane approaches being priority controlled.

4.2 The Northampton Growth Management Scheme (NGMS) for the A45 corridor proposes junction improvement works at the Queen Eleanor Gyratory. The preliminary drawing for the NGMS improvement at the Queen Eleanor gyratory is provided at **Appendix C** and shows that the following works would be delivered:

- Signal control at the A508 London Road approach
- Widening on the Newport Pagnell Road approach to enable three lanes for approximately 70 metres
- The control strategy to be upgraded to MOVA
- Provision of ramp-metering on the A45 northbound exit slip-road.

4.3 The NGMS improvement proposals are committed and have, were possible, been incorporated into the NSTM2 scenarios, including the for the 2031 D1 and 2031 J1c scenarios referred to in this report.

4.4 The traffic signal data for the existing gyratory has been obtained from NCC and this, along with the 2031 traffic data extracted from the NSTM for the reference case (D1) and with development case (J1c) scenarios, has been used to build a LinSig model. The model includes the NGMS proposals.

4.5 The model results, provided at **Appendix D** and summarised below, show that the junction would operate above its maximum capacity in both the reference case and development case scenarios (PRC values are negative indicating that one or more links are operating above 90% of their capacity).

Summary Results			
Scenario	Peak	PRC	Total Delay (pcuHr)
2031 Reference Case (D1)	AM Peak	-104.9%	921.12
	PM Peak	-109.3%	1221.79
2031 Development Case (J1c)	AM Peak	-111.0%	960.77
	PM Peak	-107.4%	1193.55
2031 Development Case + Mitigation (J1c)	AM Peak	-69.2%	780.77
	PM Peak	-45.0%	689.53

4.6 Similarly to the Wootton Interchange, and for the reasons described in Section 2 i.e. reassigned traffic onto Newport Pagnell Road and the A5067 Mere Way, the performance of the junction deteriorates by 6.1% in the morning peak hour (-104.9% vs -111.0%) with a slight improvement in performance in the evening peak hour (-109.3% vs -107.4%).

4.7 However, unlike Wootton Interchange, the A5067 Mere Way is dual carriageway and part of the Northampton Ring Road. It provides access to the A43 and the M1 via M1 J15a, which will be improved as part of the development proposals. For these reasons, it is considered an appropriate route for traffic to use as an alternative to access the M1 via M1 J15. Hence it is appropriate that the identified impact in the morning peak hour require mitigation as part of the development proposals.

4.8 A scheme of improvements works is therefore proposed at the junction. The proposed scheme is shown on drawing **ADC1475/SK03 C**.

4.9 The scheme provides widening on the A5067 Mere Way approach to lengthen the existing flared lane, and also reconfigures the lane allocation on the circulating carriageway to improve efficiency at the stoplines. The LinSig modelling results provided at **Appendix D** and summarised above show that the proposed scheme would deliver a significant improvement to junction performance in both the morning and evening peak hours when compared to the 2031 reference case (35.7% in the morning peak and 64.3% in the evening peak hour).

4.10 The proposed scheme would therefore mitigate the impact of the development on the Queen Eleanor gyratory. Further, since a better than nil detriment improvement is provided by the scheme, it is possible that a larger proportion of the reassigned A45 traffic could be drawn onto the route via Newport Pagnell Road and Mere Way, removing it from Wootton Interchange.

5.0 SUMMARY AND CONCLUSION

5.1 The Northamptonshire Strategic Transport Model (NSTM2) is being used to identify the impacts of the proposed Northampton Gateway Strategic Rail Freight Interchange development and judge the requirements for mitigation across the transport network. This Technical Note presents a summary of the analysis of the A45 corridor between M1 Junction 15, the Wootton Interchange and the Queen Elanor gyratory.

5.2 Analysis of the NSTM2 data for the 2031 reference case and 2031 development case scenarios shows that the presence of the development traffic on the A45 in the morning peak hour, combined with the proposed schemes at M1J15 and M1J15a, results in some background traffic reassigning from the A45 in the morning peak hour. This is largely traffic which intends to head north on the M1 and is now choosing to use M1J15a rather than M1J15, with the proposed improvement to M1J15a attracting some of this traffic. Predominantly the reassigned traffic is now travelling on Newport Pagnell Road and the A5067 Mere Way via the Queen Eleanor gyratory, although some traffic is also using Rowtree Road via the Wootton Interchange. There is far less traffic reassignment evident in the 2031evening peak hour and the flow difference plots show an overall reduction in traffic using the Queen Eleanor gyratory and Wootton Interchange with the development in place.

5.3 Since the NSTM2 shows that traffic has reassigned to routes which use the Queen Eleanor gyratory and the Wootton interchange the operation of these junctions has been considered in more detail.

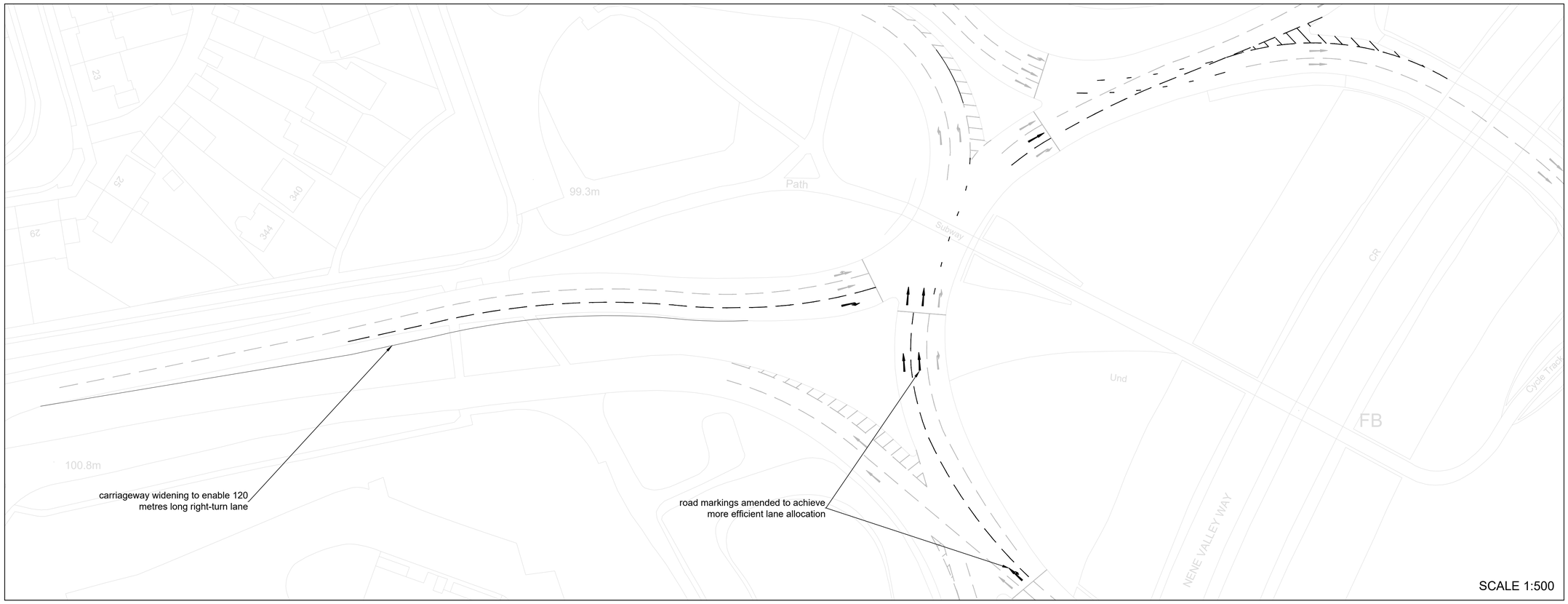
5.4 The Wootton Interchange has been modelled using Junctions 8 (Arcady) software and the results show that the traffic demand would be significantly higher than capacity for both the northern and southern roundabouts in 2031 reference case (D1) and 2031 development case (J1c) scenarios. In the 2031 morning peak hour, despite a relatively small increase in traffic flow, the effect of the development is a further worsening in operation of the junction. In the 2031 evening peak hour, traffic flows across the junction as a whole reduce and therefore the overall performance of the junction does not materially change.

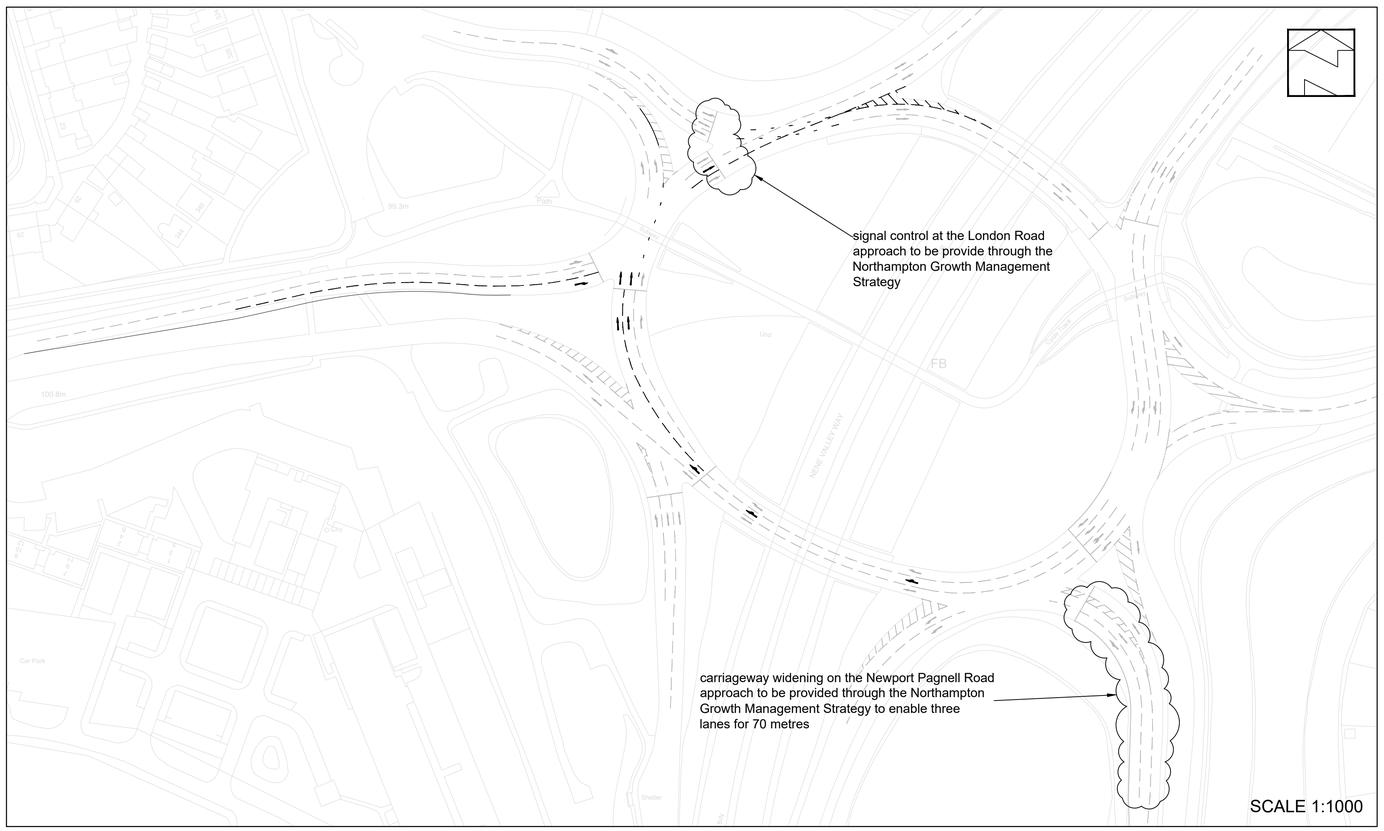
5.5 Mitigating the impact of the development on junction performance in the morning peak hour would not be easy due to constrained geometry on most approaches. Further, whilst Rowtree Road experiences the largest increase in traffic, it is a traffic calmed route leading through a residential area and therefore it would not be appropriate to promote an improvement scheme that could attract further increases in traffic flows.

5.6 The Queen Eleanor gyratory has been modelled using LinSig and the results show that the junction would operate above its maximum capacity in both the 2031 reference case and development case scenarios. Due to reassigned traffic onto Newport Pagnell Road and the A5067 Mere Way, the performance of the junction deteriorates by 6.1% in the morning peak hour, though there is a slight improvement in performance in the evening peak hour as traffic flows generally decrease.

5.7 The A5067 Mere Way is dual carriageway and part of the Northampton Ring Road and is considered an appropriate route for traffic to use to access the M1 via M1 J15a. Therefore, a scheme designed to mitigate the identified impact in the morning peak hour has been identified and the modelling results show that the proposed scheme would deliver a significantly better than nil-detriment improvement to junction performance in both the morning and evening peak hours when compared to the 2031 reference case).

DRAWINGS





Summary Results			
Scenario	**Peak**	**PRC**	**Total Delay (pcuHr)**
2031 Reference Case (D1)	AM Peak	-104.9%	921.12
	PM Peak	-109.3%	1221.79
2031 Development Case (J1c)	AM Peak	-111.0%	960.77
	PM Peak	-107.4%	1193.55
2031 Development Case + Mitigation	AM Peak	-69.2%	780.77
	PM Peak	-45.0%	689.53

Rev	Description	Date
C	Amended following revised modeling	30/08/17
B	Amended roadmarkings	16/08/17

Client:

ROXHILL

Project:

Northampton Gateway Strategic Rail Freight Interchange

Title:

Potential Queen Eleanor Gyratory Improvement Scheme

ADC INFRASTRUCTURE

Drg Size:	Scale:	Date:
A1	AS SHOWN	15/08/2017

Drg No: ADC1475/SK03

Rev: C

APPENDIX A

NSTM TRAFFIC DATA

Drawn By: ukrsc003

File: Q:\WSP_UK\WSP_D\Basing\Northants Multi Modal Transport Model\Analysis\Map Documents\Northampton Gateway\DS\DS SLA Local 0808217.mxd

Key

2031 Scenario J1c

AM Arrivals (Veh)

- 0 -10
- 10 - 25
- 25 - 50
- 50 - 75
- > 75

Shelfleys
Swan Valley
Rothersthorpe
Blacky More
Hardingstone
Collingtree
Milton Malsor
Grange Park
Preston Deanery
Hackleton
Churchill's
Alamein
Miller's
Quinton
Piddington
The Moors
The Wake Knot
Roade Cutting
Courteenhall
Hollow Quarter
Three Bridges Quarter

A5076
A5123
A45
A508
A43
M1
B526
15A

0 0.5 1 Kilometres

DRAWING STATUS:

CLIENT:

ARCHITECT:

PROJECT:
NORTHAMPTON M1 GATEWAY

TITLE:
LOCAL AREA

SCALE @ A1:	CHECKED:	APPROVED:
CAD FILE:	DESIGN-DRAWN:	DATE: -----
PROJECT No:	DRAWING No:	REV:

Drawn By: ukrsc003

File: Q:\WSP_UK\WSP_D\Basing\Northants Multi Modal Transport Model\Analysis\Map Documents\Northampton Gateway\DS\DS SLA Local 0808217.mxd

Key

2031 Scenario J1c

AM Departures (Veh)

- 0 -10
- 10 - 25
- 25 - 50
- 50 - 75
- > 75

Shelfleys
Hardingstone
Swan Valley
Blacky More
Rothersthorpe
Collingtree
Milton Malsor
Preston Deanery
Hackleton
Churchill's
Alamein
Piddington
Miller's
Quinton
Blisworth
The Moors
The Wake Knot
Roade Cutting
Courteenhall
Hollow Quarter
Three Bridges Quarter

A5123
15A
A45
B526
A508
A43
M1

0 0.5 1 Kilometres

DRAWING STATUS:

wsp

CLIENT:

ARCHITECT:

PROJECT:

NORTHAMPTON M1 GATEWAY

TITLE:

LOCAL AREA

SCALE @ A1:	CHECKED:	APPROVED:
CAD FILE:	DESIGN-DRAWN:	DATE: -----
PROJECT No:	DRAWING No:	REV:

Drawn By: ukrsc003

File: Q:\WSP_UK\WSP_D\Basing\Northants Multi Modal Transport Model\Analysis\Map Documents\Northampton Gateway\DS\DS SLA Local 0808217.mxd

Key

2031 Scenario J1c

PM Arrivals (Veh)

- 0 -10
- 10 - 25
- 25 - 50
- 50 - 75
- > 75

Shelfleys
Hardingstone
Swan Valley
Blacky More
Rothersthorpe
Collingtree
Milton Malsor
Preston Deanery
Hackleton
Churchill's
Alamein
Piddington
Miller's
Quinton
The Moors
The Wake Knot
Courteenhall
Roade Cutting
Hollow Quarter
Three Bridges Quarter

A5123
A45
A45
A45
B526
A508
A43
M1

0 0.5 1 Kilometres

DRAWING STATUS:

wsp

CLIENT:

ARCHITECT:

PROJECT:

NORTHAMPTON M1 GATEWAY

TITLE:

LOCAL AREA

SCALE @ A1:	CHECKED:	ASSIGNED:
CAD FILE:	DESIGN-DRAWN:	DATE: -----
PROJECT No:	DRAWING No:	REV:

Drawn By: ukrsc003

File: Q:\WSP_UK\WSP_D\Basing\Northants Multi Modal Transport Model\Analysis\Map Documents\Northampton Gateway\DS\DS SLA Local 0808217.mxd

Key

2031 Scenario J1c

PM Departures (Veh)

- 0 -10
- 10 - 25
- 25 - 50
- 50 - 75
- > 75

Shelfleys
Hardingstone
Swan Valley
Blacky More
Rothersthorpe
Collingtree
Milton Malsor
Grange Park
Preston Deanery
Hackleton
Churchill's
Alamein
Miller's
Quinton
Piddington
The Moors
The Wake Knot
Roade Cutting
Courteenhall
Hollow Quarter
Three Bridges Quarter

A5123 A45 A43 A508 M1 B526 15A

0 0.5 1 Kilometres

DRAWING STATUS:

wsp

CLIENT:

ARCHITECT:

PROJECT:

NORTHAMPTON M1 GATEWAY

TITLE:

LOCAL AREA

SCALE @ A1:	CHECKED:	APPROVED:
CAD FILE:	DESIGN-DRAWN:	DATE: -----
PROJECT No:	DRAWING No:	REV:

Drawn By: ukrsc003

File: Q:\WSP_UK\WSP_D\Basing\Northants Multi Modal Transport Model\Analysis\Map Documents\Northampton Gateway\Difference Plots\Actual Flow Local 07082017.mxd

Key

J1c vs D1 (AM Peak)

Actual Flow Difference (Veh)

- < -500
- -500 - -100
- -100 - -10
- -10 - 10
- 10 - 100
- 100 - 500
- > 500

Shelfleys
Hardingstone
Blacky More
Collingtree
Milton Malsor
Preston Deanery
Hackleton
Churchill's
Alamein
Piddington
Miller's
Quinton
The Moors
The Wake Knot
Roade Cutting
Courteenhall
Hollow Quarter
Three Bridges Quarter

A5123
A45
B526
A508
A43
M1

0 0.5 1 Kilometres

DRAWING STATUS:

CLIENT:

ARCHITECT:

PROJECT:
NORTHAMPTON M1 GATEWAY

TITLE:
LOCAL AREA

SCALE @ A1:	CHECKED:	AMENDMENT:
CAD FILE:	DESIGN-DRAWN:	DATE: -----
PROJECT No:	DRAWING No:	REV:

Drawn By: ukrsc003

File: Q:\WSP_UK\WSP_D\Basing\Northants Multi Modal Transport Model\Analysis\Map Documents\Northampton Gateway\Difference Plots\Actual Flow Local 07082017.mxd

Key

J1c vs D1 (PM Peak)

Actual Flow Difference (Veh)

- < -500
- -500 - -100
- -100 - -10
- -10 - 10
- 10 - 100
- 100 - 500
- > 500

Hardingstone
Blacky More
Collingtree
Milton Malsor
Churchill's
Alamein
Miller's
Quinton
Preston Deanery
Hackleton
Piddington
Bliswork
The Moors
The Wake Knot
Roade Cutting
Courteenhall
Hollow Quarter
Three Bridges Quarter

A5123
A45
A45
A508
A43
M1
B526

0 0.5 1 Kilometres

DRAWING STATUS:

wsp

CLIENT:

ARCHITECT:

PROJECT:

NORTHAMPTON M1 GATEWAY

TITLE:

LOCAL AREA

SCALE @ A1:	CHECKED:	ASSIGNED:
CAD FILE:	DESIGN-DRAWN:	DATE: ——
PROJECT No:	DRAWING No:	REV:

Drawn By: ukrsc003

File: Q:\WSP_UK\WSP_D\Basing\Northants Multi Modal Transport Model\Analysis\Map Documents\Northampton Gateway\Difference Plots\Actual Flow Reassign Local Area 07082017.mxd

Key

J1c vs D1 (AM Peak)

Actual Flow Reassign (Veh)

- < -100
- -100 - -10
- -10 -10
- 10 - 100
- > 100

Swan Valley
Shelfleys
Blacky More
Hardingstone
Wootton
Grange Park
Preston Deanery
Hackleton
Piddington
Quinton
Alamein
Miller's
The Moors
The Wake Knot
Roade Cutting
Courteenhall
Hollow Quarter
Three Bridges Quarter
The Green
Churchill's
Milton Malsor

A5123
A45
A508
A43
M1
B526

0 0.5 1 Kilometres

DRAWING STATUS:

CLIENT:

ARCHITECT:

PROJECT: NORTHAMPTON M1 GATEWAY

TITLE: LOCAL AREA

SCALE @ A1:	CHECKED:	APPROVED:
CAD FILE:	DESIGN-DRAWN:	DATE: ----
PROJECT No:	DRAWING No:	REV:

Drawn By: ukrsc003

File: Q:\WSP_UK\WSP_D\Basing\Northants Multi Modal Transport Model\Analysis\Map Documents\Northampton Gateway\Difference Plots\Actual Flow Reassign Local Area 07082017.mxd

Key

J1c vs D1 (PM Peak)

Actual Flow Reassign (Veh)

- < -100
- -100 - -10
- -10 -10
- 10 - 100
- > 100

Swan Valley
Hardingstone
Blacky More
Collingtree
Milton Malsor
Churchill's
Alamein
Miller's
The Moors
The Wake Knot
Roade Cutting
Courteenhall
The Green
Preston Deanery
Hackleton
Piddington
Quinton
Hollow Quarter
Three Bridges Quarter

A5123 A45 A45 A45 A508 A43 M1 B526

0 0.5 1 Kilometres

DRAWING STATUS:

wsp

CLIENT:

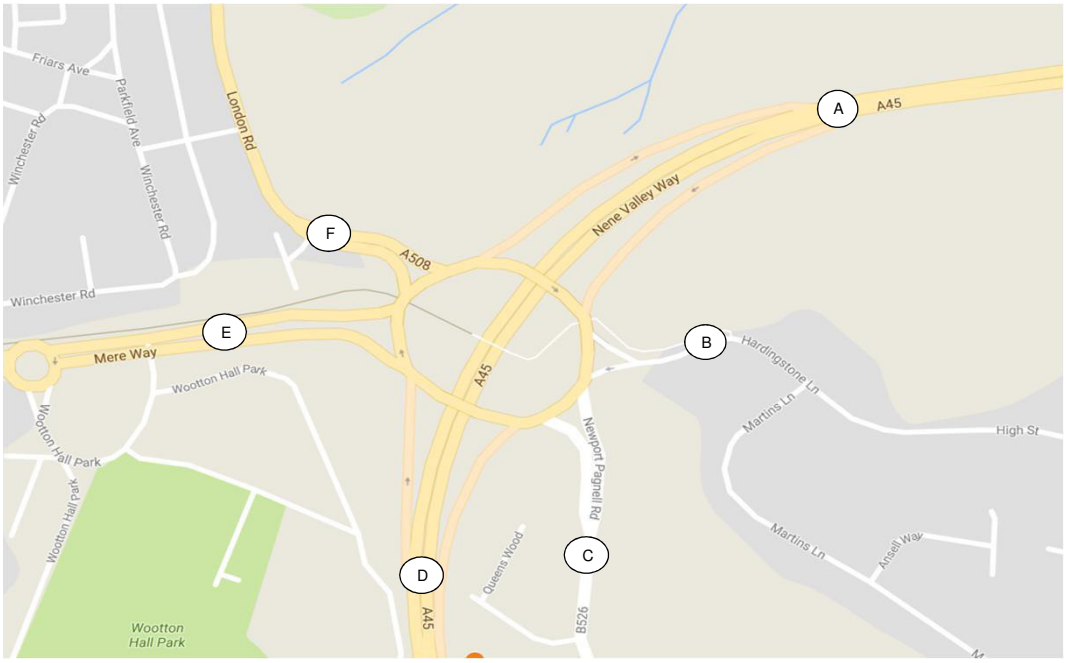
ARCHITECT:

PROJECT: NORTHAMPTON M1 GATEWAY

TITLE: LOCAL AREA

SCALE @ A1:	CHECKED:	APPROVED:
CAD FILE:	DESIGN-DRAWN:	DATE: ----
PROJECT No:	DRAWING No:	REV:

Junction: **(1) A45 Queen Eleanor Interchange**



AM (0800-0900)

Jct Node Number			TO ARM								Link Actual Flow
		Road name	A	B	C	D	E	F	G	Total	
FROM ARM	A	A45 (SB)	0	75	175	72	1477	363		**2161**	**2015**
	B	Hardingstone Lane	210	0	0	34	96	159		**499**	**503**
	C	Newport Pagnell Rd	301	0	0	0	445	565		**1311**	**914**
	D	A45 (NB)	75	1	2	0	79	762		**919**	**850**
	E	Mere Way	1765	22	500	217	4	45		**2554**	**2449**
	F	A508 - London Rd	293	11	373	407	46	0		**1130**	**1201**
	G										
Total			**2644**	**109**	**1050**	**730**	**2147**	**1894**		**8574**	
Link Actual Flow			**2532**	**120**	**557**	**708**	**2127**	**1887**			**7931**

PM (1700-1800)

Jct Node Number			TO ARM								Link Actual Flow
		Road name	A	B	C	D	E	F	G	Total	
FROM ARM	A	A45 (SB)	0	600	58	12	922	222		**1814**	**2015**
	B	Hardingstone Lane	467	0	0	19	35	173		**695**	**689**
	C	Newport Pagnell Rd	149	0	0	37	1075	524		**1785**	**1603**
	D	A45 (NB)	34	30	10	0	96	443		**613**	**550**
	E	Mere Way	1630	95	408	429	12	24		**2597**	**2592**
	F	A508 - London Rd	372	95	168	615	72	1		**1324**	**1323**
	G										
Total			**2651**	**821**	**643**	**1112**	**2213**	**1388**		**8828**	
Link Actual Flow			**2479**	**1047**	**422**	**1203**	**2279**	**1343**			**8773**

Junction: **(2) A45 Wootton Interchange**

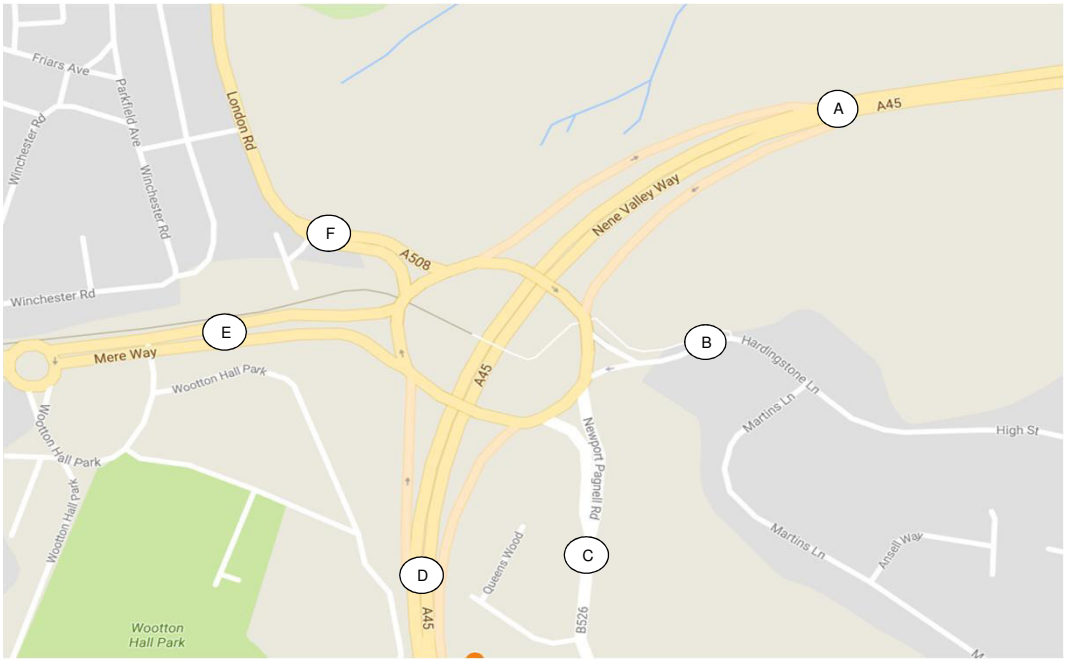
AM (0800-0900)

Jct Node Number			TO ARM								Actual Link Flow
		Road name	A	B	C	D	E	F	G	Total	
FROM ARM	A	A45 (SB) off-slip	0	0	1	2	215	31	0	**249**	**159**
	B	Berry Lane (east)	0	0	0	144	45	160	0	**349**	**247**
	C	Wooldale Rd	0	0	0	833	97	122	0	**1051**	**864**
	D	unnamed road	0	45	192	0	131	385	0	**752**	**684**
	E	Rowtree Rd	0	53	471	419	0	711	0	**1654**	**1594**
	F	London Rd	0	0	0	0	0	0	0	**0**	**0**
	G	A45 (NB) off-slip	0	59	446	75	166	47	0	**793**	**675**
Total			**0**	**157**	**1110**	**1473**	**652**	**1456**	**0**	**4848**	
Actual Link Flow			**0**	**90**	**1115**	**1336**	**555**	**1119**	**0**		**4215**

PM (1700-1800)

Jct Node Number			TO ARM								Actual Link Flow
		Road name	A	B	C	D	E	F	G	Total	
FROM ARM	A	A45 (SB) off-slip	0	0	13	0	592	127	0	**733**	**591**
	B	Berry Lane (east)	0	0	0	20	14	14	0	**48**	**5**
	C	Wooldale Rd	0	0	0	664	412	176	0	**1251**	**1013**
	D	unnamed road	0	63	260	0	90	263	0	**676**	**602**
	E	Rowtree Rd	0	10	220	413	0	630	0	**1272**	**1179**
	F	London Rd	0	0	0	0	0	0	0	**0**	**0**
	G	A45 (NB) off-slip	0	23	667	28	312	0	0	**1030**	**921**
Total			**0**	**96**	**1160**	**1125**	**1420**	**1210**	**0**	**5011**	
Actual Link Flow			**0**	**43**	**1033**	**922**	**1329**	**984**	**0**		**4311**

Junction: **(1) A45 Queen Eleanor Interchange**



AM (0800-0900)

Jct Node Number			TO ARM								Link Actual Flow
		Road name	A	B	C	D	E	F	G	Total	
FROM ARM	A	A45 (SB)	0	65	94	30	1534	363		2086	2015
	B	Hardingstone Lane	173	0	0	27	119	171		490	506
	C	Newport Pagnell Rd	256	0	0	0	528	603		1386	1049
	D	A45 (NB)	78	0	1	0	98	725		902	817
	E	Mere Way	1728	22	413	241	5	58		2466	2469
	F	A508 - London Rd	315	11	303	472	54	0		1154	1146
	G										
Total			2550	99	811	769	2336	1920		8485	
Link Actual Flow			2475	117	484	701	2346	1880			8003

PM (1700-1800)

Jct Node Number			TO ARM								Link Actual Flow
		Road name	A	B	C	D	E	F	G	Total	
FROM ARM	A	A45 (SB)	0	544	63	8	944	219		1777	2015
	B	Hardingstone Lane	441	0	0	20	46	150		657	628
	C	Newport Pagnell Rd	130	1	0	37	1003	576		1747	1556
	D	A45 (NB)	45	30	30	0	101	555		761	700
	E	Mere Way	1494	80	406	402	9	28		2419	2542
	F	A508 - London Rd	369	100	179	681	99	0		1429	1329
	G										
Total			2479	755	678	1147	2201	1528		8789	
Link Actual Flow			2356	995	418	1242	2308	1453			8772

Junction: **(2) A45 Wootton Interchange**

AM (0800-0900)

Jct Node Number			TO ARM								Link Actual Flow
		Road name	A	B	C	D	E	F	G	Total	
FROM ARM	A	A45 (SB) off-slip	0	0	1	14	228	36	0	278	178
	B	Berry Lane (east)	0	0	0	180	43	148	0	372	251
	C	Wooldale Rd	0	0	0	769	88	131	0	988	873
	D	unnamed road	0	65	181	0	118	318	0	681	672
	E	Rowtree Rd	0	77	500	447	0	775	0	1799	1736
	F	London Rd	0	0	0	0	0	0	0	0	0
	G	A45 (NB) off-slip	0	57	520	35	148	42	0	802	748
Total			0	199	1201	1445	626	1450	0	4920	
Link Actual Flow			0	96	1121	1434	594	1110	0		4355

PM (1700-1800)

Jct Node Number			TO ARM								Link Actual Flow
		Road name	A	B	C	D	E	F	G	Total	
FROM ARM	A	A45 (SB) off-slip	0	0	12	0	526	77	0	615	484
	B	Berry Lane (east)	0	0	0	15	20	13	0	48	5
	C	Wooldale Rd	0	0	0	675	478	126	0	1279	1031
	D	unnamed road	0	76	235	0	115	236	0	662	598
	E	Rowtree Rd	0	10	214	441	0	607	0	1272	1187
	F	London Rd	0	0	0	0	0	0	0	0	0
	G	A45 (NB) off-slip	0	10	707	8	242	73	0	1039	989
Total			0	96	1168	1139	1380	1133	0	4916	
Link Actual Flow			0	44	1100	1005	1268	877	0		4294

APPENDIX B

WOOTTON INTERCHANGE ARCADY MODELLING RESULTS

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]

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

Filename: 170817 Wootton Interchange v1.arc8
Path: C:\Users\ADCteam\Dropbox\~ JN8 TEMP\ADC1475\A508-Site Access ARCADY Model (J1c)
Report generation date: 17/08/2017 17:43:37

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2031 D1 AM							
Junction 1 - Arm 1	10.45	36.00	0.93	E				
Junction 1 - Arm 2	36.72	119.56	1.05	F				
Junction 1 - Arm 3	0.00	0.00	0.00	A				
Junction 1 - Arm 4	98.08	479.80	1.25	F				
Junction 2 - Arm 1	0.42	6.26	0.30	A				
Junction 2 - Arm 2	17.68	79.06	0.99	F				
Junction 2 - Arm 3	106.00	256.89	1.10	F				
Junction 2 - Arm 4	171.00	1402.72	1.56	F				
	A1 - 2031 D1 PM							
Junction 1 - Arm 1					208.40	630.71	1.17	F
Junction 1 - Arm 2					1.51	7.78	0.60	A
Junction 1 - Arm 3					0.00	0.00	0.00	A
Junction 1 - Arm 4					157.43	604.73	1.33	F
Junction 2 - Arm 1					3.23	18.52	0.77	C
Junction 2 - Arm 2					93.90	518.44	1.28	F
Junction 2 - Arm 3					16.82	48.93	0.97	E
Junction 2 - Arm 4					389.50	2974.52	2.08	F
	A1 - 2031 J1c AM							
Junction 1 - Arm 1	5.23	19.25	0.85	C				
Junction 1 - Arm 2	111.63	354.47	1.20	F				
Junction 1 - Arm 3	0.00	0.00	0.00	A				
Junction 1 - Arm 4	98.82	506.13	1.23	F				
Junction 2 - Arm 1	0.41	6.08	0.29	A				
Junction 2 - Arm 2	6.74	34.47	0.89	D				
Junction 2 - Arm 3	157.13	371.39	1.10	F				
Junction 2 - Arm 4	222.69	1765.80	1.63	F				
	A1 - 2031 J1c PM							
Junction 1 - Arm 1					215.99	649.46	1.18	F
Junction 1 - Arm 2					1.63	8.10	0.62	A
Junction 1 - Arm 3					0.00	0.00	0.00	A
Junction 1 - Arm 4					177.32	678.52	1.37	F
Junction 2 - Arm 1					3.62	20.29	0.79	C
Junction 2 - Arm 2					89.02	493.20	1.27	F
Junction 2 - Arm 3					18.57	53.03	0.97	F
Junction 2 - Arm 4					248.70	1950.89	1.78	F

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

"D1 - 2031 D1 AM, AM " model duration: 07:45 - 09:15
"D2 - 2031 D1 PM, PM" model duration: 16:45 - 18:15
"D3 - 2031 J1c AM, AM" model duration: 07:45 - 09:15
"D4 - 2031 J1c PM, PM" model duration: 16:45 - 18:15

Run using Junctions 8.0.4.487 at 17/08/2017 17:43:29

File summary

Title	170817 Wootton Interchange
Location	Northampton
Site Number	
Date	17/08/2017
Version	v1
Status	(new file)
Identifier	MH
Client	Roxhill
Jobnumber	ADC1475
Enumerator	ADCteam
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - 2031 D1 AM, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	Junction 1 - Arm 1	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	DemandSets	D1 - 2031 D1 AM, AM	Demand Set 1: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	DemandSets	D2 - 2031 D1 PM, PM	Demand Set 2: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	DemandSets	D3 - 2031 J1c AM, AM	Demand Set 3: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	DemandSets	D4 - 2031 J1c PM, PM	Demand Set 4: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2031 D1 AM, AM	2031 D1 AM	AM		Varies by Arm	07:45	09:15	90	15				✓		

Junction Network

Junctions

Junction	Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	1	(untitled)	Roundabout	1,2,3,4				188.35	F
2	2	(untitled)	Roundabout	1,2,3,4				418.55	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Junction	Arm	Arm	Name	Description
1	**1**	1	Wooldale Rd E	
1	**2**	2	Rowtree Rd	
1	**3**	3	London rd	
1	**4**	4	A45 N	
2	**1**	1	Wooldale Rd E	
2	**2**	2	A45 S	
2	**3**	3	(untitled)	Wooldale Rd W
2	**4**	4	Berry Lane	

Capacity Options

Junction	Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	**1**	0.00	99999.00		0.00
1	**2**	0.00	99999.00		0.00
1	**3**	0.00	99999.00		0.00
1	**4**	0.00	99999.00		0.00
2	**1**	0.00	99999.00		0.00
2	**2**	0.00	99999.00		0.00
2	**3**	0.00	99999.00		0.00
2	**4**	0.00	99999.00		0.00

Roundabout Geometry

Junction	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
1	1	3.70	5.90	1.70	15.00	32.00	12.00	
1	2	3.90	4.80	6.30	20.00	32.00	21.00	
1	3	3.50	6.60	10.00	30.00	32.00	18.00	
1	4	4.00	4.10	1.00	20.00	32.00	25.00	
2	1	3.10	4.80	9.80	20.00	38.00	19.00	
2	2	3.20	3.90	8.00	15.00	38.00	24.00	
2	3	4.20	5.50	6.20	15.00	38.00	24.00	
2	4	3.20	5.00	4.90	20.00	38.00	25.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1	1		(calculated)	(calculated)	0.590	1308.494
1	2		(calculated)	(calculated)	0.607	1411.596
1	3		(calculated)	(calculated)	0.657	1620.802
1	4		(calculated)	(calculated)	0.571	1256.381
2	1		(calculated)	(calculated)	0.581	1319.029
2	2		(calculated)	(calculated)	0.535	1140.435
2	3		(calculated)	(calculated)	0.610	1515.149
2	4		(calculated)	(calculated)	0.559	1241.472

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
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Junction	Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	1	Linked Arm		N/A	
1	2	ONE HOUR	✓	943.00	100.000
1	3	ONE HOUR	✓	0.00	100.000
1	4	ONE HOUR	✓	793.00	100.000
2	1	ONE HOUR	✓	219.00	100.000
2	2	ONE HOUR	✓	753.00	100.000
2	3	Linked Arm		N/A	
2	4	ONE HOUR	✓	598.00	100.000

Linked Arm Data

Junction	Arm	From Junction ID	From Arm ID	Link Type	Flow Source	Uniform Flow (PCU/hr)	Flow Multiplier (%)	Internal Storage Space (PCU)
1	1	2	3	Simple (vertical queueing)	Normal	0.00	100.00	
2	3	1	1	Simple (vertical queueing)	Normal	0.00	100.00	

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	488.000	698.000	0.000
	2	943.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	580.000	166.000	47.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.41	0.59	0.00
	2	1.00	0.00	0.00	0.00
	3	0.25	0.25	0.25	0.25
	4	0.73	0.21	0.06	0.00

Turning Counts / Proportions (PCU/hr) - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	219.000	0.000
	2	192.000	0.000	516.000	45.000
	3	917.000	494.000	0.000	112.000
	4	1.000	146.000	451.000	0.000

Turning Proportions (PCU) - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.00	1.00	0.00
	2	0.25	0.00	0.69	0.06
	3	0.60	0.32	0.00	0.07
	4	0.00	0.24	0.75	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.050	1.050	1.050	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	5.0	5.0	5.0	0.0

Average PCU Per Vehicle - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.050	1.050	1.050	1.000

Heavy Vehicle Percentages - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	5.0	5.0	5.0	0.0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	1	0.93	36.00	10.45	E	1001.28	1501.92	512.13	20.46	5.69	512.40	20.47
1	2	1.05	119.56	36.72	F	865.31	1297.97	1067.33	49.34	11.86	1067.45	49.34
1	3	0.00	0.00	0.00	A	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	4	1.25	479.80	98.08	F	727.67	1091.51	4141.71	227.67	46.02	4196.68	230.69
2	1	0.30	6.26	0.42	A	200.96	301.44	29.41	5.85	0.33	29.41	5.85
2	2	0.99	79.06	17.68	F	690.97	1036.45	582.05	33.69	6.47	582.17	33.70
2	3	1.10	256.89	106.00	F	1376.99	2065.48	4461.44	129.60	49.57	4643.14	134.88
2	4	1.56	1402.72	171.00	F	548.74	823.10	7542.00	549.77	83.80	9543.25	695.65

Main Results for each time segment

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	877.54	219.38	867.56	1132.42	157.88	0.00	1215.33	957.67	0.722	0.00	2.49	10.084	B
1	2	709.94	177.48	702.51	480.02	545.42	0.00	1080.79	903.18	0.657	0.00	1.86	9.344	A
1	3	0.00	0.00	0.00	545.42	702.51	0.00	1158.94	1027.01	0.000	0.00	0.00	0.000	A
1	4	597.01	149.25	587.79	0.00	702.51	0.00	855.54	301.55	0.698	0.00	2.31	13.689	B
2	1	164.87	41.22	163.93	816.05	799.14	0.00	854.50	801.42	0.193	0.00	0.24	5.207	A
2	2	566.90	141.72	559.82	469.15	493.92	0.00	876.12	536.73	0.647	0.00	1.77	11.148	B
2	3	1132.42	283.11	1117.04	877.54	176.20	0.00	1407.59	1412.02	0.805	0.00	3.84	11.835	B
2	4	450.21	112.55	437.55	115.60	1177.64	0.00	582.76	433.19	0.773	0.00	3.16	24.291	C

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	999.74	249.93	991.53	1344.42	185.76	0.00	1198.88	957.67	0.834	2.49	4.55	16.693	C
1	2	847.74	211.93	838.61	552.75	624.54	0.00	1032.80	903.18	0.821	1.86	4.14	17.740	C
1	3	0.00	0.00	0.00	624.54	838.61	0.00	1069.47	1027.01	0.000	0.00	0.00	0.000	A
1	4	712.89	178.22	691.57	0.00	838.61	0.00	777.89	301.55	0.916	2.31	7.64	37.011	E
2	1	196.88	49.22	196.55	957.13	878.77	0.00	808.22	801.42	0.244	0.24	0.32	5.883	A
2	2	676.93	169.23	669.86	534.61	540.71	0.00	851.08	536.73	0.795	1.77	3.54	19.131	C
2	3	1344.42	336.11	1304.71	999.74	210.83	0.00	1386.44	1412.02	0.970	3.84	13.77	33.658	D
2	4	537.59	134.40	456.34	135.98	1379.56	0.00	469.81	433.19	1.144	3.16	23.48	127.674	F

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	1105.13	276.28	1088.35	1477.50	187.94	0.00	1197.59	957.67	0.923	4.55	8.74	28.837	D
1	2	1038.26	259.57	965.75	594.29	682.00	0.00	997.95	903.18	1.040	4.14	22.27	62.665	F
1	3	0.00	0.00	0.00	682.00	965.75	0.00	985.88	1027.01	0.000	0.00	0.00	0.000	A
1	4	873.11	218.28	699.69	0.00	965.75	0.00	705.35	301.55	1.238	7.64	50.99	166.297	F
2	1	241.12	60.28	240.74	1015.50	865.59	0.00	815.88	801.42	0.296	0.32	0.42	6.255	A
2	2	829.07	207.27	790.17	542.67	563.66	0.00	838.80	536.73	0.988	3.54	13.26	51.642	F
2	3	1477.50	369.37	1350.78	1105.13	248.70	0.00	1363.33	1412.02	1.084	13.77	45.45	89.935	F
2	4	658.41	164.60	428.17	146.56	1452.92	0.00	428.78	433.19	1.536	23.48	81.04	458.019	F

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	1116.04	279.01	1109.20	1489.72	187.02	0.00	1198.13	957.67	0.931	8.74	10.45	35.998	E
1	2	1038.26	259.57	980.47	602.15	694.07	0.00	990.63	903.18	1.048	22.27	36.72	119.558	F
1	3	0.00	0.00	0.00	694.07	980.47	0.00	976.20	1027.01	0.000	0.00	0.00	0.000	A
1	4	873.11	218.28	696.27	0.00	980.47	0.00	696.95	301.55	1.253	50.99	95.20	387.749	F
2	1	241.12	60.28	241.12	1024.14	862.03	0.00	817.95	801.42	0.295	0.42	0.42	6.240	A
2	2	829.07	207.27	811.39	543.12	560.03	0.00	840.74	536.73	0.986	13.26	17.68	79.062	F
2	3	1489.72	372.43	1356.16	1116.04	255.38	0.00	1359.25	1412.02	1.096	45.45	78.84	172.843	F
2	4	658.41	164.60	422.86	148.22	1463.31	0.00	422.97	433.19	1.557	81.04	139.92	949.128	F

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	1019.48	254.87	1035.63	1481.49	188.39	0.00	1197.32	957.67	0.851	10.45	6.41	23.991	C
1	2	847.74	211.93	968.51	572.95	651.07	0.00	1016.71	903.18	0.834	36.72	6.52	78.947	F
1	3	0.00	0.00	0.00	651.07	968.51	0.00	984.07	1027.01	0.000	0.00	0.00	0.000	A
1	4	712.89	178.22	701.37	0.00	968.51	0.00	703.77	301.55	1.013	95.20	98.08	479.800	F
2	1	196.88	49.22	197.25	1013.82	870.21	0.00	813.19	801.42	0.242	0.42	0.32	5.850	A
2	2	676.93	169.23	731.45	549.22	518.25	0.00	863.10	536.73	0.784	17.68	4.05	34.797	D
2	3	1481.49	370.37	1372.87	1019.48	230.22	0.00	1374.61	1412.02	1.078	78.84	106.00	247.940	F
2	4	537.59	134.40	425.62	144.67	1458.41	0.00	425.71	433.19	1.263	139.92	167.92	1301.584	F

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	889.73	222.43	902.33	1336.38	223.55	0.00	1176.57	957.67	0.756	6.41	3.26	13.675	B
1	2	709.94	177.48	727.64	545.50	580.38	0.00	1059.58	903.18	0.670	6.52	2.10	11.382	B
1	3	0.00	0.00	0.00	580.38	727.64	0.00	1142.42	1027.01	0.000	0.00	0.00	0.000	A
1	4	597.01	149.25	832.29	0.00	727.64	0.00	841.20	301.55	0.710	98.08	39.26	300.340	F
2	1	164.87	41.22	165.12	985.26	888.49	0.00	802.57	801.42	0.205	0.32	0.26	5.651	A
2	2	566.90	141.72	575.50	558.24	495.37	0.00	875.34	536.73	0.648	4.05	1.90	12.329	B
2	3	1336.38	334.09	1391.45	889.73	181.13	0.00	1404.58	1412.02	0.951	106.00	92.23	256.887	F
2	4	450.21	112.55	437.89	136.72	1435.86	0.00	438.32	433.19	1.027	167.92	171.00	1402.717	F

Queueing Delay Results for each time segment

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	34.21	2.28	10.084	B	B
1	2	25.84	1.72	9.344	A	A
1	3	0.00	0.00	0.000	A	A
1	4	31.17	2.08	13.689	B	B
2	1	3.46	0.23	5.207	A	A
2	2	24.43	1.63	11.148	B	B
2	3	51.08	3.41	11.835	B	B
2	4	40.08	2.67	24.291	C	C

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	60.99	4.07	16.693	C	B
1	2	54.80	3.65	17.740	C	B
1	3	0.00	0.00	0.000	A	A
1	4	89.48	5.97	37.011	E	D
2	1	4.69	0.31	5.883	A	A
2	2	47.28	3.15	19.131	C	B
2	3	153.00	10.20	33.658	D	C
2	4	209.74	13.98	127.674	F	F

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	109.78	7.32	28.837	D	C
1	2	215.10	14.34	62.665	F	E
1	3	0.00	0.00	0.000	A	A
1	4	444.68	29.65	166.297	F	F
2	1	6.09	0.41	6.255	A	A
2	2	141.39	9.43	51.642	F	D
2	3	450.87	30.06	89.935	F	F
2	4	784.27	52.28	458.019	F	F

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	145.94	9.73	35.998	E	D
1	2	444.57	29.64	119.558	F	F
1	3	0.00	0.00	0.000	A	A
1	4	1096.68	73.11	387.749	F	F
2	1	6.24	0.42	6.240	A	A
2	2	234.29	15.62	79.062	F	E
2	3	933.14	62.21	172.843	F	F
2	4	1657.24	110.48	949.128	F	F

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	107.52	7.17	23.991	C	C
1	2	291.04	19.40	78.947	F	E
1	3	0.00	0.00	0.000	A	A
1	4	1449.64	96.64	479.800	F	F
2	1	4.94	0.33	5.850	A	A
2	2	103.67	6.91	34.797	D	C
2	3	1386.61	92.44	247.940	F	F
2	4	2308.82	153.92	1301.584	F	F

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	53.69	3.58	13.675	B	B
1	2	35.97	2.40	11.382	B	B
1	3	0.00	0.00	0.000	A	A
1	4	1030.05	68.67	300.340	F	F
2	1	3.98	0.27	5.651	A	A
2	2	30.98	2.07	12.329	B	B
2	3	1486.74	99.12	256.887	F	F
2	4	2541.85	169.46	1402.717	F	F

(Default Analysis Set) - 2031 D1 PM, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	Junction 1 - Arm 1	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	DemandSets	D1 - 2031 D1 AM, AM	Demand Set 1: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	DemandSets	D2 - 2031 D1 PM, PM	Demand Set 2: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	DemandSets	D3 - 2031 J1c AM, AM	Demand Set 3: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	DemandSets	D4 - 2031 J1c PM, PM	Demand Set 4: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2031 D1 PM, PM	2031 D1 PM	PM		Varies by Arm	16:45	18:15	90	15				✓		

Junction Network

Junctions

Junction	Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	1	(untitled)	Roundabout	1,2,3,4				491.52	F
2	2	(untitled)	Roundabout	1,2,3,4				819.57	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Junction	Arm	Arm	Name	Description
1	1	1	Wooldale Rd E	
1	2	2	Rowtree Rd	
1	3	3	London rd	
1	4	4	A45 N	
2	1	1	Wooldale Rd E	
2	2	2	A45 S	
2	3	3	(untitled)	Wooldale Rd W
2	4	4	Berry Lane	

Capacity Options

Junction	Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	1	0.00	99999.00		0.00
1	2	0.00	99999.00		0.00
1	3	0.00	99999.00		0.00
1	4	0.00	99999.00		0.00
2	1	0.00	99999.00		0.00
2	2	0.00	99999.00		0.00
2	3	0.00	99999.00		0.00
2	4	0.00	99999.00		0.00

Roundabout Geometry

Junction	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
1	1	3.70	5.90	1.70	15.00	32.00	12.00	
1	2	3.90	4.80	6.30	20.00	32.00	21.00	
1	3	3.50	6.60	10.00	30.00	32.00	18.00	
1	4	4.00	4.10	1.00	20.00	32.00	25.00	
2	1	3.10	4.80	9.80	20.00	38.00	19.00	
2	2	3.20	3.90	8.00	15.00	38.00	24.00	
2	3	4.20	5.50	6.20	15.00	38.00	24.00	
2	4	3.20	5.00	4.90	20.00	38.00	25.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1	1		(calculated)	(calculated)	0.590	1308.494
1	2		(calculated)	(calculated)	0.607	1411.596
1	3		(calculated)	(calculated)	0.657	1620.802
1	4		(calculated)	(calculated)	0.571	1256.381
2	1		(calculated)	(calculated)	0.581	1319.029
2	2		(calculated)	(calculated)	0.535	1140.435
2	3		(calculated)	(calculated)	0.610	1515.149
2	4		(calculated)	(calculated)	0.559	1241.472

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
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Junction	Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	1	Linked Arm		N/A	
1	2	ONE HOUR	✓	643.00	100.000
1	3	ONE HOUR	✓	0.00	100.000
1	4	ONE HOUR	✓	1030.00	100.000
2	1	ONE HOUR	✓	588.00	100.000
2	2	ONE HOUR	✓	676.00	100.000
2	3	Linked Arm		N/A	
2	4	ONE HOUR	✓	780.00	100.000

Linked Arm Data

Junction	Arm	From Junction ID	From Arm ID	Link Type	Flow Source	Uniform Flow (PCU/hr)	Flow Multiplier (%)	Internal Storage Space (PCU)
1	1	2	3	Simple (vertical queueing)	Normal	0.00	100.00	
2	3	1	1	Simple (vertical queueing)	Normal	0.00	100.00	

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	1108.000	580.000	0.000
	2	643.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	718.000	312.000	0.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.66	0.34	0.00
	2	1.00	0.00	0.00	0.00
	3	0.25	0.25	0.25	0.25
	4	0.70	0.30	0.00	0.00

Turning Counts / Proportions (PCU/hr) - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	588.000	0.000
	2	260.000	0.000	353.000	63.000
	3	887.000	441.000	0.000	33.000
	4	13.000	20.000	747.000	0.000

Turning Proportions (PCU) - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.00	1.00	0.00
	2	0.38	0.00	0.52	0.09
	3	0.65	0.32	0.00	0.02
	4	0.02	0.03	0.96	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.050	1.050	1.050	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	5.0	5.0	5.0	0.0

Average PCU Per Vehicle - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.050	1.050	1.050	1.000

Heavy Vehicle Percentages - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	5.0	5.0	5.0	0.0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	1	1.17	630.71	208.40	F	1281.82	1922.72	9449.21	294.87	104.99	10597.64	330.71
1	2	0.60	7.78	1.51	A	590.03	885.04	94.28	6.39	1.05	94.29	6.39
1	3	0.00	0.00	0.00	A	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	4	1.33	604.73	157.43	F	945.15	1417.72	7137.04	302.05	79.30	7494.46	317.18
2	1	0.77	18.52	3.23	C	539.56	809.34	177.25	13.14	1.97	177.30	13.14
2	2	1.28	518.44	93.90	F	620.31	930.46	4188.74	270.11	46.54	4304.15	277.55
2	3	0.97	48.93	16.82	E	1198.20	1797.30	874.76	29.20	9.72	876.39	29.26
2	4	2.08	2974.52	389.50	F	715.74	1073.61	16472.58	920.59	183.03	26531.20	1482.73

Main Results for each time segment

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	1213.72	303.43	1122.97	1011.78	230.51	0.00	1172.47	991.42	1.035	0.00	22.69	47.856	E
1	2	484.08	121.02	481.32	967.62	385.86	0.00	1177.57	1065.43	0.411	0.00	0.69	5.150	A
1	3	0.00	0.00	0.00	385.86	481.32	0.00	1304.36	920.35	0.000	0.00	0.00	0.000	A
1	4	775.44	193.86	760.96	0.00	481.32	0.00	981.75	254.62	0.790	0.00	3.62	16.204	C
2	1	442.68	110.67	438.11	851.46	855.71	0.00	821.62	839.55	0.539	0.00	1.14	9.280	A
2	2	508.93	127.23	494.26	338.19	955.63	0.00	629.04	492.85	0.809	0.00	3.67	24.579	C
2	3	1011.78	252.94	1000.96	1213.72	236.16	0.00	1370.98	1371.39	0.738	0.00	2.71	9.473	A
2	4	587.22	146.81	540.38	70.33	1166.79	0.00	588.83	386.95	0.997	0.00	11.71	57.094	F

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	1281.95	320.49	1145.99	1189.44	266.14	0.00	1151.44	991.43	1.113	22.69	56.68	135.380	F
1	2	578.04	144.51	576.97	1018.37	393.76	0.00	1172.77	1065.43	0.493	0.69	0.96	6.031	A
1	3	0.00	0.00	0.00	393.76	576.97	0.00	1241.48	920.35	0.000	0.00	0.00	0.000	A
1	4	925.95	231.49	878.62	0.00	576.97	0.00	927.17	254.62	0.999	3.62	15.45	52.688	F
2	1	528.60	132.15	526.31	995.07	847.57	0.00	826.35	839.55	0.640	1.14	1.72	11.903	B
2	2	607.71	151.93	576.17	392.80	981.08	0.00	615.42	492.85	0.987	3.67	11.55	63.456	F
2	3	1189.44	297.36	1174.65	1281.95	275.30	0.00	1347.09	1371.39	0.883	2.71	6.40	19.358	C
2	4	701.20	175.30	474.87	82.18	1367.78	0.00	476.41	386.95	1.472	11.71	68.30	333.103	F

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	1348.69	337.17	1155.14	1299.38	257.93	0.00	1156.29	991.42	1.166	56.68	105.06	259.853	F
1	2	707.96	176.99	705.80	1016.17	396.91	0.00	1170.86	1065.43	0.605	0.96	1.50	7.705	A
1	3	0.00	0.00	0.00	396.91	705.80	0.00	1156.78	920.35	0.000	0.00	0.00	0.000	A
1	4	1134.05	283.51	851.51	0.00	705.80	0.00	853.66	254.62	1.328	15.45	86.09	226.283	F
2	1	647.40	161.85	641.68	1057.33	828.34	0.00	837.53	839.55	0.773	1.72	3.15	17.853	C
2	2	744.29	186.07	577.09	422.68	1047.33	0.00	579.96	492.85	1.283	11.55	53.35	217.983	F
2	3	1299.38	324.84	1270.96	1348.69	275.74	0.00	1346.82	1371.39	0.965	6.40	13.51	36.706	E
2	4	858.80	214.70	423.57	84.60	1462.10	0.00	423.65	386.95	2.027	68.30	177.10	1066.506	F

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	1346.42	336.60	1155.70	1301.96	258.15	0.00	1156.16	991.42	1.165	105.06	152.74	408.960	F
1	2	707.96	176.99	707.89	1016.75	397.10	0.00	1170.75	1065.43	0.605	1.50	1.51	7.775	A
1	3	0.00	0.00	0.00	397.10	707.89	0.00	1155.40	920.35	0.000	0.00	0.00	0.000	A
1	4	1134.05	283.51	852.21	0.00	707.89	0.00	852.47	254.62	1.330	86.09	156.55	505.760	F
2	1	647.40	161.85	647.06	1070.66	823.55	0.00	840.31	839.55	0.770	3.15	3.23	18.524	C
2	2	744.29	186.07	582.11	428.17	1042.44	0.00	582.58	492.85	1.278	53.35	93.90	454.662	F
2	3	1301.96	325.49	1288.72	1346.42	278.14	0.00	1345.36	1371.39	0.968	13.51	16.82	48.932	E
2	4	858.80	214.70	412.86	85.50	1481.36	0.00	412.87	386.95	2.080	177.10	288.59	2041.403	F

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	1275.50	318.87	1143.26	1223.16	279.41	0.00	1143.61	991.43	1.115	152.74	185.80	539.880	F
1	2	578.04	144.51	580.16	1029.84	392.83	0.00	1173.34	1065.43	0.493	1.51	0.98	6.089	A
1	3	0.00	0.00	0.00	392.83	580.16	0.00	1239.38	920.35	0.000	0.00	0.00	0.000	A
1	4	925.95	231.49	922.41	0.00	580.16	0.00	925.35	254.62	1.001	156.55	157.43	604.731	F
2	1	528.60	132.15	534.50	1053.39	825.51	0.00	839.18	839.55	0.630	3.23	1.76	12.032	B
2	2	607.71	151.93	626.18	411.49	948.51	0.00	632.85	492.85	0.960	93.90	89.28	518.436	F
2	3	1223.16	305.79	1235.72	1275.50	299.19	0.00	1332.50	1371.39	0.918	16.82	13.68	40.923	E
2	4	701.20	175.30	432.31	88.32	1446.59	0.00	432.32	386.95	1.622	288.59	355.81	2613.337	F

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	1224.62	306.15	1134.21	1163.49	294.75	0.00	1134.56	991.42	1.079	185.80	208.40	630.712	F
1	2	484.08	121.02	485.19	1039.24	389.72	0.00	1175.23	1065.43	0.412	0.98	0.71	5.227	A
1	3	0.00	0.00	0.00	389.72	485.19	0.00	1301.82	920.35	0.000	0.00	0.00	0.000	A
1	4	775.44	193.86	973.05	0.00	485.19	0.00	979.54	254.62	0.792	157.43	108.03	492.216	F
2	1	442.68	110.67	445.13	1034.35	828.67	0.00	837.34	839.55	0.529	1.76	1.14	9.235	A
2	2	508.93	127.23	662.92	395.35	878.45	0.00	670.34	492.85	0.759	89.28	50.78	382.792	F
2	3	1163.49	290.87	1184.30	1224.62	316.75	0.00	1321.79	1371.39	0.880	13.68	8.48	28.740	D
2	4	587.22	146.81	452.46	90.50	1410.56	0.00	452.48	386.95	1.298	355.81	389.50	2974.516	F

Queueing Delay Results for each time segment

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	208.64	13.91	47.856	E	D
1	2	10.02	0.67	5.150	A	A
1	3	0.00	0.00	0.000	A	A
1	4	47.17	3.14	16.204	C	B
2	1	16.10	1.07	9.280	A	A
2	2	45.72	3.05	24.579	C	C
2	3	37.12	2.47	9.473	A	A
2	4	115.19	7.68	57.094	F	E

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	597.74	39.85	135.380	F	F
1	2	13.98	0.93	6.031	A	A
1	3	0.00	0.00	0.000	A	A
1	4	160.72	10.71	52.688	F	D
2	1	24.32	1.62	11.903	B	B
2	2	125.25	8.35	63.456	F	E
2	3	81.96	5.46	19.358	C	B
2	4	601.45	40.10	333.103	F	F

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	1213.48	80.90	259.853	F	F
1	2	21.51	1.43	7.705	A	A
1	3	0.00	0.00	0.000	A	A
1	4	763.46	50.90	226.283	F	F
2	1	42.64	2.84	17.853	C	B
2	2	488.99	32.60	217.983	F	F
2	3	161.01	10.73	36.706	E	D
2	4	1840.51	122.70	1066.506	F	F

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	1933.66	128.91	408.960	F	F
1	2	22.61	1.51	7.775	A	A
1	3	0.00	0.00	0.000	A	A
1	4	1819.86	121.32	505.760	F	F
2	1	47.94	3.20	18.524	C	B
2	2	1104.51	73.63	454.662	F	F
2	3	229.86	15.32	48.932	E	D
2	4	3492.65	232.84	2041.403	F	F

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	2539.13	169.28	539.880	F	F
1	2	15.28	1.02	6.089	A	A
1	3	0.00	0.00	0.000	A	A
1	4	2354.86	156.99	604.731	F	F
2	1	28.24	1.88	12.032	B	B
2	2	1373.81	91.59	518.436	F	F
2	3	221.76	14.78	40.923	E	D
2	4	4832.96	322.20	2613.337	F	F

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	2956.57	197.10	630.712	F	F
1	2	10.89	0.73	5.227	A	A
1	3	0.00	0.00	0.000	A	A
1	4	1990.96	132.73	492.216	F	F
2	1	17.99	1.20	9.235	A	A
2	2	1050.46	70.03	382.792	F	F
2	3	143.05	9.54	28.740	D	C
2	4	5589.82	372.65	2974.516	F	F

(Default Analysis Set) - 2031 J1c AM, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	Junction 1 - Arm 1	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	DemandSets	D1 - 2031 D1 AM, AM	Demand Set 1: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	DemandSets	D2 - 2031 D1 PM, PM	Demand Set 2: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	DemandSets	D3 - 2031 J1c AM, AM	Demand Set 3: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	DemandSets	D4 - 2031 J1c PM, PM	Demand Set 4: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2031 J1c AM, AM	2031 J1c AM	AM		Varies by Arm	07:45	09:15	90	15				✓		

Junction Network

Junctions

Junction	Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	1	(untitled)	Roundabout	1,2,3,4				281.84	F
2	2	(untitled)	Roundabout	1,2,3,4				562.67	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Junction	Arm	Arm	Name	Description
1	1	1	Wooldale Rd E	
1	2	2	Rowtree Rd	
1	3	3	London rd	
1	4	4	A45 N	
2	1	1	Wooldale Rd E	
2	2	2	A45 S	
2	3	3	(untitled)	Wooldale Rd W
2	4	4	Berry Lane	

Capacity Options

Junction	Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	1	0.00	99999.00		0.00
1	2	0.00	99999.00		0.00
1	3	0.00	99999.00		0.00
1	4	0.00	99999.00		0.00
2	1	0.00	99999.00		0.00
2	2	0.00	99999.00		0.00
2	3	0.00	99999.00		0.00
2	4	0.00	99999.00		0.00

Roundabout Geometry

Junction	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
1	1	3.70	5.90	1.70	15.00	32.00	12.00	
1	2	3.90	4.80	6.30	20.00	32.00	21.00	
1	3	3.50	6.60	10.00	30.00	32.00	18.00	
1	4	4.00	4.10	1.00	20.00	32.00	25.00	
2	1	3.10	4.80	9.80	20.00	38.00	19.00	
2	2	3.20	3.90	8.00	15.00	38.00	24.00	
2	3	4.20	5.50	6.20	15.00	38.00	24.00	
2	4	3.20	5.00	4.90	20.00	38.00	25.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1	1		(calculated)	(calculated)	0.590	1308.494
1	2		(calculated)	(calculated)	0.607	1411.596
1	3		(calculated)	(calculated)	0.657	1620.802
1	4		(calculated)	(calculated)	0.571	1256.381
2	1		(calculated)	(calculated)	0.581	1319.029
2	2		(calculated)	(calculated)	0.535	1140.435
2	3		(calculated)	(calculated)	0.610	1515.149
2	4		(calculated)	(calculated)	0.559	1241.472

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
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Junction	Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	1	Linked Arm		N/A	
1	2	ONE HOUR	✓	1124.00	100.000
1	3	ONE HOUR	✓	0.00	100.000
1	4	ONE HOUR	✓	802.00	100.000
2	1	ONE HOUR	✓	219.00	100.000
2	2	ONE HOUR	✓	682.00	100.000
2	3	Linked Arm		N/A	
2	4	ONE HOUR	✓	650.00	100.000

Linked Arm Data

Junction	Arm	From Junction ID	From Arm ID	Link Type	Flow Source	Uniform Flow (PCU/hr)	Flow Multiplier (%)	Internal Storage Space (PCU)
1	1	2	3	Simple (vertical queueing)	Normal	0.00	100.00	
2	3	1	1	Simple (vertical queueing)	Normal	0.00	100.00	

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	477.000	633.000	0.000
	2	1024.000	0.000	0.000	100.000
	3	0.000	0.000	0.000	0.000
	4	612.000	148.000	42.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.43	0.57	0.00
	2	0.91	0.00	0.00	0.09
	3	0.25	0.25	0.25	0.25
	4	0.76	0.18	0.05	0.00

Turning Counts / Proportions (PCU/hr) - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	219.000	0.000
	2	181.000	0.000	436.000	65.000
	3	1020.000	482.000	0.000	134.000
	4	1.000	194.000	455.000	0.000

Turning Proportions (PCU) - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.00	1.00	0.00
	2	0.27	0.00	0.64	0.10
	3	0.62	0.29	0.00	0.08
	4	0.00	0.30	0.70	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.050	1.050	1.050	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	5.0	5.0	5.0	0.0

Average PCU Per Vehicle - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.050	1.050	1.050	1.000

Heavy Vehicle Percentages - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	5.0	5.0	5.0	0.0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	1	0.85	19.25	5.23	C	913.86	1370.79	291.61	12.76	3.24	291.71	12.77
1	2	1.20	354.47	111.63	F	1031.40	1547.10	4558.29	176.78	50.65	4592.75	178.12
1	3	0.00	0.00	0.00	A	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	4	1.23	506.13	98.82	F	735.93	1103.89	4531.04	246.28	50.34	4812.13	261.55
2	1	0.29	6.08	0.41	A	200.96	301.44	28.77	5.73	0.32	28.78	5.73
2	2	0.89	34.47	6.74	D	625.82	938.72	290.43	18.56	3.23	290.50	18.57
2	3	1.10	371.39	157.13	F	1438.77	2158.15	5947.52	165.35	66.08	6476.17	180.05
2	4	1.63	1765.80	222.69	F	596.45	894.68	9760.62	654.58	108.45	13100.48	878.56

Main Results for each time segment

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	815.56	203.89	807.83	1212.50	140.47	0.00	1225.60	959.40	0.665	0.00	1.93	8.468	A
1	2	846.21	211.55	834.25	456.57	491.73	0.00	1113.35	914.18	0.760	0.00	2.99	12.419	B
1	3	0.00	0.00	0.00	491.73	834.25	0.00	1072.33	1019.79	0.000	0.00	0.00	0.000	A
1	4	603.79	150.95	592.95	74.22	760.03	0.00	822.72	344.77	0.734	0.00	2.71	15.789	C
2	1	164.87	41.22	163.91	877.56	816.96	0.00	844.15	821.71	0.195	0.00	0.24	5.284	A
2	2	513.45	128.36	507.95	490.04	490.83	0.00	877.77	534.20	0.585	0.00	1.37	9.598	A
2	3	1212.50	303.13	1190.17	815.56	183.22	0.00	1403.30	1397.52	0.864	0.00	5.58	15.562	C
2	4	489.35	122.34	467.03	145.89	1227.49	0.00	554.87	444.49	0.882	0.00	5.58	36.856	E

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	905.25	226.31	901.71	1421.96	162.98	0.00	1212.32	959.40	0.747	1.93	2.82	11.448	B
1	2	1010.45	252.61	984.60	514.44	550.25	0.00	1077.86	914.18	0.937	2.99	9.45	32.061	D
1	3	0.00	0.00	0.00	550.25	984.60	0.00	973.49	1019.79	0.000	0.00	0.00	0.000	A
1	4	720.98	180.25	687.94	87.60	897.00	0.00	744.57	344.77	0.968	2.71	10.97	49.798	E
2	1	196.88	49.22	196.60	999.54	850.78	0.00	824.49	821.71	0.239	0.24	0.31	5.730	A
2	2	613.10	153.28	609.31	531.65	515.72	0.00	864.45	534.20	0.709	1.37	2.32	13.896	B
2	3	1421.96	355.49	1342.70	905.25	219.78	0.00	1380.98	1397.52	1.030	5.58	25.40	52.811	F
2	4	584.34	146.08	455.89	168.05	1394.43	0.00	461.50	444.49	1.266	5.58	37.69	192.827	F

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	1019.22	254.80	1011.14	1486.51	169.39	0.00	1208.53	959.40	0.843	2.82	4.84	17.496	C
1	2	1237.55	309.39	1032.78	566.47	614.07	0.00	1039.15	914.18	1.191	9.45	60.65	133.883	F
1	3	0.00	0.00	0.00	614.07	1032.78	0.00	941.81	1019.79	0.000	0.00	0.00	0.000	A
1	4	883.02	220.75	715.02	91.88	940.89	0.00	719.53	344.77	1.227	10.97	52.97	175.860	F
2	1	241.12	60.28	240.75	1035.81	836.39	0.00	832.85	821.71	0.290	0.31	0.40	6.076	A
2	2	750.90	187.72	735.71	528.26	548.88	0.00	846.71	534.20	0.887	2.32	6.12	29.055	D
2	3	1486.51	371.63	1347.11	1019.22	265.37	0.00	1353.15	1397.52	1.099	25.40	60.25	124.253	F
2	4	715.66	178.92	440.18	180.46	1432.02	0.00	440.47	444.49	1.625	37.69	106.56	605.747	F

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	1026.06	256.51	1024.47	1489.84	170.18	0.00	1208.07	959.40	0.849	4.84	5.23	19.251	C
1	2	1237.55	309.39	1033.63	572.81	621.84	0.00	1034.44	914.18	1.196	60.65	111.63	305.427	F
1	3	0.00	0.00	0.00	621.84	1033.63	0.00	941.25	1019.79	0.000	0.00	0.00	0.000	A
1	4	883.02	220.75	718.35	91.96	941.67	0.00	719.08	344.77	1.228	52.97	94.14	381.510	F
2	1	241.12	60.28	241.12	1039.99	834.45	0.00	833.98	821.71	0.289	0.40	0.41	6.071	A
2	2	750.90	187.72	748.40	527.95	547.61	0.00	847.38	534.20	0.886	6.12	6.74	34.469	D
2	3	1489.84	372.46	1348.42	1026.06	269.95	0.00	1350.36	1397.52	1.103	60.25	95.61	214.687	F
2	4	715.66	178.92	437.85	181.77	1436.59	0.00	437.91	444.49	1.634	106.56	176.02	1166.383	F

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	909.14	227.28	917.41	1503.82	166.37	0.00	1210.32	959.40	0.751	5.23	3.17	12.619	B
1	2	1010.45	252.61	1062.46	523.83	559.95	0.00	1071.98	914.18	0.943	111.63	98.62	354.474	F
1	3	0.00	0.00	0.00	559.95	1062.46	0.00	922.30	1019.79	0.000	0.00	0.00	0.000	A
1	4	720.98	180.25	702.26	94.52	967.93	0.00	704.10	344.77	1.024	94.14	98.82	506.128	F
2	1	196.88	49.22	197.24	1025.36	846.14	0.00	827.19	821.71	0.238	0.41	0.31	5.717	A
2	2	613.10	153.28	630.02	537.01	506.37	0.00	869.46	534.20	0.705	6.74	2.51	15.980	C
2	3	1503.82	375.95	1375.33	909.14	227.25	0.00	1376.42	1397.52	1.093	95.61	127.73	297.230	F
2	4	584.34	146.08	441.61	172.70	1429.88	0.00	441.67	444.49	1.323	176.02	211.70	1585.156	F

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	807.93	201.98	812.40	1517.96	160.73	0.00	1213.65	959.40	0.666	3.17	2.05	9.072	A
1	2	846.21	211.55	1097.92	474.31	498.82	0.00	1109.05	914.18	0.763	98.62	35.70	223.272	F
1	3	0.00	0.00	0.00	498.82	1097.92	0.00	898.99	1019.79	0.000	0.00	0.00	0.000	A
1	4	603.79	150.95	678.45	97.68	1000.24	0.00	685.66	344.77	0.881	98.82	80.15	475.835	F
2	1	164.87	41.22	165.12	1011.20	857.25	0.00	820.73	821.71	0.201	0.31	0.25	5.494	A
2	2	513.45	128.36	517.84	545.50	476.87	0.00	885.24	534.20	0.580	2.51	1.41	9.911	A
2	3	1517.96	379.49	1400.36	807.93	186.79	0.00	1401.12	1397.52	1.083	127.73	157.13	371.393	F
2	4	489.35	122.34	445.36	164.05	1423.09	0.00	445.47	444.49	1.099	211.70	222.69	1765.796	F

Queueing Delay Results for each time segment

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	27.01	1.80	8.468	A	A
1	2	40.11	2.67	12.419	B	B
1	3	0.00	0.00	0.000	A	A
1	4	35.99	2.40	15.789	C	B
2	1	3.51	0.23	5.284	A	A
2	2	19.25	1.28	9.598	A	A
2	3	70.57	4.70	15.562	C	B
2	4	64.01	4.27	36.856	E	D

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	39.66	2.64	11.448	B	B
1	2	110.27	7.35	32.061	D	C
1	3	0.00	0.00	0.000	A	A
1	4	118.91	7.93	49.798	E	D
2	1	4.57	0.30	5.730	A	A
2	2	32.30	2.15	13.896	B	B
2	3	250.79	16.72	52.811	F	D
2	4	329.36	21.96	192.827	F	F

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	64.93	4.33	17.496	C	B
1	2	531.32	35.42	133.883	F	F
1	3	0.00	0.00	0.000	A	A
1	4	483.04	32.20	175.860	F	F
2	1	5.92	0.39	6.076	A	A
2	2	75.58	5.04	29.055	D	C
2	3	644.98	43.00	124.253	F	F
2	4	1082.09	72.14	605.747	F	F

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	76.19	5.08	19.251	C	B
1	2	1292.32	86.15	305.427	F	F
1	3	0.00	0.00	0.000	A	A
1	4	1103.57	73.57	381.510	F	F
2	1	6.07	0.40	6.071	A	A
2	2	97.22	6.48	34.469	D	C
2	3	1169.43	77.96	214.687	F	F
2	4	2119.36	141.29	1166.383	F	F

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	51.36	3.42	12.619	B	B
1	2	1576.87	105.12	354.474	F	F
1	3	0.00	0.00	0.000	A	A
1	4	1447.23	96.48	506.128	F	F
2	1	4.83	0.32	5.717	A	A
2	2	43.60	2.91	15.980	C	B
2	3	1675.20	111.68	297.230	F	F
2	4	2907.85	193.86	1585.156	F	F

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	32.46	2.16	9.072	A	A
1	2	1007.40	67.16	223.272	F	F
1	3	0.00	0.00	0.000	A	A
1	4	1342.30	89.49	475.835	F	F
2	1	3.87	0.26	5.494	A	A
2	2	22.47	1.50	9.911	A	A
2	3	2136.54	142.44	371.393	F	F
2	4	3257.94	217.20	1765.796	F	F

(Default Analysis Set) - 2031 J1c PM, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	Junction 1 - Arm 1	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	DemandSets	D1 - 2031 D1 AM, AM	Demand Set 1: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	DemandSets	D2 - 2031 D1 PM, PM	Demand Set 2: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	DemandSets	D3 - 2031 J1c AM, AM	Demand Set 3: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	DemandSets	D4 - 2031 J1c PM, PM	Demand Set 4: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2031 J1c PM, PM	2031 J1c PM	PM		Varies by Arm	16:45	18:15	90	15				✓		

Junction Network

Junctions

Junction	Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	1	(untitled)	Roundabout	1,2,3,4				521.84	F
2	2	(untitled)	Roundabout	1,2,3,4				523.54	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Junction	Arm	Arm	Name	Description
1	**1**	1	Wooldale Rd E	
1	**2**	2	Rowtree Rd	
1	**3**	3	London rd	
1	**4**	4	A45 N	
2	**1**	1	Wooldale Rd E	
2	**2**	2	A45 S	
2	**3**	3	(untitled)	Wooldale Rd W
2	**4**	4	Berry Lane	

Capacity Options

Junction	Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	**1**	0.00	99999.00		0.00
1	**2**	0.00	99999.00		0.00
1	**3**	0.00	99999.00		0.00
1	**4**	0.00	99999.00		0.00
2	**1**	0.00	99999.00		0.00
2	**2**	0.00	99999.00		0.00
2	**3**	0.00	99999.00		0.00
2	**4**	0.00	99999.00		0.00

Roundabout Geometry

Junction	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
1	1	3.70	5.90	1.70	15.00	32.00	12.00	
1	2	3.90	4.80	6.30	20.00	32.00	21.00	
1	3	3.50	6.60	10.00	30.00	32.00	18.00	
1	4	4.00	4.10	1.00	20.00	32.00	25.00	
2	1	3.10	4.80	9.80	20.00	38.00	19.00	
2	2	3.20	3.90	8.00	15.00	38.00	24.00	
2	3	4.20	5.50	6.20	15.00	38.00	24.00	
2	4	3.20	5.00	4.90	20.00	38.00	25.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1	1		(calculated)	(calculated)	0.590	1308.494
1	2		(calculated)	(calculated)	0.607	1411.596
1	3		(calculated)	(calculated)	0.657	1620.802
1	4		(calculated)	(calculated)	0.571	1256.381
2	1		(calculated)	(calculated)	0.581	1319.029
2	2		(calculated)	(calculated)	0.535	1140.435
2	3		(calculated)	(calculated)	0.610	1515.149
2	4		(calculated)	(calculated)	0.559	1241.472

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
		✓	✓	HV Percentages	2.30				✓	✓

Entry Flows

General Flows Data

Junction	Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	1	Linked Arm		N/A	
1	2	ONE HOUR	✓	665.00	100.000
1	3	ONE HOUR	✓	0.00	100.000
1	4	ONE HOUR	✓	1040.00	100.000
2	1	ONE HOUR	✓	604.00	100.000
2	2	ONE HOUR	✓	662.00	100.000
2	3	Linked Arm		N/A	
2	4	ONE HOUR	✓	663.00	100.000

Linked Arm Data

Junction	Arm	From Junction ID	From Arm ID	Link Type	Flow Source	Uniform Flow (PCU/hr)	Flow Multiplier (%)	Internal Storage Space (PCU)
1	1	2	3	Simple (vertical queueing)	Normal	0.00	100.00	
2	3	1	1	Simple (vertical queueing)	Normal	0.00	100.00	

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	1139.000	452.000	0.000
	2	665.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	725.000	242.000	73.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.72	0.28	0.00
	2	1.00	0.00	0.00	0.00
	3	0.25	0.25	0.25	0.25
	4	0.70	0.23	0.07	0.00

Turning Counts / Proportions (PCU/hr) - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	604.000	0.000
	2	235.000	0.000	351.000	76.000
	3	921.000	449.000	0.000	20.000
	4	12.000	15.000	636.000	0.000

Turning Proportions (PCU) - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.00	1.00	0.00
	2	0.35	0.00	0.53	0.11
	3	0.66	0.32	0.00	0.01
	4	0.02	0.02	0.96	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.065	1.065	1.065	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	5.0	5.0	5.0	0.0

Average PCU Per Vehicle - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.065	1.065	1.065	1.000

Heavy Vehicle Percentages - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	5.0	5.0	5.0	0.0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	1	1.18	649.46	215.99	F	1284.70	1927.04	9411.05	293.02	104.57	10642.87	331.37
1	2	0.62	8.10	1.63	A	610.22	915.32	100.53	6.59	1.12	100.55	6.59
1	3	0.00	0.00	0.00	A	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	4	1.37	678.52	177.32	F	954.32	1431.48	8032.03	336.66	89.24	8570.90	359.25
2	1	0.79	20.29	3.62	C	554.24	831.36	191.79	13.84	2.13	191.84	13.85
2	2	1.27	493.20	89.02	F	607.46	911.19	3889.10	256.09	43.21	3974.52	261.71
2	3	0.97	53.03	18.57	F	1213.64	1820.46	949.70	31.30	10.55	951.50	31.36
2	4	1.78	1950.89	248.70	F	608.38	912.57	10719.01	704.76	119.10	14842.70	975.88

Main Results for each time segment

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	1168.06	292.02	1103.28	1032.49	232.33	0.00	1171.39	998.02	0.997	0.00	16.20	38.120	E
1	2	500.65	125.16	497.77	968.33	367.28	0.00	1188.83	1092.24	0.421	0.00	0.72	5.187	A
1	3	0.00	0.00	0.00	367.28	497.77	0.00	1293.55	902.72	0.000	0.00	0.00	0.000	A
1	4	782.97	195.74	767.05	0.00	497.77	0.00	972.37	246.87	0.805	0.00	3.98	17.525	C
2	1	454.72	113.68	450.26	857.94	800.38	0.00	853.78	840.59	0.533	0.00	1.12	8.828	A
2	2	498.39	124.60	486.71	340.64	910.00	0.00	653.46	492.32	0.763	0.00	2.92	20.378	C
2	3	1032.49	258.12	1020.97	1168.06	228.65	0.00	1375.57	1373.96	0.751	0.00	2.88	9.857	A
2	4	499.14	124.79	479.26	70.57	1179.06	0.00	581.97	386.25	0.858	0.00	4.97	32.834	D

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	1287.07	321.77	1144.45	1207.90	265.59	0.00	1151.77	998.02	1.117	16.20	51.85	118.394	F
1	2	597.82	149.46	596.63	1023.35	386.68	0.00	1177.06	1092.24	0.508	0.72	1.02	6.190	A
1	3	0.00	0.00	0.00	386.68	596.63	0.00	1228.55	902.72	0.000	0.00	0.00	0.000	A
1	4	934.94	233.73	876.85	0.00	596.63	0.00	915.96	246.87	1.021	3.98	18.50	60.665	F
2	1	542.98	135.75	540.14	999.04	842.30	0.00	829.42	840.59	0.655	1.12	1.83	12.319	B
2	2	595.12	148.78	566.06	395.51	986.93	0.00	612.29	492.32	0.972	2.92	10.18	56.915	F
2	3	1207.90	301.97	1191.78	1287.07	265.93	0.00	1352.81	1373.96	0.893	2.88	6.91	20.509	C
2	4	596.02	149.01	465.76	82.13	1375.58	0.00	472.04	386.25	1.263	4.97	37.54	188.877	F

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	1363.59	340.90	1157.45	1314.24	253.93	0.00	1158.65	998.01	1.177	51.85	103.39	249.411	F
1	2	732.18	183.04	729.81	1023.70	387.67	0.00	1176.46	1092.24	0.622	1.02	1.61	8.017	A
1	3	0.00	0.00	0.00	387.67	729.81	0.00	1141.00	902.72	0.000	0.00	0.00	0.000	A
1	4	1145.06	286.27	838.36	0.00	729.81	0.00	839.97	246.87	1.363	18.50	95.18	255.458	F
2	1	665.02	166.25	658.31	1059.78	827.74	0.00	837.88	840.59	0.794	1.83	3.50	19.330	C
2	2	728.88	182.22	568.77	424.04	1062.02	0.00	572.11	492.32	1.274	10.18	50.21	207.173	F
2	3	1314.24	328.56	1283.24	1363.59	267.20	0.00	1352.03	1373.96	0.972	6.91	14.66	39.111	E
2	4	729.98	182.49	420.84	83.76	1466.68	0.00	421.08	386.25	1.734	37.54	114.82	674.327	F

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	1362.30	340.57	1158.20	1316.60	253.95	0.00	1158.63	998.01	1.176	103.39	154.41	408.173	F
1	2	732.18	183.04	732.11	1024.26	387.89	0.00	1176.33	1092.24	0.622	1.61	1.63	8.100	A
1	3	0.00	0.00	0.00	387.89	732.11	0.00	1139.49	902.72	0.000	0.00	0.00	0.000	A
1	4	1145.06	286.27	838.45	0.00	732.11	0.00	838.66	246.87	1.365	95.18	171.83	562.482	F
2	1	665.02	166.25	664.55	1073.07	823.11	0.00	840.57	840.59	0.791	3.50	3.62	20.289	C
2	2	728.88	182.22	573.66	429.52	1058.14	0.00	574.18	492.32	1.269	50.21	89.02	436.931	F
2	3	1316.60	329.15	1300.96	1362.30	269.50	0.00	1350.63	1373.96	0.975	14.66	18.57	53.035	F
2	4	729.98	182.49	410.30	84.58	1485.88	0.00	410.34	386.25	1.779	114.82	194.74	1370.254	F

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	1289.91	322.48	1145.00	1236.59	276.52	0.00	1145.31	998.02	1.126	154.41	190.64	549.343	F
1	2	597.82	149.46	600.14	1032.15	389.38	0.00	1175.43	1092.24	0.509	1.63	1.05	6.282	A
1	3	0.00	0.00	0.00	389.38	600.14	0.00	1226.24	902.72	0.000	0.00	0.00	0.000	A
1	4	934.94	233.73	912.97	0.00	600.14	0.00	913.95	246.87	1.023	171.83	177.32	678.520	F
2	1	542.98	135.75	549.87	1055.66	825.45	0.00	839.21	840.59	0.647	3.62	1.90	12.722	B
2	2	595.12	148.78	618.77	413.49	961.83	0.00	625.72	492.32	0.951	89.02	83.10	493.202	F
2	3	1236.59	309.15	1249.99	1289.91	290.69	0.00	1337.69	1373.96	0.924	18.57	15.22	45.352	E
2	4	596.02	149.01	429.45	89.02	1451.66	0.00	429.49	386.25	1.388	194.74	236.38	1776.222	F

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

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	1237.25	309.31	1135.85	1174.04	292.06	0.00	1136.15	998.02	1.089	190.64	215.99	649.463	F
1	2	500.65	125.16	501.84	1037.53	390.37	0.00	1174.83	1092.24	0.426	1.05	0.75	5.360	A
1	3	0.00	0.00	0.00	390.37	501.84	0.00	1290.87	902.72	0.000	0.00	0.00	0.000	A
1	4	782.97	195.74	964.25	0.00	501.84	0.00	970.04	246.87	0.807	177.32	132.00	578.315	F
2	1	454.72	113.68	457.46	1035.84	829.09	0.00	837.09	840.59	0.543	1.90	1.22	9.550	A
2	2	498.39	124.60	656.78	397.53	889.02	0.00	664.69	492.32	0.750	83.10	43.51	349.899	F
2	3	1174.04	293.51	1199.16	1237.25	308.55	0.00	1326.79	1373.96	0.885	15.22	8.94	31.257	D
2	4	499.14	124.79	449.88	92.66	1415.05	0.00	449.96	386.25	1.109	236.38	248.70	1950.886	F

Queueing Delay Results for each time segment

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	160.63	10.71	38.120	E	D
1	2	10.43	0.70	5.187	A	A
1	3	0.00	0.00	0.000	A	A
1	4	51.23	3.42	17.525	C	B
2	1	15.77	1.05	8.828	A	A
2	2	37.68	2.51	20.378	C	C
2	3	39.31	2.62	9.857	A	A
2	4	58.64	3.91	32.834	D	C

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	514.45	34.30	118.394	F	F
1	2	14.81	0.99	6.190	A	A
1	3	0.00	0.00	0.000	A	A
1	4	185.69	12.38	60.665	F	E
2	1	25.71	1.71	12.319	B	B
2	2	110.95	7.40	56.915	F	E
2	3	87.57	5.84	20.509	C	C
2	4	324.36	21.62	188.877	F	F

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	1164.75	77.65	249.411	F	F
1	2	23.07	1.54	8.017	A	A
1	3	0.00	0.00	0.000	A	A
1	4	853.97	56.93	255.458	F	F
2	1	46.95	3.13	19.330	C	B
2	2	455.60	30.37	207.173	F	F
2	3	173.19	11.55	39.111	E	D
2	4	1142.82	76.19	674.327	F	F

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	1933.58	128.91	408.173	F	F
1	2	24.33	1.62	8.100	A	A
1	3	0.00	0.00	0.000	A	A
1	4	2002.61	133.51	562.482	F	F
2	1	53.57	3.57	20.289	C	C
2	2	1044.38	69.63	436.931	F	F
2	3	251.72	16.78	53.035	F	D
2	4	2321.70	154.78	1370.254	F	F

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

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	2587.91	172.53	549.343	F	F
1	2	16.32	1.09	6.282	A	A
1	3	0.00	0.00	0.000	A	A
1	4	2618.63	174.58	678.520	F	F
2	1	30.64	2.04	12.722	B	B
2	2	1290.90	86.06	493.202	F	F
2	3	246.40	16.43	45.352	E	D
2	4	3233.41	215.56	1776.222	F	F

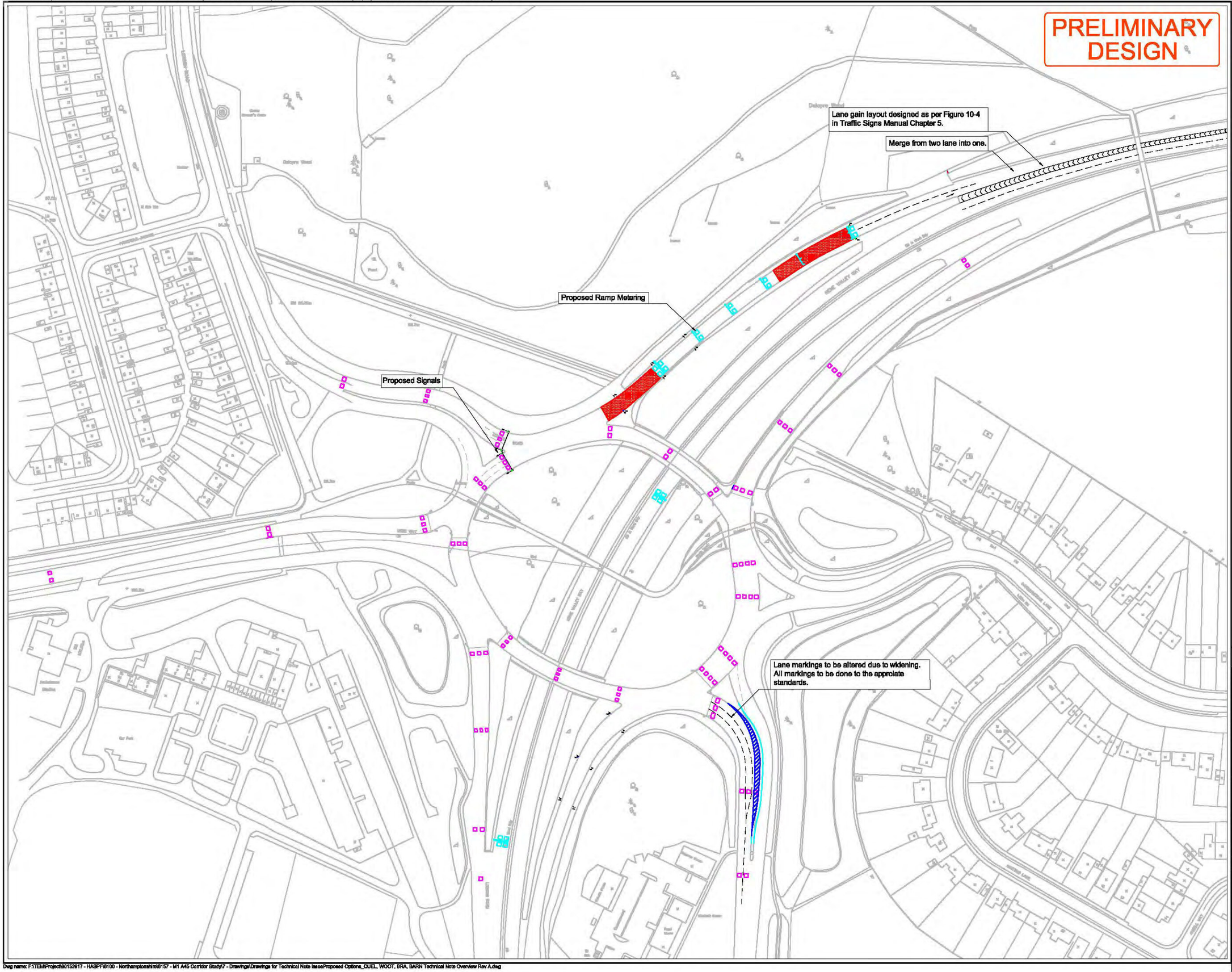
Queueing Delay results: (18:00-18:15)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	3049.73	203.32	649.463	F	F
1	2	11.56	0.77	5.360	A	A
1	3	0.00	0.00	0.000	A	A
1	4	2319.90	154.66	578.315	F	F
2	1	19.15	1.28	9.550	A	A
2	2	949.58	63.31	349.899	F	F
2	3	151.51	10.10	31.257	D	C
2	4	3638.09	242.54	1950.886	F	F

APPENDIX C

NORTHAMPTON GROWTH MANAGEMENT SCHEME PROPOSALS

PRELIMINARY DESIGN



NOTES

Ramp Metering has been designed as per document 'MCH 2470 Ramp Metering Technical Design Guidelines' and accompanying diagrams MCX 1016, MCX 1010 and MCX 1011.

KEY

- EXISTING SIGNALS
- EXISTING STOP - LINE
- EXISTING WHITE LINING
- PROPOSED RAMP METERING DETECTOR
- PROPOSED DUCTING
- PROPOSED MOVA DETECTOR
- PROPOSED QUEUE DETECTOR
- PROPOSED TRAFFIC SIGN
- PROPOSED TRAFFIC SIGNAL
- PROPOSED ANTI-SKID SURFACING
- PROPOSED WHITE LINING
- PROPOSED CARRIAGEWAY WIDENING
- PROPOSED TRAFFIC ISLAND
- PROPOSED HOV LANE
- PROPOSED PEDESTRIAN GUARDRAIL

Rev	Date	Detail	Made	Chkd	Appd
A	March 2011	HOV Scheme Removed	DB	JC	NS

Client: HIGHWAYS AGENCY

Project: Highways Agency Spatial Planning Framework

Title: A45 Corridor Study - Proposed Drawing - A45 Queen Eleanor Interchange

Design:	AC	CAD:	NM
Chk'd:	NS	App'd:	JC
Date:	June 2010	Scale:	1:1000

AECOM

Beaufort House, 94-96 Newhall Street, BIRMINGHAM, B3 1PB

Tel: +44 (0) 121 262 1900
Fax: +44 (0) 121 262 1999
www.aecom.com

No. 60153917/6157/QUEL/TN1 Rev: A

A1

Dwg name: P:\TEM\Projects\60153917 - HASPF\6100 - Northamptonshire\6157 - M1 A45 Corridor Study\7 - Drawings\Drawings for Technical Note Issue\Proposed Options_QUEL, WOOT, BRA, BARN Technical Note Overview Rev A.dwg

APPENDIX D

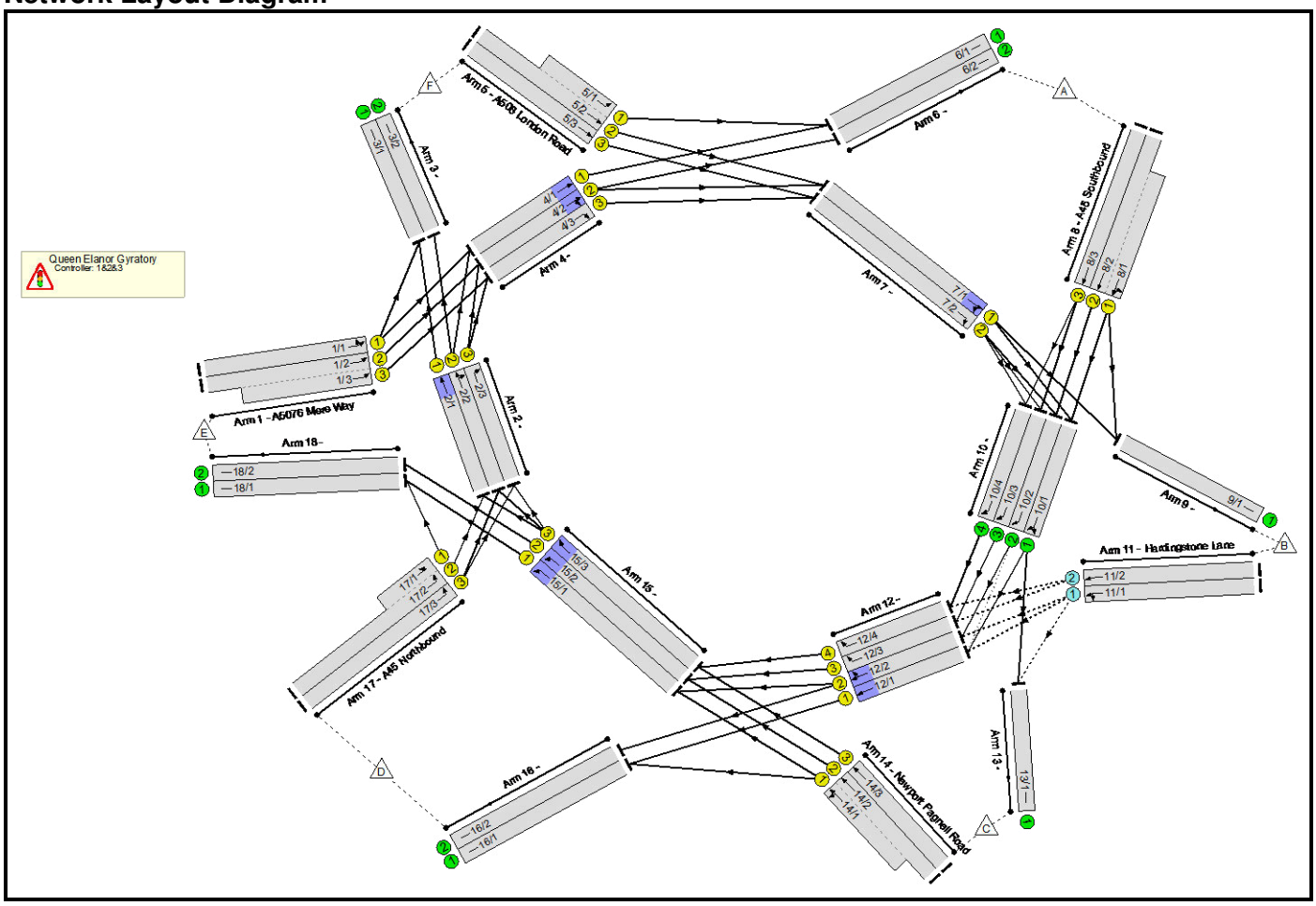
QUEEN ELEANOR GYRATORY LINSIG MODELLING RESULTS

Full Input Data And Results

User and Project Details

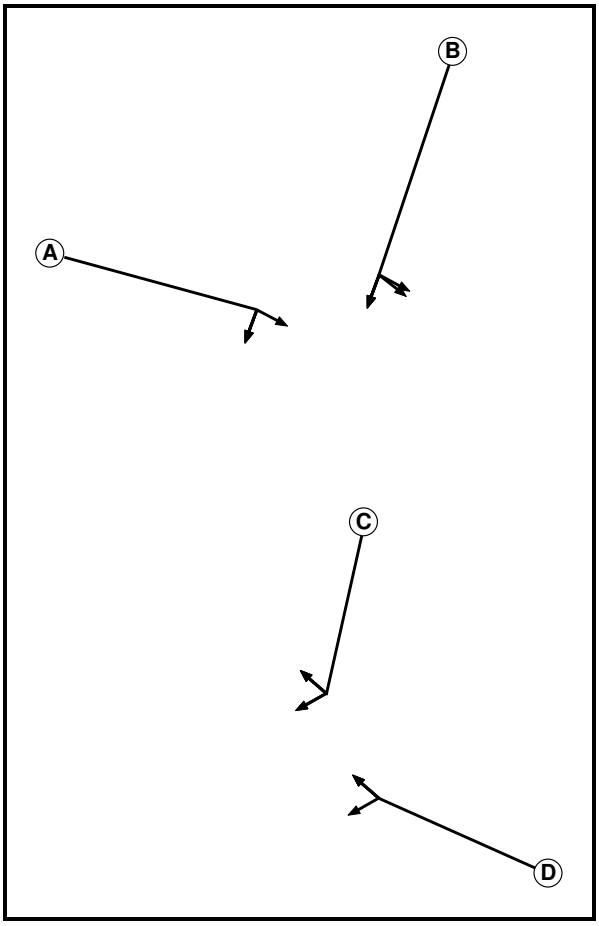
Project:	**Northampton Gateway SRFI**
Title:	**Queen Elanor Gyratory**
Location:	
File name:	170830 Queen Elanor Gyratory.lsg3x
Author:	Mark Higgins
Company:	ADC Infrastructure
Address:	Western Street, Nottingham
Notes:	

Network Layout Diagram



C1 - Queen Elanor A B

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	2		7	7
D	Traffic	2		7	7

Phase Intergreens Matrix

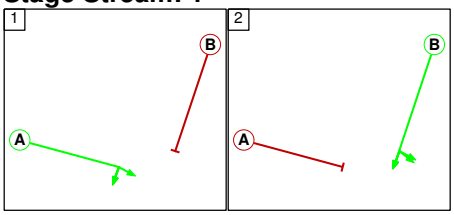
		Starting Phase			
		A	B	C	D
Terminating Phase	A		7	-	-
	B	7		-	-
	C	-	-		5
	D	-	-	5	

Phases in Stage

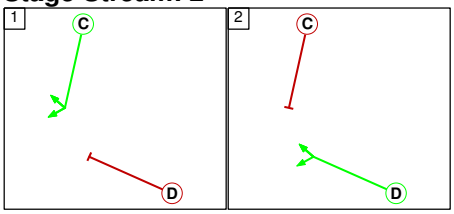
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Phase Delays

Stage Stream: 1

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

Stage Stream: 2

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

Prohibited Stage Change

Stage Stream: 1

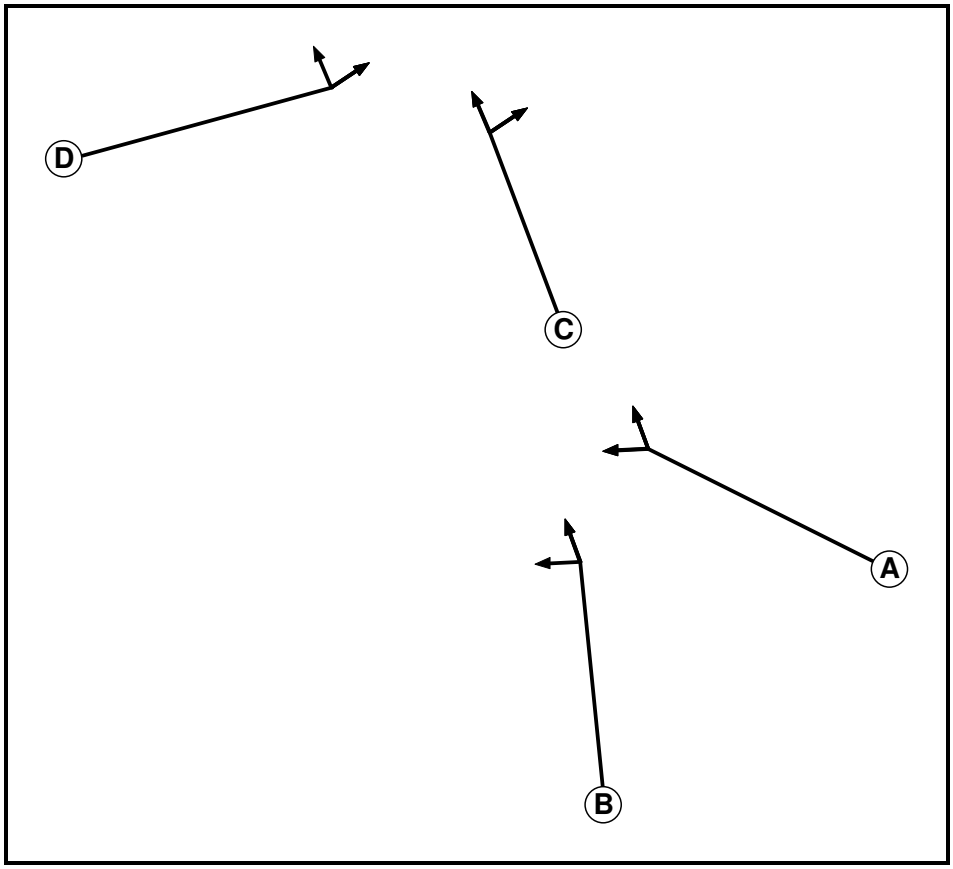
	To Stage		
From Stage		1	2
	1		7
	2	7	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		5
	2	5	

C2 - Queen Elanor C D

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	2		7	7
D	Traffic	2		7	7

Phase Intergreens Matrix

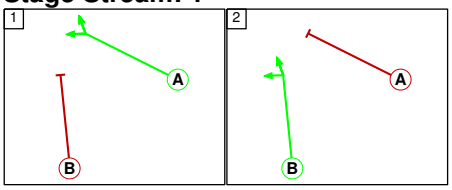
		Starting Phase			
		A	B	C	D
Terminating Phase	A		5	-	-
	B	5		-	-
	C	-	-		6
	D	-	-	6	

Phases in Stage

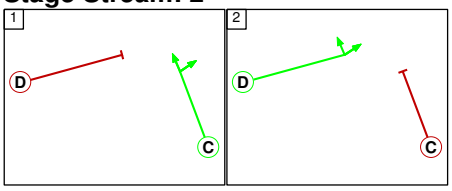
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Phase Delays

Stage Stream: 1

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

Stage Stream: 2

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

Prohibited Stage Change

Stage Stream: 1

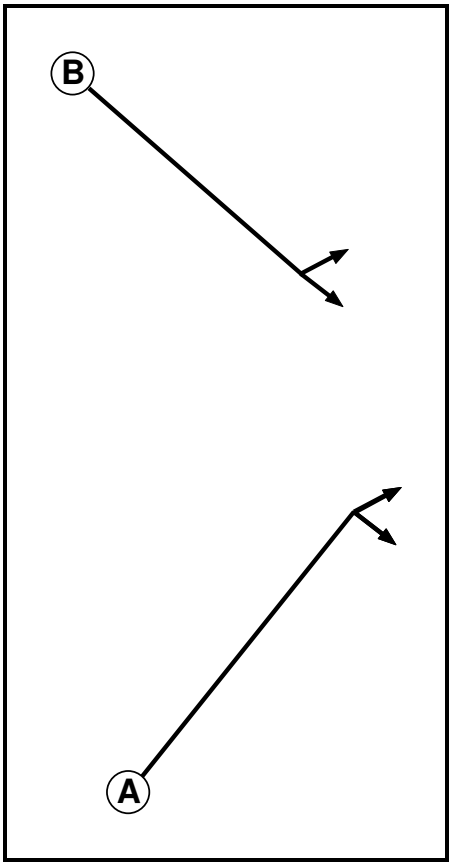
	To Stage		
From Stage		1	2
	1		5
	2	5	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		6
	2	6	

C3 - London Road

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Traffic	1		7	7

Phase Intergreens Matrix

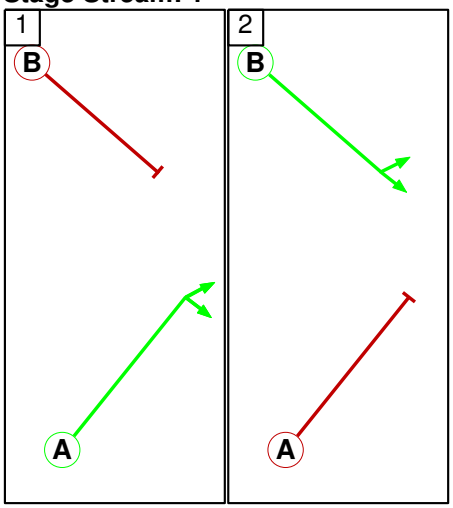
	Starting Phase		
Terminating Phase		A	B
	A		6
	B	6	

Phases in Stage

Stream	Stage No.	Phases in Stage
1	1	A
1	2	B

Stage Diagram

Stage Stream: 1



Phase Delays

Stage Stream: 1

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

Prohibited Stage Change

Stage Stream: 1

	To Stage		
		1	2
From Stage	1		6
	2	6	

Give-Way Lane Input Data

Junction: Queen Elanor Gyratory											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
11/1 (Hardingstone Lane)	12/1 (Ahead)	1006	0	10/1	0.25	All	-	-	-	-	-
				10/2	0.25	All					
	12/2 (Ahead)	1006	0	10/1	0.25	All					
				10/2	0.25	All					
	13/1 (Left)	1006	0	10/1	0.25	All					
11/2 (Hardingstone Lane)	12/3 (Ahead)	1006	0	10/1	0.25	All	-	-	-	-	-
				10/2	0.25	All					
				10/3	0.25	All					
				10/4	0.25	All					
	12/4 (Ahead)	1006	0	10/1	0.25	All					
				10/2	0.25	All					
				10/3	0.25	All					
				10/4	0.25	All					

Lane Input Data

Junction: Queen Elanor Gyratory												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
1/1 (A5076 Mere Way)	U	D	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 3 Left	20.00
											Arm 4 Ahead	Inf
1/2 (A5076 Mere Way)	U	D	2	3	60.0	Geom	-	3.50	0.00	N	Arm 4 Ahead	Inf
1/3 (A5076 Mere Way)	U	D	2	3	12.2	Geom	-	3.50	0.00	Y	Arm 4 Ahead	Inf
2/1	U	C	2	3	12.2	User	1900	-	-	-	-	-
2/2	U	C	2	3	12.2	User	1900	-	-	-	-	-
2/3	U	C	2	3	12.2	User	1900	-	-	-	-	-
3/1	U		2	3	3.0	Inf	-	-	-	-	-	-
3/2	U		2	3	3.0	Inf	-	-	-	-	-	-
4/1	U	A	2	3	9.6	User	1900	-	-	-	-	-
4/2	U	A	2	3	9.6	User	1900	-	-	-	-	-
4/3	U	A	2	3	9.6	User	1900	-	-	-	-	-
5/1 (A508 London Road)	U	B	2	3	7.8	Geom	-	3.50	0.00	Y	Arm 6 Left	Inf
5/2 (A508 London Road)	U	B	2	3	60.0	Geom	-	3.50	0.00	N	Arm 7 Ahead	Inf
5/3 (A508 London Road)	U	B	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 7 Ahead	Inf
6/1	U		2	3	3.0	Inf	-	-	-	-	-	-
6/2	U		2	3	3.0	Inf	-	-	-	-	-	-
7/1	U	A	2	3	20.9	User	1900	-	-	-	-	-
7/2	U	A	2	3	20.9	User	1900	-	-	-	-	-
8/1 (A45 Southbound)	U	B	2	3	15.7	Geom	-	3.65	0.00	Y	Arm 9 Left	30.00
											Arm 10 Ahead	Inf
8/2 (A45 Southbound)	U	B	2	3	60.0	Geom	-	3.65	0.00	N	Arm 10 Ahead	Inf
8/3 (A45 Southbound)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 10 Ahead	Inf
9/1	U		2	3	3.0	Inf	-	-	-	-	-	-
10/1	U		2	3	12.2	Inf	-	-	-	-	-	-
10/2	U		2	3	12.2	Inf	-	-	-	-	-	-
10/3	U		2	3	12.2	User	3000	-	-	-	-	-

10/4	U		2	3	12.2	User	3000	-	-	-	-	-
11/1 (Hardingstone Lane)	O		2	3	5.2	Inf	-	-	-	-	-	-
11/2 (Hardingstone Lane)	O		2	3	60.0	Inf	-	-	-	-	-	-
12/1	U	C	2	3	7.8	User	1900	-	-	-	-	-
12/2	U	C	2	3	7.8	User	1900	-	-	-	-	-
12/3	U	C	2	3	7.8	User	1900	-	-	-	-	-
12/4	U	C	2	3	7.8	User	1900	-	-	-	-	-
13/1	U		2	3	3.0	Inf	-	-	-	-	-	-
14/1 (Newport Pagnell Road)	U	D	2	3	10.0	Geom	-	3.50	0.00	Y	Arm 15 Ahead Arm 16 Left	Inf 20.00
14/2 (Newport Pagnell Road)	U	D	2	3	60.0	Geom	-	3.50	0.00	N	Arm 15 Ahead	30.00
14/3 (Newport Pagnell Road)	U	D	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 15 Ahead	50.00
15/1	U	A	2	3	22.6	User	1900	-	-	-	-	-
15/2	U	A	2	3	22.6	User	1900	-	-	-	-	-
15/3	U	A	2	3	22.6	User	1900	-	-	-	-	-
16/1	U		2	3	3.0	Inf	-	-	-	-	-	-
16/2	U		2	3	3.0	Inf	-	-	-	-	-	-
17/1 (A45 Northbound)	U	B	2	3	6.0	Geom	-	3.65	0.00	Y	Arm 18 U-Turn	Inf
17/2 (A45 Northbound)	U	B	2	3	60.0	Geom	-	3.65	0.00	N	Arm 2 Left	Inf
17/3 (A45 Northbound)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 2 Left	Inf
18/1	U		2	3	3.0	Inf	-	-	-	-	-	-
18/2	U		2	3	3.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2031 Reference Case D1 - AM'	08:00	09:00	01:00	
2: '2031 Reference Case D1 - PM'	17:00	18:00	01:00	
3: '2031 With Dev Case J1c - AM'	08:00	09:00	01:00	
4: '2031 With Dev Case J1c - PM'	17:00	18:00	01:00	

Scenario 1: '2031 Reference Case AM' (FG1: '2031 Reference Case D1 - AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	75	93	72	1477	363	2080
	B	210	0	0	34	96	159	499
	C	210	0	0	0	310	394	914
	D	75	1	2	0	79	762	919
	E	1765	22	265	217	4	45	2318
	F	293	11	198	407	46	0	955
	Tot.	2553	109	558	730	2012	1723	7685

Traffic Lane Flows

Lane	Scenario 1: 2031 Reference Case AM
Junction: Queen Elanor Gyratory	
1/1	1124
1/2 (with short)	1194(In) 1190(Out)
1/3 (short)	4
2/1	951
2/2	856
2/3	369
3/1	996
3/2	727
4/1	1208
4/2	1559
4/3	4
5/1 (short)	293
5/2 (with short)	502(In) 209(Out)
5/3	453
6/1	1501
6/2	1052
7/1	716
7/2	457
8/1 (short)	240
8/2 (with short)	1106(In) 866(Out)
8/3	974
9/1	109
10/1	847
10/2	1277
10/3	657
10/4	363
11/1	130
11/2	369
12/1	654
12/2	1042
12/3	657
12/4	732
13/1	558
14/1 (short)	102
14/2 (with short)	310(In) 208(Out)
14/3	604

15/1	1068
15/2	865
15/3	1336
16/1	654
16/2	76
17/1 (short)	79
17/2 (with short)	501(In) 422(Out)
17/3	418
18/1	1147
18/2	865

Lane Saturation Flows

Junction: Queen Elanor Gyratory

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A5076 Mere Way)	3.50	0.00	Y	Arm 3 Left	20.00	4.0 %	1959	1959
				Arm 4 Ahead	Inf	96.0 %		
1/2 (A5076 Mere Way)	3.50	0.00	N	Arm 4 Ahead	Inf	100.0 %	2105	2105
1/3 (A5076 Mere Way)	3.50	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1965	1965
2/1	This lane uses a directly entered Saturation Flow						1900	1900
2/2	This lane uses a directly entered Saturation Flow						1900	1900
2/3	This lane uses a directly entered Saturation Flow						1900	1900
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	This lane uses a directly entered Saturation Flow						1900	1900
4/2	This lane uses a directly entered Saturation Flow						1900	1900
4/3	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (A508 London Road)	3.50	0.00	Y	Arm 6 Left	Inf	100.0 %	1965	1965
5/2 (A508 London Road)	3.50	0.00	N	Arm 7 Ahead	Inf	100.0 %	2105	2105
5/3 (A508 London Road)	3.50	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1965	1965
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	This lane uses a directly entered Saturation Flow						1900	1900
7/2	This lane uses a directly entered Saturation Flow						1900	1900
8/1 (A45 Southbound)	3.65	0.00	Y	Arm 9 Left	30.00	31.3 %	1950	1950
				Arm 10 Ahead	Inf	68.8 %		
8/2 (A45 Southbound)	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
8/3 (A45 Southbound)	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/1	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
10/3	This lane uses a directly entered Saturation Flow						3000	3000
10/4	This lane uses a directly entered Saturation Flow						3000	3000
11/1 (Hardingstone Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (Hardingstone Lane Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1	This lane uses a directly entered Saturation Flow						1900	1900
12/2	This lane uses a directly entered Saturation Flow						1900	1900

12/3	This lane uses a directly entered Saturation Flow						1900	1900
12/4	This lane uses a directly entered Saturation Flow						1900	1900
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Newport Pagnell Road)	3.50	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1965	1965
				Arm 16 Left	20.00	0.0 %		
14/2 (Newport Pagnell Road)	3.50	0.00	N	Arm 15 Ahead	30.00	100.0 %	2005	2005
14/3 (Newport Pagnell Road)	3.50	0.00	Y	Arm 15 Ahead	50.00	100.0 %	1908	1908
15/1	This lane uses a directly entered Saturation Flow						1900	1900
15/2	This lane uses a directly entered Saturation Flow						1900	1900
15/3	This lane uses a directly entered Saturation Flow						1900	1900
16/1	Infinite Saturation Flow						Inf	Inf
16/2	Infinite Saturation Flow						Inf	Inf
17/1 (A45 Northbound)	3.65	0.00	Y	Arm 18 U-Turn	Inf	100.0 %	1980	1980
17/2 (A45 Northbound)	3.65	0.00	N	Arm 2 Left	Inf	100.0 %	2120	2120
17/3 (A45 Northbound)	3.65	0.00	Y	Arm 2 Left	Inf	100.0 %	1980	1980
18/1	Infinite Saturation Flow						Inf	Inf
18/2	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2031 With Dev AM' (FG3: '2031 With Dev Case J1c - AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	65	56	30	1534	363	2048
	B	173	0	0	27	119	171	490
	C	194	0	0	0	400	456	1050
	D	78	0	1	0	98	725	902
	E	1728	22	247	241	5	58	2301
	F	315	11	181	472	54	0	1033
	Tot.	2488	98	485	770	2210	1773	7824

Traffic Lane Flows

Lane	Scenario 2: 2031 With Dev AM
Junction: Queen Elanor Gyratory	
1/1	1115
1/2 (with short)	1186(In) 1181(Out)
1/3 (short)	5
2/1	969
2/2	863
2/3	329
3/1	1027
3/2	746
4/1	1174
4/2	1510
4/3	5
5/1 (short)	315
5/2 (with short)	507(In) 192(Out)
5/3	526
6/1	1489
6/2	999
7/1	703
7/2	531
8/1 (short)	151
8/2 (with short)	1047(In) 896(Out)
8/3	1001
9/1	98
10/1	756
10/2	1373
10/3	692
10/4	363
11/1	146
11/2	344
12/1	688
12/2	1102
12/3	692
12/4	707
13/1	485
14/1 (short)	174
14/2 (with short)	400(In) 226(Out)
14/3	650

15/1	1194
15/2	918
15/3	1357
16/1	688
16/2	82
17/1 (short)	98
17/2 (with short)	499(In) 401(Out)
17/3	403
18/1	1292
18/2	918

Lane Saturation Flows

Junction: Queen Elanor Gyratory

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A5076 Mere Way)	3.50	0.00	Y	Arm 3 Left	20.00	5.2 %	1957	1957
				Arm 4 Ahead	Inf	94.8 %		
1/2 (A5076 Mere Way)	3.50	0.00	N	Arm 4 Ahead	Inf	100.0 %	2105	2105
1/3 (A5076 Mere Way)	3.50	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1965	1965
2/1	This lane uses a directly entered Saturation Flow						1900	1900
2/2	This lane uses a directly entered Saturation Flow						1900	1900
2/3	This lane uses a directly entered Saturation Flow						1900	1900
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	This lane uses a directly entered Saturation Flow						1900	1900
4/2	This lane uses a directly entered Saturation Flow						1900	1900
4/3	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (A508 London Road)	3.50	0.00	Y	Arm 6 Left	Inf	100.0 %	1965	1965
5/2 (A508 London Road)	3.50	0.00	N	Arm 7 Ahead	Inf	100.0 %	2105	2105
5/3 (A508 London Road)	3.50	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1965	1965
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	This lane uses a directly entered Saturation Flow						1900	1900
7/2	This lane uses a directly entered Saturation Flow						1900	1900
8/1 (A45 Southbound)	3.65	0.00	Y	Arm 9 Left	30.00	43.0 %	1938	1938
				Arm 10 Ahead	Inf	57.0 %		
8/2 (A45 Southbound)	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
8/3 (A45 Southbound)	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/1	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
10/3	This lane uses a directly entered Saturation Flow						3000	3000
10/4	This lane uses a directly entered Saturation Flow						3000	3000
11/1 (Hardingstone Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (Hardingstone Lane Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1	This lane uses a directly entered Saturation Flow						1900	1900
12/2	This lane uses a directly entered Saturation Flow						1900	1900

12/3	This lane uses a directly entered Saturation Flow						1900	1900
12/4	This lane uses a directly entered Saturation Flow						1900	1900
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Newport Pagnell Road)	3.50	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1965	1965
				Arm 16 Left	20.00	0.0 %		
14/2 (Newport Pagnell Road)	3.50	0.00	N	Arm 15 Ahead	30.00	100.0 %	2005	2005
14/3 (Newport Pagnell Road)	3.50	0.00	Y	Arm 15 Ahead	50.00	100.0 %	1908	1908
15/1	This lane uses a directly entered Saturation Flow						1900	1900
15/2	This lane uses a directly entered Saturation Flow						1900	1900
15/3	This lane uses a directly entered Saturation Flow						1900	1900
16/1	Infinite Saturation Flow						Inf	Inf
16/2	Infinite Saturation Flow						Inf	Inf
17/1 (A45 Northbound)	3.65	0.00	Y	Arm 18 U-Turn	Inf	100.0 %	1980	1980
17/2 (A45 Northbound)	3.65	0.00	N	Arm 2 Left	Inf	100.0 %	2120	2120
17/3 (A45 Northbound)	3.65	0.00	Y	Arm 2 Left	Inf	100.0 %	1980	1980
18/1	Infinite Saturation Flow						Inf	Inf
18/2	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2031 Reference Case PM' (FG2: '2031 Reference Case D1 - PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	600	38	12	922	222	1794
	B	467	0	0	19	35	173	694
	C	134	0	0	33	965	471	1603
	D	34	30	10	0	96	443	613
	E	1630	95	268	429	12	24	2458
	F	372	95	110	615	72	0	1264
	Tot.	2637	820	426	1108	2102	1333	8426

Traffic Lane Flows

Lane	Scenario 3: 2031 Reference Case PM
Junction: Queen Elanor Gyratory	
1/1	1180
1/2 (with short)	1278(In) 1257(Out)
1/3 (short)	21
2/1	817
2/2	739
2/3	428
3/1	841
3/2	492
4/1	1403
4/2	1685
4/3	21
5/1 (short)	372
5/2 (with short)	577(In) 205(Out)
5/3	687
6/1	1775
6/2	862
7/1	1028
7/2	708
8/1 (short)	639
8/2 (with short)	1127(In) 488(Out)
8/3	667
9/1	820
10/1	847
10/2	1173
10/3	468
10/4	222
11/1	54
11/2	640
12/1	790
12/2	858
12/3	468
12/4	862
13/1	426
14/1 (short)	476
14/2 (with short)	998(In) 522(Out)
14/3	605

15/1	1016
15/2	990
15/3	1467
16/1	823
16/2	285
17/1 (short)	96
17/2 (with short)	374(In) 278(Out)
17/3	239
18/1	1112
18/2	990

Lane Saturation Flows

Junction: Queen Elanor Gyratory

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A5076 Mere Way)	3.50	0.00	Y	Arm 3 Left	20.00	2.0 %	1962	1962
				Arm 4 Ahead	Inf	98.0 %		
1/2 (A5076 Mere Way)	3.50	0.00	N	Arm 4 Ahead	Inf	100.0 %	2105	2105
1/3 (A5076 Mere Way)	3.50	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1965	1965
2/1	This lane uses a directly entered Saturation Flow						1900	1900
2/2	This lane uses a directly entered Saturation Flow						1900	1900
2/3	This lane uses a directly entered Saturation Flow						1900	1900
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	This lane uses a directly entered Saturation Flow						1900	1900
4/2	This lane uses a directly entered Saturation Flow						1900	1900
4/3	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (A508 London Road)	3.50	0.00	Y	Arm 6 Left	Inf	100.0 %	1965	1965
5/2 (A508 London Road)	3.50	0.00	N	Arm 7 Ahead	Inf	100.0 %	2105	2105
5/3 (A508 London Road)	3.50	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1965	1965
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	This lane uses a directly entered Saturation Flow						1900	1900
7/2	This lane uses a directly entered Saturation Flow						1900	1900
8/1 (A45 Southbound)	3.65	0.00	Y	Arm 9 Left	30.00	93.9 %	1891	1891
				Arm 10 Ahead	Inf	6.1 %		
8/2 (A45 Southbound)	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
8/3 (A45 Southbound)	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/1	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
10/3	This lane uses a directly entered Saturation Flow						3000	3000
10/4	This lane uses a directly entered Saturation Flow						3000	3000
11/1 (Hardingstone Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (Hardingstone Lane Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1	This lane uses a directly entered Saturation Flow						1900	1900
12/2	This lane uses a directly entered Saturation Flow						1900	1900

12/3	This lane uses a directly entered Saturation Flow						1900	1900
12/4	This lane uses a directly entered Saturation Flow						1900	1900
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Newport Pagnell Road)	3.50	0.00	Y	Arm 15 Ahead	Inf	93.1 %	1955	1955
				Arm 16 Left	20.00	6.9 %		
14/2 (Newport Pagnell Road)	3.50	0.00	N	Arm 15 Ahead	30.00	100.0 %	2005	2005
14/3 (Newport Pagnell Road)	3.50	0.00	Y	Arm 15 Ahead	50.00	100.0 %	1908	1908
15/1	This lane uses a directly entered Saturation Flow						1900	1900
15/2	This lane uses a directly entered Saturation Flow						1900	1900
15/3	This lane uses a directly entered Saturation Flow						1900	1900
16/1	Infinite Saturation Flow						Inf	Inf
16/2	Infinite Saturation Flow						Inf	Inf
17/1 (A45 Northbound)	3.65	0.00	Y	Arm 18 U-Turn	Inf	100.0 %	1980	1980
17/2 (A45 Northbound)	3.65	0.00	N	Arm 2 Left	Inf	100.0 %	2120	2120
17/3 (A45 Northbound)	3.65	0.00	Y	Arm 2 Left	Inf	100.0 %	1980	1980
18/1	Infinite Saturation Flow						Inf	Inf
18/2	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2031 With Dev PM' (FG4: '2031 With Dev Case J1c - PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	544	39	8	944	219	1754
	B	441	0	0	20	46	150	657
	C	116	1	0	33	893	513	1556
	D	45	30	19	0	101	555	750
	E	1494	80	250	402	9	28	2263
	F	369	100	110	681	99	0	1359
	Tot.	2465	755	418	1144	2092	1465	8339

Traffic Lane Flows

Lane	Scenario 4: 2031 With Dev PM
Junction: Queen Elanor Gyratory	
1/1	1092
1/2 (with short)	1171(In) 1162(Out)
1/3 (short)	9
2/1	814
2/2	812
2/3	463
3/1	842
3/2	623
4/1	1253
4/2	1625
4/3	9
5/1 (short)	369
5/2 (with short)	579(In) 210(Out)
5/3	780
6/1	1622
6/2	843
7/1	992
7/2	789
8/1 (short)	583
8/2 (with short)	1160(In) 577(Out)
8/3	594
9/1	755
10/1	820
10/2	1280
10/3	461
10/4	219
11/1	66
11/2	591
12/1	803
12/2	945
12/3	461
12/4	810
13/1	418
14/1 (short)	446
14/2 (with short)	926(In) 480(Out)
14/3	630

15/1	1050
15/2	941
15/3	1440
16/1	836
16/2	308
17/1 (short)	101
17/2 (with short)	427(In) 326(Out)
17/3	323
18/1	1151
18/2	941

Lane Saturation Flows

Junction: Queen Elanor Gyratory

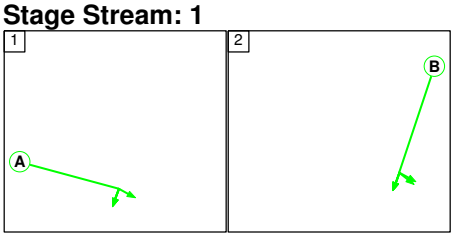
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A5076 Mere Way)	3.50	0.00	Y	Arm 3 Left	20.00	2.6 %	1961	1961
				Arm 4 Ahead	Inf	97.4 %		
1/2 (A5076 Mere Way)	3.50	0.00	N	Arm 4 Ahead	Inf	100.0 %	2105	2105
1/3 (A5076 Mere Way)	3.50	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1965	1965
2/1	This lane uses a directly entered Saturation Flow						1900	1900
2/2	This lane uses a directly entered Saturation Flow						1900	1900
2/3	This lane uses a directly entered Saturation Flow						1900	1900
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	This lane uses a directly entered Saturation Flow						1900	1900
4/2	This lane uses a directly entered Saturation Flow						1900	1900
4/3	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (A508 London Road)	3.50	0.00	Y	Arm 6 Left	Inf	100.0 %	1965	1965
5/2 (A508 London Road)	3.50	0.00	N	Arm 7 Ahead	Inf	100.0 %	2105	2105
5/3 (A508 London Road)	3.50	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1965	1965
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	This lane uses a directly entered Saturation Flow						1900	1900
7/2	This lane uses a directly entered Saturation Flow						1900	1900
8/1 (A45 Southbound)	3.65	0.00	Y	Arm 9 Left	30.00	93.3 %	1892	1892
				Arm 10 Ahead	Inf	6.7 %		
8/2 (A45 Southbound)	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
8/3 (A45 Southbound)	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/1	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
10/3	This lane uses a directly entered Saturation Flow						3000	3000
10/4	This lane uses a directly entered Saturation Flow						3000	3000
11/1 (Hardingstone Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (Hardingstone Lane Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1	This lane uses a directly entered Saturation Flow						1900	1900
12/2	This lane uses a directly entered Saturation Flow						1900	1900

12/3	This lane uses a directly entered Saturation Flow						1900	1900
12/4	This lane uses a directly entered Saturation Flow						1900	1900
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Newport Pagnell Road)	3.50	0.00	Y	Arm 15 Ahead	Inf	92.6 %	1954	1954
				Arm 16 Left	20.00	7.4 %		
14/2 (Newport Pagnell Road)	3.50	0.00	N	Arm 15 Ahead	30.00	100.0 %	2005	2005
14/3 (Newport Pagnell Road)	3.50	0.00	Y	Arm 15 Ahead	50.00	100.0 %	1908	1908
15/1	This lane uses a directly entered Saturation Flow						1900	1900
15/2	This lane uses a directly entered Saturation Flow						1900	1900
15/3	This lane uses a directly entered Saturation Flow						1900	1900
16/1	Infinite Saturation Flow						Inf	Inf
16/2	Infinite Saturation Flow						Inf	Inf
17/1 (A45 Northbound)	3.65	0.00	Y	Arm 18 U-Turn	Inf	100.0 %	1980	1980
17/2 (A45 Northbound)	3.65	0.00	N	Arm 2 Left	Inf	100.0 %	2120	2120
17/3 (A45 Northbound)	3.65	0.00	Y	Arm 2 Left	Inf	100.0 %	1980	1980
18/1	Infinite Saturation Flow						Inf	Inf
18/2	Infinite Saturation Flow						Inf	Inf

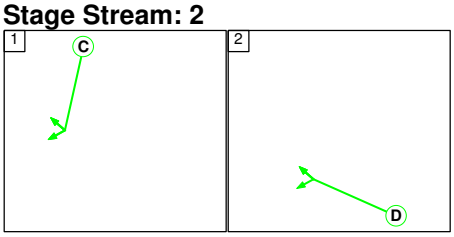
Scenario 1: '2031 Reference Case AM' (FG1: '2031 Reference Case D1 - AM', Plan 1: 'Network Control Plan 1')
C1 - Queen Elanor A B

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

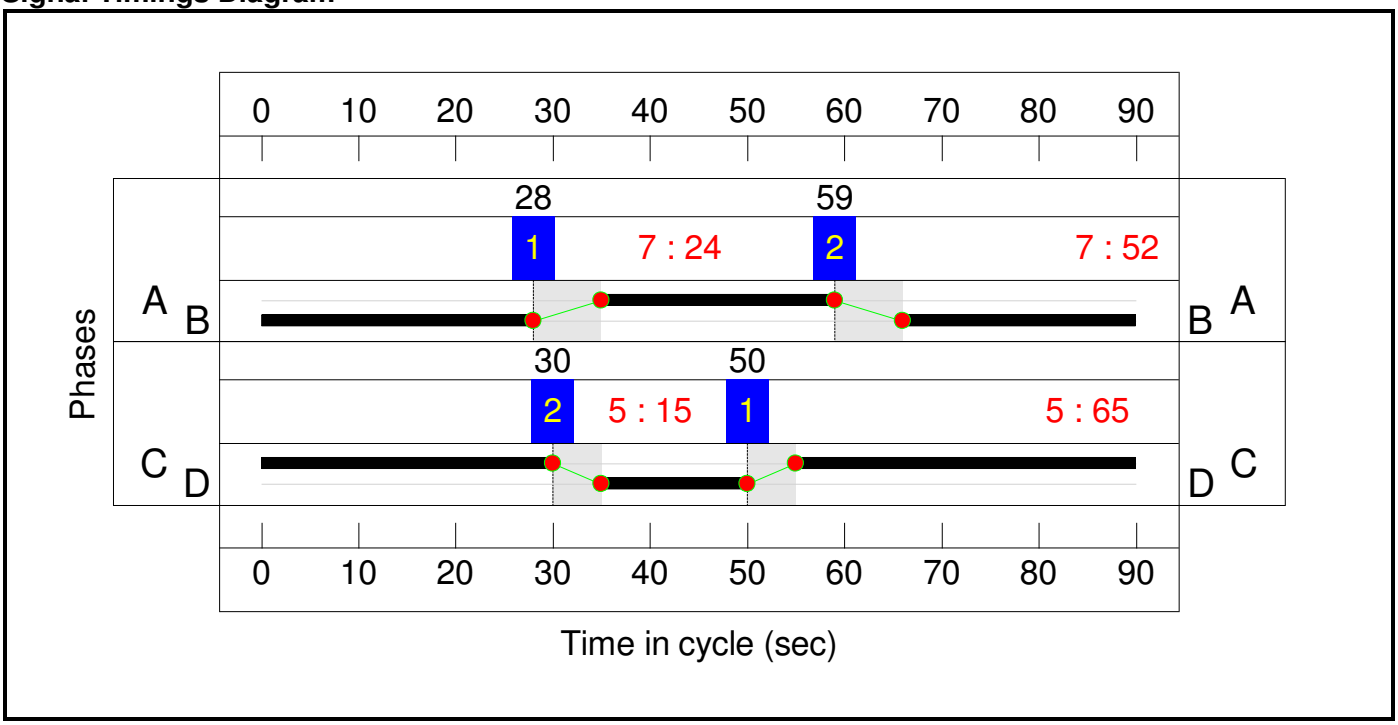
Stage Stream: 1

Stage	1	2
Duration	24	52
Change Point	28	59

Stage Stream: 2

Stage	1	2
Duration	65	15
Change Point	50	30

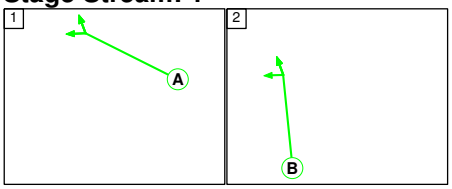
Signal Timings Diagram



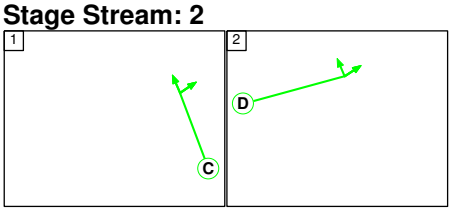
C2 - Queen Elanor C D

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

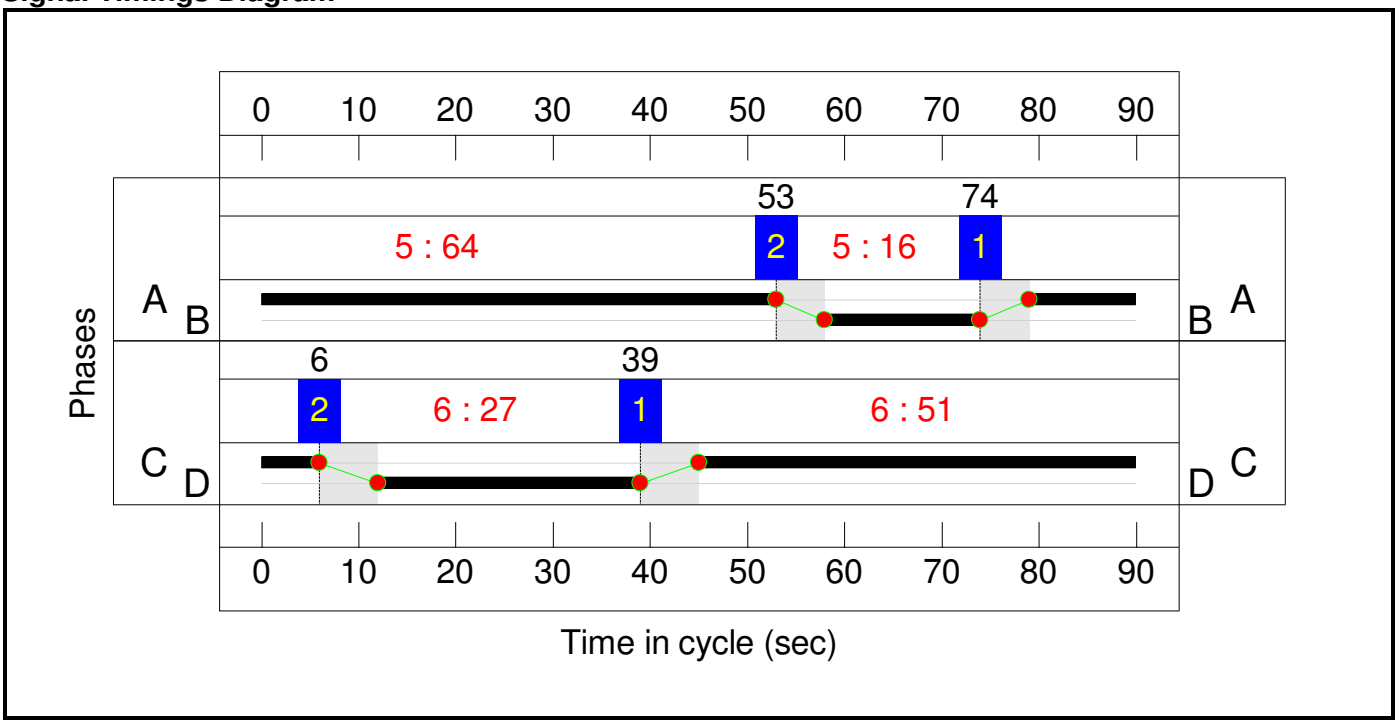
Stage Stream: 1

Stage	1	2
Duration	64	16
Change Point	74	53

Stage Stream: 2

Stage	1	2
Duration	51	27
Change Point	39	6

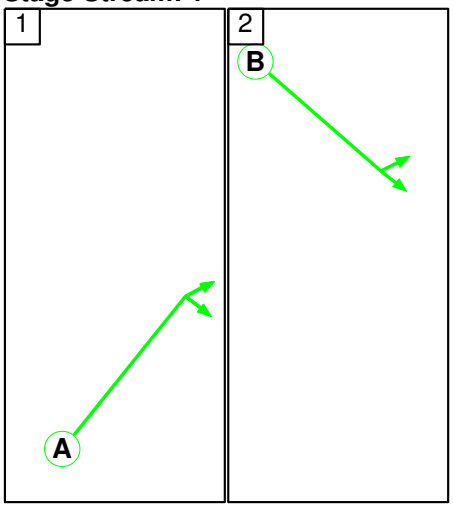
Signal Timings Diagram



C3 - London Road

Stage Sequence Diagram

Stage Stream: 1

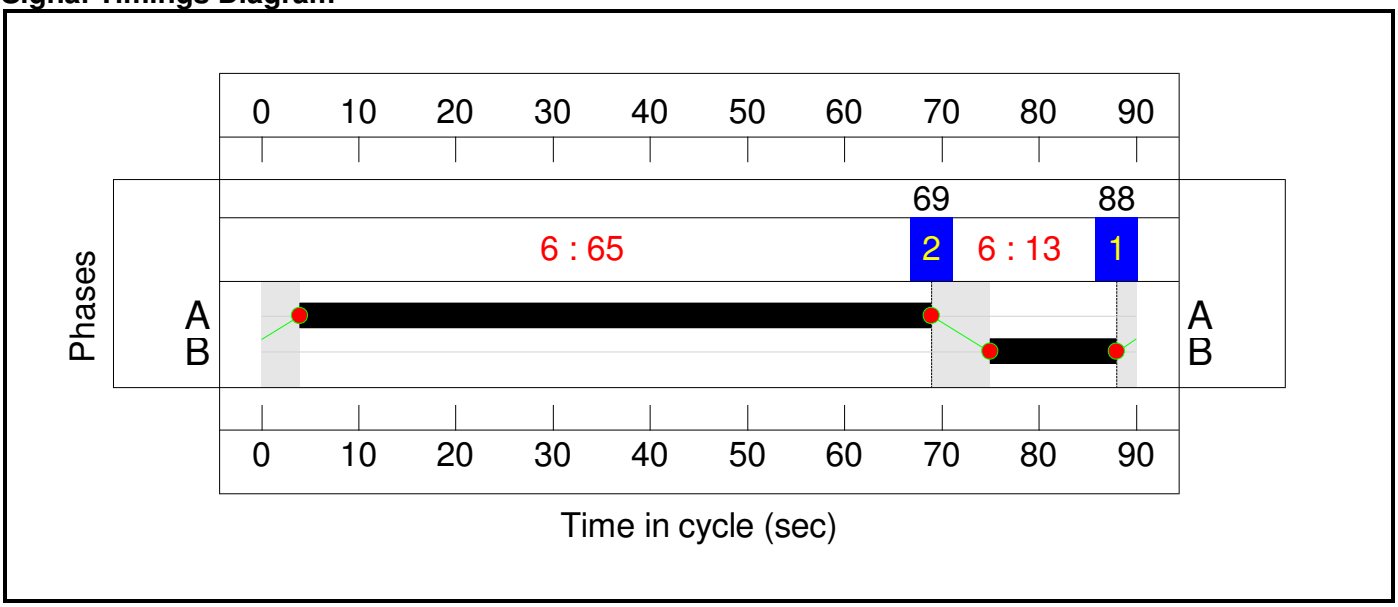


Stage Timings

Stage Stream: 1

Stage	1	2
Duration	65	13
Change Point	88	69

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Queen Elanor Gyratory	-	-	**N/A**	-	-		-	-	-	-	-	-	**184.4%**
Queen Elanor Gyratory	-	-	**N/A**	-	-		-	-	-	-	-	-	**184.4%**
1/1	A5076 Mere Way Left Ahead	U	2:2	N/A	C2:D		1	27	-	1124	1959	609	184.4%
1/2+1/3	A5076 Mere Way Ahead	U	2:2	N/A	C2:D		1	27	-	1194	2105:1965	646+2	184.1 : 184.1%
2/1	Ahead	U	2:2	N/A	C2:C		1	51	-	951	1900	1098	70.6%
2/2	Ahead Right	U	2:2	N/A	C2:C		1	51	-	856	1900	1098	65.3%
2/3	Right	U	2:2	N/A	C2:C		1	51	-	369	1900	1098	24.7%
4/1	Ahead	U	3:1	N/A	C3:A		1	65	-	1208	1900	1393	48.6%
4/2	Ahead Right	U	3:1	N/A	C3:A		1	65	-	1559	1900	1393	65.9%
4/3	Right	U	3:1	N/A	C3:A		1	65	-	4	1900	1393	0.2%
5/2+5/1	A508 London Road Left Ahead	U	3:1	N/A	C3:B		1	13	-	502	2105:1965	218+306	95.9 : 95.9%
5/3	A508 London Road Ahead	U	1:1	N/A	C1:B		1	52	-	453	1965	1157	39.1%
7/1	Ahead Right	U	1:1	N/A	C1:A		1	24	-	716	1900	528	92.0%
7/2	Right	U	1:1	N/A	C1:A		1	24	-	457	1900	528	86.2%
8/2+8/1	A45 Southbound Left Ahead	U	1:1	N/A	C1:B		1	52	-	1106	2120:1950	1123+311	77.1 : 77.1%
8/3	A45 Southbound Ahead	U	1:1	N/A	C1:B		1	52	-	974	1980	1166	83.5%
10/3	Right	U	N/A	N/A	-		-	-	-	657	3000	3000	21.9%
10/4	Right	U	N/A	N/A	-		-	-	-	363	3000	3000	12.1%
11/1	Hardingstone Lane Ahead Left	O	N/A	N/A	-		-	-	-	130	Inf	530	24.5%
11/2	Hardingstone Lane Ahead	O	N/A	N/A	-		-	-	-	369	Inf	309	119.4%
12/1	Ahead	U	1:2	N/A	C1:C		1	65	-	654	1900	1393	39.8%
12/2	Right Ahead	U	1:2	N/A	C1:C		1	65	-	1042	1900	1393	74.7%

12/3	Right	U	1:2	N/A	C1:C		1	65	-	657	1900	1393	47.2%
12/4	Right	U	1:2	N/A	C1:C		1	65	-	732	1900	1393	48.2%
14/2+14/1	Newport Pagnell Road Ahead Left	U	1:2	N/A	C1:D		1	15	-	310	2005:1965	356+175	58.4 : 58.4%
14/3	Newport Pagnell Road Ahead	U	1:2	N/A	C1:D		1	15	-	604	1908	339	178.1%
15/1	Ahead	U	2:1	N/A	C2:A		1	64	-	1068	1900	1372	77.7%
15/2	Ahead	U	2:1	N/A	C2:A		1	64	-	865	1900	1372	63.0%
15/3	Ahead	U	2:1	N/A	C2:A		1	64	-	1336	1900	1372	73.7%
17/2+17/1	A45 Northbound Left U-Turn	U	2:1	N/A	C2:B		1	16	-	501	2120:1980	377+71	111.8 : 111.8%
17/3	A45 Northbound Left	U	2:1	N/A	C2:B		1	16	-	418	1980	374	111.8%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Queen Elanor Gyratory	**-**	**-**	**439**	**0**	**0**	**135.6**	**785.5**	**0.0**	**921.1**	**-**	**-**	**-**	**-**
Queen Elanor Gyratory	**-**	**-**	**439**	**0**	**0**	**135.6**	**785.5**	**0.0**	**921.1**	**-**	**-**	**-**	**-**
1/1	1124	609	-	-	-	31.5	258.4	-	289.8	928.3	41.0	258.4	299.3
1/2+1/3	1194	649	-	-	-	33.4	273.8	-	307.1	926.0	46.4	273.8	320.2
2/1	775	775	-	-	-	1.7	1.2	-	2.8	13.2	6.8	1.2	8.0
2/2	717	717	-	-	-	1.8	0.9	-	2.8	13.8	7.1	0.9	8.1
2/3	271	271	-	-	-	0.9	0.2	-	1.1	14.2	2.9	0.2	3.0
4/1	677	677	-	-	-	0.1	0.5	-	0.6	3.3	1.0	0.5	1.4
4/2	918	918	-	-	-	0.5	1.0	-	1.4	5.6	7.2	1.0	8.2
4/3	2	2	-	-	-	0.0	0.0	-	0.0	3.9	0.0	0.0	0.0
5/2+5/1	502	502	-	-	-	5.1	7.0	-	12.2	87.2	7.2	7.0	14.3
5/3	453	453	-	-	-	1.2	0.3	-	1.6	12.4	6.0	0.3	6.4
7/1	485	485	-	-	-	3.1	4.7	-	7.8	58.1	12.1	4.7	16.8
7/2	455	455	-	-	-	5.3	2.9	-	8.2	64.9	11.4	2.9	14.3
8/2+8/1	1106	1106	-	-	-	3.7	1.7	-	5.3	17.4	14.9	1.7	16.6
8/3	974	974	-	-	-	4.1	2.5	-	6.5	24.1	19.5	2.5	22.0
10/3	657	657	-	-	-	0.0	0.1	-	0.1	0.8	0.0	0.1	0.1
10/4	363	363	-	-	-	0.0	0.1	-	0.1	0.7	0.0	0.1	0.1
11/1	130	130	130	0	0	0.0	0.2	-	0.2	4.5	0.4	0.2	0.6
11/2	369	309	309	0	0	4.0	32.8	-	36.8	359.0	23.1	32.8	55.8
12/1	555	555	-	-	-	1.2	0.3	-	1.6	10.1	12.0	0.3	12.3
12/2	1040	1040	-	-	-	1.2	1.5	-	2.6	9.1	11.6	1.5	13.1
12/3	657	657	-	-	-	0.4	0.4	-	0.8	4.5	2.1	0.4	2.5
12/4	672	672	-	-	-	0.9	0.5	-	1.3	7.2	4.2	0.5	4.7
14/2+14/1	310	310	-	-	-	2.9	0.7	-	3.6	41.4	4.7	0.7	5.4
14/3	604	339	-	-	-	16.6	133.5	-	150.1	894.7	22.1	133.5	155.7

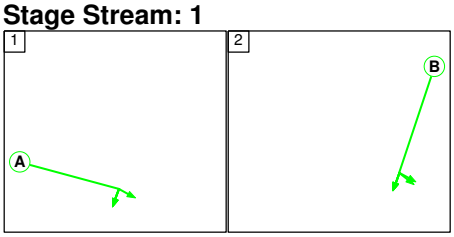
15/1	1066	1066	-	-	-	0.5	1.7	-	2.2	7.6	3.4	1.7	5.1
15/2	865	865	-	-	-	0.5	0.8	-	1.4	5.7	3.0	0.8	3.8
15/3	1011	1011	-	-	-	2.7	1.4	-	4.1	14.7	14.6	1.4	16.0
17/2+17/1	501	448	-	-	-	6.7	30.6	-	37.3	268.0	13.3	30.6	43.9
17/3	418	374	-	-	-	5.6	26.0	-	31.6	272.4	11.5	26.0	37.6

C1 - Queen Elanor A B	Stream: 1 PRC for Signalled Lanes (%):	-2.2	Total Delay for Signalled Lanes (pcuHr):	29.48	Cycle Time (s): 90
C1 - Queen Elanor A B	Stream: 2 PRC for Signalled Lanes (%):	-97.9	Total Delay for Signalled Lanes (pcuHr):	160.01	Cycle Time (s): 90
C2 - Queen Elanor C D	Stream: 1 PRC for Signalled Lanes (%):	-24.3	Total Delay for Signalled Lanes (pcuHr):	76.64	Cycle Time (s): 90
C2 - Queen Elanor C D	Stream: 2 PRC for Signalled Lanes (%):	-104.9	Total Delay for Signalled Lanes (pcuHr):	603.62	Cycle Time (s): 90
C3 - London Road	Stream: 1 PRC for Signalled Lanes (%):	-6.5	Total Delay for Signalled Lanes (pcuHr):	14.20	Cycle Time (s): 90
	PRC Over All Lanes (%):	-104.9	Total Delay Over All Lanes(pcuHr):	921.12	

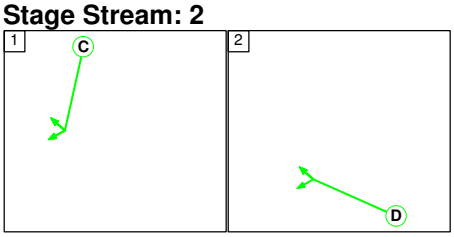
Scenario 2: '2031 With Dev AM' (FG3: '2031 With Dev Case J1c - AM', Plan 1: 'Network Control Plan 1')
C1 - Queen Elanor A B

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

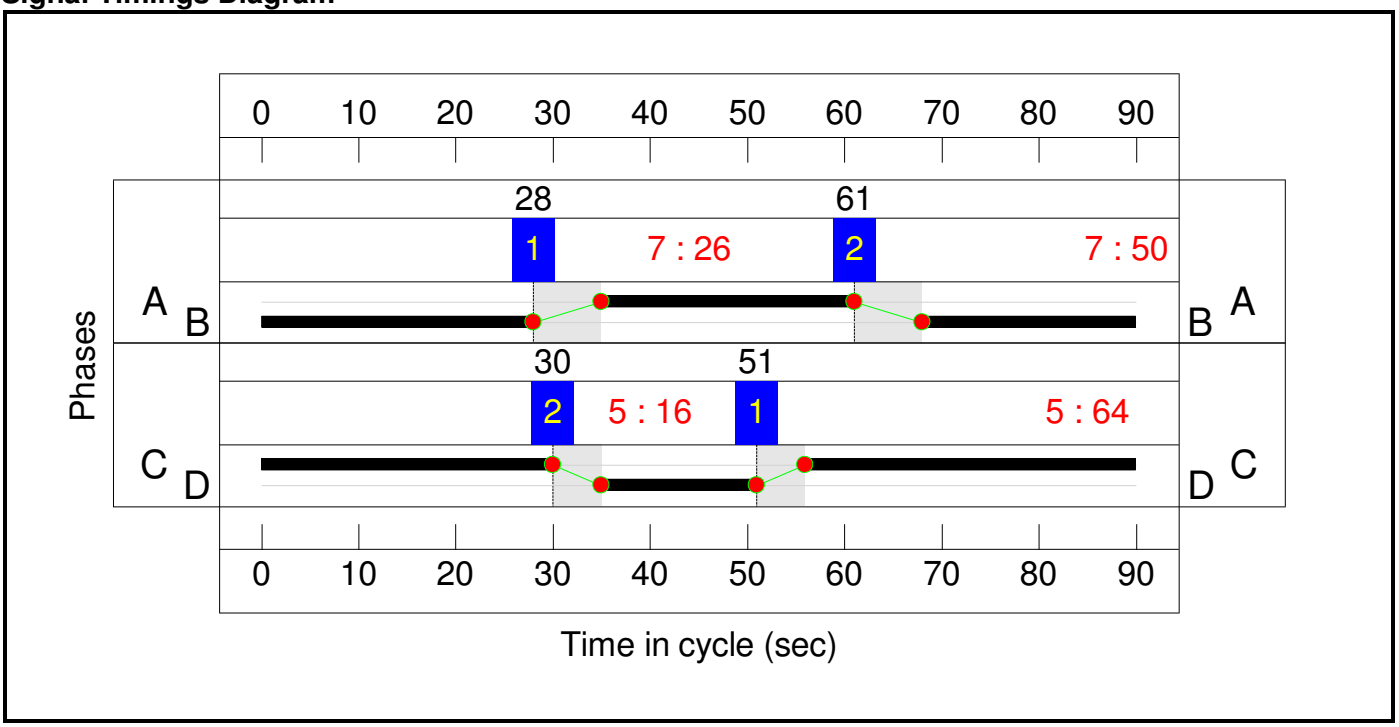
Stage Stream: 1

Stage	1	2
Duration	26	50
Change Point	28	61

Stage Stream: 2

Stage	1	2
Duration	64	16
Change Point	51	30

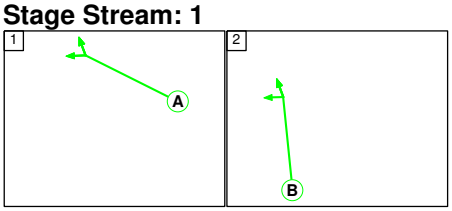
Signal Timings Diagram



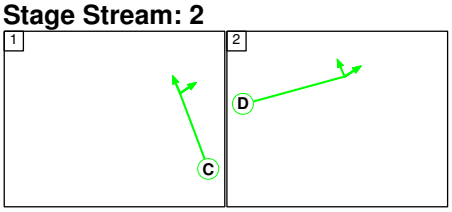
C2 - Queen Elanor C D

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

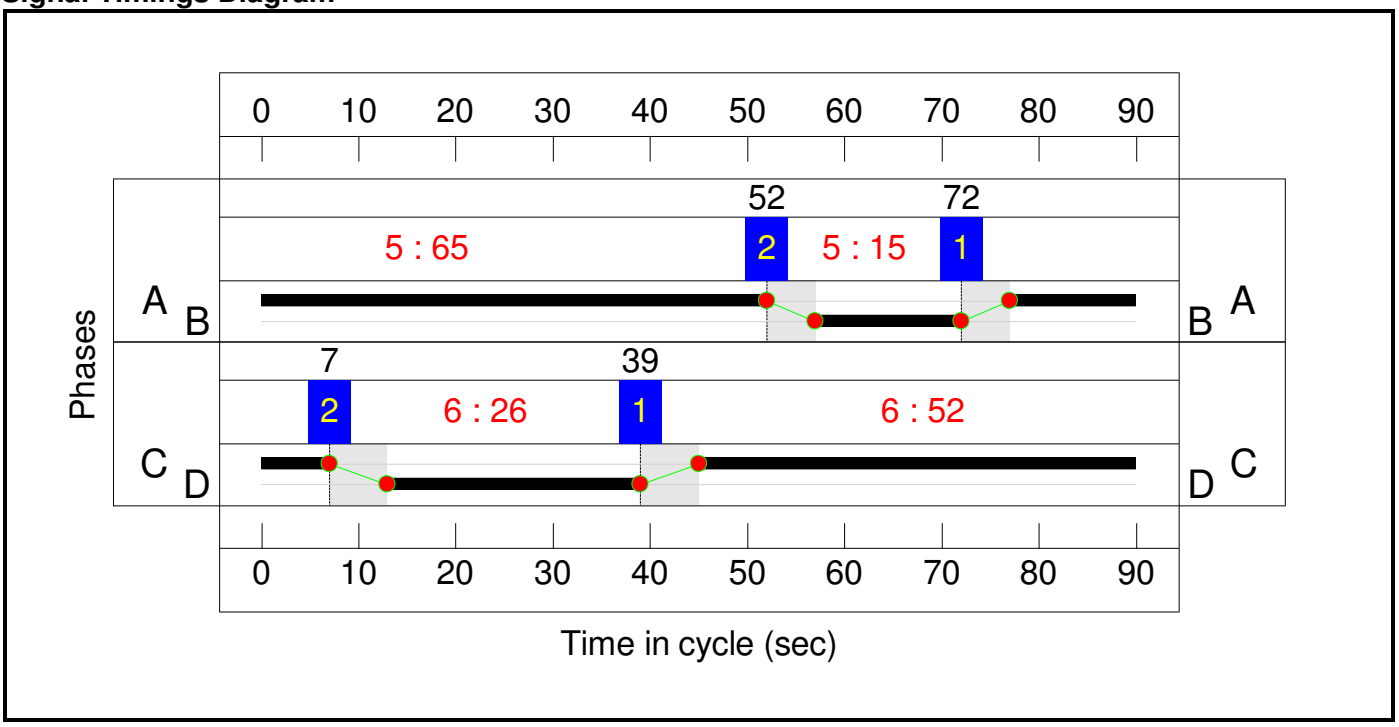
Stage Stream: 1

Stage	1	2
Duration	65	15
Change Point	72	52

Stage Stream: 2

Stage	1	2
Duration	52	26
Change Point	39	7

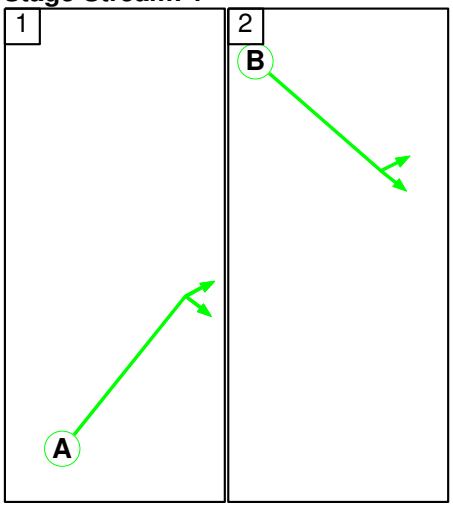
Signal Timings Diagram



C3 - London Road

Stage Sequence Diagram

Stage Stream: 1

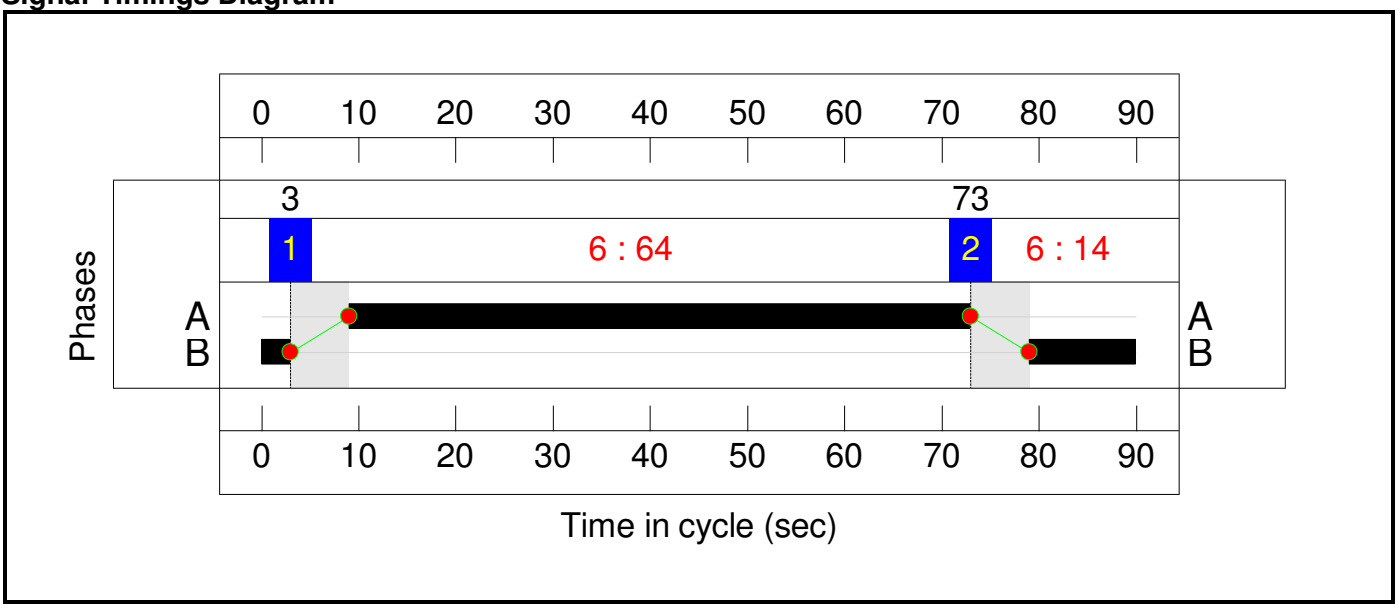


Stage Timings

Stage Stream: 1

Stage	1	2
Duration	64	14
Change Point	3	73

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Queen Elanor Gyratory	-	-	**N/A**	-	-		-	-	-	-	-	-	**189.9%**
Queen Elanor Gyratory	-	-	**N/A**	-	-		-	-	-	-	-	-	**189.9%**
1/1	A5076 Mere Way Left Ahead	U	2:2	N/A	C2:D		1	26	-	1115	1957	587	189.9%
1/2+1/3	A5076 Mere Way Ahead	U	2:2	N/A	C2:D		1	26	-	1186	2105:1965	623+3	189.5 : 189.5%
2/1	Ahead	U	2:2	N/A	C2:C		1	52	-	969	1900	1119	68.7%
2/2	Ahead Right	U	2:2	N/A	C2:C		1	52	-	863	1900	1119	63.5%
2/3	Right	U	2:2	N/A	C2:C		1	52	-	329	1900	1119	21.3%
4/1	Ahead	U	3:1	N/A	C3:A		1	64	-	1174	1900	1372	46.7%
4/2	Ahead Right	U	3:1	N/A	C3:A		1	64	-	1510	1900	1372	62.8%
4/3	Right	U	3:1	N/A	C3:A		1	64	-	5	1900	1372	0.2%
5/2+5/1	A508 London Road Left Ahead	U	3:1	N/A	C3:B		1	14	-	507	2105:1965	200+327	96.2 : 96.2%
5/3	A508 London Road Ahead	U	1:1	N/A	C1:B		1	50	-	526	1965	1113	47.2%
7/1	Ahead Right	U	1:1	N/A	C1:A		1	26	-	703	1900	570	81.0%
7/2	Right	U	1:1	N/A	C1:A		1	26	-	531	1900	570	92.7%
8/2+8/1	A45 Southbound Left Ahead	U	1:1	N/A	C1:B		1	50	-	1047	2120:1938	1132+191	79.2 : 79.2%
8/3	A45 Southbound Ahead	U	1:1	N/A	C1:B		1	50	-	1001	1980	1122	89.2%
10/3	Right	U	N/A	N/A	-		-	-	-	692	3000	3000	23.1%
10/4	Right	U	N/A	N/A	-		-	-	-	363	3000	3000	12.1%
11/1	Hardingstone Lane Ahead Left	O	N/A	N/A	-		-	-	-	146	Inf	532	27.5%
11/2	Hardingstone Lane Ahead	O	N/A	N/A	-		-	-	-	344	Inf	290	118.7%
12/1	Ahead	U	1:2	N/A	C1:C		1	64	-	688	1900	1372	41.8%
12/2	Right Ahead	U	1:2	N/A	C1:C		1	64	-	1102	1900	1372	80.1%

12/3	Right	U	1:2	N/A	C1:C		1	64	-	692	1900	1372	50.4%
12/4	Right	U	1:2	N/A	C1:C		1	64	-	707	1900	1372	47.6%
14/2+14/1	Newport Pagnell Road Ahead Left	U	1:2	N/A	C1:D		1	16	-	400	2005:1965	379+292	59.7 : 59.7%
14/3	Newport Pagnell Road Ahead	U	1:2	N/A	C1:D		1	16	-	650	1908	360	180.4%
15/1	Ahead	U	2:1	N/A	C2:A		1	65	-	1194	1900	1393	85.5%
15/2	Ahead	U	2:1	N/A	C2:A		1	65	-	918	1900	1393	65.9%
15/3	Ahead	U	2:1	N/A	C2:A		1	65	-	1357	1900	1393	72.7%
17/2+17/1	A45 Northbound Left U-Turn	U	2:1	N/A	C2:B		1	15	-	499	2120:1980	352+86	113.9 : 113.9%
17/3	A45 Northbound Left	U	2:1	N/A	C2:B		1	15	-	403	1980	352	114.5%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Queen Elanor Gyratory	**-**	**-**	**436**	**0**	**0**	**141.9**	**818.8**	**0.0**	**960.8**	**-**	**-**	**-**	**-**
Queen Elanor Gyratory	**-**	**-**	**436**	**0**	**0**	**141.9**	**818.8**	**0.0**	**960.8**	**-**	**-**	**-**	**-**
1/1	1115	587	-	-	-	32.0	265.0	-	297.0	959.1	41.3	265.0	306.3
1/2+1/3	1186	626	-	-	-	34.0	281.2	-	315.2	956.8	46.6	281.2	327.8
2/1	769	769	-	-	-	1.6	1.1	-	2.6	12.4	6.4	1.1	7.5
2/2	710	710	-	-	-	1.7	0.9	-	2.6	13.1	7.1	0.9	8.0
2/3	238	238	-	-	-	0.7	0.1	-	0.8	12.4	2.1	0.1	2.2
4/1	640	640	-	-	-	0.1	0.4	-	0.6	3.3	0.9	0.4	1.4
4/2	862	862	-	-	-	0.5	0.8	-	1.3	5.6	6.6	0.8	7.4
4/3	3	3	-	-	-	0.0	0.0	-	0.0	4.3	0.0	0.0	0.0
5/2+5/1	507	507	-	-	-	5.1	7.3	-	12.4	88.0	7.8	7.3	15.1
5/3	526	526	-	-	-	1.7	0.4	-	2.1	14.6	7.7	0.4	8.2
7/1	462	462	-	-	-	2.6	2.1	-	4.6	36.2	11.2	2.1	13.3
7/2	529	529	-	-	-	6.2	5.1	-	11.3	77.0	13.2	5.1	18.3
8/2+8/1	1047	1047	-	-	-	4.0	1.9	-	5.9	20.3	16.9	1.9	18.7
8/3	1001	1001	-	-	-	4.8	3.9	-	8.6	31.1	21.7	3.9	25.6
10/3	692	692	-	-	-	0.0	0.1	-	0.1	0.8	0.0	0.1	0.1
10/4	363	363	-	-	-	0.0	0.1	-	0.1	0.7	0.0	0.1	0.1
11/1	146	146	146	0	0	0.0	0.2	-	0.2	5.0	0.9	0.2	1.1
11/2	344	290	290	0	0	3.8	29.9	-	33.8	353.4	25.8	29.9	55.7
12/1	574	574	-	-	-	1.6	0.4	-	1.9	12.1	13.7	0.4	14.1
12/2	1100	1100	-	-	-	1.4	2.0	-	3.4	11.1	14.9	2.0	16.8
12/3	692	692	-	-	-	0.4	0.5	-	0.9	4.8	2.2	0.5	2.7
12/4	653	653	-	-	-	0.9	0.5	-	1.4	7.6	4.3	0.5	4.7
14/2+14/1	400	400	-	-	-	3.7	0.7	-	4.4	39.6	5.1	0.7	5.9
14/3	650	360	-	-	-	18.2	145.9	-	164.1	908.9	24.2	145.9	170.1

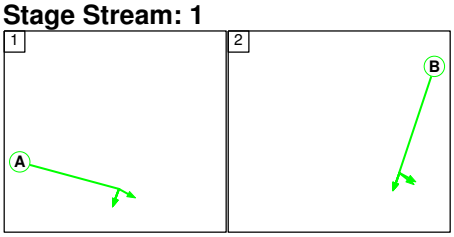
15/1	1192	1192	-	-	-	0.5	2.9	-	3.4	10.2	3.9	2.9	6.8
15/2	918	918	-	-	-	0.8	1.0	-	1.7	6.8	4.2	1.0	5.2
15/3	1013	1013	-	-	-	2.8	1.3	-	4.2	14.8	15.2	1.3	16.6
17/2+17/1	499	438	-	-	-	7.0	34.1	-	41.1	296.9	13.1	34.1	47.2
17/3	403	352	-	-	-	5.7	29.0	-	34.7	310.2	11.3	29.0	40.3

C1 - Queen Elanor A B	Stream: 1 PRC for Signalled Lanes (%):	-3.0	Total Delay for Signalled Lanes (pcuHr):	32.63	Cycle Time (s): 90
C1 - Queen Elanor A B	Stream: 2 PRC for Signalled Lanes (%):	-100.4	Total Delay for Signalled Lanes (pcuHr):	176.14	Cycle Time (s): 90
C2 - Queen Elanor C D	Stream: 1 PRC for Signalled Lanes (%):	-27.2	Total Delay for Signalled Lanes (pcuHr):	85.17	Cycle Time (s): 90
C2 - Queen Elanor C D	Stream: 2 PRC for Signalled Lanes (%):	-111.0	Total Delay for Signalled Lanes (pcuHr):	618.32	Cycle Time (s): 90
C3 - London Road	Stream: 1 PRC for Signalled Lanes (%):	-6.9	Total Delay for Signalled Lanes (pcuHr):	14.32	Cycle Time (s): 90
	PRC Over All Lanes (%):	-111.0	Total Delay Over All Lanes(pcuHr):	960.77	

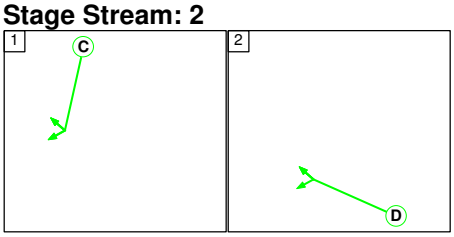
Scenario 3: '2031 Reference Case PM' (FG2: '2031 Reference Case D1 - PM', Plan 1: 'Network Control Plan 1')
C1 - Queen Elanor A B

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

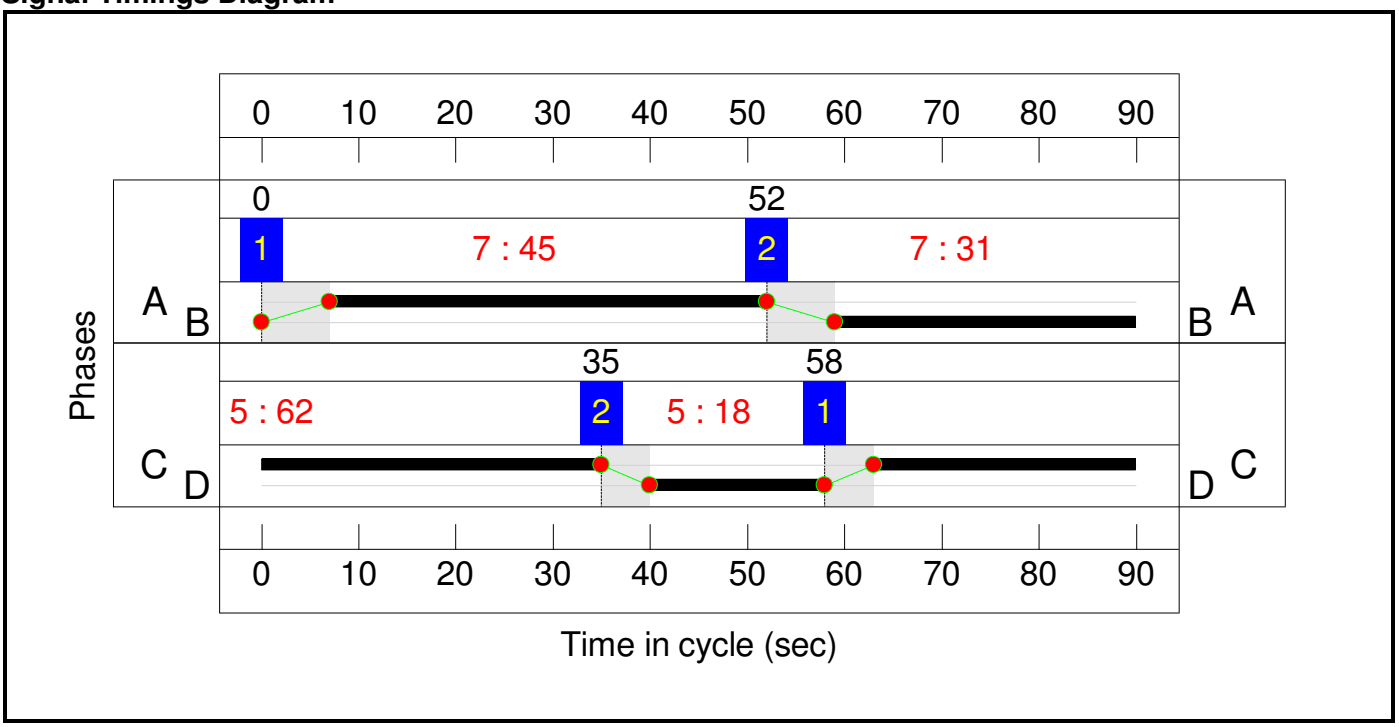
Stage Stream: 1

Stage	1	2
Duration	45	31
Change Point	0	52

Stage Stream: 2

Stage	1	2
Duration	62	18
Change Point	58	35

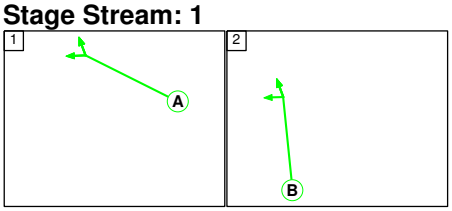
Signal Timings Diagram



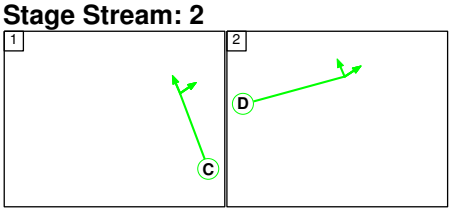
C2 - Queen Elanor C D

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

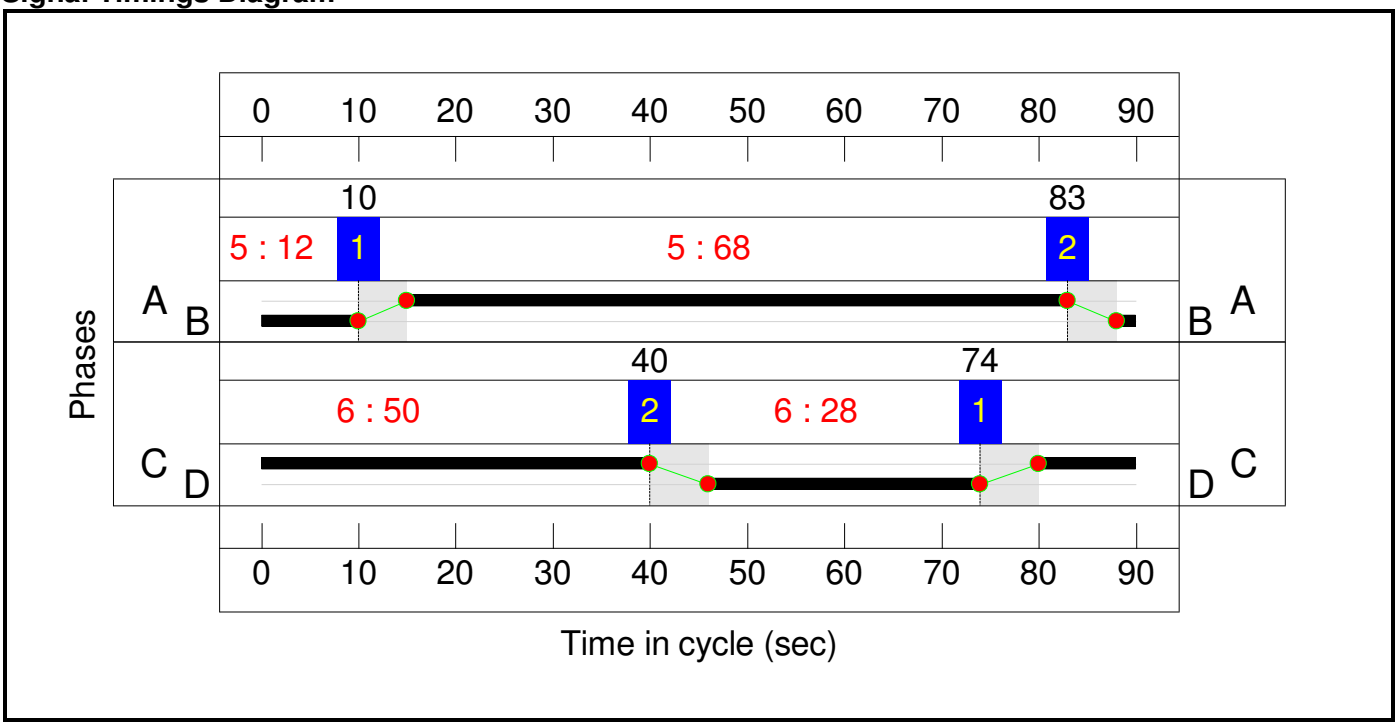
Stage Stream: 1

Stage	1	2
Duration	68	12
Change Point	10	83

Stage Stream: 2

Stage	1	2
Duration	50	28
Change Point	74	40

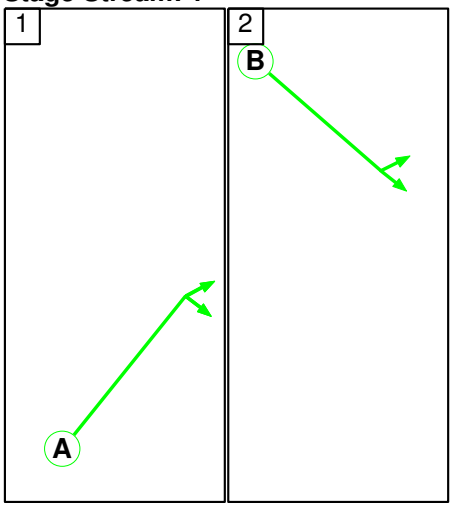
Signal Timings Diagram



C3 - London Road

Stage Sequence Diagram

Stage Stream: 1

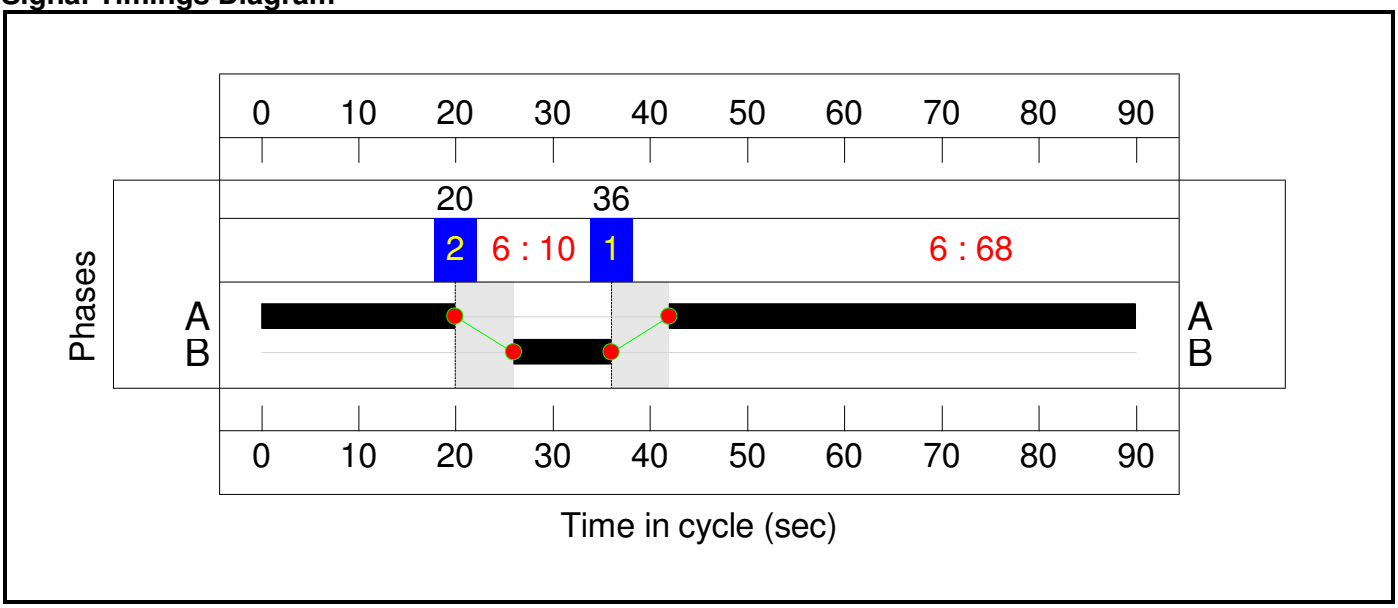


Stage Timings

Stage Stream: 1

Stage	1	2
Duration	68	10
Change Point	36	20

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Queen Elanor Gyratory	-	-	**N/A**	-	-		-	-	-	-	-	-	**188.4%**
Queen Elanor Gyratory	-	-	**N/A**	-	-		-	-	-	-	-	-	**188.4%**
1/1	A5076 Mere Way Left Ahead	U	2:2	N/A	C2:D		1	28	-	1180	1962	632	186.6%
1/2+1/3	A5076 Mere Way Ahead	U	2:2	N/A	C2:D		1	28	-	1278	2105:1965	667+11	188.4 : 188.4%
2/1	Ahead	U	2:2	N/A	C2:C		1	50	-	817	1900	1077	63.2%
2/2	Ahead Right	U	2:2	N/A	C2:C		1	50	-	739	1900	1077	54.4%
2/3	Right	U	2:2	N/A	C2:C		1	50	-	428	1900	1077	28.4%
4/1	Ahead	U	3:1	N/A	C3:A		1	68	-	1403	1900	1457	54.3%
4/2	Ahead Right	U	3:1	N/A	C3:A		1	68	-	1685	1900	1457	66.8%
4/3	Right	U	3:1	N/A	C3:A		1	68	-	21	1900	1457	0.8%
5/2+5/1	A508 London Road Left Ahead	U	3:1	N/A	C3:B		1	10	-	577	2105:1965	132+240	154.9 : 154.9%
5/3	A508 London Road Ahead	U	1:1	N/A	C1:B		1	31	-	687	1965	699	98.3%
7/1	Ahead Right	U	1:1	N/A	C1:A		1	45	-	1028	1900	971	60.6%
7/2	Right	U	1:1	N/A	C1:A		1	45	-	708	1900	971	71.9%
8/2+8/1	A45 Southbound Left Ahead	U	1:1	N/A	C1:B		1	31	-	1127	2120:1891	503+658	97.1 : 97.1%
8/3	A45 Southbound Ahead	U	1:1	N/A	C1:B		1	31	-	667	1980	704	94.7%
10/3	Right	U	N/A	N/A	-		-	-	-	468	3000	3000	15.6%
10/4	Right	U	N/A	N/A	-		-	-	-	222	3000	3000	7.4%
11/1	Hardingstone Lane Ahead Left	O	N/A	N/A	-		-	-	-	54	Inf	594	9.1%
11/2	Hardingstone Lane Ahead	O	N/A	N/A	-		-	-	-	640	Inf	430	148.7%
12/1	Ahead	U	1:2	N/A	C1:C		1	62	-	790	1900	1330	44.6%
12/2	Right Ahead	U	1:2	N/A	C1:C		1	62	-	858	1900	1330	63.8%

12/3	Right	U	1:2	N/A	C1:C		1	62	-	468	1900	1330	35.2%
12/4	Right	U	1:2	N/A	C1:C		1	62	-	862	1900	1330	49.0%
14/2+14/1	Newport Pagnell Road Ahead Left	U	1:2	N/A	C1:D		1	18	-	998	2005:1955	412+375	126.8 : 126.8%
14/3	Newport Pagnell Road Ahead	U	1:2	N/A	C1:D		1	18	-	605	1908	403	150.2%
15/1	Ahead	U	2:1	N/A	C2:A		1	68	-	1016	1900	1457	62.9%
15/2	Ahead	U	2:1	N/A	C2:A		1	68	-	990	1900	1457	60.4%
15/3	Ahead	U	2:1	N/A	C2:A		1	68	-	1467	1900	1457	72.4%
17/2+17/1	A45 Northbound Left U-Turn	U	2:1	N/A	C2:B		1	12	-	374	2120:1980	292+101	95.3 : 95.3%
17/3	A45 Northbound Left	U	2:1	N/A	C2:B		1	12	-	239	1980	286	83.6%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Queen Elanor Gyratory	**-**	**-**	**484**	**0**	**0**	**179.2**	**1042.6**	**0.0**	**1221.8**	**-**	**-**	**-**	**-**
Queen Elanor Gyratory	**-**	**-**	**484**	**0**	**0**	**179.2**	**1042.6**	**0.0**	**1221.8**	**-**	**-**	**-**	**-**
1/1	1180	632	-	-	-	37.4	275.0	-	312.4	953.0	52.6	275.0	327.6
1/2+1/3	1278	678	-	-	-	37.6	300.8	-	338.5	953.4	57.1	300.8	358.0
2/1	681	681	-	-	-	1.3	0.9	-	2.1	11.2	6.1	0.9	7.0
2/2	586	586	-	-	-	0.9	0.6	-	1.5	9.3	6.0	0.6	6.6
2/3	306	306	-	-	-	0.3	0.2	-	0.5	5.9	2.8	0.2	3.0
4/1	791	791	-	-	-	0.1	0.6	-	0.7	3.2	0.9	0.6	1.5
4/2	973	973	-	-	-	0.4	1.0	-	1.4	5.3	7.7	1.0	8.7
4/3	11	11	-	-	-	0.0	0.0	-	0.0	5.0	0.1	0.0	0.1
5/2+5/1	577	373	-	-	-	13.7	103.6	-	117.3	731.8	16.2	103.6	119.8
5/3	687	687	-	-	-	5.5	10.5	-	16.0	83.8	17.0	10.5	27.5
7/1	588	588	-	-	-	3.6	0.8	-	4.4	27.0	11.3	0.8	12.1
7/2	698	698	-	-	-	5.5	1.3	-	6.8	35.0	17.4	1.3	18.7
8/2+8/1	1127	1127	-	-	-	8.3	10.3	-	18.6	59.5	15.4	10.3	25.8
8/3	667	667	-	-	-	5.2	6.6	-	11.9	64.0	16.1	6.6	22.8
10/3	468	468	-	-	-	0.0	0.1	-	0.1	0.7	0.0	0.1	0.1
10/4	222	222	-	-	-	0.0	0.0	-	0.0	0.6	0.0	0.0	0.0
11/1	54	54	54	0	0	0.0	0.1	-	0.1	3.3	0.0	0.1	0.1
11/2	640	430	430	0	0	12.8	106.3	-	119.2	670.4	48.0	106.3	154.3
12/1	593	593	-	-	-	1.3	0.4	-	1.7	10.1	4.4	0.4	4.8
12/2	848	848	-	-	-	1.3	0.9	-	2.2	9.2	9.9	0.9	10.8
12/3	468	468	-	-	-	0.1	0.3	-	0.3	2.5	0.2	0.3	0.5
12/4	652	652	-	-	-	1.0	0.5	-	1.5	8.1	8.7	0.5	9.2
14/2+14/1	998	787	-	-	-	17.3	107.9	-	125.2	451.7	23.3	107.9	131.3
14/3	605	403	-	-	-	13.4	102.6	-	116.0	690.1	20.4	102.6	122.9

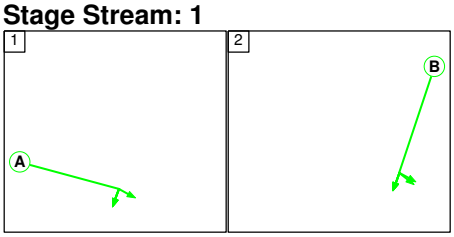
15/1	917	917	-	-	-	2.4	0.8	-	3.2	12.7	10.8	0.8	11.7
15/2	880	880	-	-	-	1.8	0.8	-	2.6	10.6	9.4	0.8	10.1
15/3	1055	1055	-	-	-	1.6	1.3	-	2.9	10.1	10.1	1.3	11.4
17/2+17/1	374	374	-	-	-	3.9	6.1	-	10.0	96.2	7.2	6.1	13.3
17/3	239	239	-	-	-	2.5	2.3	-	4.8	72.3	5.8	2.3	8.1

C1 - Queen Elanor A B	Stream: 1 PRC for Signalled Lanes (%):	-9.3	Total Delay for Signalled Lanes (pcuHr):	57.66	Cycle Time (s): 90
C1 - Queen Elanor A B	Stream: 2 PRC for Signalled Lanes (%):	-66.9	Total Delay for Signalled Lanes (pcuHr):	246.82	Cycle Time (s): 90
C2 - Queen Elanor C D	Stream: 1 PRC for Signalled Lanes (%):	-5.9	Total Delay for Signalled Lanes (pcuHr):	23.57	Cycle Time (s): 90
C2 - Queen Elanor C D	Stream: 2 PRC for Signalled Lanes (%):	-109.3	Total Delay for Signalled Lanes (pcuHr):	654.94	Cycle Time (s): 90
C3 - London Road	Stream: 1 PRC for Signalled Lanes (%):	-72.1	Total Delay for Signalled Lanes (pcuHr):	119.44	Cycle Time (s): 90
	PRC Over All Lanes (%):	-109.3	Total Delay Over All Lanes(pcuHr):	1221.79	

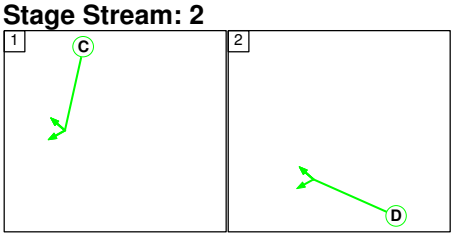
Scenario 4: '2031 With Dev PM' (FG4: '2031 With Dev Case J1c - PM', Plan 1: 'Network Control Plan 1')
C1 - Queen Elanor A B

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

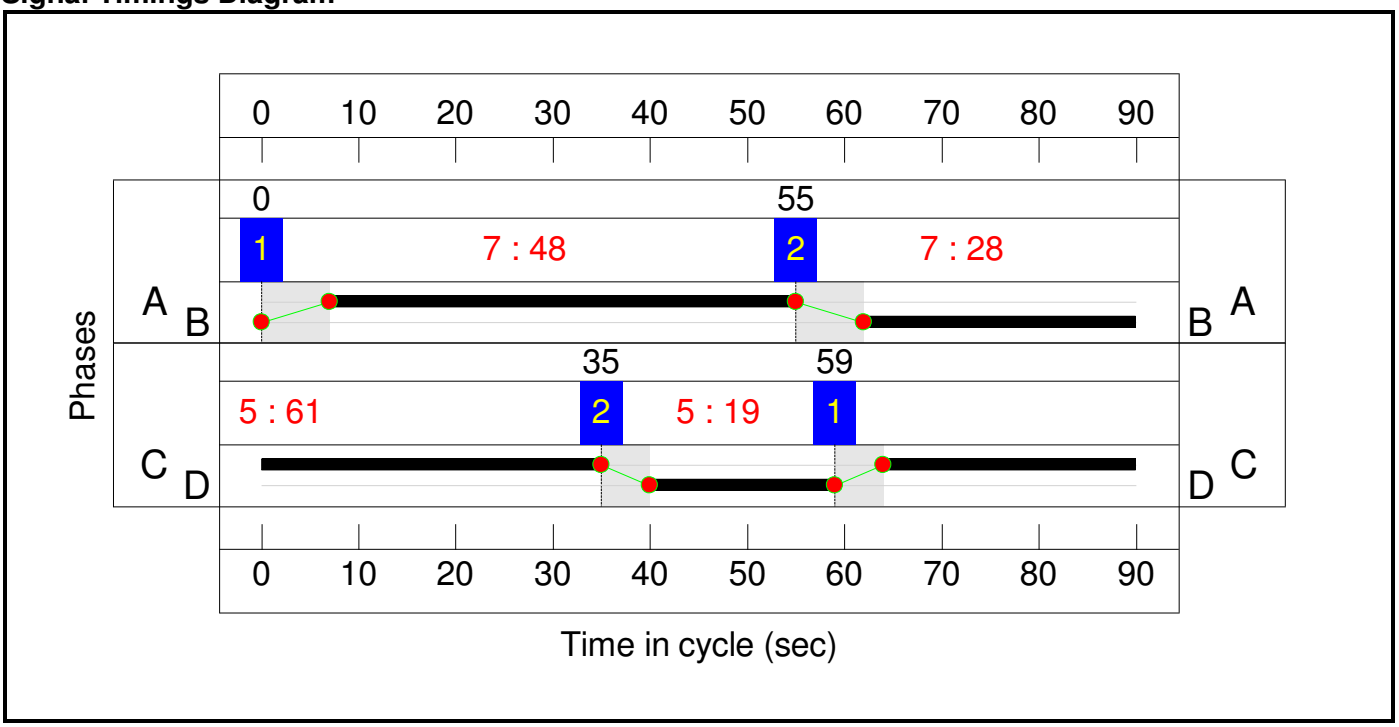
Stage Stream: 1

Stage	1	2
Duration	48	28
Change Point	0	55

Stage Stream: 2

Stage	1	2
Duration	61	19
Change Point	59	35

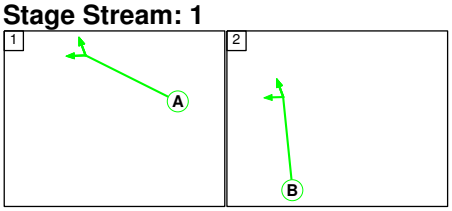
Signal Timings Diagram



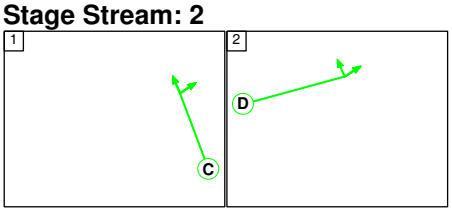
C2 - Queen Elanor C D

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

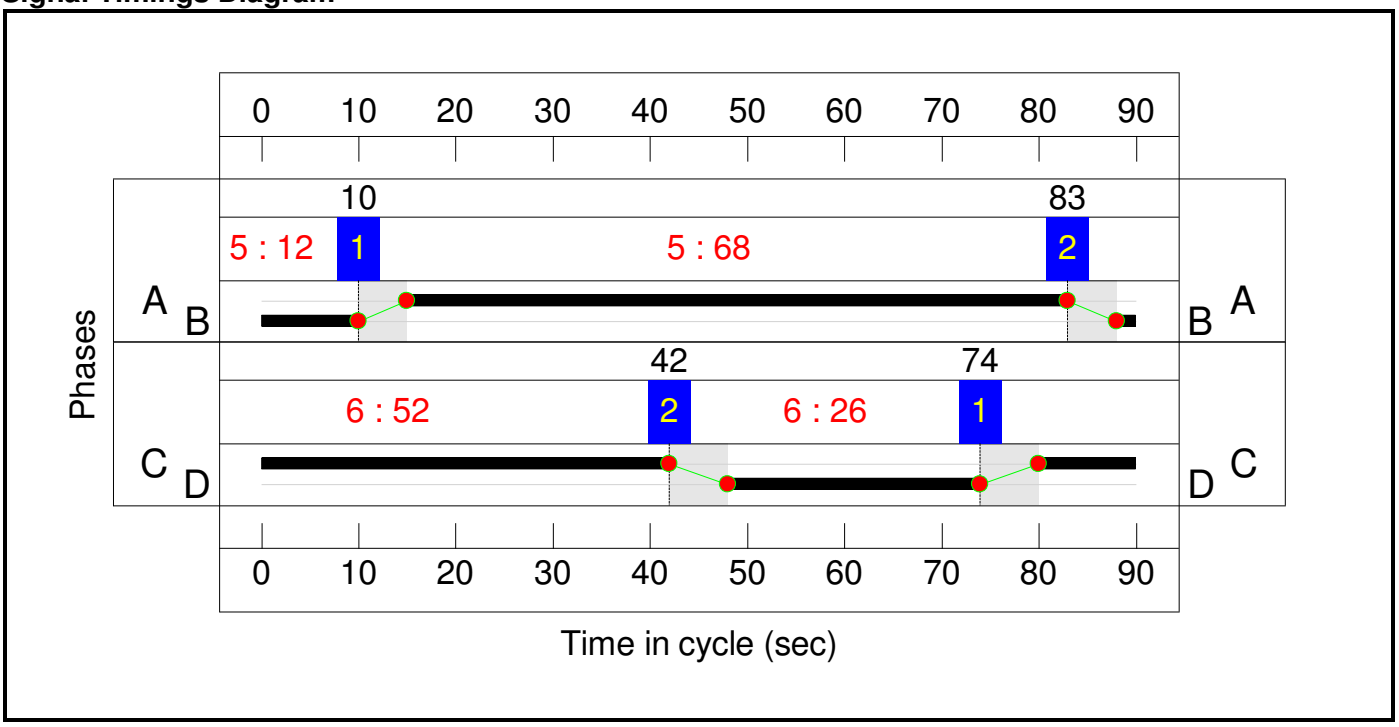
Stage Stream: 1

Stage	1	2
Duration	68	12
Change Point	10	83

Stage Stream: 2

Stage	1	2
Duration	52	26
Change Point	74	42

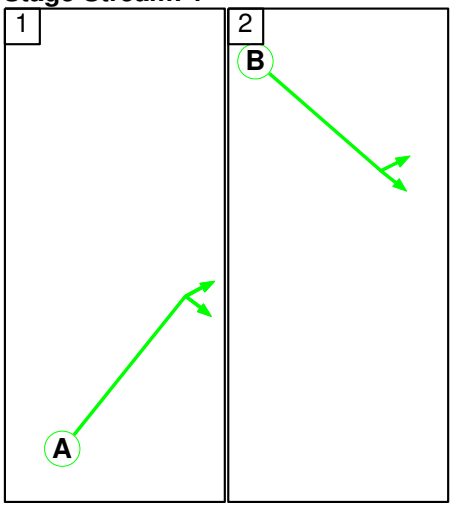
Signal Timings Diagram



C3 - London Road

Stage Sequence Diagram

Stage Stream: 1

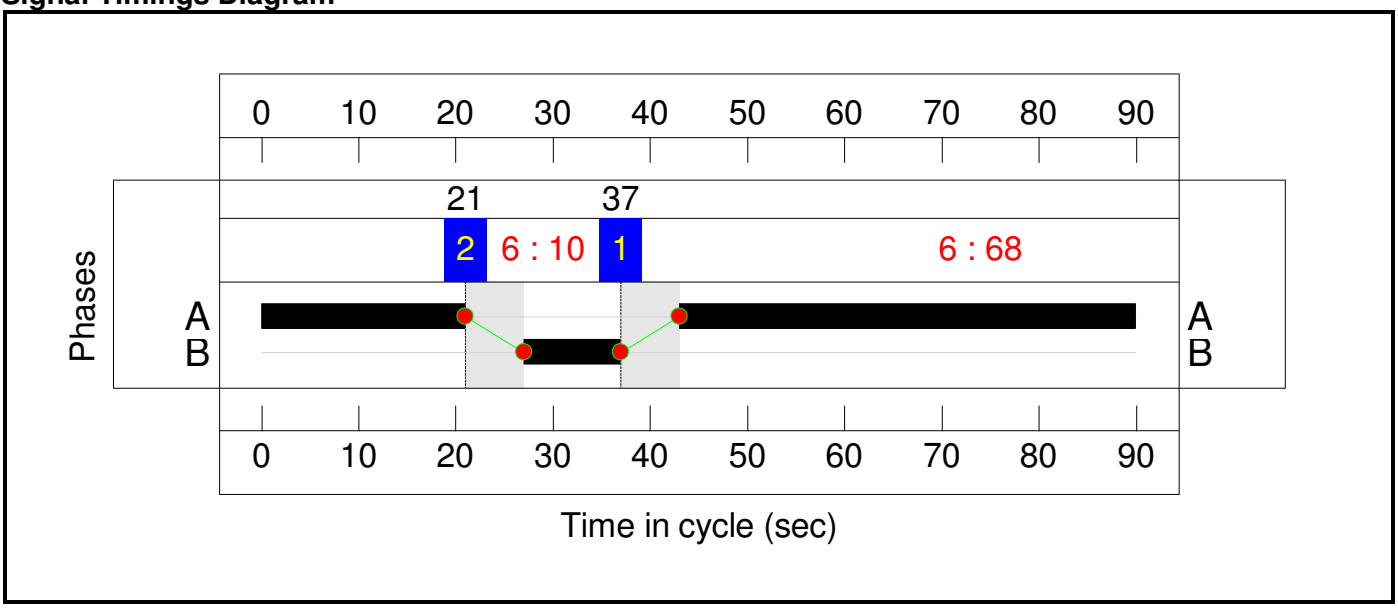


Stage Timings

Stage Stream: 1

Stage	1	2
Duration	68	10
Change Point	37	21

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Queen Elanor Gyratory	-	-	**N/A**	-	-		-	-	-	-	-	-	**186.6%**
Queen Elanor Gyratory	-	-	**N/A**	-	-		-	-	-	-	-	-	**186.6%**
1/1	A5076 Mere Way Left Ahead	U	2:2	N/A	C2:D		1	26	-	1092	1961	588	185.6%
1/2+1/3	A5076 Mere Way Ahead	U	2:2	N/A	C2:D		1	26	-	1171	2105:1965	623+5	186.6 : 186.6%
2/1	Ahead	U	2:2	N/A	C2:C		1	52	-	814	1900	1119	59.0%
2/2	Ahead Right	U	2:2	N/A	C2:C		1	52	-	812	1900	1119	58.6%
2/3	Right	U	2:2	N/A	C2:C		1	52	-	463	1900	1119	31.5%
4/1	Ahead	U	3:1	N/A	C3:A		1	68	-	1253	1900	1457	49.1%
4/2	Ahead Right	U	3:1	N/A	C3:A		1	68	-	1625	1900	1457	67.0%
4/3	Right	U	3:1	N/A	C3:A		1	68	-	9	1900	1457	0.3%
5/2+5/1	A508 London Road Left Ahead	U	3:1	N/A	C3:B		1	10	-	579	2105:1965	137+240	153.6 : 153.6%
5/3	A508 London Road Ahead	U	1:1	N/A	C1:B		1	28	-	780	1965	633	123.2%
7/1	Ahead Right	U	1:1	N/A	C1:A		1	48	-	992	1900	1034	55.4%
7/2	Right	U	1:1	N/A	C1:A		1	48	-	789	1900	1034	61.7%
8/2+8/1	A45 Southbound Left Ahead	U	1:1	N/A	C1:B		1	28	-	1160	2120:1892	603+610	95.6 : 95.6%
8/3	A45 Southbound Ahead	U	1:1	N/A	C1:B		1	28	-	594	1980	638	93.1%
10/3	Right	U	N/A	N/A	-		-	-	-	461	3000	3000	14.8%
10/4	Right	U	N/A	N/A	-		-	-	-	219	3000	3000	7.3%
11/1	Hardingstone Lane Ahead Left	O	N/A	N/A	-		-	-	-	66	Inf	600	11.0%
11/2	Hardingstone Lane Ahead	O	N/A	N/A	-		-	-	-	591	Inf	447	132.3%
12/1	Ahead	U	1:2	N/A	C1:C		1	61	-	803	1900	1309	41.7%
12/2	Right Ahead	U	1:2	N/A	C1:C		1	61	-	945	1900	1309	67.3%

12/3	Right	U	1:2	N/A	C1:C		1	61	-	461	1900	1309	34.0%
12/4	Right	U	1:2	N/A	C1:C		1	61	-	810	1900	1309	50.9%
14/2+14/1	Newport Pagnell Road Ahead Left	U	1:2	N/A	C1:D		1	19	-	926	2005:1954	423+393	113.5 : 113.5%
14/3	Newport Pagnell Road Ahead	U	1:2	N/A	C1:D		1	19	-	630	1908	424	148.6%
15/1	Ahead	U	2:1	N/A	C2:A		1	68	-	1050	1900	1457	68.2%
15/2	Ahead	U	2:1	N/A	C2:A		1	68	-	941	1900	1457	59.6%
15/3	Ahead	U	2:1	N/A	C2:A		1	68	-	1440	1900	1457	74.8%
17/2+17/1	A45 Northbound Left U-Turn	U	2:1	N/A	C2:B		1	12	-	427	2120:1980	293+91	111.2 : 111.2%
17/3	A45 Northbound Left	U	2:1	N/A	C2:B		1	12	-	323	1980	286	112.9%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Queen Elanor Gyratory	**-**	**-**	**513**	**0**	**0**	**179.8**	**1013.7**	**0.0**	**1193.5**	**-**	**-**	**-**	**-**
Queen Elanor Gyratory	**-**	**-**	**513**	**0**	**0**	**179.8**	**1013.7**	**0.0**	**1193.5**	**-**	**-**	**-**	**-**
1/1	1092	588	-	-	-	34.6	252.9	-	287.5	947.8	48.5	252.9	301.5
1/2+1/3	1171	627	-	-	-	34.3	272.9	-	307.2	944.4	52.1	272.9	325.0
2/1	661	661	-	-	-	1.2	0.7	-	2.0	10.7	6.0	0.7	6.7
2/2	656	656	-	-	-	0.9	0.7	-	1.6	8.9	5.9	0.7	6.6
2/3	353	353	-	-	-	0.3	0.2	-	0.5	5.4	2.8	0.2	3.1
4/1	716	716	-	-	-	0.1	0.5	-	0.6	3.1	0.8	0.5	1.3
4/2	975	975	-	-	-	0.6	1.0	-	1.6	5.9	6.6	1.0	7.6
4/3	5	5	-	-	-	0.0	0.0	-	0.0	4.1	0.0	0.0	0.0
5/2+5/1	579	377	-	-	-	13.5	102.5	-	116.0	721.1	16.1	102.5	118.5
5/3	780	633	-	-	-	14.4	76.0	-	90.4	417.3	26.2	76.0	102.2
7/1	573	573	-	-	-	3.3	0.6	-	3.9	24.4	10.5	0.6	11.1
7/2	638	638	-	-	-	4.5	0.8	-	5.3	30.0	15.9	0.8	16.7
8/2+8/1	1160	1160	-	-	-	9.4	8.3	-	17.7	55.0	14.3	8.3	22.6
8/3	594	594	-	-	-	4.9	5.4	-	10.3	62.4	14.4	5.4	19.8
10/3	445	445	-	-	-	0.0	0.1	-	0.1	0.7	0.0	0.1	0.1
10/4	219	219	-	-	-	0.0	0.0	-	0.0	0.6	0.0	0.0	0.0
11/1	66	66	66	0	0	0.0	0.1	-	0.1	3.4	0.0	0.1	0.1
11/2	591	447	447	0	0	9.0	74.1	-	83.1	506.3	44.3	74.1	118.4
12/1	546	546	-	-	-	1.0	0.4	-	1.3	8.6	3.2	0.4	3.6
12/2	881	881	-	-	-	1.0	1.0	-	2.0	8.2	6.2	1.0	7.2
12/3	445	445	-	-	-	0.2	0.3	-	0.4	3.4	0.6	0.3	0.9
12/4	666	666	-	-	-	1.3	0.5	-	1.8	9.8	10.6	0.5	11.1
14/2+14/1	926	816	-	-	-	12.8	59.1	-	71.9	279.4	18.7	59.1	77.8
14/3	630	424	-	-	-	13.7	104.5	-	118.2	675.6	21.2	104.5	125.7

15/1	994	994	-	-	-	3.2	1.1	-	4.3	15.4	13.9	1.1	15.0
15/2	868	868	-	-	-	1.7	0.7	-	2.4	10.0	8.9	0.7	9.6
15/3	1090	1090	-	-	-	2.1	1.5	-	3.5	11.7	11.0	1.5	12.5
17/2+17/1	427	384	-	-	-	6.7	25.7	-	32.4	273.0	10.4	25.7	36.1
17/3	323	286	-	-	-	5.2	22.1	-	27.4	305.3	9.0	22.1	31.1

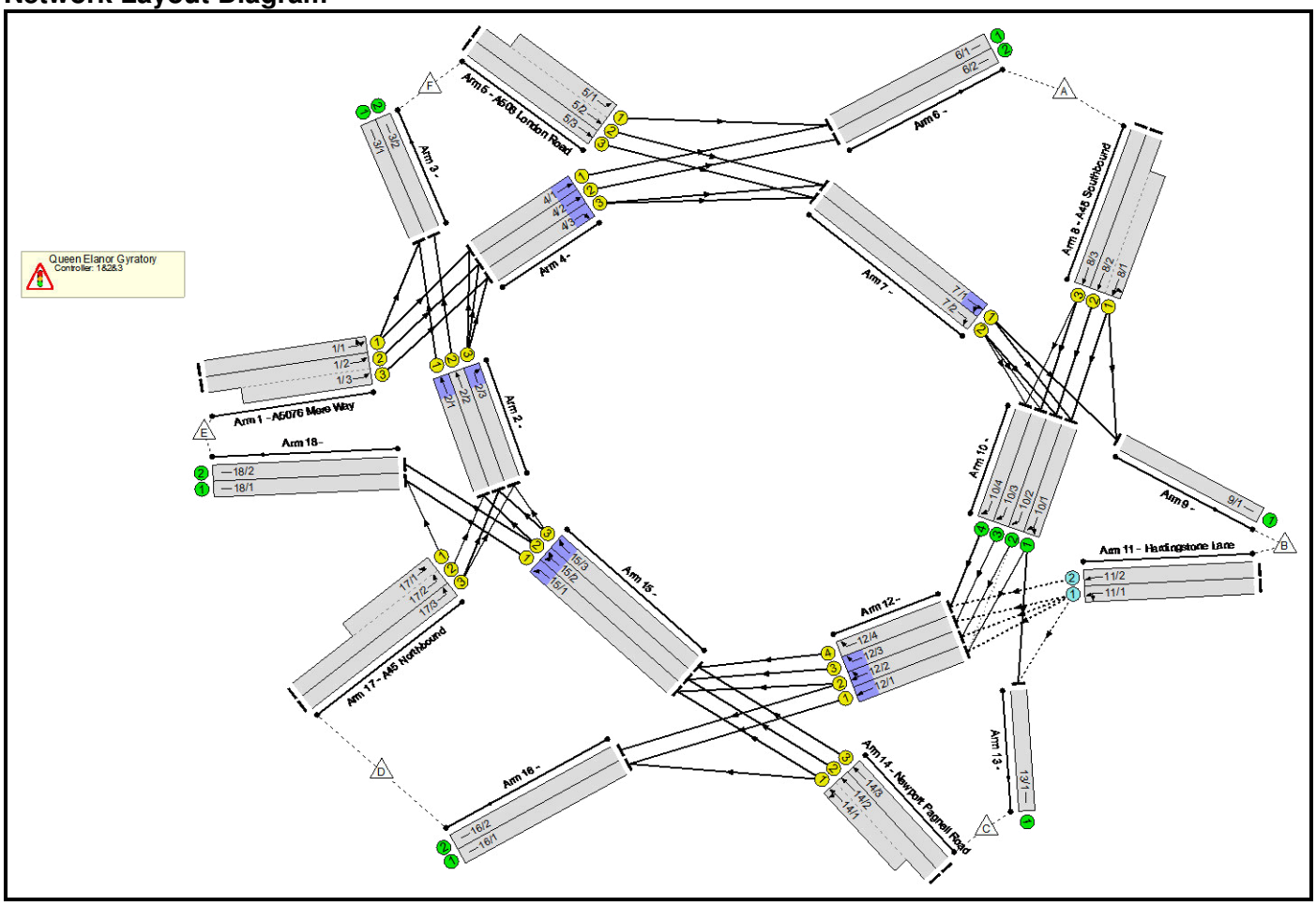
C1 - Queen Elanor A B	Stream: 1 PRC for Signalled Lanes (%):	-36.9	Total Delay for Signalled Lanes (pcuHr):	127.63	Cycle Time (s): 90
C1 - Queen Elanor A B	Stream: 2 PRC for Signalled Lanes (%):	-65.1	Total Delay for Signalled Lanes (pcuHr):	195.66	Cycle Time (s): 90
C2 - Queen Elanor C D	Stream: 1 PRC for Signalled Lanes (%):	-25.5	Total Delay for Signalled Lanes (pcuHr):	69.96	Cycle Time (s): 90
C2 - Queen Elanor C D	Stream: 2 PRC for Signalled Lanes (%):	-107.4	Total Delay for Signalled Lanes (pcuHr):	598.81	Cycle Time (s): 90
C3 - London Road	Stream: 1 PRC for Signalled Lanes (%):	-70.7	Total Delay for Signalled Lanes (pcuHr):	118.19	Cycle Time (s): 90
	PRC Over All Lanes (%):	-107.4	Total Delay Over All Lanes(pcuHr):	1193.55	

Full Input Data And Results

User and Project Details

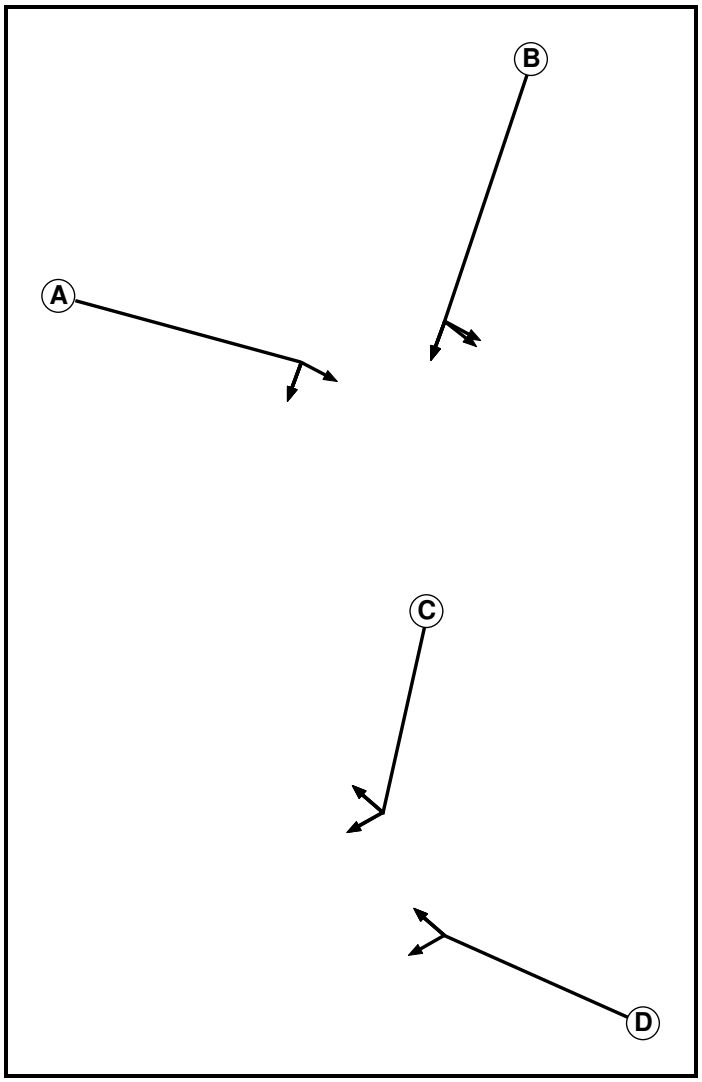
Project:	**Northampton Gateway SRFI**
Title:	**Queen Elanor Gyratory Mitigation**
Location:	
File name:	170830 Queen Elanor Gyratory Mitigation.lsg3x
Author:	Mark Higgins
Company:	ADC Infrastructure
Address:	Western Street, Nottingham
Notes:	

Network Layout Diagram



C1 - Queen Elanor A B

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	2		7	7
D	Traffic	2		7	7

Phase Intergreens Matrix

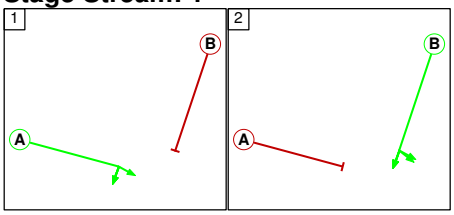
	Starting Phase			
Terminating Phase	A	B	C	D
A		7	-	-
B	7		-	-
C	-	-		5
D	-	-	5	

Phases in Stage

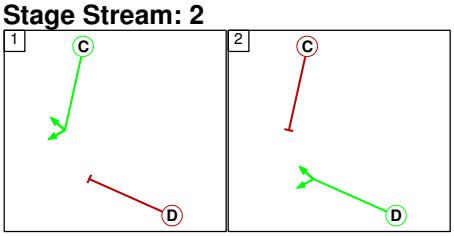
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Phase Delays

Stage Stream: 1

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

Stage Stream: 2

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

Prohibited Stage Change

Stage Stream: 1

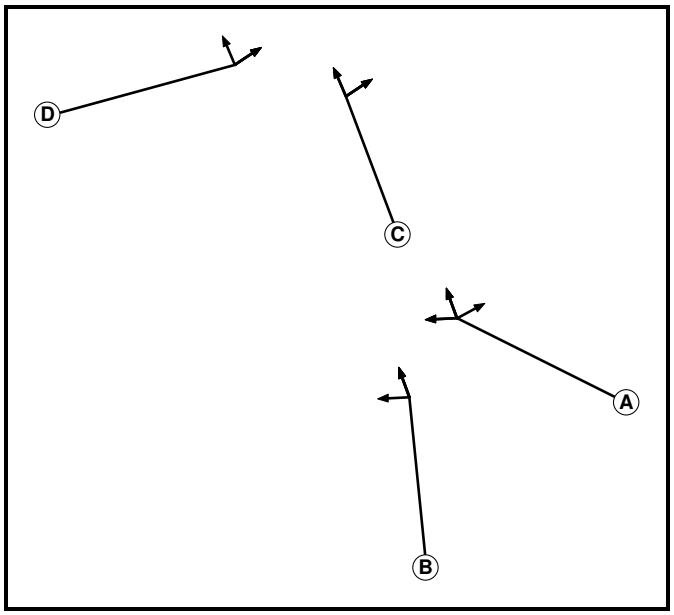
	To Stage		
		1	2
From Stage	1		7
	2	7	

Stage Stream: 2

	To Stage		
		1	2
From Stage	1		5
	2	5	

C2 - Queen Elanor C D

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	2		7	7
D	Traffic	2		7	7

Phase Intergreens Matrix

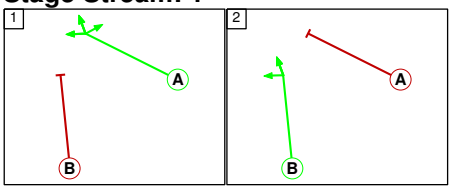
Terminating Phase	Starting Phase				
		A	B	C	D
A			5	-	-
B	5			-	-
C	-	-			6
D	-	-	6		

Phases in Stage

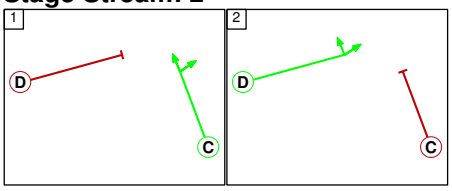
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Phase Delays

Stage Stream: 1

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

Stage Stream: 2

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

Prohibited Stage Change

Stage Stream: 1

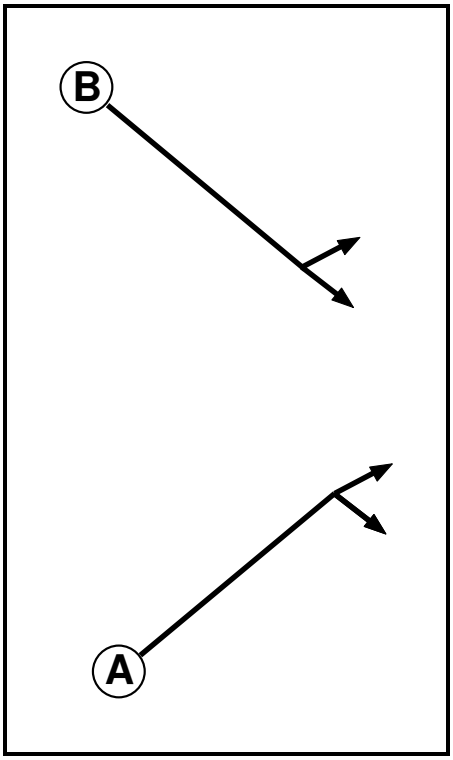
	To Stage		
From Stage		1	2
	1		5
	2	5	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		6
	2	6	

C3 - London Road

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7

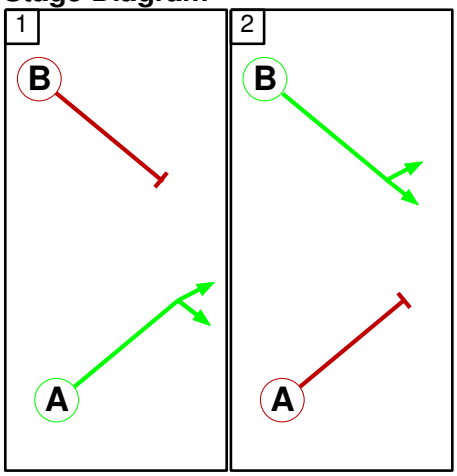
Phase Intergreens Matrix

Terminating Phase	Starting Phase		
		A	B
A			6
B	6		

Phases in Stage

Stage No.	Phases in Stage
1	A
2	B

Stage Diagram



Phase Delays

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

Prohibited Stage Change

	To Stage	
	1	2
From Stage 1		6
From Stage 2	6	

Give-Way Lane Input Data

Junction: Queen Elanor Gyratory											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
11/1 (Hardingstone Lane)	12/1 (Ahead)	1006	0	10/1	0.25	All	-	-	-	-	-
				10/2	0.25	All					
	12/2 (Ahead)	1006	0	10/1	0.25	All					
				10/2	0.25	All					
	12/3 (Ahead)	1006	0	10/1	0.25	All					
				10/2	0.25	All					
				10/3	0.25	All					
				10/4	0.25	All					
	13/1 (Left)	1006	0	10/1	0.25	All					
11/2 (Hardingstone Lane)	12/4 (Ahead)	1006	0	10/1	0.25	All	-	-	-	-	-
				10/2	0.25	All					
				10/3	0.25	All					
				10/4	0.25	All					

Lane Input Data

Junction: Queen Elanor Gyratory												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
1/1 (A5076 Mere Way)	U	D	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 3 Left	20.00
											Arm 4 Ahead	Inf
1/2 (A5076 Mere Way)	U	D	2	3	60.0	Geom	-	3.50	0.00	N	Arm 4 Ahead	Inf
1/3 (A5076 Mere Way)	U	D	2	3	20.9	Geom	-	3.50	0.00	Y	Arm 4 Ahead	Inf
2/1	U	C	2	3	12.2	User	1900	-	-	-	-	-
2/2	U	C	2	3	12.2	User	1900	-	-	-	-	-
2/3	U	C	2	3	12.2	User	1900	-	-	-	-	-
3/1	U		2	3	3.0	Inf	-	-	-	-	-	-
3/2	U		2	3	3.0	Inf	-	-	-	-	-	-
4/1	U	A	2	3	9.6	User	1900	-	-	-	-	-
4/2	U	A	2	3	9.6	User	1900	-	-	-	-	-
4/3	U	A	2	3	9.6	User	1900	-	-	-	-	-
5/1 (A508 London Road)	U	B	2	3	15.7	Geom	-	3.50	0.00	Y	Arm 6 Left	Inf
5/2 (A508 London Road)	U	B	2	3	60.0	Geom	-	3.50	0.00	N	Arm 7 Ahead	Inf
5/3 (A508 London Road)	U	B	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 7 Ahead	Inf
6/1	U		2	3	3.0	Inf	-	-	-	-	-	-
6/2	U		2	3	3.0	Inf	-	-	-	-	-	-
7/1	U	A	2	3	20.9	User	1900	-	-	-	-	-
7/2	U	A	2	3	20.9	User	1900	-	-	-	-	-
8/1 (A45 Southbound)	U	B	2	3	15.7	Geom	-	3.65	0.00	Y	Arm 9 Left	30.00
											Arm 10 Ahead	Inf
8/2 (A45 Southbound)	U	B	2	3	60.0	Geom	-	3.65	0.00	N	Arm 10 Ahead	Inf
8/3 (A45 Southbound)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 10 Ahead	Inf
9/1	U		2	3	3.0	Inf	-	-	-	-	-	-
10/1	U		2	3	12.2	Inf	-	-	-	-	-	-
10/2	U		2	3	12.2	Inf	-	-	-	-	-	-
10/3	U		2	3	12.2	User	3000	-	-	-	-	-

10/4	U		2	3	12.2	User	3000	-	-	-	-	-
11/1 (Hardingstone Lane)	O		2	3	5.2	Inf	-	-	-	-	-	-
11/2 (Hardingstone Lane)	O		2	3	60.0	Inf	-	-	-	-	-	-
12/1	U	C	2	3	7.8	User	1900	-	-	-	-	-
12/2	U	C	2	3	7.8	User	1900	-	-	-	-	-
12/3	U	C	2	3	7.8	User	1900	-	-	-	-	-
12/4	U	C	2	3	7.8	User	1900	-	-	-	-	-
13/1	U		2	3	3.0	Inf	-	-	-	-	-	-
14/1 (Newport Pagnell Road)	U	D	2	3	10.0	Geom	-	3.50	0.00	Y	Arm 15 Ahead Arm 16 Left	Inf 20.00
14/2 (Newport Pagnell Road)	U	D	2	3	60.0	Geom	-	3.50	0.00	N	Arm 15 Ahead	30.00
14/3 (Newport Pagnell Road)	U	D	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 15 Ahead	50.00
15/1	U	A	2	3	22.6	User	1900	-	-	-	-	-
15/2	U	A	2	3	22.6	User	1900	-	-	-	-	-
15/3	U	A	2	3	22.6	User	1900	-	-	-	-	-
16/1	U		2	3	3.0	Inf	-	-	-	-	-	-
16/2	U		2	3	3.0	Inf	-	-	-	-	-	-
17/1 (A45 Northbound)	U	B	2	3	10.0	Geom	-	3.65	0.00	Y	Arm 18 U-Turn	Inf
17/2 (A45 Northbound)	U	B	2	3	60.0	Geom	-	3.65	0.00	N	Arm 2 Left	Inf
17/3 (A45 Northbound)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 2 Left	Inf
18/1	U		2	3	3.0	Inf	-	-	-	-	-	-
18/2	U		2	3	3.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2031 Reference Case D1 - AM'	08:00	09:00	01:00	
2: '2031 Reference Case D1 - PM'	17:00	18:00	01:00	
3: '2031 With Dev Case J1c - AM'	08:00	09:00	01:00	
4: '2031 With Dev Case J1c - PM'	17:00	18:00	01:00	

Scenario 1: '2031 With Dev AM' (FG3: '2031 With Dev Case J1c - AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	65	56	30	1534	363	2048
	B	173	0	0	27	119	171	490
	C	194	0	0	0	400	456	1050
	D	78	0	1	0	98	725	902
	E	1728	22	247	241	5	58	2301
	F	315	11	181	472	54	0	1033
	Tot.	2488	98	485	770	2210	1773	7824

Traffic Lane Flows

Lane	Scenario 1: 2031 With Dev AM
Junction: Queen Elanor Gyratory	
1/1	860
1/2 (with short)	1441(In) 926(Out)
1/3 (short)	515
2/1	847
2/2	868
2/3	446
3/1	905
3/2	868
4/1	981
4/2	1192
4/3	516
5/1 (short)	315
5/2 (with short)	512(In) 197(Out)
5/3	521
6/1	1296
6/2	1192
7/1	675
7/2	559
8/1 (short)	151
8/2 (with short)	1085(In) 934(Out)
8/3	963
9/1	98
10/1	728
10/2	1457
10/3	653
10/4	346
11/1	248
11/2	242
12/1	632
12/2	1111
12/3	858
12/4	588
13/1	485
14/1 (short)	351
14/2 (with short)	711(In) 360(Out)
14/3	339

15/1	1324
15/2	1218
15/3	927
16/1	632
16/2	138
17/1 (short)	98
17/2 (with short)	515(In) 417(Out)
17/3	387
18/1	1422
18/2	788

Lane Saturation Flows

Junction: Queen Elanor Gyratory

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A5076 Mere Way)	3.50	0.00	Y	Arm 3 Left	20.00	6.7 %	1955	1955
				Arm 4 Ahead	Inf	93.3 %		
1/2 (A5076 Mere Way)	3.50	0.00	N	Arm 4 Ahead	Inf	100.0 %	2105	2105
1/3 (A5076 Mere Way)	3.50	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1965	1965
2/1	This lane uses a directly entered Saturation Flow						1900	1900
2/2	This lane uses a directly entered Saturation Flow						1900	1900
2/3	This lane uses a directly entered Saturation Flow						1900	1900
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	This lane uses a directly entered Saturation Flow						1900	1900
4/2	This lane uses a directly entered Saturation Flow						1900	1900
4/3	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (A508 London Road)	3.50	0.00	Y	Arm 6 Left	Inf	100.0 %	1965	1965
5/2 (A508 London Road)	3.50	0.00	N	Arm 7 Ahead	Inf	100.0 %	2105	2105
5/3 (A508 London Road)	3.50	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1965	1965
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	This lane uses a directly entered Saturation Flow						1900	1900
7/2	This lane uses a directly entered Saturation Flow						1900	1900
8/1 (A45 Southbound)	3.65	0.00	Y	Arm 9 Left	30.00	43.0 %	1938	1938
				Arm 10 Ahead	Inf	57.0 %		
8/2 (A45 Southbound)	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
8/3 (A45 Southbound)	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/1	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
10/3	This lane uses a directly entered Saturation Flow						3000	3000
10/4	This lane uses a directly entered Saturation Flow						3000	3000
11/1 (Hardingstone Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (Hardingstone Lane Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1	This lane uses a directly entered Saturation Flow						1900	1900
12/2	This lane uses a directly entered Saturation Flow						1900	1900

12/3	This lane uses a directly entered Saturation Flow						1900	1900
12/4	This lane uses a directly entered Saturation Flow						1900	1900
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Newport Pagnell Road)	3.50	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1965	1965
				Arm 16 Left	20.00	0.0 %		
14/2 (Newport Pagnell Road)	3.50	0.00	N	Arm 15 Ahead	30.00	100.0 %	2005	2005
14/3 (Newport Pagnell Road)	3.50	0.00	Y	Arm 15 Ahead	50.00	100.0 %	1908	1908
15/1	This lane uses a directly entered Saturation Flow						1900	1900
15/2	This lane uses a directly entered Saturation Flow						1900	1900
15/3	This lane uses a directly entered Saturation Flow						1900	1900
16/1	Infinite Saturation Flow						Inf	Inf
16/2	Infinite Saturation Flow						Inf	Inf
17/1 (A45 Northbound)	3.65	0.00	Y	Arm 18 U-Turn	Inf	100.0 %	1980	1980
17/2 (A45 Northbound)	3.65	0.00	N	Arm 2 Left	Inf	100.0 %	2120	2120
17/3 (A45 Northbound)	3.65	0.00	Y	Arm 2 Left	Inf	100.0 %	1980	1980
18/1	Infinite Saturation Flow						Inf	Inf
18/2	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2031 With Dev PM' (FG4: '2031 With Dev Case J1c - PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	544	39	8	944	219	1754
	B	441	0	0	20	46	150	657
	C	116	1	0	33	893	513	1556
	D	45	30	19	0	101	555	750
	E	1494	80	250	402	9	28	2263
	F	369	100	110	681	99	0	1359
	Tot.	2465	755	418	1144	2092	1465	8339

Traffic Lane Flows

Lane	Scenario 2: 2031 With Dev PM
Junction: Queen Elanor Gyratory	
1/1	731
1/2 (with short)	1532(In) 791(Out)
1/3 (short)	741
2/1	611
2/2	826
2/3	652
3/1	639
3/2	826
4/1	1007
4/2	1089
4/3	791
5/1 (short)	369
5/2 (with short)	722(In) 353(Out)
5/3	637
6/1	1376
6/2	1089
7/1	1112
7/2	669
8/1 (short)	584
8/2 (with short)	1167(In) 583(Out)
8/3	587
9/1	755
10/1	941
10/2	1195
10/3	433
10/4	211
11/1	216
11/2	441
12/1	874
12/2	865
12/3	628
12/4	652
13/1	418
14/1 (short)	535
14/2 (with short)	1035(In) 500(Out)
14/3	521

15/1	1130
15/2	1128
15/3	1173
16/1	907
16/2	237
17/1 (short)	101
17/2 (with short)	445(In) 344(Out)
17/3	305
18/1	1231
18/2	861

Lane Saturation Flows

Junction: Queen Elanor Gyratory

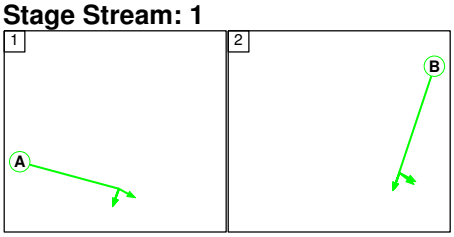
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A5076 Mere Way)	3.50	0.00	Y	Arm 3 Left	20.00	3.8 %	1959	1959
				Arm 4 Ahead	Inf	96.2 %		
1/2 (A5076 Mere Way)	3.50	0.00	N	Arm 4 Ahead	Inf	100.0 %	2105	2105
1/3 (A5076 Mere Way)	3.50	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1965	1965
2/1	This lane uses a directly entered Saturation Flow						1900	1900
2/2	This lane uses a directly entered Saturation Flow						1900	1900
2/3	This lane uses a directly entered Saturation Flow						1900	1900
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	This lane uses a directly entered Saturation Flow						1900	1900
4/2	This lane uses a directly entered Saturation Flow						1900	1900
4/3	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (A508 London Road)	3.50	0.00	Y	Arm 6 Left	Inf	100.0 %	1965	1965
5/2 (A508 London Road)	3.50	0.00	N	Arm 7 Ahead	Inf	100.0 %	2105	2105
5/3 (A508 London Road)	3.50	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1965	1965
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	This lane uses a directly entered Saturation Flow						1900	1900
7/2	This lane uses a directly entered Saturation Flow						1900	1900
8/1 (A45 Southbound)	3.65	0.00	Y	Arm 9 Left	30.00	93.2 %	1892	1892
				Arm 10 Ahead	Inf	6.8 %		
8/2 (A45 Southbound)	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
8/3 (A45 Southbound)	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/1	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
10/3	This lane uses a directly entered Saturation Flow						3000	3000
10/4	This lane uses a directly entered Saturation Flow						3000	3000
11/1 (Hardingstone Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (Hardingstone Lane Lane 2)	Infinite Saturation Flow						Inf	Inf
12/1	This lane uses a directly entered Saturation Flow						1900	1900
12/2	This lane uses a directly entered Saturation Flow						1900	1900

12/3	This lane uses a directly entered Saturation Flow						1900	1900
12/4	This lane uses a directly entered Saturation Flow						1900	1900
13/1	Infinite Saturation Flow						Inf	Inf
14/1 (Newport Pagnell Road)	3.50	0.00	Y	Arm 15 Ahead	Inf	93.8 %	1956	1956
				Arm 16 Left	20.00	6.2 %		
14/2 (Newport Pagnell Road)	3.50	0.00	N	Arm 15 Ahead	30.00	100.0 %	2005	2005
14/3 (Newport Pagnell Road)	3.50	0.00	Y	Arm 15 Ahead	50.00	100.0 %	1908	1908
15/1	This lane uses a directly entered Saturation Flow						1900	1900
15/2	This lane uses a directly entered Saturation Flow						1900	1900
15/3	This lane uses a directly entered Saturation Flow						1900	1900
16/1	Infinite Saturation Flow						Inf	Inf
16/2	Infinite Saturation Flow						Inf	Inf
17/1 (A45 Northbound)	3.65	0.00	Y	Arm 18 U-Turn	Inf	100.0 %	1980	1980
17/2 (A45 Northbound)	3.65	0.00	N	Arm 2 Left	Inf	100.0 %	2120	2120
17/3 (A45 Northbound)	3.65	0.00	Y	Arm 2 Left	Inf	100.0 %	1980	1980
18/1	Infinite Saturation Flow						Inf	Inf
18/2	Infinite Saturation Flow						Inf	Inf

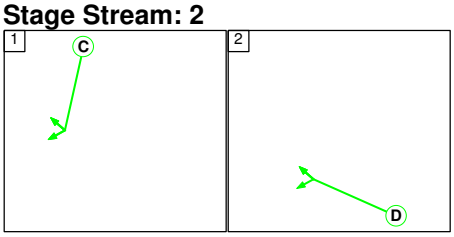
Scenario 1: '2031 With Dev AM' (FG3: '2031 With Dev Case J1c - AM', Plan 1: 'Network Control Plan 1')
C1 - Queen Elanor A B

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

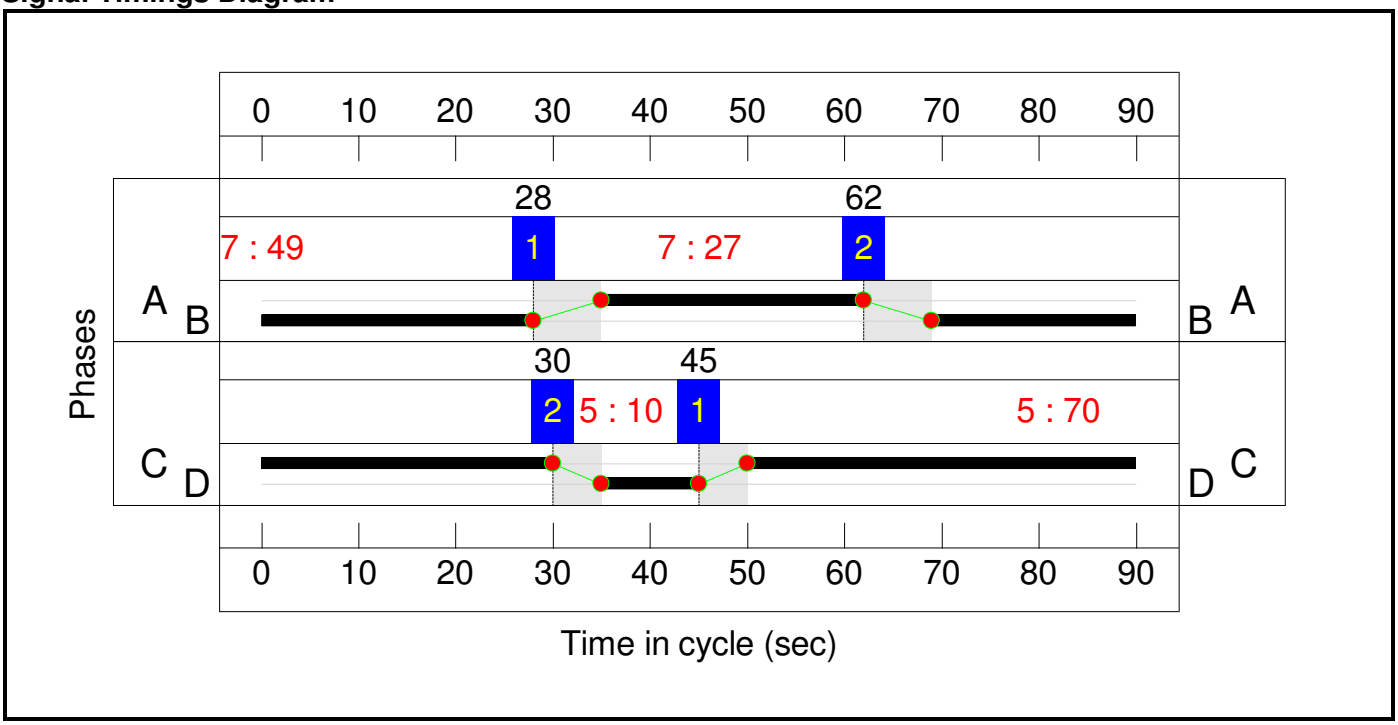
Stage Stream: 1

Stage	1	2
Duration	27	49
Change Point	28	62

Stage Stream: 2

Stage	1	2
Duration	70	10
Change Point	45	30

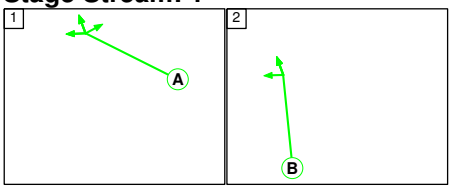
Signal Timings Diagram



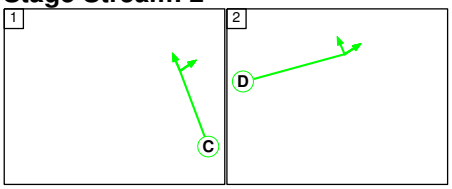
C2 - Queen Elanor C D

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

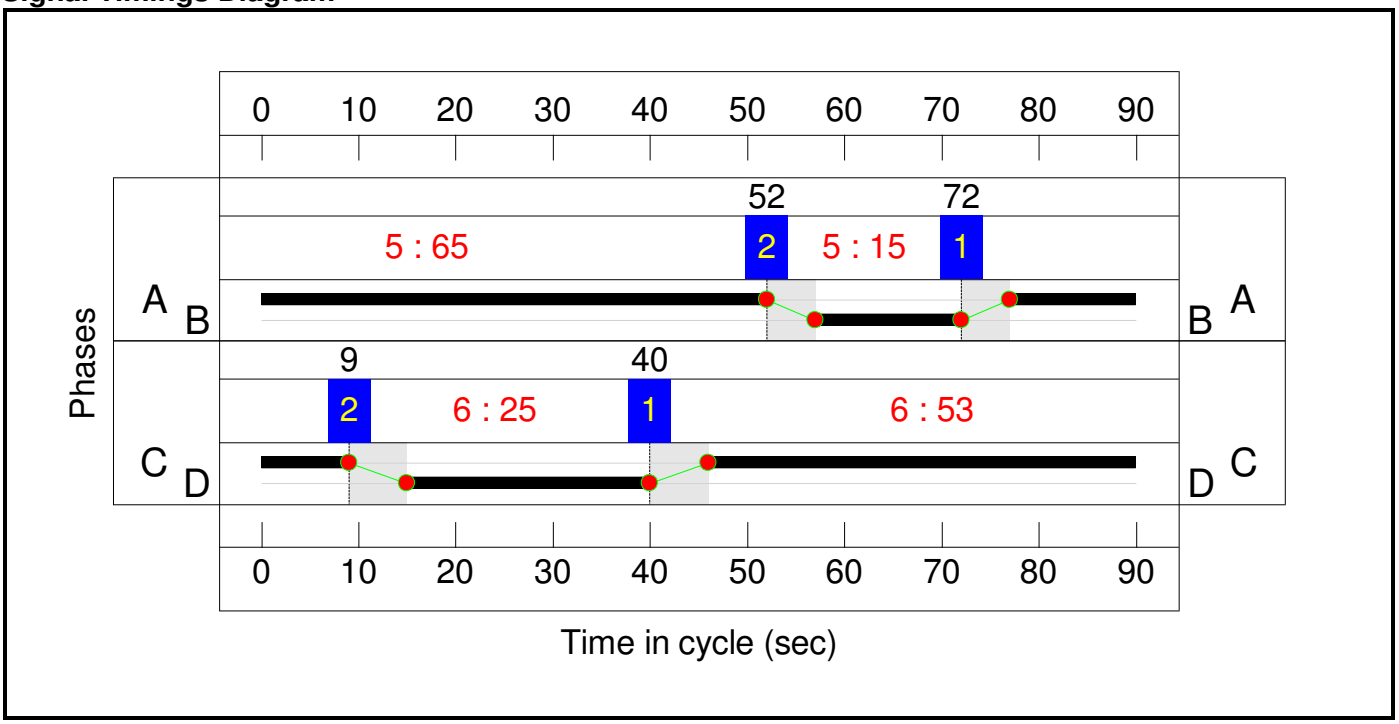
Stage Stream: 1

Stage	1	2
Duration	65	15
Change Point	72	52

Stage Stream: 2

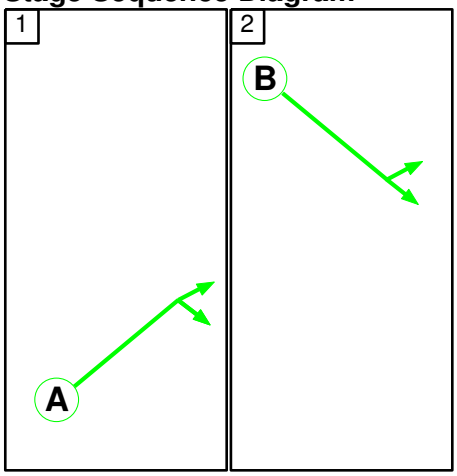
Stage	1	2
Duration	53	25
Change Point	40	9

Signal Timings Diagram



C3 - London Road

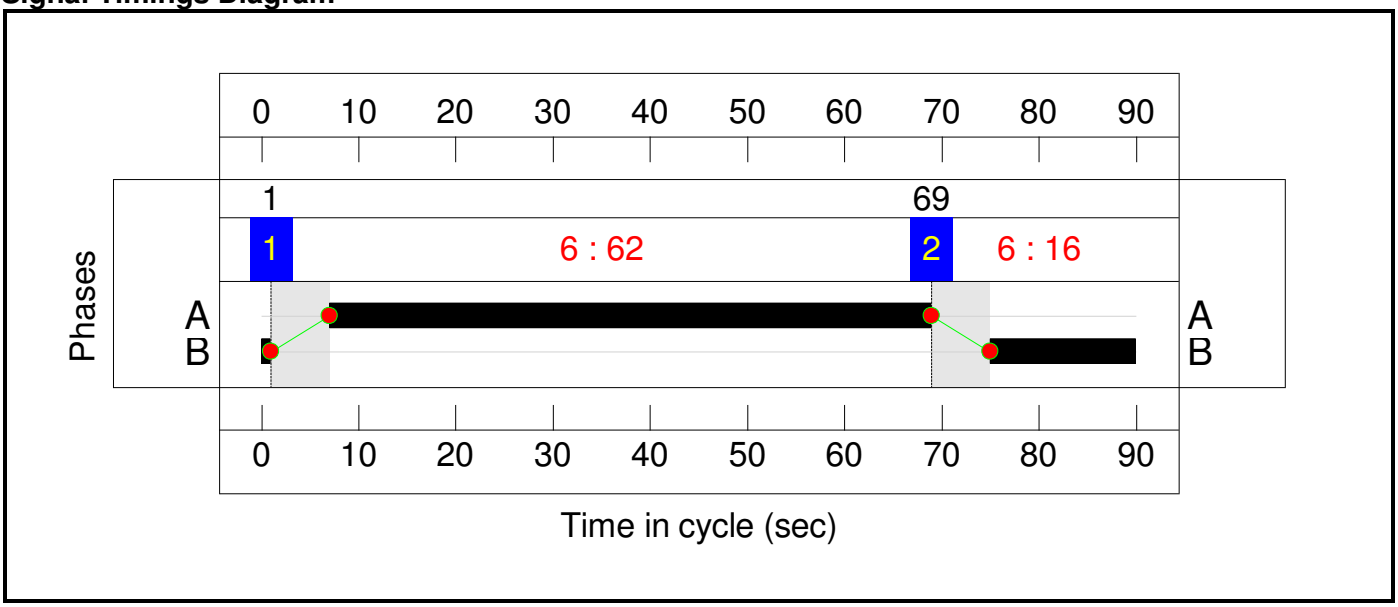
Stage Sequence Diagram



Stage Timings

Stage	1	2
Duration	62	16
Change Point	1	69

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Queen Elanor Gyratory Mitigation	-	-	**N/A**	-	-		-	-	-	-	-	-	**152.3%**
Queen Elanor Gyratory	-	-	**N/A**	-	-		-	-	-	-	-	-	**152.3%**
1/1	A5076 Mere Way Left Ahead	U	2:2	N/A	C2:D		1	25	-	860	1955	565	152.3%
1/2+1/3	A5076 Mere Way Ahead	U	2:2	N/A	C2:D		1	25	-	1441	2105:1965	608+338	152.3 : 152.3%
2/1	Ahead	U	2:2	N/A	C2:C		1	53	-	847	1900	1140	62.1%
2/2	Ahead	U	2:2	N/A	C2:C		1	53	-	868	1900	1140	69.7%
2/3	Right	U	2:2	N/A	C2:C		1	53	-	446	1900	1140	33.2%
4/1	Ahead	U	N/A	N/A	C3:A		1	62	-	981	1900	1330	49.0%
4/2	Ahead	U	2:1	N/A	C2:A		1	65	-	1192	1900	1393	61.8%
4/3	Right	U	N/A	N/A	C3:A		1	62	-	516	1900	1330	25.5%
5/2+5/1	A508 London Road Left Ahead	U	N/A	N/A	C3:B		1	16	-	512	2105:1965	232+371	84.9 : 84.9%
5/3	A508 London Road Ahead	U	1:1	N/A	C1:B		1	49	-	521	1965	1092	47.7%
7/1	Ahead Right	U	1:1	N/A	C1:A		1	27	-	675	1900	591	86.4%
7/2	Right	U	1:1	N/A	C1:A		1	27	-	559	1900	591	92.4%
8/2+8/1	A45 Southbound Left Ahead	U	1:1	N/A	C1:B		1	49	-	1085	2120:1938	1115+180	83.8 : 83.8%
8/3	A45 Southbound Ahead	U	1:1	N/A	C1:B		1	49	-	963	1980	1100	87.5%
10/3	Right	U	N/A	N/A	-		-	-	-	653	3000	3000	21.8%
10/4	Right	U	N/A	N/A	-		-	-	-	346	3000	3000	11.5%
11/1	Hardingstone Lane Ahead Left	O	N/A	N/A	-		-	-	-	248	Inf	283	87.8%
11/2	Hardingstone Lane Ahead	O	N/A	N/A	-		-	-	-	242	Inf	275	88.0%
12/1	Ahead	U	1:2	N/A	C1:C		1	70	-	632	1900	1499	36.9%

12/2	Right Ahead	U	1:2	N/A	C1:C		1	70	-	1111	1900	1499	73.7%
12/3	Right	U	1:2	N/A	C1:C		1	70	-	858	1900	1499	57.2%
12/4	Right	U	1:2	N/A	C1:C		1	70	-	588	1900	1499	39.2%
14/2+14/1	Newport Pagnell Road Ahead Left	U	1:2	N/A	C1:D		1	10	-	711	2005:1965	245+240	146.9 : 146.1%
14/3	Newport Pagnell Road Ahead	U	1:2	N/A	C1:D		1	10	-	339	1908	233	145.4%
15/1	Ahead	U	2:1	N/A	C2:A		1	65	-	1324	1900	1393	86.9%
15/2	Ahead Ahead2	U	2:1	N/A	C2:A		1	65	-	1218	1900	1393	79.2%
15/3	Ahead	U	2:1	N/A	C2:A		1	65	-	927	1900	1393	58.9%
17/2+17/1	A45 Northbound Left U-Turn	U	2:1	N/A	C2:B		1	15	-	515	2120:1980	377+89	110.6 : 110.6%
17/3	A45 Northbound Left	U	2:1	N/A	C2:B		1	15	-	387	1980	352	109.9%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Queen Elanor Gyratory Mitigation	**-**	**-**	**490**	**0**	**0**	**127.6**	**653.2**	**0.0**	**780.8**	**-**	**-**	**-**	**-**
Queen Elanor Gyratory	**-**	**-**	**490**	**0**	**0**	**127.6**	**653.2**	**0.0**	**780.8**	**-**	**-**	**-**	**-**
1/1	860	565	-	-	-	20.0	149.1	-	169.0	707.6	28.9	149.1	177.9
1/2+1/3	1441	946	-	-	-	29.4	248.8	-	278.2	695.0	42.4	248.8	291.2
2/1	708	708	-	-	-	0.2	0.8	-	1.0	5.2	1.0	0.8	1.8
2/2	795	795	-	-	-	2.1	1.1	-	3.2	14.6	8.9	1.1	10.1
2/3	378	378	-	-	-	0.0	0.2	-	0.3	2.5	0.4	0.2	0.7
4/1	651	651	-	-	-	0.1	0.5	-	0.6	3.3	0.9	0.5	1.4
4/2	861	861	-	-	-	0.4	0.8	-	1.2	4.9	6.2	0.8	7.0
4/3	339	339	-	-	-	1.0	0.2	-	1.2	12.3	3.2	0.2	3.4
5/2+5/1	512	512	-	-	-	4.9	2.7	-	7.5	52.9	7.5	2.7	10.2
5/3	521	521	-	-	-	1.8	0.5	-	2.2	15.2	7.8	0.5	8.3
7/1	511	511	-	-	-	6.9	3.0	-	9.8	69.2	12.8	3.0	15.7
7/2	546	546	-	-	-	6.4	5.0	-	11.4	74.9	13.6	5.0	18.6
8/2+8/1	1085	1085	-	-	-	4.5	2.5	-	7.1	23.4	19.0	2.5	21.5
8/3	963	963	-	-	-	4.6	3.4	-	8.0	29.8	20.6	3.4	23.9
10/3	653	653	-	-	-	0.0	0.1	-	0.1	0.8	0.0	0.1	0.1
10/4	346	346	-	-	-	0.0	0.1	-	0.1	0.7	0.0	0.1	0.1
11/1	248	248	248	0	0	1.0	3.0	-	4.0	58.4	3.8	3.0	6.8
11/2	242	242	242	0	0	1.0	3.1	-	4.1	60.4	3.7	3.1	6.8
12/1	554	554	-	-	-	0.8	0.3	-	1.1	6.9	12.9	0.3	13.2
12/2	1105	1105	-	-	-	0.9	1.4	-	2.3	7.6	11.6	1.4	13.0
12/3	858	858	-	-	-	0.7	0.7	-	1.4	5.8	4.5	0.7	5.2
12/4	588	588	-	-	-	0.6	0.3	-	0.9	5.8	4.0	0.3	4.3
14/2+14/1	711	485	-	-	-	16.5	114.4	-	130.9	662.8	15.3	114.4	129.7

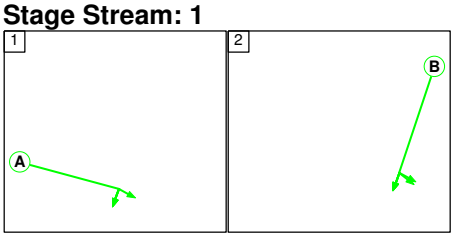
14/3	339	233	-	-	-	7.8	54.5	-	62.2	660.9	11.1	54.5	65.6
15/1	1211	1211	-	-	-	1.1	3.2	-	4.3	12.8	4.7	3.2	7.9
15/2	1103	1103	-	-	-	1.9	1.9	-	3.8	12.4	11.8	1.9	13.7
15/3	821	821	-	-	-	1.5	0.7	-	2.2	9.6	8.1	0.7	8.8
17/2+17/1	515	465	-	-	-	6.5	29.2	-	35.7	249.7	12.5	29.2	41.7
17/3	387	352	-	-	-	5.1	21.9	-	27.0	251.1	10.6	21.9	32.5

C1 - Queen Elanor A B	Stream: 1 PRC for Signalled Lanes (%):	-2.6	Total Delay for Signalled Lanes (pcuHr):	38.43	Cycle Time (s): 90
C1 - Queen Elanor A B	Stream: 2 PRC for Signalled Lanes (%):	-63.2	Total Delay for Signalled Lanes (pcuHr):	198.85	Cycle Time (s): 90
C2 - Queen Elanor C D	Stream: 1 PRC for Signalled Lanes (%):	-22.9	Total Delay for Signalled Lanes (pcuHr):	74.19	Cycle Time (s): 90
C2 - Queen Elanor C D	Stream: 2 PRC for Signalled Lanes (%):	-69.2	Total Delay for Signalled Lanes (pcuHr):	451.74	Cycle Time (s): 90
C3 - London Road	PRC for Signalled Lanes (%):	6.0	Total Delay for Signalled Lanes (pcuHr):	9.27	Cycle Time (s): 90
	PRC Over All Lanes (%):	-69.2	Total Delay Over All Lanes(pcuHr):	780.77	

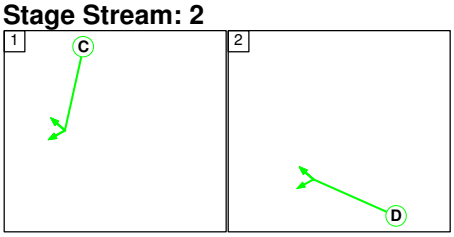
Scenario 2: '2031 With Dev PM' (FG4: '2031 With Dev Case J1c - PM', Plan 1: 'Network Control Plan 1')
C1 - Queen Elanor A B

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

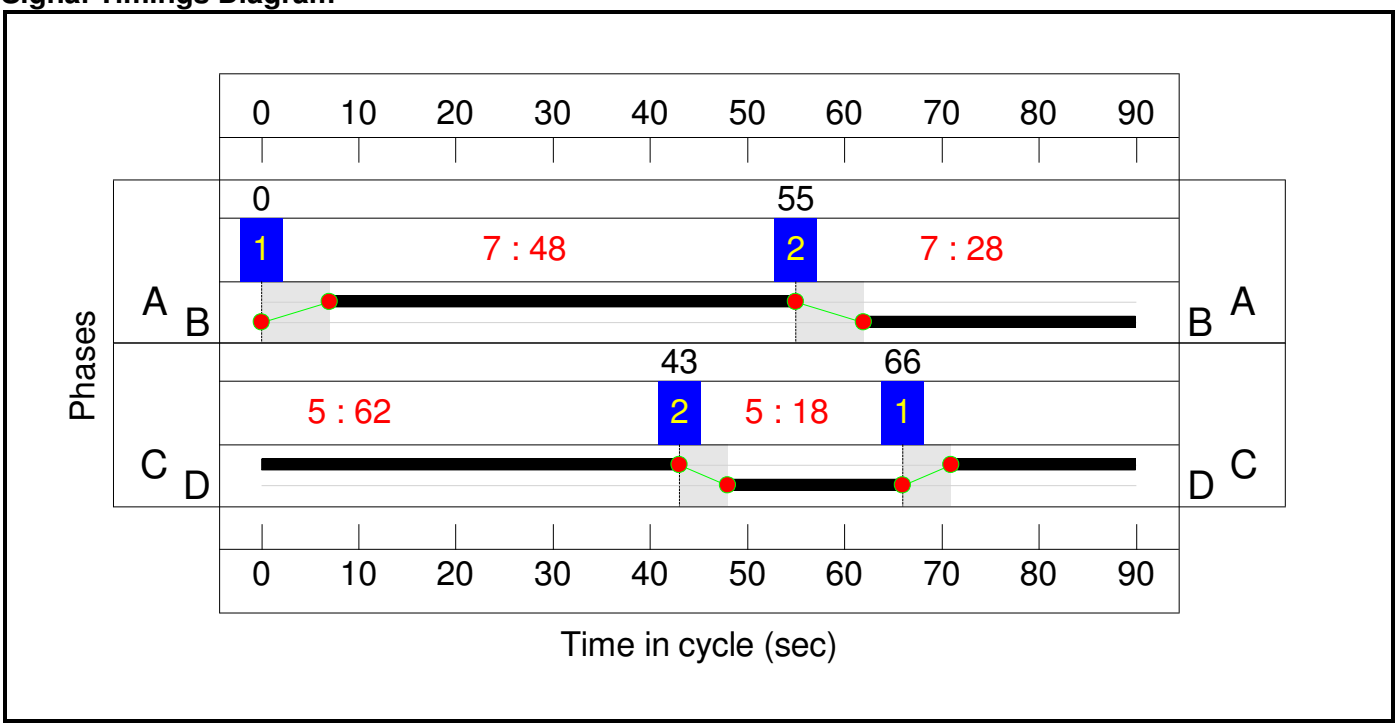
Stage Stream: 1

Stage	1	2
Duration	48	28
Change Point	0	55

Stage Stream: 2

Stage	1	2
Duration	62	18
Change Point	66	43

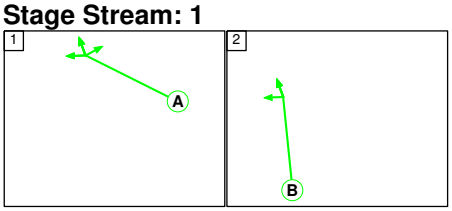
Signal Timings Diagram



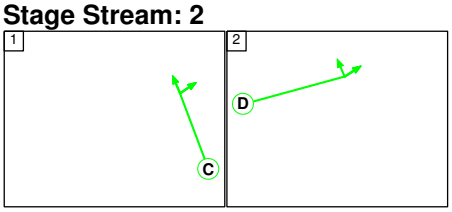
C2 - Queen Elanor C D

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

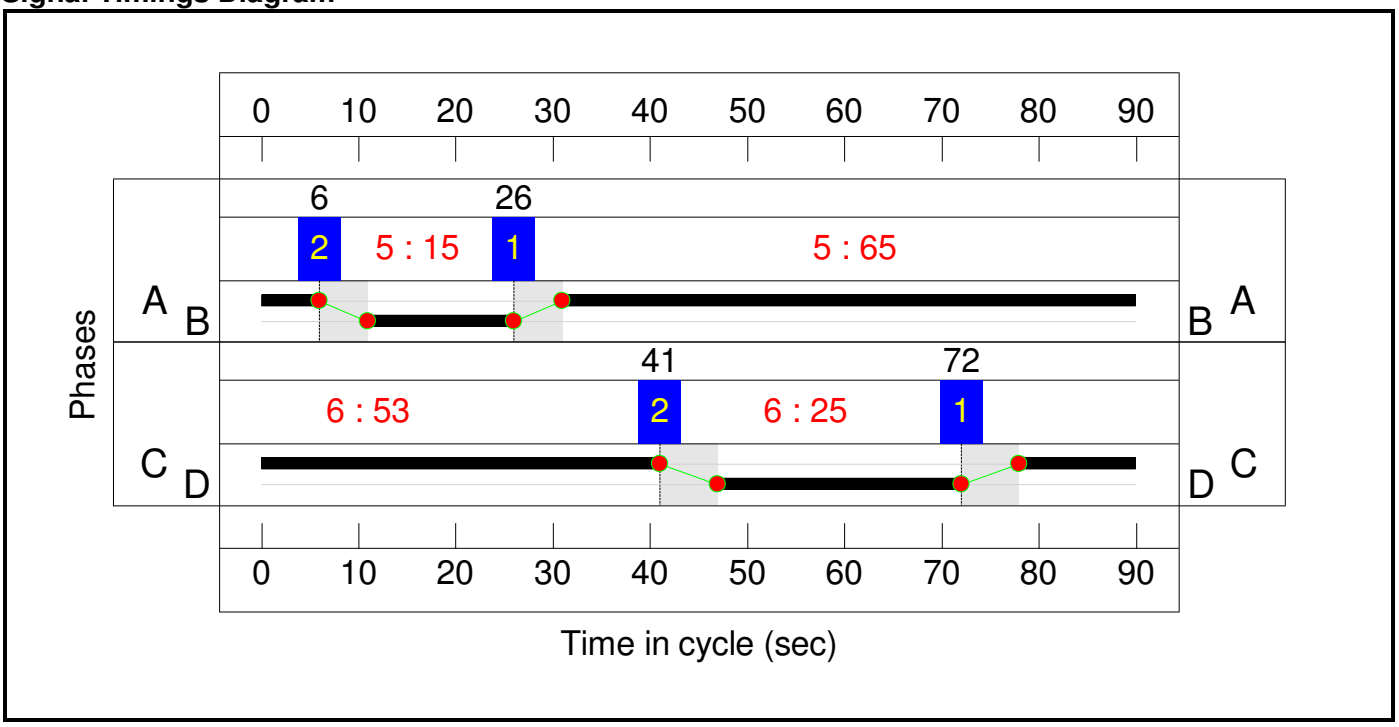
Stage Stream: 1

Stage	1	2
Duration	65	15
Change Point	26	6

Stage Stream: 2

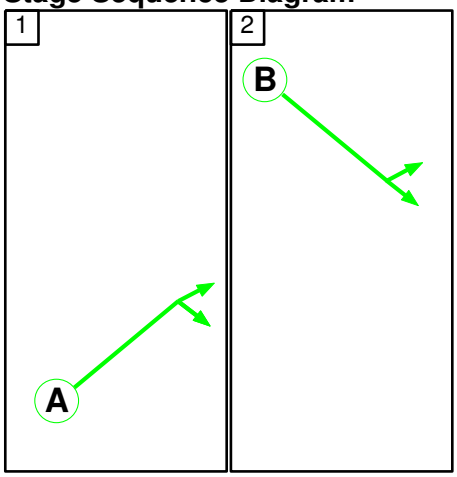
Stage	1	2
Duration	53	25
Change Point	72	41

Signal Timings Diagram



C3 - London Road

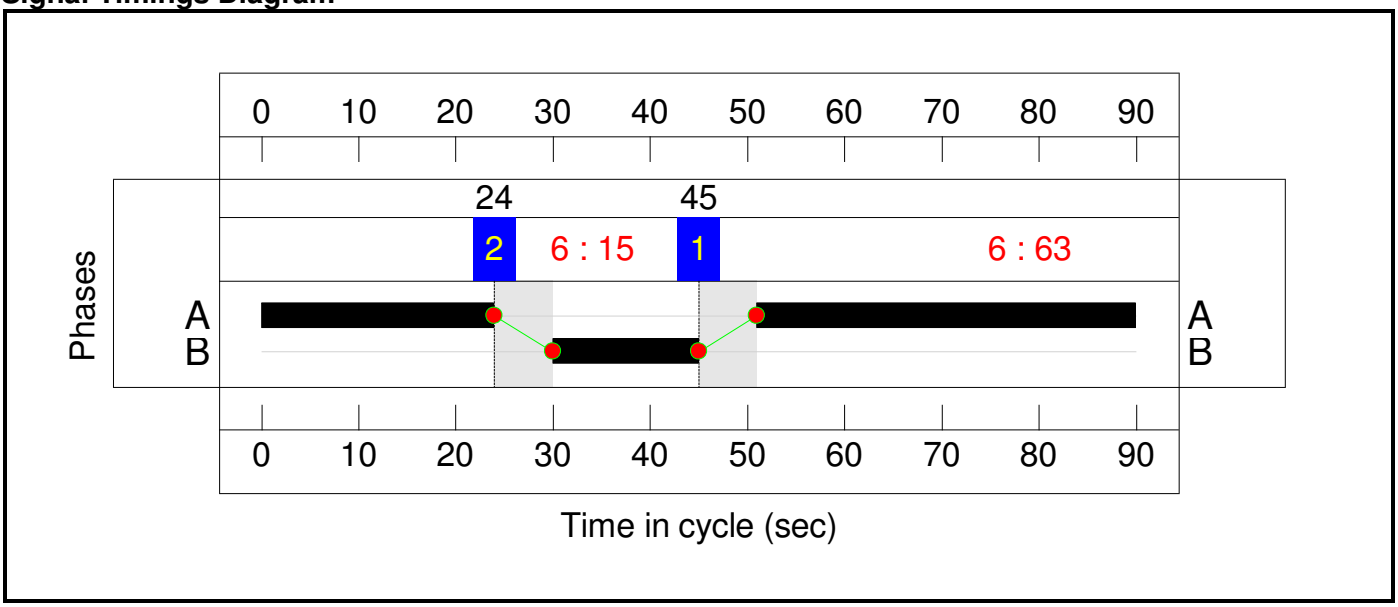
Stage Sequence Diagram



Stage Timings

Stage	1	2
Duration	63	15
Change Point	45	24

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Queen Elanor Gyratory Mitigation	-	-	**N/A**	-	-		-	-	-	-	-	-	**130.5%**
Queen Elanor Gyratory	-	-	**N/A**	-	-		-	-	-	-	-	-	**130.5%**
1/1	A5076 Mere Way Left Ahead	U	2:2	N/A	C2:D		1	25	-	731	1959	566	129.2%
1/2+1/3	A5076 Mere Way Ahead	U	2:2	N/A	C2:D		1	25	-	1532	2105:1965	608+568	130.1 : 130.5%
2/1	Ahead	U	2:2	N/A	C2:C		1	53	-	611	1900	1140	51.4%
2/2	Ahead	U	2:2	N/A	C2:C		1	53	-	826	1900	1140	64.4%
2/3	Right	U	2:2	N/A	C2:C		1	53	-	652	1900	1140	48.1%
4/1	Ahead	U	N/A	N/A	C3:A		1	63	-	1007	1900	1351	58.8%
4/2	Ahead	U	2:1	N/A	C2:A		1	65	-	1089	1900	1393	61.5%
4/3	Right	U	N/A	N/A	C3:A		1	63	-	791	1900	1351	45.7%
5/2+5/1	A508 London Road Left Ahead	U	N/A	N/A	C3:B		1	15	-	722	2105:1965	374+349	94.3 : 105.6%
5/3	A508 London Road Ahead	U	1:1	N/A	C1:B		1	28	-	637	1965	633	100.6%
7/1	Ahead Right	U	1:1	N/A	C1:A		1	48	-	1112	1900	1034	91.4%
7/2	Right	U	1:1	N/A	C1:A		1	48	-	669	1900	1034	63.6%
8/2+8/1	A45 Southbound Left Ahead	U	1:1	N/A	C1:B		1	28	-	1167	2120:1892	609+610	95.8 : 95.8%
8/3	A45 Southbound Ahead	U	1:1	N/A	C1:B		1	28	-	587	1980	638	92.0%
10/3	Right	U	N/A	N/A	-		-	-	-	433	3000	3000	14.4%
10/4	Right	U	N/A	N/A	-		-	-	-	211	3000	3000	7.0%
11/1	Hardingstone Lane Ahead Left	O	N/A	N/A	-		-	-	-	216	Inf	366	59.1%
11/2	Hardingstone Lane Ahead	O	N/A	N/A	-		-	-	-	441	Inf	364	121.3%
12/1	Ahead	U	1:2	N/A	C1:C		1	62	-	874	1900	1330	58.5%

12/2	Right Ahead	U	1:2	N/A	C1:C		1	62	-	865	1900	1330	64.7%
12/3	Right	U	1:2	N/A	C1:C		1	62	-	628	1900	1330	47.2%
12/4	Right	U	1:2	N/A	C1:C		1	62	-	652	1900	1330	43.2%
14/2+14/1	Newport Pagnell Road Ahead Left	U	1:2	N/A	C1:D		1	18	-	1035	2005:1956	384+411	130.1 : 130.1%
14/3	Newport Pagnell Road Ahead	U	1:2	N/A	C1:D		1	18	-	521	1908	403	129.3%
15/1	Ahead	U	2:1	N/A	C2:A		1	65	-	1130	1900	1393	72.6%
15/2	Ahead Ahead2	U	2:1	N/A	C2:A		1	65	-	1128	1900	1393	72.6%
15/3	Ahead	U	2:1	N/A	C2:A		1	65	-	1173	1900	1393	70.2%
17/2+17/1	A45 Northbound Left U-Turn	U	2:1	N/A	C2:B		1	15	-	445	2120:1980	377+111	91.3 : 91.3%
17/3	A45 Northbound Left	U	2:1	N/A	C2:B		1	15	-	305	1980	352	86.6%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Queen Elanor Gyratory Mitigation	**-**	**-**	**580**	**0**	**0**	**126.6**	**562.9**	**0.0**	**689.5**	**-**	**-**	**-**	**-**
Queen Elanor Gyratory	**-**	**-**	**580**	**0**	**0**	**126.6**	**562.9**	**0.0**	**689.5**	**-**	**-**	**-**	**-**
1/1	731	566	-	-	-	13.0	84.7	-	97.7	481.2	23.5	84.7	108.2
1/2+1/3	1532	1176	-	-	-	25.3	180.2	-	205.6	483.1	33.5	180.2	213.8
2/1	586	586	-	-	-	1.1	0.5	-	1.6	10.0	4.2	0.5	4.8
2/2	734	734	-	-	-	1.1	0.9	-	2.0	9.7	7.9	0.9	8.8
2/3	548	548	-	-	-	1.7	0.5	-	2.1	13.9	6.0	0.5	6.5
4/1	794	794	-	-	-	0.0	0.7	-	0.8	3.4	0.2	0.7	0.9
4/2	857	857	-	-	-	0.6	0.8	-	1.4	5.9	6.2	0.8	7.0
4/3	617	617	-	-	-	1.0	0.4	-	1.5	8.6	3.3	0.4	3.7
5/2+5/1	722	702	-	-	-	8.1	22.9	-	31.0	154.7	9.7	22.9	32.6
5/3	637	633	-	-	-	5.6	13.6	-	19.2	108.6	16.0	13.6	29.6
7/1	946	946	-	-	-	1.7	4.8	-	6.5	24.9	4.1	4.8	8.9
7/2	658	658	-	-	-	4.6	0.9	-	5.5	30.1	16.4	0.9	17.3
8/2+8/1	1167	1167	-	-	-	9.5	8.5	-	18.0	55.6	14.3	8.5	22.8
8/3	587	587	-	-	-	4.8	4.8	-	9.6	59.1	14.0	4.8	18.9
10/3	433	433	-	-	-	0.0	0.1	-	0.1	0.7	0.0	0.1	0.1
10/4	211	211	-	-	-	0.0	0.0	-	0.0	0.6	0.0	0.0	0.0
11/1	216	216	216	0	0	0.4	0.7	-	1.1	18.3	2.0	0.7	2.7
11/2	441	364	364	0	0	5.1	41.4	-	46.5	379.3	31.0	41.4	72.3
12/1	779	779	-	-	-	1.5	0.7	-	2.2	10.0	5.5	0.7	6.2
12/2	861	861	-	-	-	0.7	0.9	-	1.6	6.5	11.0	0.9	12.0
12/3	628	628	-	-	-	0.5	0.4	-	0.9	5.4	4.4	0.4	4.9
12/4	575	575	-	-	-	1.1	0.4	-	1.5	9.3	8.6	0.4	9.0
14/2+14/1	1035	796	-	-	-	18.2	121.7	-	139.9	486.5	24.8	121.7	146.5

14/3	521	403	-	-	-	9.1	61.2	-	70.3	486.0	16.0	61.2	77.2
15/1	1012	1012	-	-	-	2.0	1.3	-	3.3	11.6	7.7	1.3	9.1
15/2	1012	1012	-	-	-	1.5	1.3	-	2.9	10.2	7.4	1.3	8.7
15/3	977	977	-	-	-	1.0	1.2	-	2.2	8.0	5.5	1.2	6.7
17/2+17/1	445	445	-	-	-	4.4	4.3	-	8.7	70.5	8.4	4.3	12.8
17/3	305	305	-	-	-	3.0	2.9	-	5.9	70.1	7.4	2.9	10.3

C1 - Queen Elanor A B	Stream: 1 PRC for Signalled Lanes (%):	-11.8	Total Delay for Signalled Lanes (pcuHr):	58.89	Cycle Time (s): 90
C1 - Queen Elanor A B	Stream: 2 PRC for Signalled Lanes (%):	-44.5	Total Delay for Signalled Lanes (pcuHr):	216.35	Cycle Time (s): 90
C2 - Queen Elanor C D	Stream: 1 PRC for Signalled Lanes (%):	-1.4	Total Delay for Signalled Lanes (pcuHr):	24.35	Cycle Time (s): 90
C2 - Queen Elanor C D	Stream: 2 PRC for Signalled Lanes (%):	-45.0	Total Delay for Signalled Lanes (pcuHr):	308.99	Cycle Time (s): 90
C3 - London Road	PRC for Signalled Lanes (%):	-17.4	Total Delay for Signalled Lanes (pcuHr):	33.25	Cycle Time (s): 90
	PRC Over All Lanes (%):	-45.0	Total Delay Over All Lanes(pcuHr):	689.53	