OXFORDSHIRE
STRATEGIC RAIL FREIGHT INTERCHANGE

DCO Submission

Environmental Statement

Chapter 3: Transport
Appendix 3.1: Transport Assessment Part 7 of 11

Document 6.3A

On behalf of
Oxfordshire Railfreight Limited

Prepared by ADC Infrastructure Ltd
March 2026

APPENDIX 15

TN5: M40 JUNCTION 10 OPTIONS REPORT

OXFORDSHIRE RAILFREIGHT INTERCHANGE LIMITED

TECHNICAL NOTE 5: M40 JUNCTION 10 OPTIONS REPORT

ADC Infrastructure Limited
Suite 3a, King Edward Court
King Edward Street
Nottingham
NG1 1EW

www.ADCinfrastructure.com

project number: ADC1794				report reference: ADC1794-RP-M
version	date	lead author	reviewer(s)	comments
1		[redacted]		internal draft
2	11/06/2021			draft to BWB Consulting
3	14/06/2021			for issue to Transport Working Group

CONTENTS PAGE

1.0	**INTRODUCTION**	**6**
2.0	**HIGHWAY NETWORK**	**8**
	Site location	8
	Strategic Road Network	8
	Local road network	10
3.0	**ASSESSMENT OF FUTURE BASELINE AT M40 JUNCTION 10**	**11**
	Introduction	11
	Baynard's Green Roundabout (A43/B4100)	11
	Padbury Roundabout (A43/M40 southbound off-slip)	13
	Cherwell Roundabout (A43/M40 southbound on-slip/Cherwell Valley services)	15
	Ardley Roundabout (A43/M40 northbound on-slip and off-slip/B430)	18
	Summary	20
4.0	**M40 JUNCTION 10 ACCESS STRATEGY**	**21**
	General principle	21
	Ardley Bypass	21
	Individual Junction and overall Strategic Options	23
	Padbury Roundabout (P)	23
	Cherwell Roundabout (C)	24
	Ardley Roundabout (A)	25
	Ardley, Cherwell and Padbury combined (ACP)	25
	Proposed Ardley East junction (AE)	25
5.0	**HIGHWAY GEOMETRY REVIEW**	**27**
	Introduction	27
	Free-flow link from the A43SB to M40SB, including its proximity to the Baynard's Green Roundabout	27
	Free-flow link from the M40NB to A43NB, including its proximity to the Baynard's Green Roundabout	28
	Upgrading of the existing M40 SB merge to a two-lane merge	28
	Upgrading of the existing M40 NB diverge to a two-lane diverge	29
	Use of the existing Ardley Road bridge to provide a link to the M40 SB	30
	New M40 SB merge slip road connected to the Ardley East junction	30
	New M40 NB diverge slip road connected to the Ardley East junction	30
	The provision of two separate merge slip roads on the M40 SB	31
6.0	**M40J10 DO SOMETHING OPTION CAPACITY TESTING**	**33**
	Introduction	33
	Padbury Roundabout (P)	33
	Cherwell (C)	35
	Ardley (A)	37
	Ardley East (AE)	39
	Baynard's Green Roundabout	41
	Single large grade-separated gyratory (ACP-1)	43
	Site access	45
7.0	**ACCESS STRATEGY APPRAISAL SUMMARY**	**46**
8.0	**SUMMARY, CONCLUSIONS AND NEXT STEPS**	**49**

DRAWINGS

OxSRFI-ADC-GEN-XX-SK-CH-SK01-S1-P1	Baynard's Green General Arrangement
OxSRFI-ADC-GEN-XX-SK-CH-SK02-S1-P1	Padbury Roundabout General Arrangement
OxSRFI-ADC-GEN-XX-SK-CH-SK03-S1-P1	Cherwell Roundabout General Arrangement
OxSRFI-ADC-GEN-XX-SK-CH-SK04-S1-P1	Ardley East Roundabout General Arrangement with link with Ardley Road
OxSRFI-ADC-GEN-XX-SK-CH-SK05-S1-P1	Ardley East Roundabout General Arrangement no link with Ardley Road
OxSRFI-BWB-GEN-XX-SK-CH-SK008-S01-P01	M40 Junction 10 Slip Road Options Northbound Diverge and Southbound Merge
OxSRFI-BWB-GEN-XX-SK-CH-SK018-S1-P2	OxSRFI Principal access roundabout
OxSRFI-BWB-GEN-XX-SK-CH-SK019-S1-P01	J10 SB Merge and J10 NB Diverge General Arrangement and Vertical Alignment
OxSRFI-BWB-GEN-XX-SK-CH-SK020-S1-P1	Ardley Roundabout General Arrangement
OxSRFI-BWB-GEN-XX-SK-CH-SK021-S1-P01	A43 to M40 SB Free Flow Merge General Arrangement and Vertical Alignment
OxSRFI-BWB-GEN-XX-SK-CH-SK011-S3-P03	M40 J10 Strategic Option 11
OxSRFI-BWB-GEN-XX-SK-CH-SK012-S3-P03	M40 J10 Strategic Option 13
OxSRFI-BWB-GEN-XX-SK-CH-SK013-S3-P03	M40 J10 Strategic Option 18
OxSRFI-BWB-GEN-XX-SK-CH-SK014-S3-P03	M40 J10 Strategic Option 19

APPENDICES

Appendix 1	Highways England committed improvement schemes at Baynard's Green and Padbury Roundabouts
Appendix 2	Baynard's Green Roundabout committed scheme – LinSig results
Appendix 3	Padbury Roundabout committed scheme – LinSig results
Appendix 4	Cherwell Roundabout existing layout – LinSig results
Appendix 5	Potential improvement at Cherwell Roundabout
Appendix 6	Cherwell Roundabout potential improvement – LinSig results
Appendix 7	Ardley Roundabout existing layout– LinSig results
Appendix 8	Potential improvement at Ardley Roundabout
Appendix 9	Ardley Roundabout potential improvement – LinSig results
Appendix10	Draft features plan
Appendix 11	Strategic Options 1 to 19
Appendix 12	Padbury Roundabout junction options P-1 and P-3 – LinSig results
Appendix 13	Padbury T- junction option P-4 – LinSig results
Appendix 14	Padbury Roundabout junction option P-1 (alt) – LinSig results
Appendix 15	Cherwell Roundabout junction option C-1 – LinSig results
Appendix 16	Cherwell Roundabout junction option C-2 and C-4 – LinSig results
Appendix 17	Cherwell Roundabout junction option C-3 – LinSig results
Appendix 18	Cherwell Roundabout junction option C-5 – LinSig results
Appendix 19	Cherwell Roundabout junction option C-6 – LinSig results
Appendix 20	Cherwell Roundabout junction option C-7 – LinSig results
Appendix 21	Ardley Roundabout junction option A-1 – Arcady results
Appendix 22	Ardley Roundabout junction option A-2 – Arcady results
Appendix 23	Ardley Roundabout junction option A-3 – Arcady results
Appendix 24	Ardley Roundabout junction option A-1 – LinSig results
Appendix 25	Ardley Roundabout junction option A-2 – LinSig results

Appendix 26 Ardley Roundabout junction option A-3 – LinSig results
Appendix 27 Ardley East Roundabout junction option AE-1 – Arcady results
Appendix 28 Ardley East Roundabout junction option AE-3 – Arcady results
Appendix 29 Ardley East Roundabout junction option AE-4 – Arcady results
Appendix 30 Ardley East Roundabout junction option AE-5 – Arcady results
Appendix 31 Ardley East Roundabout junction option AE-6 – Arcady results
Appendix 32 Ardley East Roundabout junction option AE-7 – Arcady results
Appendix 33 Ardley East Roundabout junction option AE-6 – LinSig results
Appendix 34 Ardley East Roundabout junction option AE-8 – LinSig results
Appendix 35 Baynard's Green Roundabout mitigation – LinSig results
Appendix 36 Single, large grade-separated gyratory – LinSig results
Appendix 37 Site access roundabout – Arcady results

1.0 INTRODUCTION

1.1 ADC Infrastructure Ltd and BWB Consulting Ltd are appointed by Oxfordshire Railfreight Interchange Ltd (the Applicant) to assess and design the transport and infrastructure requirements of a Nationally Significant Infrastructure Project (NSIP), that being a proposed Strategic Rail Freight Interchange in Oxfordshire, to be known as Oxfordshire Strategic Rail Freight Interchange (OxSRFI).

1.2 An SRFI is a large multi-purpose freight interchange and distribution centre linked into both the strategic rail and road systems. It has rail served warehousing and container handling facilities and enables freight to be transferred between transport modes (i.e. from lorry to train). SRFI allow rail to be used to undertake the long-haul primary journey, with other modes (usually road) providing the secondary, and often final, delivery leg of the journey.

1.3 Given the requirement for good access to the strategic rail and road systems, there are relatively few locations this criterion can be met whilst also meeting requirements for appropriate land-use planning and environmental considerations.

1.4 The OxSRFI site is located on land south of the Chiltern Railway line, and west of the B430, east of Upper Heyford Former Airfield, and south of the village of Ardley in Cherwell District, Oxfordshire. The proposed SRFI site is located west of the M40, with Junction 10 of the M40 located nearby to the north-east. The Proposed Development is located on land entirely within the administrative boundaries of Cherwell District Council and Oxfordshire County Council (OCC).

1.5 OCC are the local highway authority and Highways England have responsibility for the strategic road network (SRN), which in the vicinity of the site comprises the M40, A43 and A34, as shown at **Figure 1**.

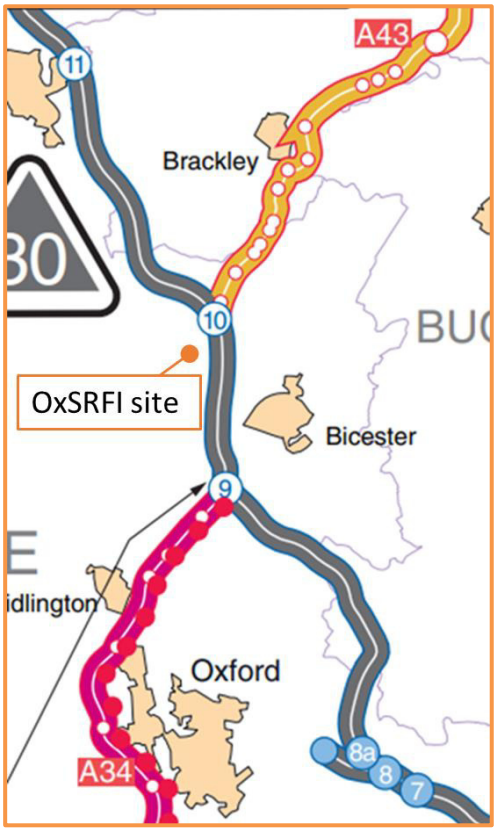


Figure 1: OxSRFI location in relation to SRN

1.6 The existing access to the site from all directions is via single carriageway roads and would involve passing through the village of Ardley to the north or the village of Middleton Stoney to the south.

1.7 Ensuring good access to the SRN is a prerequisite for the proposed OxSRFI development. The Applicant's approach to the road access strategy has evolved from a starting assumption that a new junction on the M40 motorway midway between J9 and J10 would be the most appropriate approach. Following initial investigations into this[1], and consultation with OCC and Highways England, the access strategy has evolved and is now centred on significant improvements to Junction 10 of the M40 motorway, in combination with a provision of a new bypass for the village of Ardley and a new relief road around the north-east quadrant of the village of Middleton Stoney and a Heyford Park link. The objectives of this approach are to ensure adequate capacity at M40 Junction 10 to accommodate the required access to the SRN, whilst delivering appropriate new site access infrastructure, along with aiding the delivery of planned growth and development across the wider area.

1.8 The purpose of this technical note is to identify and assess a long list of interventions to be considered at M40 Junction 10 that could be implemented by the OxSRFI scheme to mitigate the impact of the OxSRFI development at the junction. Based on the assessment work undertaken a short list of options is identified to be taken forward for further consideration.

1.9 This Options Report technical note has been prepared by ADC Infrastructure Ltd working jointly with BWB Consulting Ltd, and is structured as follows:

- In Section 2 the baseline conditions at M40 Junction 10 are described along with the committed highway improvements at the junction.
- In Section 3 the operation of M40 Junction 10 in the future baseline scenario (i.e. with the committed highway improvements in place) is examined with and without the OxSRFI development traffic in a 2031 assessment year.
- Section 4 considers the access strategy for the OxSRFI, identifying the requirement for the Ardley Bypass, and determines the long list of interventions to be considered at M40 Junction 10 that could be implemented by the OxSRFI scheme to mitigate the impact of the OxSRFI development at the junction.
- Section 5 presents the highway geometry review to establish the deliverability of the potential interventions.
- Section 6 presents the capacity assessment work that has been undertaken to establish whether the potential interventions provide sufficient capacity.
- Section 7 draws together and summarises the findings of the highway geometry and capacity assessment work and identifies a short list of options to be taken forward for further assessment.
- Section 8 presents the summary and conclusions.

1.10 A separate report, Technical Note 6 'M40 Junction 10 Options Report – Traffic Flows Derivation' has been prepared by ADC Infrastructure Ltd setting out the traffic flow demands used in this Option Reports. This Options Report cross refers to Technical Note 6 and should be read in conjunction with that document.

[1] Technical Note 1 – New M40 Junction, report reference ADC1794-RP-G-V3, ADC December 2020.

2.0 HIGHWAY NETWORK

Site location

2.1 The Main Site is bounded to the north by the Chiltern Main Line Railway, to the east by the B430 and the Viridor 'Ardley Energy from Waste' facility, to the south by farmland, and to the west by Heyford Park, the former RAF Upper Heyford site, **Figure 2**.

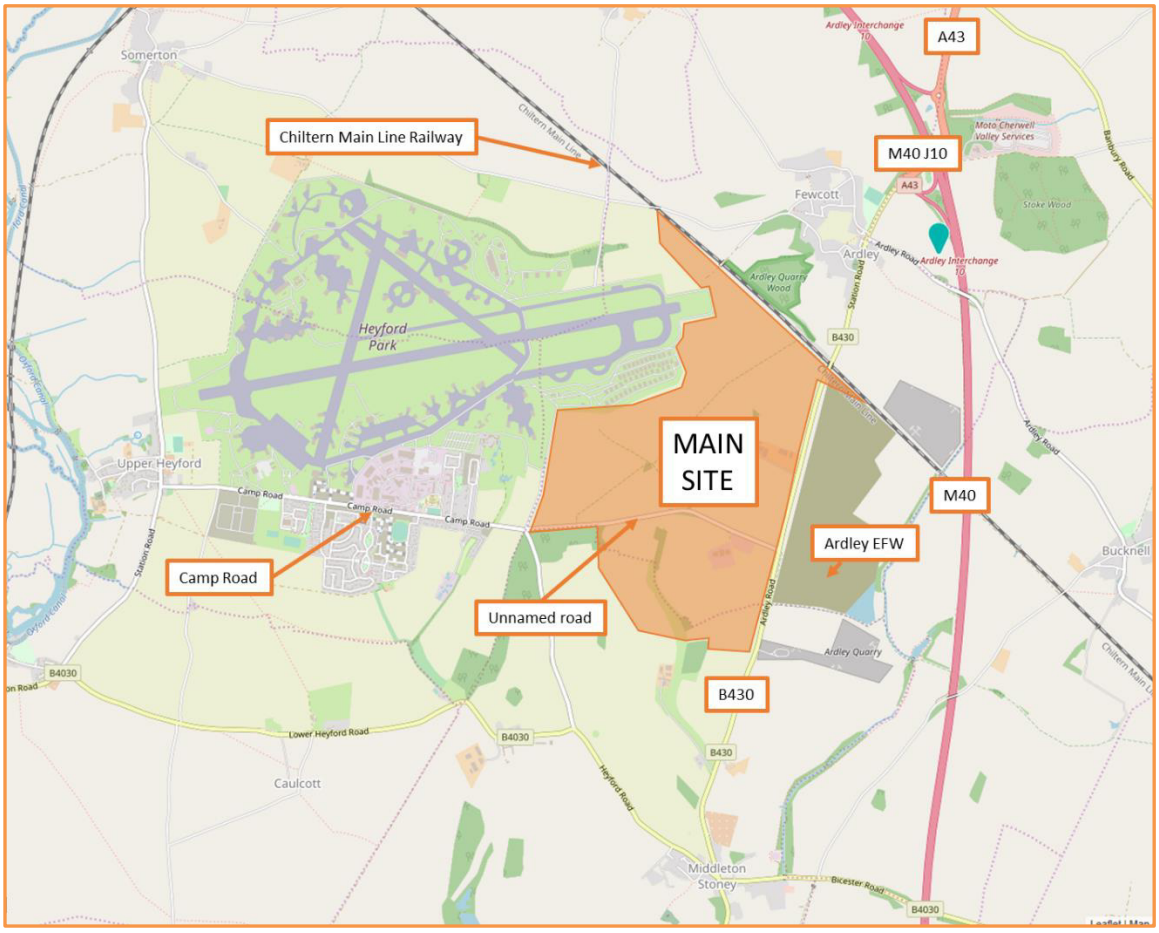


Figure 2: site location

Strategic Road Network

2.2 The closest point of access to the Strategic Road Network from the Main Site is at Junction 10 of the M40, approximately 1.6km to the north of the Main Site when accessed via the B430. To access M40 Junction 10 from the Main Site involves travelling through the village of Ardley.

2.3 At Junction 10 there is also direct access to the A43. The M40 connects to Birmingham (and the M42 and M5) to the north, and the M25 and London to the south. The A43 heads northeast from M40 Junction 10 and connects to the M1 at M1 Junction 15A.

2.4 The current layout of M40 Junction 10 is shown at **Figure 3**. The layout of the junction was altered in 2015 as part of works carried out under Highways England's Pinch Point Programme. The works involved the modification of the northern roundabout (Padbury Roundabout) to remove the M40 southbound diverge slip road, with all southbound traffic now joining the M40 at what was previously the slip road from the motorway services. As part of the works the motorway service roundabout (Cherwell Roundabout) was signalised.



Figure 3: M40 Junction 10 (including Baynard's Green)

2.5 The Pinch Point scheme was not a long-term fix for the junction and assessment work undertaken by Highways England has identified the 2021 to 2026 time period as the tipping point for the Pinch Point improvement scheme at the junction. In addition, Highways England have identified that the A43/B4100 roundabout (Baynard's Green Roundabout), to the north of M40 Junction 10, currently operates over capacity, with the performance deteriorating significant in future years and adversely impacting the operation of M40 Junction 10.

2.6 Highways England have identified an improvement scheme at the Padbury Roundabout at M40 Junction 10 and at the Baynard's Green Roundabout (**Appendix 1)**. The schemes will be delivered through a combination of OCC Housing Growth Deal funding and contributions from the Heyford Park development. It is currently expected that the improvement schemes will be delivered in 2023.

2.7 However, assessment undertake by Highways England shows that by 2031 the Cherwell Roundabout and B430/A43/M40 northbound roundabout (Ardley Roundabout) will also operate overcapacity. The M40 southbound on-slip at the Cherwell Roundabout breaks down due to the merge type, whereas the Ardley Roundabout breaks down because of the demand for right-turners from the M40 northbound off-slip. The break down at the Cherwell Roundabout has a knock-on impact at the Padbury Roundabout.

2.8 Highways England have identified potential improvement schemes at the Cherwell Roundabout (**Appendix 5**) and the Ardley Roundabout (**Appendix 8**). However, these are not committed and do not have funding. Even with these additional improvements, the operation

of M40 Junction 10 would be at the tipping point by 2031 assessment year. The assessment work at Section 3 of this Options Report demonstrates that these potential improvements would not have sufficient capacity to accommodate the traffic from the OxSRFI development.

Local road network

2.9 The village of Ardley is approximately 1km to the north of the Main Site. The B430 runs through the east of the village, to the east of the village centre. To access the Main Site from M40 Junction 10 it is currently necessary to pass through Ardley on the B430 and over the Chiltern Main Line railway bridge, which narrows slightly, potentially making it difficult for two HGVs to pass one another.

2.10 The village of Middleton Stoney is approximately 2km south of the Main Site, accessed by the B430 which runs through the village in a north-south direction, connecting to the A34 to the south, and in doing so also passing through the village of Weston-on-the-Green.

2.11 In the centre of Middleton Stoney there is a signalised staggered crossroads junction between the B430 and the B4030. The B4030 runs through the village in an east-west direction connecting to the A44 to the west, and to the east it connects with Bicester and in turn the A41, from where access to M40 Junction 9 can be gained.

3.0 ASSESSMENT OF FUTURE BASELINE AT M40 JUNCTION 10

Introduction

3.1 To establish the future baseline position for the M40 Junction 10 complex of junctions, their operation has been considered in detail using the TRL software package Junction 9 and JCT software package LinSig 3.2.4.

3.2 The operation of each junction has been tested using the appropriate 2031 Reference Case traffic flows for the morning and evening peak hours, as derived and presented in the Technical Note 6 'M40 Junction 10 Options Report – Traffic Flows Derivation' (TN6).

3.3 Except for the Ardley Roundabout, the layout of which would need to be amended to accommodate the Ardley Bypass that is proposed as part of the OxSRFI highway access strategy (see Section 4 for further details), each junction has also been tested using the appropriate 2031 Do Something traffic flows (with development) for the morning and evening peak hours as presented in TN6.

3.4 A summary of the assessment findings is presented in the following sections for each junction.

Baynard's Green Roundabout (A43/B4100)

3.5 The layout of the existing A43/B4100 Baynard's Green Roundabout is shown in the aerial photograph in **Figure 4**. The junction is a four-arm roundabout comprising the A43 (north and south) and the B4100 (east and west). The A43 approaches are dual carriageway and the B4100 approaches are single carriageway with flaring to two lanes at the give-way lines.

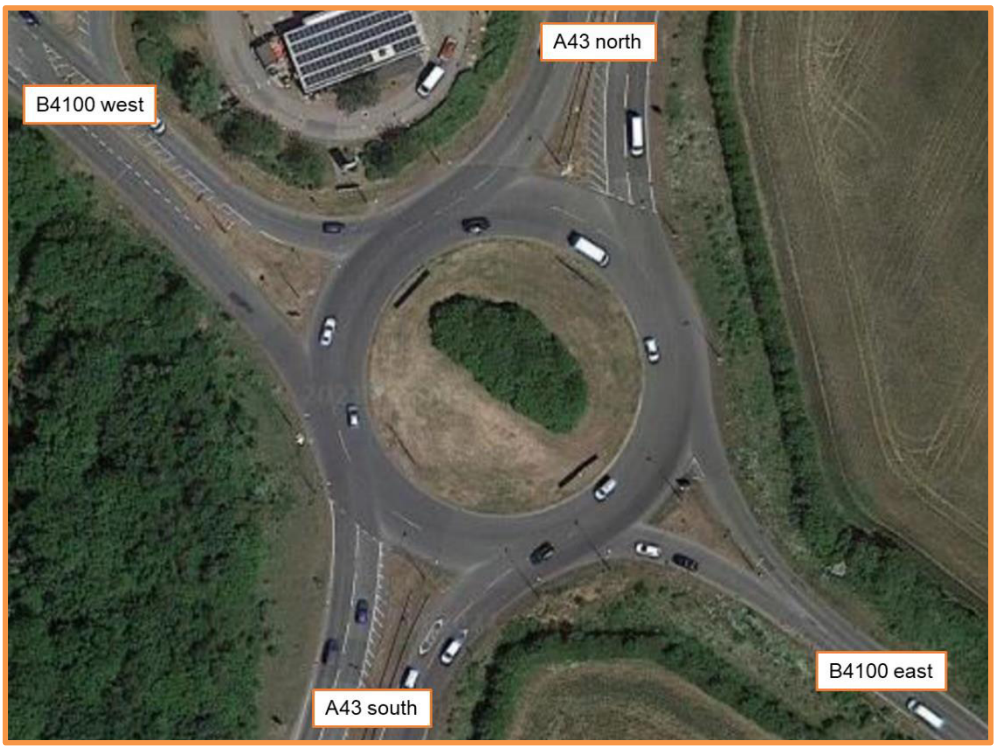


Figure 4: existing Baynard's Green Roundabout

3.6 The Highways England committed improvement scheme of the Baynard's Green roundabout is shown on drawings included at **Appendix 1** and an extract is provided in **Figure 5**. The proposed improvement would increase the size of the junction, which would be upgraded to full traffic signal control. The A43 northbound and southbound approaches would be widened to provide

a third flared lane. The two-lane section on the B4100 eastbound would be extended and an additional flared lane would be provided on the B4100 westbound approach.

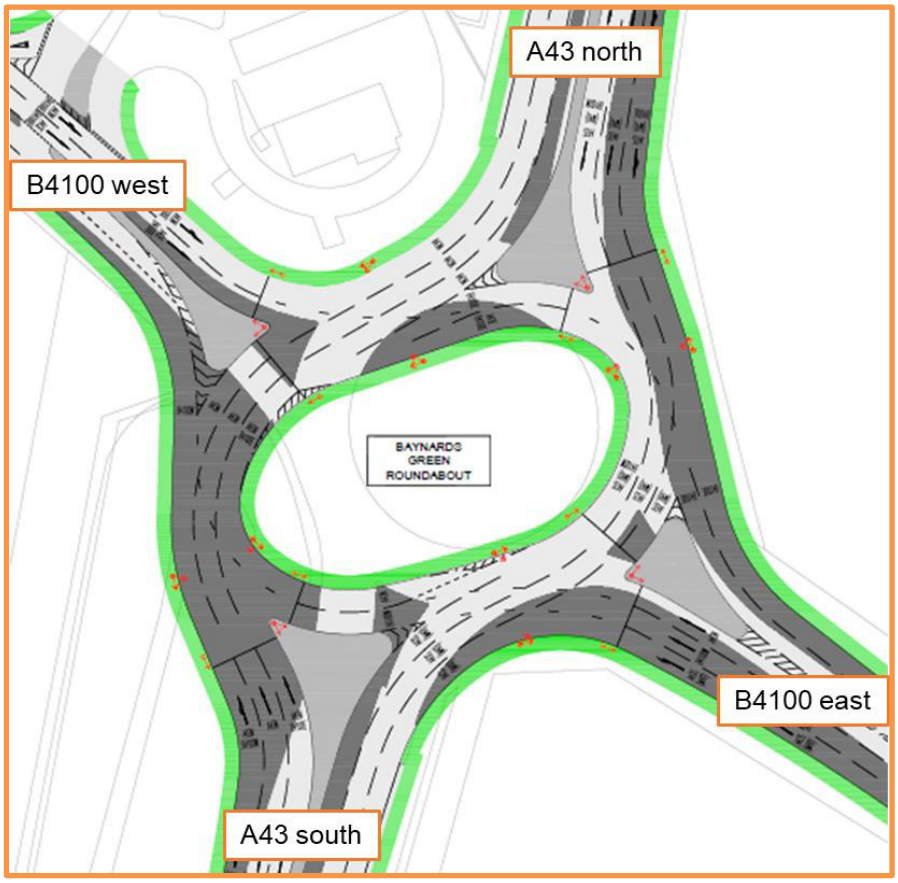


Figure 5: Baynard's Green Roundabout committed improvement scheme

3.7 The junction was modelled using LinSig and tested using the following traffic flows:

- 2031 Reference Case traffic flows 'BaynardsRef1_AM and BaynardsRef1_PM' presented at Appendix B of TN6.
- 2031 Do Something (with development) traffic flows 'Baynards1_AM and Baynards1_PM' presented at Diagrams 1 and 2 of Appendix D of TN6.

3.8 The results are summarised below, and the full model report is contained in **Appendix 2**.

Scenarios View

Automatically recalculate results for: All Scenarios | When optimising optimise for: All Scenarios

When assigning, assign for: Current Scenario

Number	Scenario Name	Flow Group	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2031 Reference Case - AM Peak	BaynardsRef1_AM	07:45 - 08:45	60	-3.2	41.09
2	2031 Do Something - AM Peak	Baynards1_AM	07:45 - 08:45	60	-9.4	56.05
3	2031 Reference Case - PM Peak	BaynardsRef1_PM	16:30 - 17:30	60	-7.6	49.91
4	2031 Do Something - PM Peak	Baynards1_PM	16:30 - 17:30	60	-17.1	117.57

3.9 As shown, in the 2031 morning peak hour the junction is forecast to operate over capacity in both the Reference Case scenario and the Do Something scenario. The practical reserve capacity (PRC) is negative, indicating that one or more links are operating more than 90% saturated. The impact on PRC due to the development traffic is 6.2%.

3.10 In the 2031 evening peak hour the results also show that the junction would operate over capacity in both the Reference Case scenario and the Do Something scenario. The impact due to the development traffic is 9.5%.

3.11 Therefore, whilst the proposed Highways England improvements at the junction would reduce the congestion issues at the junction, it is still forecast to operate above capacity in in the 2031 morning and evening peak hours for the Reference Case scenario. The addition of the development traffic compounds the congestion issue at the junction. Therefore, the proposed junction layout does not have the capacity to accommodate the background and development traffic.

Padbury Roundabout (A43/M40 southbound off-slip)

3.12 The layout of the existing Padbury Roundabout is shown in the aerial photograph in **Figure 6**. The junction has a tear drop layout comprising the A43 (north and south) and the M40 Junction 10 southbound off-slip. The A43 approaches are dual carriageway and the off-slip flares to provide two lanes on the approach to the junction. Only the A43 southbound and M40 off-slip movements are required to give-way. The A43 northbound approach is free flow.



Figure 6: existing Padbury Roundabout

3.13 The Highways England committed improvement scheme at the Padbury Roundabout is shown on the drawing provided at **Appendix 1** and an extract is provided in **Figure 7**. This scheme was identified as being required by Highways England to manage queuing traffic on the slip road and prevent block back to the mainline. The proposed improvements would upgrade the junction to full traffic signal control. The M40 J10 southbound off-slip approach would be widened to provide an additional flared lane.

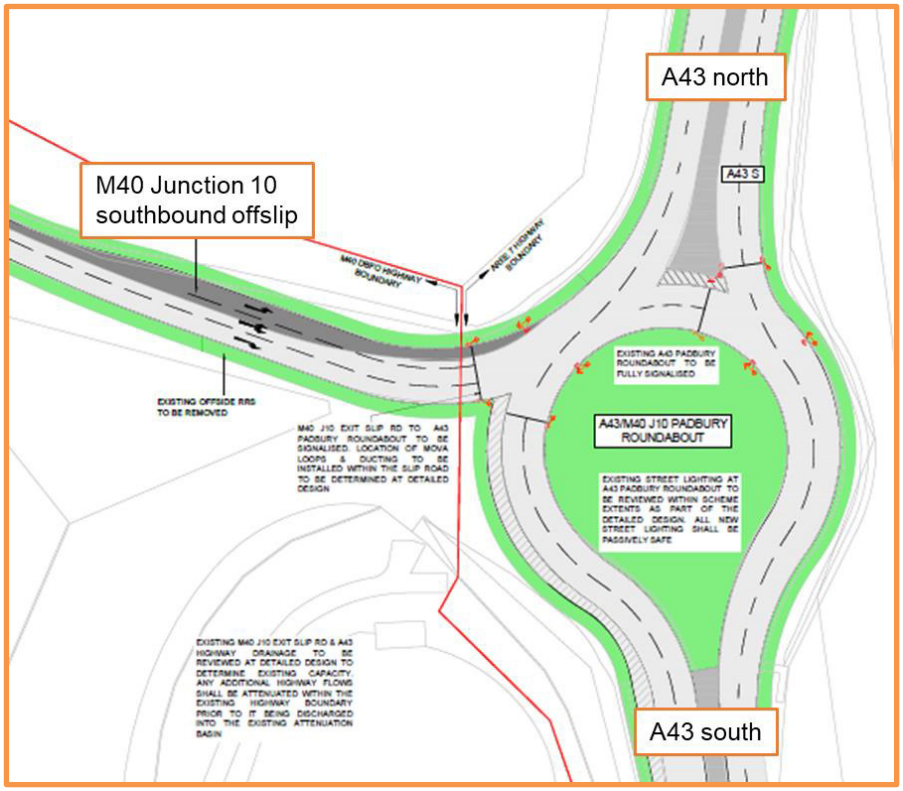


Figure 7: Padbury Roundabout committed improvement scheme

3.14 The junction was modelled using LinSig and tested using the following traffic flow sets:

- 2031 Reference Case traffic flows 'PadburyRef1_AM and PadburyRef1_PM' presented at Appendix B of TN6.
- 2031 Do Something (with development) traffic flows 'Padbury1_AM and Padbury1_PM' presented at Diagrams 3 and 4 of Appendix D of TN6.

3.15 The results are summarised below, and the full model report is contained in **Appendix 3**.

Scenarios View

Automatically recalculate results for: All Scenarios | When optimising optimise for: All Scenarios

When assigning, assign for: Current Scenario

Number	Scenario Name	Flow Group	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2031 Reference Case - AM Peak	PadburyRef1_AM	07:45 - 08:45	60	-11.9	62.95
2	2031 Do Something - AM Peak	Padbury1_AM	07:45 - 08:45	60	-33.7	292.76
3	2031 Reference Case - PM Peak	PadburyRef1_PM	16:30 - 17:30	60	1.5	26.75
4	2031 Do Something - PM Peak	Padbury1_PM	16:30 - 17:30	60	-11.8	74.31

3.16 As shown, in the 2031 morning peak hour the junction is forecast to operate over capacity in both the Reference Case scenario and the Do Something scenario. The practical reserve capacity (PRC) is negative, indicating that one or more links are operating more than 90% saturated. The impact on PRC due to the development traffic is 21.8%.

3.17 In the 2031 evening peak hour the results also show that the junction would operate within capacity in the Reference Case scenario with a PRC of 1.5%. The addition of the development traffic would force the junction over capacity with a PRC of -11.8% in the Do Something scenario. The impact on PRC due to the development traffic is 13.3%.

3.18 Therefore, whilst the committed Highways England improvement at the junction would reduce the congestion issues and is shown by Highways England to successfully control queuing on the

slip road, the junction is forecast to operate above capacity in in the 2031 morning peak hour Reference Case scenario. The addition of the development traffic exacerbates the congestion issue at the junction in the morning peak hour and would lead to the junction also operating over capacity in the evening peak. Therefore, the junction with the committed improvement does not have the capacity to accommodate the background and development traffic.

Cherwell Roundabout (A43/M40 southbound on-slip/Cherwell Valley services)

3.19 The northern section of the M40 J10 dumbbell is known as the Cherwell Roundabout. The layout of the junction is shown at **Figure 8**. Cherwell Roundabout provides southbound access to the M40 southbound and also serves the Cherwell Valley motorway service area.

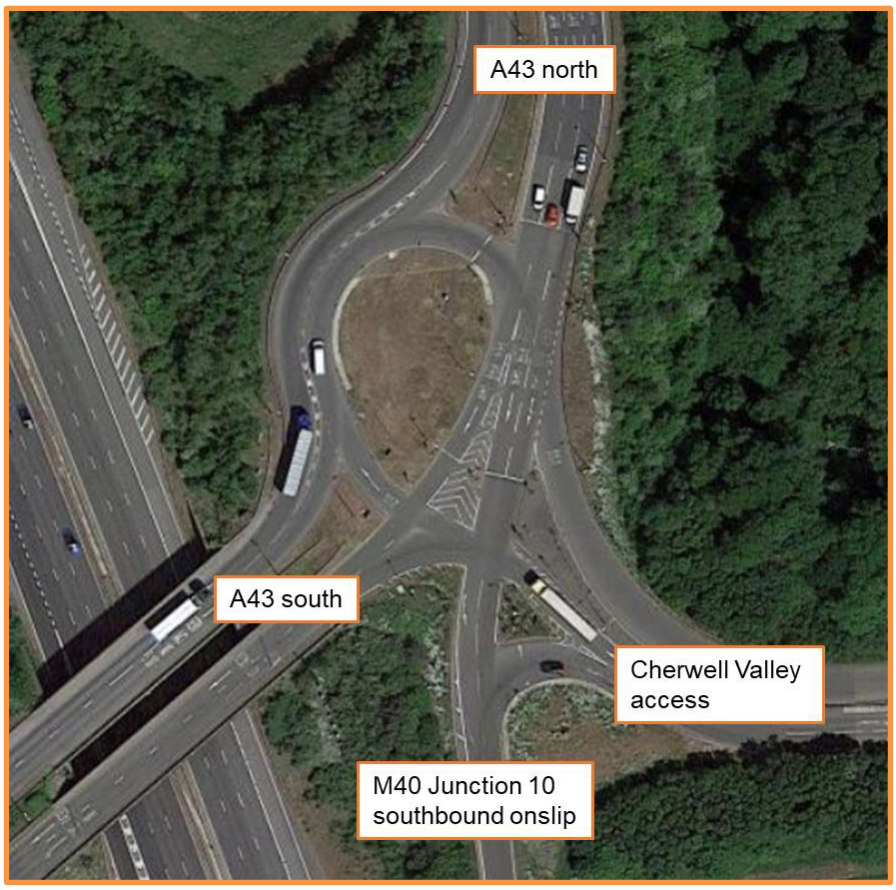


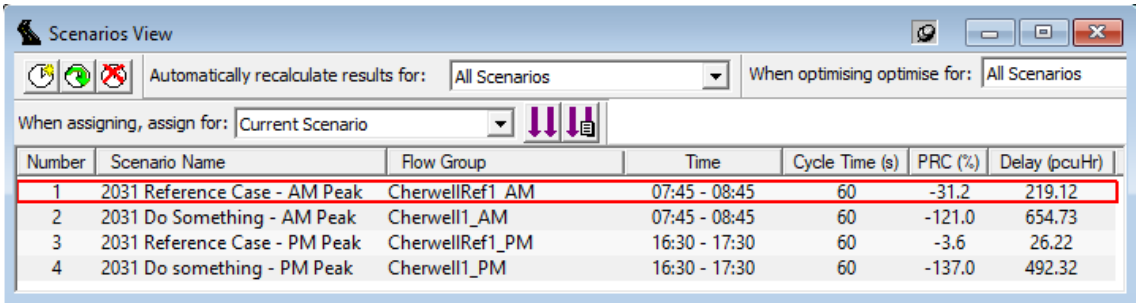
Figure 8: existing Cherwell Roundabout layout

3.20 The A43 southbound approach to Cherwell roundabout has two full lanes and a flared lane and is subject to traffic signal control. The A43 northbound approach has two lanes, with the nearside lane providing free-flow to the A43 north, whilst the offside lane is subject to priority control with traffic able to go ahead to the A43 or turn right towards Cherwell Valley motorway service area and the M40 southbound on-slip. The Cherwell Valley services approach to the junction has two lanes and is subject to traffic signal control.

3.21 The operation of the existing Cherwell Roundabout layout was modelled using LinSig and tested using the following traffic flow sets:

- 2031 Reference Case traffic flows 'CherwellRef1_AM and CherwellRef1_PM' presented at Appendix B of TN6.
- 2031 Do Something (with development) traffic flows 'Cherwell1_AM and Cherwell1_PM' presented at Diagrams 7 and 8 of Appendix D of TN6.

3.22 The results are summarised below, and the full model report is contained in **Appendix 4**.



Number	Scenario Name	Flow Group	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2031 Reference Case - AM Peak	CherwellRef1_AM	07:45 - 08:45	60	-31.2	219.12
2	2031 Do Something - AM Peak	Cherwell1_AM	07:45 - 08:45	60	-121.0	654.73
3	2031 Reference Case - PM Peak	CherwellRef1_PM	16:30 - 17:30	60	-3.6	26.22
4	2031 Do something - PM Peak	Cherwell1_PM	16:30 - 17:30	60	-137.0	492.32

3.23 As shown, in the 2031 morning peak hour the junction is forecast to operate over capacity in the Reference Case scenario, with a negative PRC of -31.2%. The A43 southbound approach is significantly saturated, with a mean maximum queue of 115.1 pcus. Once the development traffic is added, the model results show that the junction performance would deteriorate significantly as more traffic is added to the A43 southbound lane, and the demand for the right-turn to the M40 southbound on-slip is increased.

3.24 The same effect is also seen in the 2031 Reference Case evening peak hour, though congestion on the A43 southbound approach is significantly better than during the morning peak hour. In the 2031 Reference Case evening peak hour the results also show that the junction would operate over capacity with a negative PRC of -3.6%, with the A43 southbound approach again suffering from congestion. As per the morning peak hour, the addition of the development traffic would significantly increase congestion at the junction, with a large deterioration in PRC.

3.25 Therefore, the existing Cherwell Roundabout junction would not have the capacity to accommodate the background and development traffic in 2031.

3.26 As part of previous assessment work[2] Highways England have identified a potential improvement at Cherwell Roundabout. This is shown on the drawing in **Appendix 5** and an extract is provided in **Figure 9**. The proposed improvements would provide an additional flared lane on the A43 southbound approach, providing three lanes from the A43 to the M40 southbound, with the slip road also widened to provide a 3-to-2 merge. A single lane would be maintained for A43 southbound traffic.

[2] M40 Junction 10 TN10: M40 Junction 10 Option Development & Testing – 2031 Optioneering Exercise (Aecom, 17 January 2018)

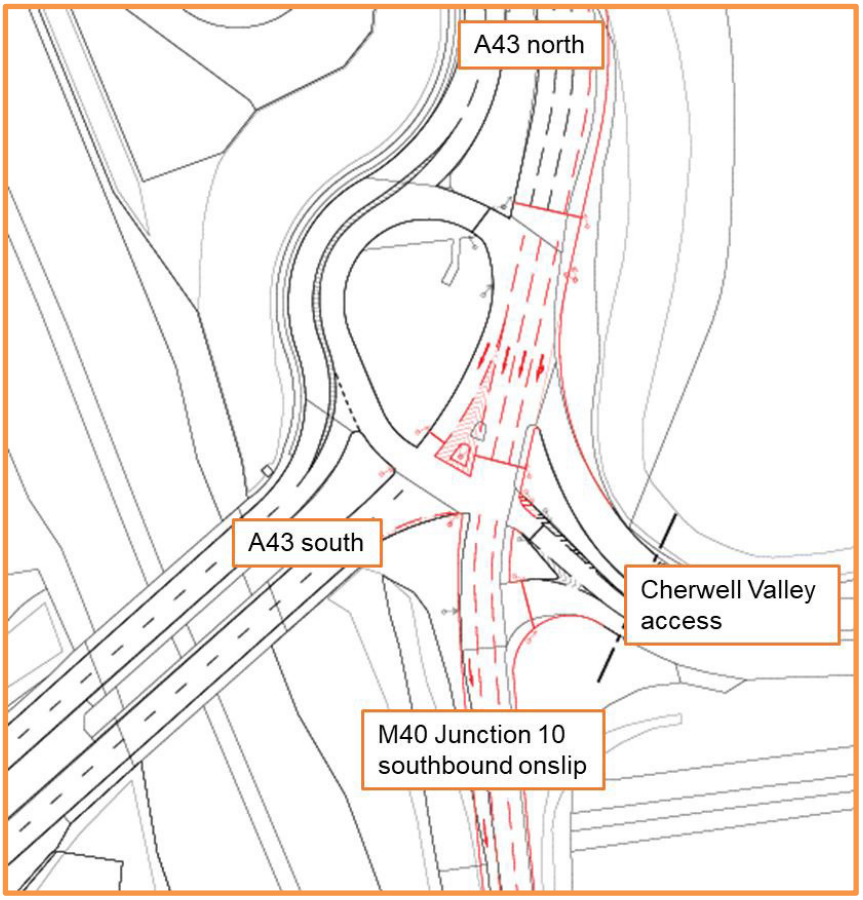


Figure 9: Cherwell Roundabout potential improvement scheme

3.27 The potential Cherwell Roundabout improvement scheme was modelled using LinSig and tested using the same traffic flow sets described at paragraph 3.21. The results are summarised below, and the full model report is contained in **Appendix 6**.

Scenarios View

Automatically recalculate results for: All Scenarios | When optimising optimise for: All Scenarios

When assigning, assign for: Current Scenario

Number	Scenario Name	Flow Group	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2031 Reference Case - AM Peak	CherwellRef1_AM	07:45 - 08:45	60	-31.2	121.07
2	2031 Do Something - AM Peak	Cherwell1_AM	07:45 - 08:45	60	-121.0	463.76
3	2031 Reference Case - PM Peak	CherwellRef1_PM	16:30 - 17:30	60	-3.6	23.19
4	2031 Do Something - PM Peak	Cherwell1_PM	16:30 - 17:30	60	-137.0	331.26

3.28 As shown, in the 2031 morning peak hour the junction is forecast to operate over capacity in the Reference Case scenario, with a negative PRC of -31.2%. Compared to the results for the existing junction shown at paragraph 3.22 the potential intervention does not alter the overall PRC at the junction compared to the existing junction layout (-31.2% versus -31.2% PRC). This is because whilst the additional lane helps to ease delay for traffic travelling to the M40 southbound, it does not assist traffic continuing south on the A43, which is continues to be allocated a single lane.

3.29 As for the existing junction, once the development traffic is added, the model results show that the junction performance would deteriorate significantly as more traffic is added to the A43 southbound lane, and the demand for right-turner to the M40 southbound on-slip is increased.

3.30 The same effect is also seen in the 2031 evening peak hour. In the 2031 Reference Case evening peak hour, the results also show that the junction would operate over capacity with a negative PRC of -3.6%, offering no real improvement over the existing junction (-3.6% versus -3.6%), with the A43 southbound ahead movement again suffering from congestion due to the single lane allocation. The addition of the development traffic would significantly increase congestion for this movement with a large deterioration in PRC.

3.31 Therefore, whilst the identified potential improvement scheme would ease the congestion issues at the junction, it is forecast to operate above capacity in in the 2031 morning and evening peak hours for the Reference Case scenario. The addition of the development traffic exacerbates the issues at the junction. Therefore, the proposed junction layout does not have the capacity to accommodate the background and development traffic.

Ardley Roundabout (A43/M40 northbound on-slip and off-slip/B430)

3.32 The southern section of the M40J10 dumbbell is known as the Ardley Roundabout, as shown at **Figure 10**. The Ardley Roundabout is a three-arm priority controlled roundabout with the M40J10 northbound off-slip and on-slip forming the south-eastern arm. The A43 is the northern arm, bridging over the M40, and the B430 is the western arm routing through Ardley. The A43 southbound approach and the M40J10 off-slip approach both have two full lanes, whilst the B430 approach has one lane with an additional flared lane.

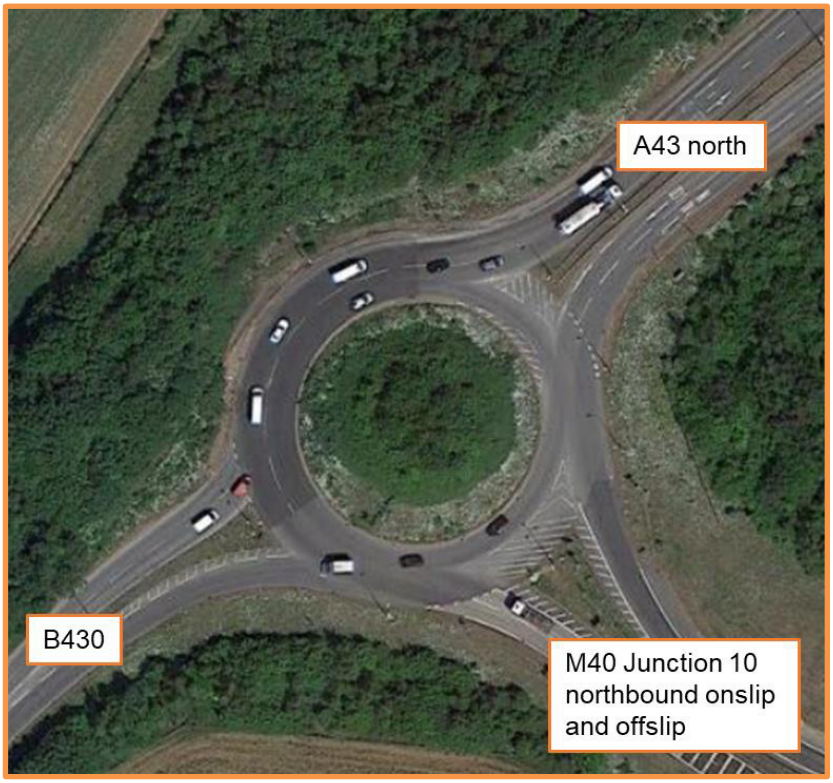


Figure 10: existing Ardley Roundabout layout

3.33 The existing Ardley Roundabout was modelled using the Arcady module of Junctions 9 and tested using the following traffic flow set:

- 2031 Reference Case traffic flows 'ArdleyRef1_AM and ArdleyRef1_PM' presented at Appendix B of TN6.

3.34 As the layout of the existing junction would need to be amended to accommodate the Ardley Bypass that is proposed as part of the OxSRFI highway access strategy (see Section 4), the operation of the existing junction as not been assessed with the Do Something traffic flows.

3.35 The results of the Reference Case assessment are summarised below, and the full model report is contained in **Appendix 7**.

AM2				PM			
Set ID	Queue (PCU)	Delay (s)	RFC	Set ID	Queue (PCU)	Delay (s)	RFC
2031 Ref Case - 2031 Ref							
D2	1.2	6.23	0.53	D3	2.3	11.69	0.69
	2.0	4.94	0.66		0.9	3.14	0.47
	4.8	12.08	0.81		27.5	49.53	0.99

where Arm 1 is B430, Arm 2 is A43 Bridge and Arm 3 is the M40 slips

3.36 As shown, the roundabout is forecast to operate acceptably (i.e. within 0.85 RFC) in the morning peak hour 2031 Reference Case scenario. However, in the 2031 Reference Case evening peak hour scenario the roundabout is forecast to operate over the design threshold of 0.85 RFC, with the M40 northbound off-slip arm of the roundabout operating with a RFC of 0.99, and a queue of 28 pcus and delay of around 50 seconds per pcu.

3.37 As part of previous assessment work[Error! Bookmark not defined.] Highways England have identified a potential improvement at Ardley Roundabout. This is shown on the drawing in **Appendix 8** and an extract is provided in **Figure 11**. The potential improvement scheme would provide full signal control at the roundabout.

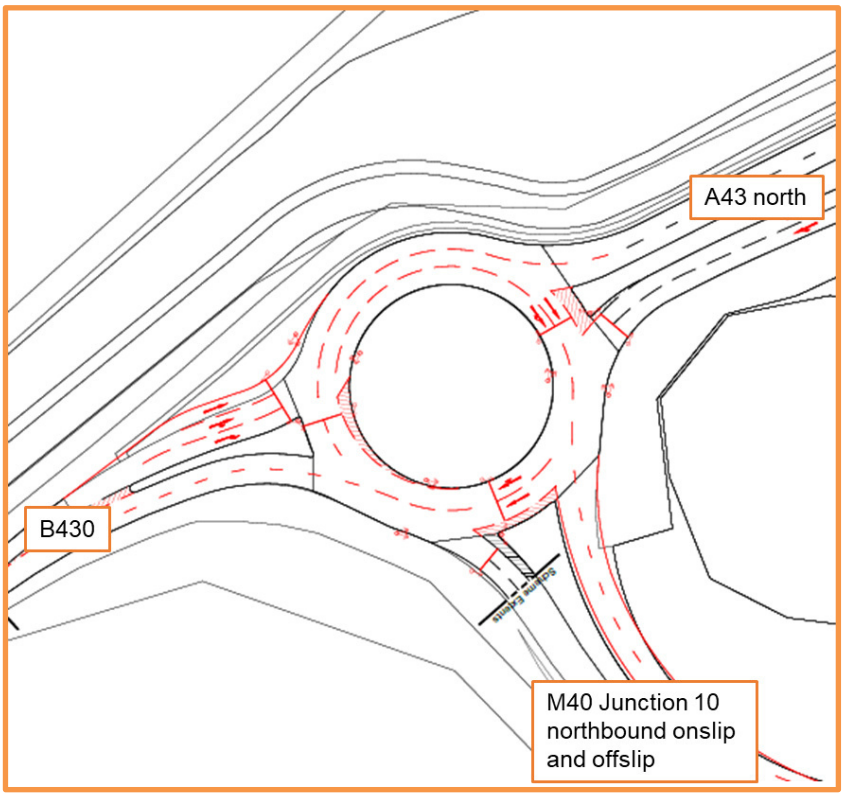
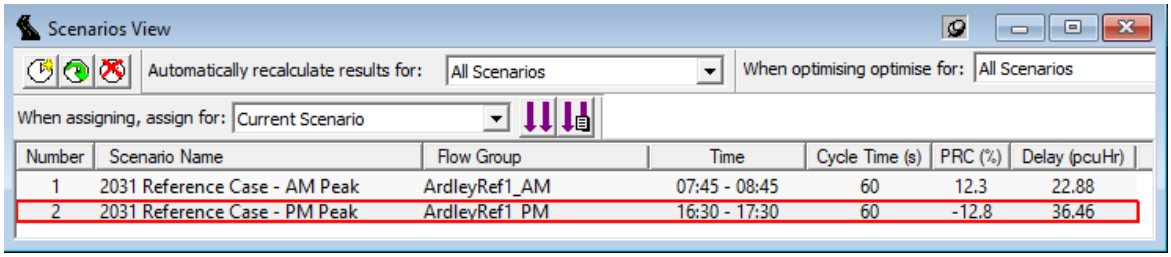


Figure 11: Ardley Roundabout potential improvement scheme

3.38 The potential Ardley Roundabout improvement scheme was modelled using LinSig and tested using the same traffic flows sets described at paragraph 3.33. The results are summarised below, and the full model report is contained in **Appendix 9**.



Number	Scenario Name	Flow Group	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2031 Reference Case - AM Peak	ArdleyRef1_AM	07:45 - 08:45	60	12.3	22.88
2	2031 Reference Case - PM Peak	ArdleyRef1_PM	16:30 - 17:30	60	-12.8	36.46

3.39 As shown, the potential roundabout improvement scheme is forecast to operate acceptably (i.e. with a positive PRC) in the morning peak hour 2031 Reference Case scenario. However, in the 2031 Reference Case evening peak hour scenario the roundabout is forecast to operate over capacity with a negative PRC of -12.2%, with the B430 northbound arm of the roundabout operating above 100% saturated, and a queue 21 pcus

3.40 Hence, when compared to the results at paragraph 3.35 above for the existing junction layout, overall there is no real change to the capacity at the junction though the arm suffering with congestion most in the evening peak hour switches from the M40 off-slip to the B430 northbound approach.

3.41 These results highlight that that the Ardley Roundabout is suffering from increased congestion and that any mitigation solution would have to include increasing the size of the junction.

Summary

3.42 The above analysis demonstrates that the future baseline highway conditions at M40 Junction 10 and Baynard's Green Roundabout (including the committed highway improvements) would be such that the junctions would already be operating over capacity with the Reference Case traffic flows in 2031. Once the development traffic from the proposed OxSRFI scheme is added in the 'Do Something' scenarios, the analysis shows that these existing issues would be further exacerbated and there would be significant congestion at M40 Junction 10.

3.43 Hence, a step change in the scale and type of mitigation at the junction is required so that the background and development traffic can be accommodated satisfactorily.

4.0 M40 JUNCTION 10 ACCESS STRATEGY

General principle

4.1 Section 3 details the results of capacity assessments for the future baseline highway conditions at M40 Junction 10. The assessment shows that the M40 Junction 10 would not have sufficient capacity to accommodate the background traffic and the traffic due to the proposed development in the 2031 assessment year. The assessment work concludes that if the background and development traffic are to be accommodated, then a step change in the scale and type of mitigation at the junction is required.

4.2 Therefore, a long list of potential improvement options has been identified and tested. The options considered have had regard to the following factors:

1. the requirement to provide suitable access between the OxSRFI site and M40 J10;
2. consider the opportunity to consolidate the J10 layout and motorway slip roads into a standard grade separated junction layout, such as a conventional dumbbell roundabout or large single roundabout;
3. determine the optimum configuration and geometry for the M40 north and south facing slip roads; and
4. ensure sufficient capacity is provided at M40 Junction 10, and Baynard's Green Roundabout to accommodate the forecast OxSRFI development traffic.

4.3 A draft Features Plan has been prepared as part of the Environmental Statement Scoping Report that has been submitted to PINS. A copy of the draft Features Plan is presented at **Appendix 10**.

4.4 When developing the long list of options, regard to the draft Features Plan has been made, noting that based on available information there are no significant constraints around M40 Junction 10. The understanding of the baseline conditions will evolve as a range of surveys being planned and programmed are undertaken.

Ardley Bypass

4.5 As discussed in Section 2, the village of Ardley is approximately 1km to the north of the site. The B430 runs through the east of the village, to the east of the village centre. To access the OxSRFI site from M40 Junction 10 it is necessary to pass through Ardley on the B430 and over the Chiltern Main Line railway bridge, where the carriageway narrows to approximately 6.5m in width, potentially making it difficult for two HGVs to pass one another.

4.6 It is forecast that around 57% of the light vehicle trips and nearly 100% of the HGV trips associated with the proposed OxSRFI development would access the site via M40 Junction 10 (see TN6). Based on the agreed traffic generations for the development, this would equate to the traffic flows shown in **Figure 12** seeking to access the M40 Junction 10 via the B430 and passing through the village of Ardley and having to use the narrow railway bridge over the Chiltern Main Line.

4.7 It is considered these additional traffic volumes traveling on the B430 between the OxSRFI site and M40 Junction 10, and the associated noise, vibration and air quality effects would represent an unacceptable impact on Ardley village. Therefore, it would not be appropriate for the OxSRFI traffic to route along the existing B430 and through Ardley.

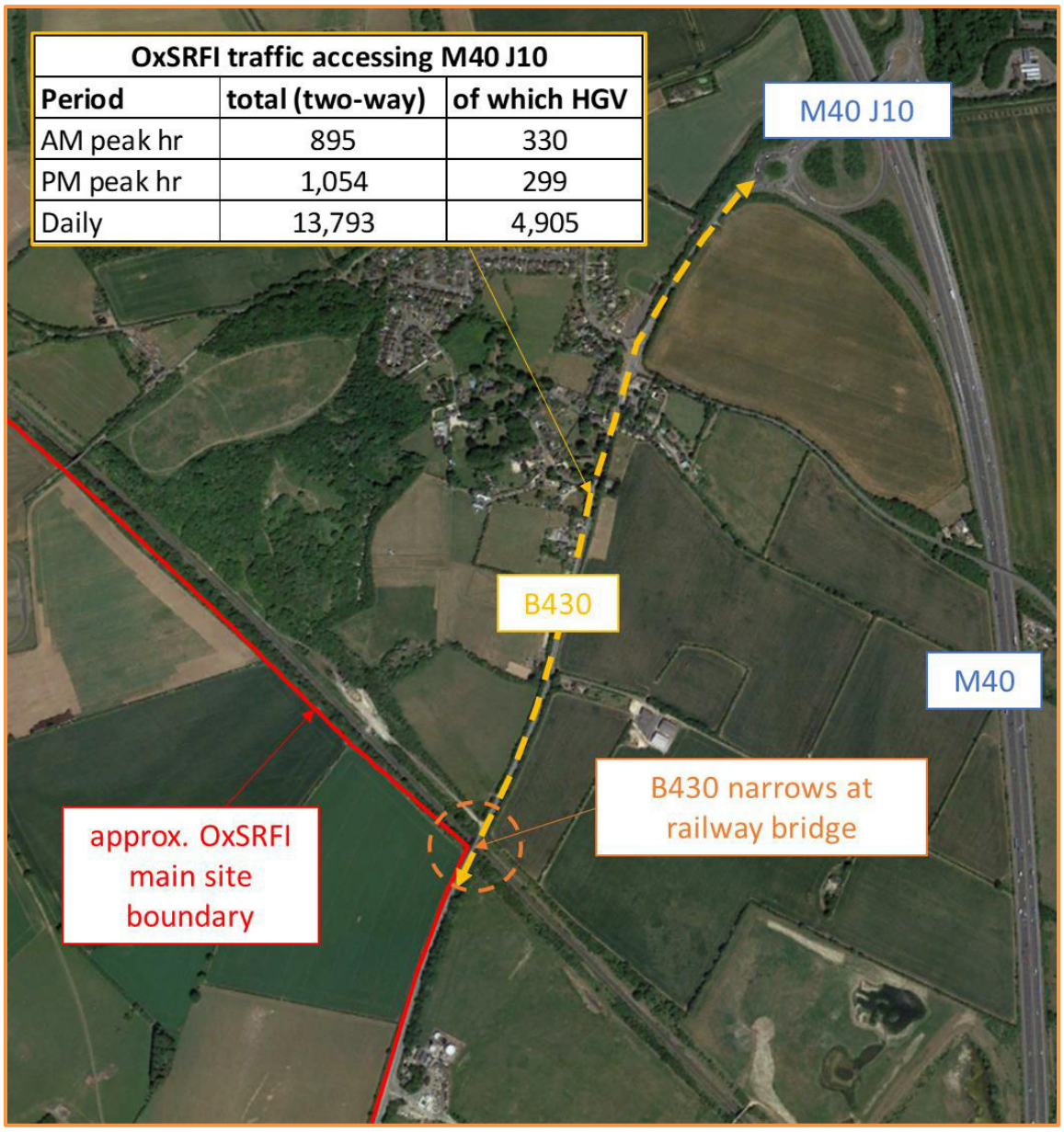


Figure 12: forecast OxSRFI development traffic accessing the SRN via M40 Junction 10

4.8 Therefore, the Applicant considers that a prerequisite for any access strategy that seeks to access the SRN via M40 Junction 10 is the provision of a bypass around Ardley, including a new bridge over the Chiltern Railway Line. Due to the layout of the Ardley village, which predominantly extends to the west of the B430, the bypass would pass on the eastern side of the village, on the land between the M40 and B430.

4.9 The bypass would connect to M40 Junction 10 at the Ardley roundabout and is proposed as a dual carriageway. At the southern end of the bypass, a new roundabout would be provided south of the Chiltern Mainline railway (via a new bridge over the railway), connecting to the existing B430 (south) and providing direct access into the Proposed Development. The B430 to the north of the new site access roundabout would be stopped up for vehicular traffic, with the existing B430 traffic using the new bypass to access M40 Junction 10. The proposed Ardley Bypass therefore would remove through-traffic from the village and deliver the primary new site access road to the OxSRFI development.

Individual Junction and overall Strategic Options

4.10 Having established the prerequisite of the proposed Ardley Bypass, the optioneering for the access strategy next considered the different options for each of the junctions that make up the M40 Junction 10, namely:

- Padbury Roundabout;
- Cherwell Roundabout; and
- Ardley Roundabout.

4.11 In addition, the options surrounding a new junction (Ardley East) that could potentially be provided as part of the Ardley Bypass and would provide the opportunity to link with Ardley Road, and/or provide access to new south facing M40 slip roads, were also considered.

4.12 The resulting long list of junction options are detailed in the tables set out in the following sections. Where appropriate the options they have been taken forward into a total of 19 wider scheme strategic options, that combine the different junction sub-options, as listed in the tables. High-level sketches of the arrangements for the 19 Strategic Options are presented at **Appendix 11**.

4.13 Section 5 of this Options Report considers the feasibility of the 19 Strategic Options in terms of the required highway geometry. Section 6 summarises the results of the junction capacity modelling that has been undertaken, including the Baynard's Green Roundabout and the proposed OxSRFI Site Access Roundabout.

Padbury Roundabout (P)

4.14 The table below shows that five different configurations of the Padbury Roundabout junction have been considered to meet the requirements of the Strategic Options. The table below cross-references the junction option with the associated Strategic Option(s) and summaries the junction form and M40 slip road configuration for each.

Junction option	Junction form	M40 SB exit slip	A43 – M40 SB movement	Shown on strategic option(s) in Appendix 11
P-1*	No further changes following separate OCC/HE scheme (Housing growth deal)	As amended for housing growth deal	Via Padbury	1, 4, 5, 6, 7, 8
P-2	Junction removed	Relocated to connect to Cherwell (See Cherwell options below)	Via Padbury (but junction is removed)	2, 3, 9, 16, 17
P-3	No further changes following separate OCC/HE scheme (Housing growth deal)	As amended for housing growth deal	New free-flow movement to avoid Padbury	10, 14
P-4	Signalised T junction	Generally as amended for housing growth deal	New free-flow movement to avoid Padbury	11, 13, 15, 18, 19

Junction option	Junction form	M40 SB exit slip	A43 – M40 SB movement	Shown on strategic option(s) in Appendix 11
P-5	Junction removed	Relocated to connect to Cherwell (See Cherwell options below)	New free-flow movement to avoid Padbury	12

*P-1(alt) also examined with additional improvements to committed improvements at Padbury Roundabout

Cherwell Roundabout (C)

4.15 The table below shows that seven different configurations of the Cherwell Roundabout junction have been considered to meet the requirements of the Strategic Options. The table below cross-references the junction option with the associated Strategic Option(s) and summaries the junction form and M40 slip road configuration for each.

Junction option	Junction form	M40 SB exit slip	M40 SB entry slip	A43 – M40 SB movement	Shown on strategic option(s) in Appendix 11
C-1	4-arm roundabout	Not connected (remains connected to Padbury)	Widened to 2 lane merge	Via Cherwell	1
C-2	5-arm roundabout	Relocated to connect to Cherwell	Widened to 2 lane merge	Via Cherwell	2, 16, 17
C-3	4-arm roundabout	Not connected (remains connected to Padbury)	Nose length shortened (to standard length)	Via Cherwell	4, 5, 6, 7, 8
C-4	5-arm roundabout	Relocated to connect to Cherwell	Nose length shortened (to standard length)	Via Cherwell	9
C-5	3-arm roundabout	Not connected (remains connected to Padbury)	Closed*	New free-flow movement to avoid Cherwell	10, 11, 13, 18, 19
C-6	4-arm roundabout	Relocated to connect to Cherwell	Closed*	New free-flow movement to avoid Cherwell	12
C-7	4-arm roundabout	Not connected (remains connected to Padbury)	As existing	New free-flow movement to avoid Cherwell	14, 15

* Alterations to the MSA exit will be required to remove the direct connection from the MSA to the SB entry slip road.

Ardley Roundabout (A)

4.16 The table below shows that three different configurations of the Ardley Roundabout junction have been considered to meet the requirements of the Strategic Options. The table below cross-references the junction option with the associated Strategic Option(s) and summaries the junction form and M40 slip road configuration for each.

Junction option	Junction form	M40 NB merge slip road	M40 NB diverge slip road	Shown on strategic option(s) in Appendix 11
A-1	5-arm roundabout	Relocated to north side of roundabout	Widened to 2 lane diverge and realigned	1, 2, 4, 5, 14, 15
A-2	4-arm roundabout (realigned)	Minor realignment to existing	Relocated to connect to Ardley East junction*	6, 7, 13, 16, 19
A-3	4-arm roundabout	Relocated to north side of roundabout	Relocated to connect to Ardley East junction*	8, 9, 10, 11, 12, 17, 18

* Options 16 and 17 also include a new free-flow link for M40 northbound and A43 northbound traffic

Ardley, Cherwell and Padbury combined (ACP)

4.17 The table below shows three additional combinations for the Ardley, Cherwell and Padbury junctions. The table cross-references the combined options with the associated Strategic Option(s) and summaries the junction form and M40 slip road configuration for each.

Junction option	Junction form	Shown on strategic option(s) in Appendix 11
ACP-1	Large single grade separated two-bridge gyratory with the following arms: • M40 SB exit slip • A43 • MSA • M40 SB entry slip • M40 NB exit slip • B430 Ardley Bypass • M40 NB exit slip	3
ACP-2	Free-flow link from M40 NB to A43 NB, avoiding Ardley, Cherwell and Padbury.	16, 17

Proposed Ardley East junction (AE)

4.18 The table below shows that eight different configurations of the Ardley East junction have been considered to meet the requirements of the Strategic Options. The table below cross-references the junction option with the associated Strategic Option(s) and summaries the junction form and M40 slip road configuration for each.

Junction option	Junction form	Ardley Road	M40 south facing slip roads	Shown on strategic option(s) in Appendix 11
AE-1	4-arm roundabout	Connected to bypass	None	1, 2, 3, 14, 15
AE-2	No junction	Taken over bypass on bridge (i.e. no connection to bypass)	None	(as note in 1, 2, 3, 14, 15)
AE-3	4-arm roundabout	Connected to bypass, new link onto M40 SB via existing Ardley Road bridge over M40	New SB slip east of M40 from second roundabout on Ardley Road	4
AE-4	5-arm roundabout	Connected to bypass	New M40 SB merge slip road	5
AE-5	5-arm roundabout	Connected to bypass	New M40 SB merge and NB diverge slip roads	6, 17
AE-6	4-arm roundabout	Connection to east (Bucknell) only, no vehicle link to Ardley t west	New M40 SB merge and NB diverge slip roads	7, 8, 9, 10, 11, 12, 13
AE-7	5-arm roundabout	Connected to bypass	New M40 NB diverge slip road	16
AE-8	3-arm roundabout	Taken under bypass (i.e. no connection to bypass)	New M40 SB merge and NB diverge slip roads	18, 19

5.0 HIGHWAY GEOMETRY REVIEW

Introduction

5.1 For this first stage optioneering, detailed designs for every junction option have not been produced and checked for geometric compliance with standards. This is because there is sufficient land to provide the new junction arrangements and link roads for most options in accordance with highway design standards i.e. the design manual for roads and bridges (DMRB).

5.2 However, there are certain key aspects that do require a more detailed assessment to confirm whether or not various options are deliverable or not. These aspects are:

- A free-flow link from the A43SB to M40SB, including its proximity to the Baynard's Green Roundabout;
- A free-flow link from the M40NB to A43NB, including its proximity to the Baynard's Green Roundabout;
- Upgrading of the existing M40 SB merge to a two lane merge;
- Upgrading of the existing M40 NB diverge to a two lane diverge;
- Use of the existing Ardley Road bridge to provide a link to the M40 SB;
- A new M40 SB merge slip road connected to the Ardley East roundabout;
- A new M40 NB diverge slip road connected to the Ardley East roundabout; and
- The provision of two separate merge slip roads on the M40 southbound.

5.3 The design of the above elements has been assessed against the following DMRB standards:

Standard	Title	Revision
CD 109	Highway link design	1
CD 116	Geometric design of roundabouts	2
CD 122	Geometric design of grade separated junctions	1
CD 127	Cross-sections and headrooms	1

Free-flow link from the A43SB to M40SB, including its proximity to the Baynard's Green Roundabout

5.4 An initial alignment has been developed as shown on Strategic Options 10 to15 & 18 and 19. The initial alignment is considered feasible, and this has been further developed as shown on **drawing OxSRFI-BWB-GEN-XX-SK-CH-SK021-S1-P01**.

5.5 The free-flow link road would be an interchange link and the diverge to the Padbury junction is at a sufficient distance from the Baynard's Green roundabout based on a design speed of 85kph (which is that for an interchange link as derived from CD 122).

5.6 The traffic flows require a two-lane slip road and two-lane merge as they exceed 1,350vph in the AM peak hour periods (see Table 10 of TN6) but are within 1,350vph in the PM peak hour, as summarised in below.

2031 Do Something traffic flows (Strategic Options 10 to 19)	AM1 (0645 to 0745 hrs)	AM2 (0745 to 0845 hrs)	PM (1630 to 1730 hrs)
A43 to M40 SB merge flow	1,398	1,393	853
Upstream M40 mainline flow	3,883	3,318	3,475

5.7 A two-lane slip road can be provided but a two-lane merge could not be provided without reconstruction of the two existing bridges at J10. Hence a single lane merge with an auxiliary lane would be proposed but this requires a departure from standard and a detailed assessment of this would need to be put forward for approval. Omission of the hard shoulder beneath the existing A43 bridges would also require a departure approval (it is noted this was the case when an earlier layout for the M40 southbound slip road was open).

5.8 A further departure would be required to use a 360m radius (one step below desirable minimum radius) on the free flow link as no relaxations are permitted on connector roads under CD 122.

5.9 The traffic flow at the merge would be predicted to exceed 85% of the design capacity for more than 1,000 hours a year and hence an extended auxiliary lane is required.

5.10 The distance between the tip of the merge nose for the free-flow link and the tip of the merge nose on the existing slip road (as it is at present) is over 700m which is greater than 3.75Vm (3.75 times the design speed of 120kph) which is 450m. However, as an extended auxiliary lane merge would be needed for the free flow link then it is not possible to retain the existing slip road and existing merge as they would be in the same location. For this reason, Option C-7, which relates to Strategic Options 14 and 15 would not be compatible with a free-flow A43 to M40 SB link.

5.11 Inserting the traffic flows in the above table into CD 122 Figure 3.12b would mean that a lane gain is required on the M40 southbound. However, a lane gain would already be required in the 2031 Reference Case (i.e. without the OxSRFI development) and it is not within the scope of this scheme to provide four lanes between J9 and J10. This would be part of the departure from standard required for the merge type. See further commentary below at paragraph 5.30 to 5.35 on the southbound merge proposals.

Free-flow link from the M40NB to A43NB, including its proximity to the Baynard's Green Roundabout

5.12 An initial alignment has been developed as shown on Strategic Options 16 and 17.

5.13 The merge between the free flow link and connection from the Padbury / Cherwell junctions would be very close (less than 150m) to the Baynard's Green roundabout. The weaving distance between the merge and Baynard's Green roundabout is too short to allow vehicles to change lanes in a safe manner whilst slowing down to the roundabout and would be non-compliant with standards. For this reason, the free-flow link from the M40NB to A43SB is rejected and hence option ACP-2 and Strategic Options 16 and 17 are discounted.

Upgrading of the existing M40 SB merge to a two-lane merge

5.14 Traffic flows (see Table 10 of TN6) show that a two-lane merge is required for some of the options for the M40 southbound merge as they exceed 1,350vph in both the AM and PM peak hour periods, as summarised below:

2031 Do Something traffic flows	AM1 (0645 to 0745 hrs)	AM2 (0745 to 0845 hrs)	PM (1630 to 1730 hrs)
M40 SB merge flow*	1,818	1,830	1,465
Upstream M40 mainline flow	3,883	3,318	3,475

*maximum flow merge flow is reduced under some of the Strategic Options that provide a second SB merge (i.e. Strategic Options 4 to 9)

5.15 A detailed assessment was undertaken to determine whether a two-lane merge could be provided, and two options were assessed, the first using motorway design parameters and the second using all-purpose road design parameters which is a permitted relaxation under CD 122 para E/1.3 for existing slip roads. These layout options are shown on **drawing OxSRFI-BWB-GEN-XX-SK-CH-SK008-S01-P01**.

5.16 A two-lane merge using motorway parameters would commence too close to the Cherwell roundabout for it to tie-in to the roundabout both in layout and in the vertical alignment. Hence it is not possible to provide a two-lane merge in accordance with motorway design standards and connect to the Cherwell roundabout, unless the entire slip road was moved to the south which would require replacement of the Ardley Road bridge to accommodate the two lane merge. However, use of all-purpose road standards would mean that a two-lane merge could be provided that would not require changes to the Ardley Road bridge.

5.17 Inserting the traffic flows in the above table into CD 122 Figure 3.12b would mean that a lane gain is required on the M40 southbound. However, a lane gain would already be required in the 2031 Reference Case (i.e. without the OxSRFI development) and it is not within the scope of this scheme to provide four lanes between J9 and J10. As this is an existing slip road it is permitted under CD 122 para E/1.3. See further commentary below at paragraphs 5.30 to 5.35 on the southbound merge proposals.

Upgrading of the existing M40 NB diverge to a two-lane diverge

5.18 The traffic flows (see Table 10 of TN6) show that a two-lane diverge is required for the northbound diverge as they exceed 1,350vph.

2031 Do Something traffic flows	AM1 (0645 to 0745 hrs)	AM2 (0745 to 0845 hrs)	PM (1630 to 1730 hrs)
M40 NB diverge flow*	1,484	1,618	2,004
Downstream M40 mainline flow	2,976	3,091	4,691

*maximum flow using the NB diverge slip, diverge flow is significantly reduced under Strategic Options 16 and 17 that provide free flow M40 to A43 NB link

5.19 A detailed assessment was undertaken to determine whether a two lane diverge could be provided and two options were assessed, the first using motorway design parameters and the second using all-purpose road design parameters which is a permitted relaxation under CD 122 para E/1.5 for existing slip roads. These layout options are shown on **drawing OxSRFI-BWB-GEN-XX-SK-CH-SK008-S01-P01**.

5.20 As can be seen, it is not possible to provide a two lane diverge in accordance with design standards and connect to the Ardley roundabout, unless the entire slip road was moved to the south which would require replacement of the Ardley Road bridge to accommodate the two-lane diverge.

5.21 Inserting the traffic flows in the above table into CD 122 Figure 3.26b would mean that a lane drop is required on the M40 northbound. However, this would also be the case in the future Reference Case (i.e. without OxSRFI being developed) as would be shown by inserting the traffic data (see Table 10 of TN6) in the table below into CD 122 Figure 3.26b. It is not within the scope of this scheme to provide four lanes between J9 and J10. A departure from standard would be required.

2031 Reference Case traffic flows	AM1 (0645 to 0745 hrs)	AM2 (0745 to 0845 hrs)	PM (1630 to 1730 hrs)
M40 NB diverge flow	1,189	1,323	1,857
Downstream M40 mainline flow	2,976	3,091	4,691

Use of the existing Ardley Road bridge to provide a link to the M40 SB

5.22 An initial alignment has been developed as shown on Strategic Option 4. Traffic seeking the M40 SB would use the existing Ardley Road bridge to reach a new junction, likely to be a roundabout, to then turn onto a new M40 merge slip road.

5.23 The carriageway on the existing Ardley Road bridge is only around 5.7m wide. This is not considered wide enough to take significant volumes of traffic (including high volumes of HGVs) which would typically have a 3.65m lane width, which would only leave just over 2m for opposing traffic. Furthermore, the bridge is used by horse riders and pedestrians as it forms a link in the bridleway network and continued use by horses in particular would not be compatible with a significant increase in traffic.

5.24 For these reasons option AE-3 and Strategic Option 4 is not feasible.

New M40 SB merge slip road connected to the Ardley East junction

5.25 An initial alignment has been developed as shown on Strategic Options 5 to 13 and 17 to 19. The initial alignment is considered feasible, and this has been further developed as shown on **drawing OxSRFI-BWB-GEN-XX-SK-CH-SK019-S1-P01.**

5.26 Traffic flows (see Table 10 of TN6) show that a single lane merge is required as traffic flows are less than 1,350vph, as summarised below. A layout A (taper) merge is required from using CD 122 Figure 3.12b.

2031 Do Something traffic flows	AM1 (0645 to 0745 hrs)	AM2 (0745 to 0845 hrs)	PM (1630 to 1730 hrs)
M40 SB merge flow (Strategic Option 5 – 9, 17)	158	154	330
Upstream M40 mainline flow (Strategic Option 5 – 9, 17)	5,543	4,994	4,610
M40 SB merge flow (Strategic Option 10 -13, 18 -19)*	377	399	601
Upstream M40 mainline flow (Strategic Option 10 -13, 18 -19)	5,324	4,749	4,247

* M40 SB traffic from the MSA would also use the new slip road under these Strategic Options

New M40 NB diverge slip road connected to the Ardley East junction

5.27 An initial alignment has been developed as shown on Strategic Options 6 to 13 and 16 to 19. The initial alignment is considered feasible, and this has been further developed as shown on **drawing OxSRFI-BWB-GEN-XX-SK-CH-SK019-S1-P01**. The detailed work has shown that a two-lane diverge can be provided in accordance with standards.

5.28 The traffic flows (see Table 10 of TN6) show that a two-lane diverge is required for the northbound diverge as they exceed 1,350vph in both the AM and PM peak hour periods, as summarised below. Under Strategic Options 16 and 17 a free-flow link is considered from M40

NB to the A43NB. Under these scenarios the traffic flows on the diverge would not exceed 1,350vph. However, Strategic Options 16 and 17 have already been shown not to be feasible (see paragraphs 5.12 and 5.13 due to the proximity of the free-flow link to the Baynard's Green Roundabout.

2031 Do Something traffic flows	AM1 (0645 to 0745 hrs)	AM2 (0745 to 0845 hrs)	PM (1630 to 1730 hrs)
M40 NB diverge flow	1,484	1,618	2,004
Downstream M40 mainline flow	2,976	3,091	4,691

5.29 Inserting the traffic flows in the above table into CD 122 Figure 3.26b would mean that a lane drop is required on the M40 northbound. However, this would also be the case in the future Reference Case (i.e. without OxSRFI being developed) as would be shown by inserting the Reference Case traffic flow data (see Table 10 of TN6) in the table below into CD 122 Figure 3.26b. It is not within the scope of this scheme to provide four lanes between J9 and J10. A departure from standard would be required.

2031 Reference Case traffic flows	AM1 (0645 to 0745 hrs)	AM2 (0745 to 0845 hrs)	PM (1630 to 1730 hrs)
M40 NB diverge flow	1,189	1,323	1,857
Downstream M40 mainline flow	2,976	3,091	4,691

The provision of two separate merge slip roads on the M40 SB

5.30 In the future Reference Case (i.e. without OxSRFI being developed), from inserting the data below into CD 122 Figure 3/12b, a two lane slip road with a lane gain (layout E merge) is required. It is noted that for an existing slip road (CD 122 para E/1.3), it is permitted to provide a layout C (two lane merge) in lieu of the layout Emerge.

2031 Reference Case traffic flows	AM1 (0645 to 0745 hrs)	AM2 (0745 to 0845 hrs)	PM (1630 to 1730 hrs)
M40 SB merge flow	1,716	1,728	1,152
Upstream M40 mainline flow	3,883	3,318	3,475

5.31 Many of the options identified would provide two separate merges on the M40 SB rather than having a single merge. The standard minimum merge spacing is 3.75Vm (3.75 x 120kph design speed) = 450m. It is considered that by increasing the distance between the merge points to 450m or greater, this would have more capacity and a reduced impact on the M40 than a layout C merge, where the two merge points at the ghost island are separated by a distance of 385m (tip of merge nose to tip of ghost island tail).

5.32 There are three possible configurations for providing two merges that are inherent in the options listed above.

- A new A43 SB to M40 SB free flow merge and the existing M40 SB J10 merge – this has been discounted for the reasons stated above i.e. that the extended auxiliary lane would clash with the existing merge;
- The existing M40 SB J10 merge and a new SB merge to the south of Ardley Road; and
- A new A43 SB to M40 SB free flow merge and a new SB merge to the south of Ardley Road.

5.33 If the nose length of the existing J10 SB merge was amended (i.e. reduced) to comply with standards then the distance between that and a new merge south of Ardley Road would be around 1km which is greater than the required 450m. Hence this option is feasible.

5.34 The distance between a new A43 SB to M40 SB free flow merge and a new SB merge to the south of Ardley Road is around 1.5km which is clearly well above the 450m minimum. Separating merging traffic from the free flow link from the A43 and traffic from the motorway service area, OxSRFI and the local area at a new merge south of Ardley Road by over 1.5km will minimise the impact on the M40 flows.

5.35 As shown in Section 6 of this Options Report, there are capacity advantages at the Padbury Roundabout and Cherwell Roundabout that would be created by the provision of the A43 to M40 southbound free-flow link, generating headroom at these junctions. In addition, it is considered that providing a free-flow link between the A43 and M40 southbound will provide journey time improvements and reliability for longer distance traffic using the A43 southbound corridor.

6.0 M40J10 DO SOMETHING OPTION CAPACITY TESTING

Introduction

6.1 The tables at Section 4 of this Options Report set out the junction configuration options that have been considered for the Padbury, Cherwell, Ardley and Ardley East junctions. This also includes a layout option for a large, single grade-separated roundabout to replace the Padbury, Cherwell and Ardley Roundabouts.

6.2 This section summarises the results and conclusions of capacity assessment modelling that has been undertaken for the junction options.

6.3 As part of that work an assessment of the operation of the Baynard's Green Roundabout with Highways England's committed improvement scheme in place, is provided. An assessment of the proposed Site Access Roundabout is also undertaken to demonstrate proof of concept.

6.4 The junction arrangement summary tables in Section 4 do not specify whether the junction would operate under priority or traffic signal control (with the exception of Padbury), identifying only the number of arms needed and the configuration of the M40 entry and exit slip roads. The junction assessments summarised in this section are therefore a combination of Junctions 9 Arcady models for priority controlled roundabouts and LinSig models for the traffic signal controlled options.

6.5 At this first stage optioneering stage, detailed junction arrangement drawings for every junction option have not been produced. This is because such work was deemed necessary, as in general there are no constraints in terms of available land for improvement works, and scaling of junction size and link lengths can be accurately estimated based on Ordnance Survey mapping layouts the existing junctions.

6.6 Therefore, to ensure reasonable conclusions can be drawn from the junction modelling, robust parameters have been used within the Arcady and LinSig models as summarised below:

- Arcady models assume lane widths of 3.65m, flare lengths between 20m and 50m, radii of 20m, conflict angles between 25-30 degrees and ICDs between 70m and 80m.
- LinSig models assume lane widths of 3.65m. Junction approach saturation flows have been calculated using RR67 with estimations of radii where applicable. Circulating lane saturation flows have been set to 1850 pcu/hr. 1 second has been added intergreens to account for MOVA control.

6.7 The junctions have been assessed with the 2031 Do Something traffic flows for the morning and evening peak hours, as derived in TN6. The appropriate flow set as defined for TN6 for each modelled option is referenced in the summary tables that follow.

6.8 The detailed capacity assessment results for each junction option are appended to this report. The relevant appendix for each modelled option is also referenced in the summary tables that follow.

Padbury Roundabout (P)

6.9 The table below summarises the results of the capacity assessments at the five Padbury junction options, referencing the traffic flow sets used and the relevant appendix for the detailed capacity assessment results.

Junction option	Strategic option(s)	Flow Sets (see TN6)	Capacity	Analysis	See Appendix
P-1	1, 4, 5, 6, 7, 8	Padbury1	N	Over capacity in the AM and PM peak hours with PRC** -23.7% in AM (due to large A43 SB flow) and -9.6% PM	12
P-2	2, 3, 9, 16, 17	N/A (junction removed)	Y	Junction removed and therefore not a constraint	N/A
P-3	10, 14	Padbury2	N	Junction operates acceptably in the AM peak with PRC 10.2%, but is over capacity in the PM peak with PRC -9.4%	12
P-4	11, 13, 15, *18*, 19**	Padbury2	Y	Junction operates acceptably with PRC 34.8% and 6.2% in AM and PM peaks	13
P-5	12	N/A (junction removed)	Y	Junction removed and therefore not a constraint	N/A

*note that Strategic Options 18 and 19 were not separately tested for the Padbury Roundabout, see paragraph 6.45, as these options are a variation on Strategic Options 11 and 13.
**PRC = practical reserve capacity

6.10 In junction options P-2 and P-5, the Padbury junction would be removed as these options consider the potential to provide the M40 southbound exit slip road at the Cherwell junction and hence the Padbury junction is no longer required.

6.11 The summary results presented in the table above show that junction options P-1 and P-3 (maintaining the OCC/HE committed scheme) would not operate acceptably in the morning and evening peak hours. For option P-1, the PRC is negative in both peaks, indicating that one or more links are operating above 90% saturated. In this instance, the PRC in the morning peak hour is -23.7% indicating a significant capacity issue, which the results in **Appendix 12** show to be on the A43 southbound approach.

6.12 For junction option P-3, the table above shows that the PRC would be positive in the morning peak hour and negative in the evening peak hour. The results in **Appendix 12** show that in the evening peak hour it is the A43 northbound that would be over capacity.

6.13 In the morning peak hour, the results summarised above and in **Appendix 12** show that junction option P-3 would operate significantly better than option P-1 in the morning peak hour. Option P-3 includes a southbound free-flow link from the A43 (north of the Padbury junction) to the M40. Hence, whilst P-3 would not be acceptable in its current form due to the evening peak hour performance, it does highlight the potential benefit of delivering the southbound free-flow link from the A43 the M40.

6.14 Junction option P-4 considers the performance of a traffic signal controlled T-junction in place of the partial roundabout. Option P-4 also includes the southbound free-flow link described above. The results summarised in the table above and in **Appendix 13** show that this option would operate acceptably in the morning and evening peak hours. The layout of this option has therefore further developed and is shown on **drawing OxSRFI-ADC-GEN-XX-SK-CH-SK02-S1-P1**.

6.15 It may be possible to provide additional mitigation to the OCC/HE committed scheme to improve the capacity performance of option P-1. This further modelling has been undertaken,

with an additional flared lane provided for both the A43 northbound and A43 southbound. The results are summarised below.

Junction option	Strategic option(s)	Flow Sets (see TN6)	Capacity	Analysis	See Appendix
P-1 (alt)	1, 4, 5, 6, 7, 8	Padbury1	improvement on Reference Case but over capacity	Over capacity in the AM with PRC of -4.1%	14

6.16 The results show that option P-1 (alt) would operate over capacity in the morning peak hour. However, compared to the Reference Case position (see paragraph 3.15), which is forecast to operate at -11% PRC, this option P-1 alt would still deliver an improvement.

Cherwell (C)

6.17 The existing A43 northbound flow at the Cherwell junction from the bridge over the M40 is free-flow in the nearside lane, with the offside lane also providing access to the A43 northbound, though it gives-way to circulating traffic.

6.18 In the 2031 Do Something traffic flows scenarios the northbound flow to the A43 in the evening peak is very high (circa. 2,150 pcus). Allowing this volume of traffic to access the A43 northbound free-flow in a single lane could cause problems in terms of weaving and lane allocation at the Ardley Roundabout. The higher right-turn movement at the Cherwell Roundabout could also lead to queueing on the circulating carriageway which could interact with the A43 northbound movement if left as free-flow.

6.19 Hence, the options considered for the Cherwell Roundabout junction do not provide for the free-flow lane. Various layouts for the A43 northbound approach were considered, including priority control and traffic signal control. These arrangements could not be made to work acceptably due to the proximity of the give-way or stopline to the bridge deck which prevents a meaningful additional flared lane to be developed, and the high A43 NB flow demand.

6.20 Therefore, a fully signal controlled hamburger arrangement was developed for the A43 northbound and MSA to A43 northbound right turn movement. The proposed junction arrangement is shown on **drawing OxSRFI-ADC-GEN-XX-SK-CH-SK03-S1-P1** and an extract is provided below at **Figure 13**. By providing the 'cut-through' for the right-turners exiting the motorway service area, the stopline for the A43 northbound approach can be moved northwards, allowing a flared third lane for right-turners to be provided and allowing the high A43 northbound traffic demand to be managed acceptably.

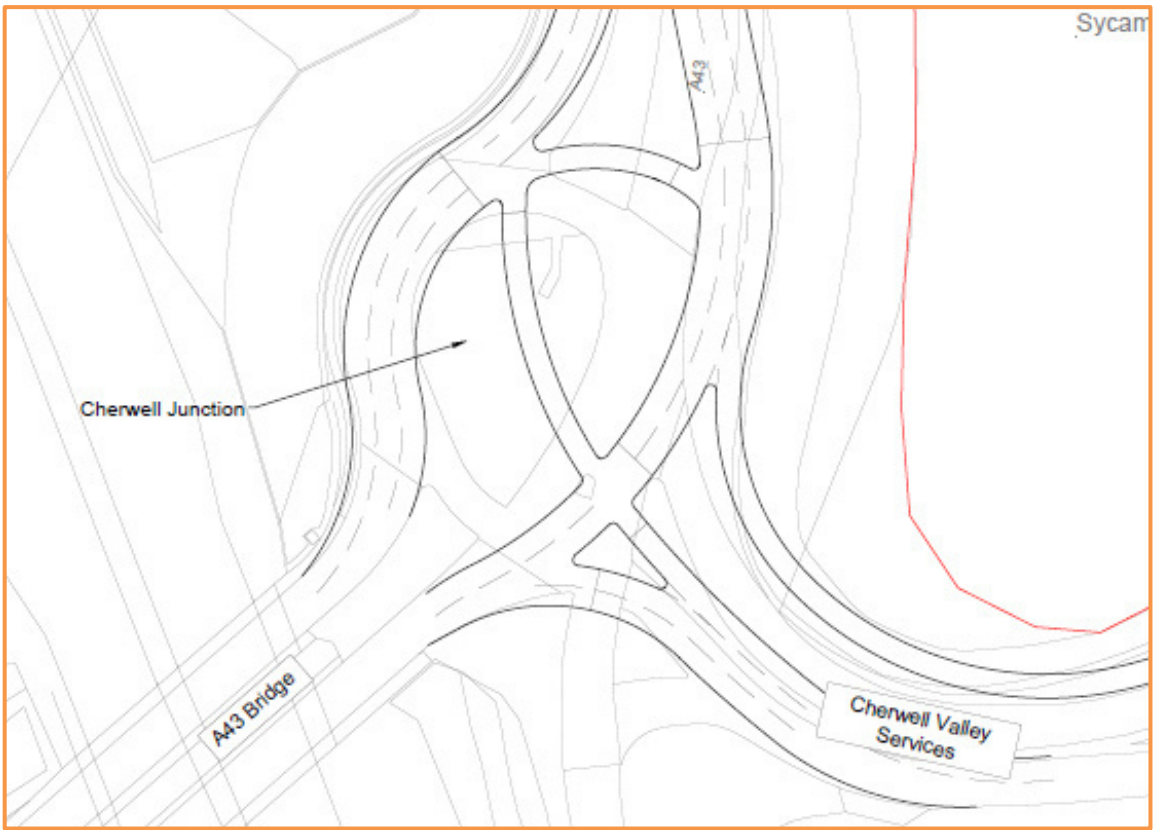


Figure 13: 'hamburger' option at Cherwell Roundabout

6.21 The initial testing showed that this option offers a material benefit to the others considered and hence it was used as the basis for testing the testing the various junction configuration options at Cherwell Roundabout. Key differences are set out below:

- For Options C-1, C-2, C-3 and C-4 the M40 SB on-slip is retained at the junction and an additional forth lane on the A43 southbound is included.
- Options C-2, C-4 and C-6 include the relation of M40 southbound exit-slip road and so an additional circulating lane at the A43 southbound node was modelled.

6.22 The table below summarises the results of the capacity assessments at the seven Cherwell Roundabout options, referencing the traffic flow sets used and the relevant appendix for the detailed capacity assessment results.

Junction option	Strategic option(s)	Flow Sets (See TN6)	Capacity	Analysis	See Appendix
C-1	1	Cherwell1	N	Over capacity in the AM and PM peak hours (PRC -57.1% and -34.3%), with the A43 NB and SB approaches significantly over capacity	15
C-2	2	Cherwell2	N	Significantly over capacity in both peaks (-36.5% and -37.1% PRC)	16
	3	N/A (replaced by large single grade separated two-bridge gyratory, ATC-1)			
C-3	4, 5	Cherwell3	improvement on Reference Case but over capacity	Junction operates over capacity in the AM peak with PRC -9.5% and acceptably in the PM peak PRC 3.3%. This would be a improvement on the Reference Case	17

C-3	6, 7, 8	Cherwell4	improvement on Reference Case but over capacity	Junction operates over capacity in the AM peak with PRC -9.3% and acceptably in the PM peak PRC 6.5%. This would be a improvement on the Reference Case	17
C-4	9	Cherwell5	N	Significantly over capacity in both peaks (-32.4% and -27.9% PRC)	16
C-5	10, 11, 13, *18*, 19**	Cherwell6	Y	Junction operates acceptably with PRC 21.7% and 5.6% in AM and PM peaks	18
C-6	12	Cherwell7	N	Over capacity in the AM and PM peak hours (-13.7% and -21.6% PRC)	19
C-7	14, 15	Cherwell8	improvement on Reference Case in AM peak and nil detriment in PM peak	Junction operates acceptably in the AM peak with PRC 19.4% and over capacity in the PM peak PRC -3.8%. This would be improvement in the AM and nil detriment in the PM peak compared to the Reference Case	20
C-2	16	Cherwell9	N	Significantly over capacity in both peaks (PRC -61.8% and -10.3%)	16
C-2	17	Cherwell10	N	Significantly over capacity in AM peak, though improvement in the PM peak (PRC -32.4% and 17.4%)	16

*note that Strategic Options 18 and 19 were not separately tested for the Cherwell Roundabout, see paragraph 6.45, as these options are a variation on Strategic Options 11 and 13.

6.23 The summary results presented in the table above show that the only junction option that would operate with positive PRC in both the AM and PM peaks is C-5. Junction Option C-5 is included in Strategic Options 10, 11, 13, 18 and 19. These strategic options include the southbound free-flow link form the A43 to the M40, removing a significant amount of traffic from the A43 southbound approach to the Cherwell Roundabout junction.

6.24 Of the junction options that would not operate acceptably, the following conclusions can be drawn:

- The A43 southbound approach to Cherwell is over capacity in the morning peak for all scenarios that do not include the southbound free-flow link from the A3 to M40 (C-1, C-2, C-3 and C-4).
- All options that connect the M40 southbound exit slip would be over capacity (C-2, C-4, and C-6).

Ardley (A)

6.25 The existing Ardley roundabout is a priority controlled roundabout. Whilst the recent work undertaken by Highways England has examined the upgrade the roundabout to traffic signal control (see Section 2), the initial option testing has considered the junction as priority control before traffic signal control options have been considered.

6.26 The table below summarises the results of the capacity assessments at the three identified Ardley roundabout options, referencing the traffic flow sets used and the relevant appendix for the detailed capacity assessment results.

Junction option	Strategic option(s)	Flow Sets	Capacity	Analysis	See Appendix
A-1	1	Ardley1	N	A43 Bridge and M40 off-slip over capacity in AM. Excessive queuing and delay on Link Road and B430 in PM	21
A-1	2	Ardley1	N	M40 off-slip over capacity in AM. Excessive queuing and delay on Link Road and B430 in PM	21
	3	N/A (replaced by large single grade separated two-bridge gyratory, ATC-1)			
A-1	4, 5	Ardley2	N	Long queues on M40 J10 NB off-slip in AM. Excessive queue and delay on Link Road approach and M40 off-slip in PM.	21
A-2	6, 7	Ardley3	N	Link Road and A43 Bridge capacity at 80% in AM. Excessive queue and delay on Link Road in PM.	22
A-3	8, 9	Ardley5	N	Excessive queuing and delay on Link Road approach in PM	23
A-3	10, 11, 12, *18**	Ardley6	N	Link Road capacity at 91% in AM. Excessive queue and delay on Link Road in PM.	23
A-2	13, *19**	Ardley4	N	Excessive queuing and delay on A43 bridge in AM. Excessive queuing and delay on Link Road approach in PM.	22
A-1	14, 15	Ardley1	N	M40 off-slip over capacity in AM. Excessive queuing and delay on Link Road and B430 in PM	21
A-3	16	Ardley7	unclear	Link Road and A43 Bridge reaching capacity in peak hours	23
A-3	17	Ardley8	unclear	A43 Bridge capacity at 85% capacity in AM peak.	23

*note that Strategic Options 18 and 19 were not separately tested for the Ardley Roundabout, see paragraph 6.45, as these options are a variation on Strategic Options 11 and 13.

6.27 The summary results presented in the table above show that maintaining the Ardley roundabout as a priority controlled junction would not work in acceptably in any of the modelled scenarios, except potentially in Strategic Options 16 and 17 that include the M40 to A43 northbound free flow link. However, the highway geometry assessment included at Section 5 of this Options Report discounts Strategic Options 16 and 17 (ATC-2) as the M40 to A43 northbound link would not be feasible due the proximity of the link to the Baynard's Green Roundabout. Therefore, options to apply traffic signal control at the Ardley Roundabout have been considered.

6.28 As discussed above, to ensure that the Cherwell Roundabout junction can operate acceptably, only the strategic options that include the southbound free-flow link from A43 to the M40 will be considered beyond the initial assessment. Therefore, junction options A-1, A-2 and A-3 compliant with Strategic Options 10, 11, 12, 13, 14, 15, 18 and 19 (that provide the A43 to M40 southbound free flow link) have been considered as traffic signal controlled junctions.

6.29 The only difference between Strategic Options 10 and 11 is the arrangement of Padbury junction (Option 10 as a partial roundabout or Option 11 as a traffic signal controlled T-junction). The assessment of the Padbury junction discussed earlier in this section concluded that the traffic signal controlled T-junction would operate best, and hence Strategic Option 10 has not been considered further.

6.30 Strategic Option 12 has already been dismissed (paragraph 6.24) as the Cherwell Roundabout would not have sufficient capacity to accommodate the M40 southbound exit slip road.

6.31 Hence, the table below summarises the results for the traffic signal controlled options for the remaining options.

Junction option	Strategic option(s)	Flow Sets (see TN6)	Capacity	Analysis	See Appendix
A-3	11, *18**	Ardley6	Y	Junction operates acceptably with PRC 13.3% and 0.5% in AM and PM peaks	24
A-2	13, *19**	Ardley4	Y	Junction operates acceptably with PRC 4.5% and 25.5% in AM and PM peaks	25
A-1	14, 15	Ardley1	N	Over capacity in the evening peak hour with a PRC of -10.9%.	26

*note that Strategic Options 18 and 19 were not separately tested for the Ardley Roundabout, see paragraph 6.45, as these options are a variation on Strategic Options 11 and 13.

6.32 The 5-arm roundabout option A-1 was tested for strategic options 14 and 15 as a traffic signal controlled gyratory. Despite modelling the M40 northbound exit slip with four lanes and the Ardley Bypass approach with five lanes, the junction would operate over capacity in the evening peak hour with a PRC of -10.9%. The addition of the M40 northbound off-slip as a fifth arm causes too much additional congestion and it is difficult to achieve satisfactory coordination of the green times.

6.33 Notwithstanding the above, the highway geometry assessment at Section 5 of this Options Report (see paragraph 5.10) concludes that Strategic Options 14 and 15 would not be compatible with a free-flow A43 to M40 southbound free-flow link. The assessment of the Padbury and Cherwell Roundabouts has concluded that the A43 to M40 southbound link is required for these junctions to operate with positive PRC.

6.34 The 4-arm roundabout option A-2 and A-3 have therefore been considered in more detail as traffic signal controlled roundabouts for Strategic Options 11 and 13 (or 18 and 19, respectively). The LinSig modelling demonstrated that both options would operate with positive PRC in both the morning and evening peak hours. However, it is noted that option A-3 for Strategic Option 11 would operate with a PRC of 0.5% in the evening peak hour and therefore does generate any material headroom. Option A-2 performs better in terms of overall capacity and therefore an initial junction layout has been development based on this layout and is shown at **drawing OxSRFI-BWB-GEN-XX-SK-CH-SK020-S1-P1**.

Ardley East (AE)

6.35 The table below summarises the results of the capacity assessments at the Ardley East junction options, referencing the traffic flow sets used and the relevant appendix for the detailed capacity assessment results. The initial option testing has considered the junction as priority control before traffic signal control options have been considered.

Junction option	Strategic option(s)	Flow Sets (see TN6)	Capacity	Analysis	See Appendix
AE-1	1, 2, 3, 14, 15	ArdleyEast1	Y	Junction operates acceptably with RFC 80% and 67% in AM and PM peaks	27
AE-3	4	ArdleyEast2	Y	Junction operates acceptably with RFC 80% and 66% in AM and PM peaks	28
AE-4	5	ArdleyEast3	Y	Junction operates acceptably with RFC 81% and 66% in AM and PM peaks	29
AE-5	6	ArdleyEast4	N	Over capacity in the evening peak hour with a RFC of 104%.	30
AE-6	7, 8, 9	ArdleyEast5	Unclear	Junction operates acceptably in AM peak with RFC 80% but would be at 86% in the PM peak	31
AE-6	10, 11, 12, 13	ArdleyEast6	Unclear	Junction operates with RFC 80% in AM peak and 86% in the PM peak	31
AE-7	16	ArdleyEast7	Y	Junction operates acceptably with RFC 58% and 67% in AM and PM peaks	32
AE-5	17	ArdleyEast8	Y	Junction operates acceptably with RFC 62% and 71% in AM and PM peaks	30

6.36 As discussed above, to ensure that the Cherwell junction can operate acceptably, only the strategic options that include the southbound free-flow link from A43 to the M40 will be considered beyond the initial assessment. Due to the geometry constraints, those options require the closure of the existing M40 southbound on-slip at the Cherwell Roundabout and the provision of a new southbound slip road at the Ardley East junction. Further, as part of the highway geometry review presented at Section 5, it is concluded that there is no sufficient room to accommodate the require two-lane M40 northbound off-slip in its current location. Therefore, whilst junction options AE-1, AE-3, AE-4, and AE-7 are shown to operate acceptably as priority controlled roundabouts, they are dismissed for the following reasons:

- AE-1 does not provide either of the south facing M40 slip roads.
- AE-3 and AE-4 do not provide the required M40 northbound off-slip road.
- AE-7 does not provide the M40 southbound on-slip and requires the M40 to A43 northbound free-flow link, which is identified as not feasible in Section 5.

6.37 Junction option AE-5, under Strategic Option 17 is also shown to work within capacity as a priority controlled roundabout, Strategic Option 17 includes the M40 to A43 northbound free-flow link, which is identified as not feasible in Section 5. Junction option AE-5 without the M40 to A43 northbound free-flow link does provide sufficient capacity as a priority controlled roundabout.

6.38 Junction option AE-6, a four-arm junction that would connect to Ardley Road east, but not Ardley Road west, was therefore taken forward for further testing as traffic signal controlled junction. Prior to this, junction option AE-5, a five-arm junction that would provide connection to both Ardley Road east and west, was also tested as traffic signal controlled junction. However, it was found that under such a layout the southbound Ardley Bypass and M40 northbound off-slip would not operate acceptably in the AM peak hour and the northbound Ardley Bypass and Ardley Road west arm would not operate acceptably in the PM peak hour.

6.39 Junction option AE-6 is shown on Strategic Options 7, 8, 9, 10, 11, 12 and 13. Strategic Options 7, 8 and 9 do not provide the A43 to M40 southbound free-flow link and hence were not taken forward. Strategic Option 10 is not being considered further as the preferred option at the Padbury junction is for a T-junction (Strategic Option 11). Strategic Option 12 has already been dismissed (paragraph 6.24) as the Cherwell roundabout would not have sufficient capacity to accommodate the M40 southbound exit slip road.

6.40 The remaining Strategic Options for junction option AE-6 are Strategic Options 11 and 13, which is consistent with the conclusions for the Padbury, Cherwell and Ardley junctions. Therefore, junction option AE-6 has been developed in more detail as a traffic signal controlled junction, as shown at **drawing OxSRFI-ADC-GEN-XX-SK-CH-SK04-S1-P1**, and results are summarised below.

Junction option	Strategic options	Flow Sets (see TN6)	Capacity	Analysis	See Appendix
AE-6	11, 13	ArdleyEast6	Y	Junction operates acceptably with PRC 6.8% and 8.5% in AM and PM peaks	33

6.41 The results for option AE-6 as a signal controlled roundabout show that the junction would operate acceptably in the morning and evening peak hours.

6.42 Further, an additional option has been considered at Ardley East in which no connection would be provided to Ardley Road. This would move the Ardley East junction to the south, forming a three-arm junction with the Ardley Bypass north and south and the M40 south facing entry and exit slip roads. The Ardley Bypass would need to pass over Ardley Road to achieve the required vertical alignment.

6.43 Strategic Options 11 and 13 have therefore been amended to create Strategic Options 18 and 19, with the configuration of the Ardley East roundabout being the only change in both. Therefore, junction option AE-8 has been developed in more detail as a traffic signal controlled junction, as shown at **drawing OxSRFI-ADC-GEN-XX-SK-CH-SK05-S1-**P1, and the results are summarised below.

Junction option	Strategic option(s)	Flow Sets (see TN6)	Capacity	Analysis	See Appendix
AE-8	18, 19	ArdleyEast6	Y	Junction operates acceptably with PRC 8.2% and 13.2% in AM and PM peaks	34

6.44 The results for option AE-8 as a signal controlled roundabout show that the junction would operate acceptably in the morning and evening peak hours.

6.45 It is noted that strategic Options 18 and 19 would not materially change the traffic flows at the Padbury, Cherwell or Ardley junctions when compared to Strategic Options 11 and 13. Therefore, the performance of these junction in Strategic Options 18 and 19 would be as per the results for Strategic Options 11 and 13.

Baynard's Green Roundabout

6.46 In Section 3 of this report, modelling of the Baynard's Green roundabout showed that despite the Highways England committed improvement scheme, the junction would operate above capacity in in the 2031 morning and evening peak hours for the Reference Case scenario. The

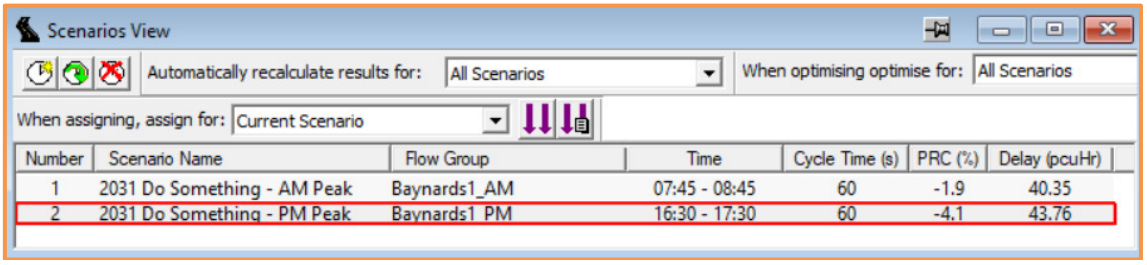
addition of the development traffic compounds the congestion issue at the junction and therefore, the proposed junction layout does not have the capacity to accommodate the background and development traffic.

6.47 To mitigate the impact of the development at the Baynard's Green Roundabout, it is proposed to provide additional widening on the A43 northbound and southbound approaches, with an additional circulating lane on the at the A43 northbound approach. The widening on the A43 northbound and southbound approaches would provide an additional flared left-turn lane These works would be additional to those that are committed at the junction under the Highways England scheme. The proposed junction arrangement is shown on **drawing OxSRFI-ADC-GEN-XX-CH-SK01-S1-P1**, and an extract is provided at **Figure 14**.

6.48 The proposed Baynard's Green roundabout has been modelled using LinSig and following traffic flow sets:

- 2031 Do Something (with development) traffic flows 'Baynards1_AM and Baynards1_PM' presented at Diagrams 1 and 2 of Appendix D of TN6

6.49 The results are summarised below and the full model report is contained in **Appendix 35**.



6.50 The results provided at **Appendix 35** and summarised above show that whilst the mitigated junction would not operate within capacity in the morning and evening peak hours in 2031 with the development in place (the PRC is negative indicating that one or more links are over 90% saturated), the proposals would provide a better than nil-detriment improvement when compared to the results for the 2031 reference case morning and evening peak hour assessments provided at paragraph 8.4 (-1.9% versus -3.2% and -4.1% versus -7.6%).

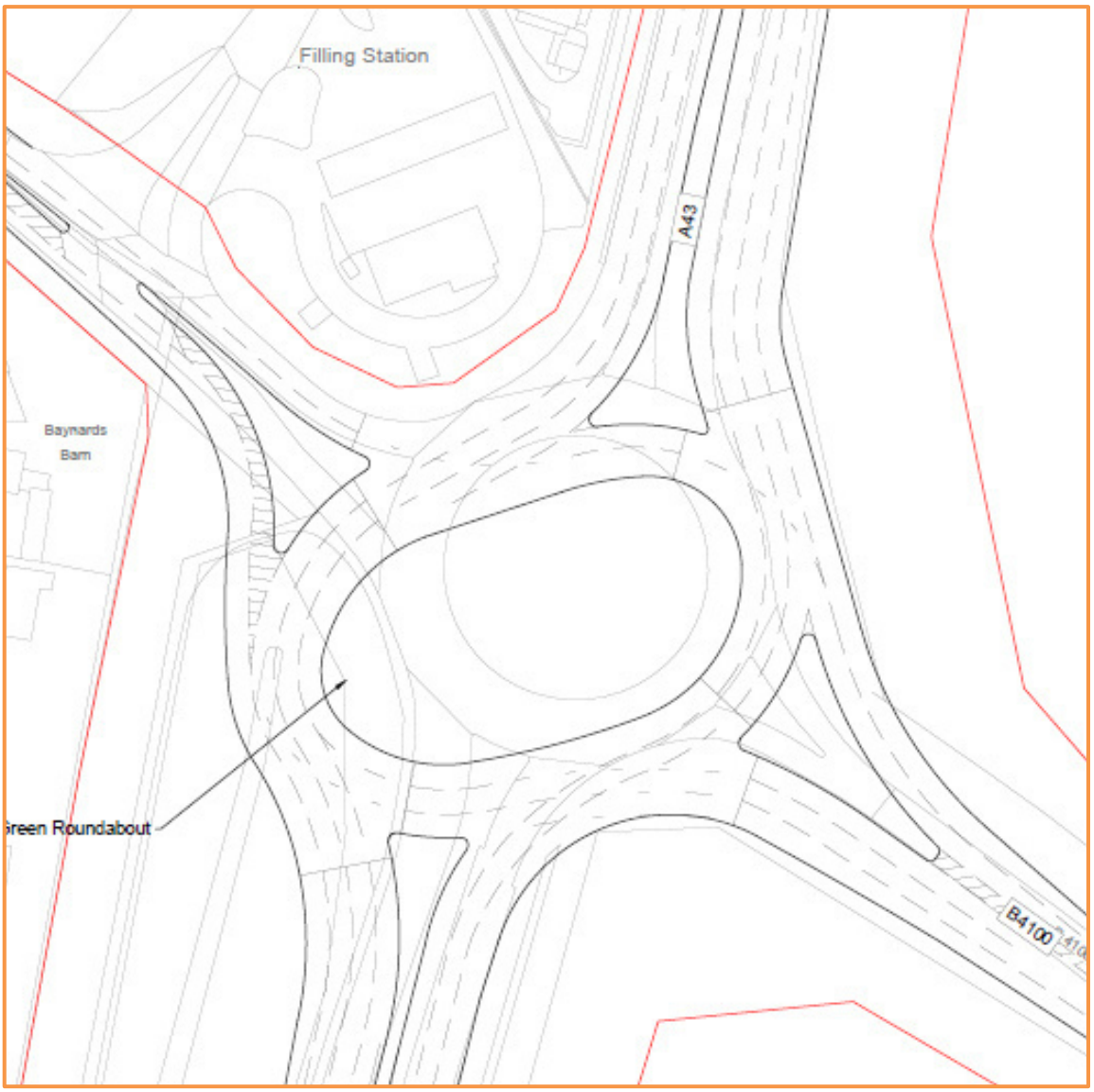


Figure 14: proposed OxSRFI Baynards Green improvement scheme

6.51 It is anticipated that the Baynards Green roundabout would operate a MOVA control system. LinSig provides aggregated results based on uniform traffic flows and fixed signal timings and, therefore, does not take into account the advantages afforded by the demand responsive MOVA control system. Linking between the two traffic signal streams could add further efficiency. Therefore, in reality the junction under MOVA control would operate more efficiently and with better queue performance than shown in the LinSig modelling.

6.52 The proposed mitigation should therefore be acceptable subject to the results of the strategic transport modelling and further detailed modelling for the Transport Assessment.

Single large grade-separated gyratory (ACP-1)

6.53 In Section 4 of this report the table at paragraph 4.17 identifies option ATC-1, a large single grade-separated gyratory that would replace the separate Ardley, Cherwell and Padbury junctions. The gyratory would consist of the following approaches:

- M40 SB exit slip
- A43
- MSA
- M40 SB entry slip

- M40 NB exit slip
- B430 Ardley Bypass
- M40 NB exit slip.

6.54 A LinSig model based on the typical geometry found at such junctions, using the current junction geometries as a guide, has been developed. Various combinations of priority controlled and signal control have been tested at the arms of the junction, along with different combinations for the link/lane structure.

6.55 This conclusion of the process showed that all arms of the junctions would require signalisation and all approaches, with the exception of the motorway service area, requiring at least four lanes. The circulating carriageway would have a minimum of three lanes, with a four and five lane section. A screen shot of the model structure is provided at **Figure 15**.

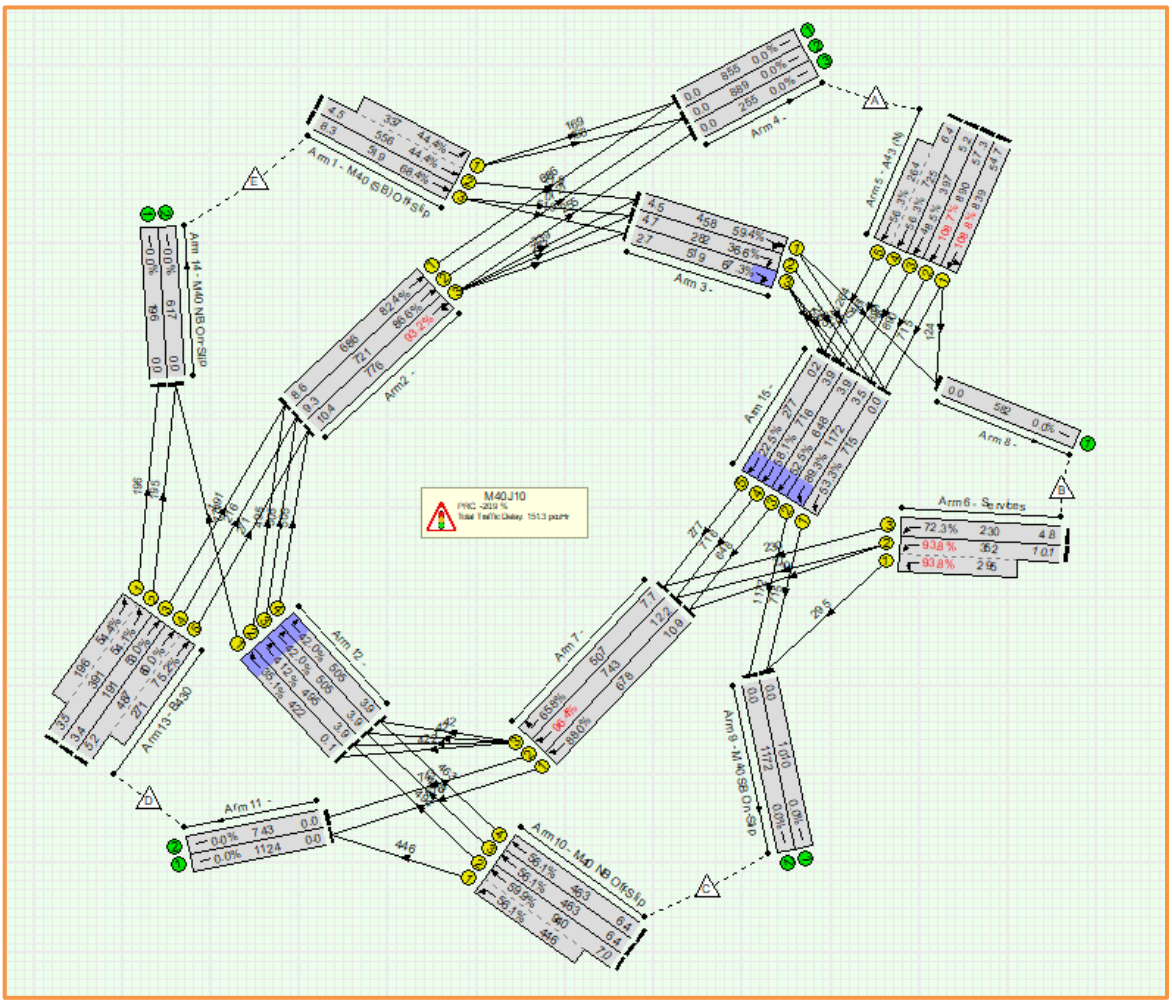
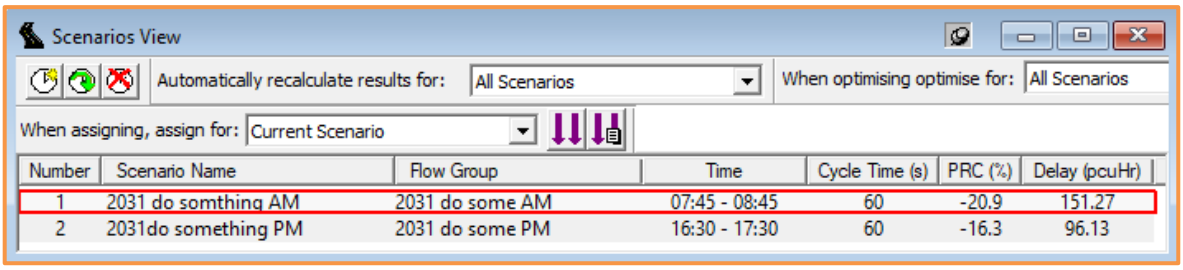


Figure 15: lane/link structure of single grade-separated gyratory model

6.56 This exercise has been solely focused on maximising the capacity. However, the geometrical feasibility of delivering such a large junction has not been considered.

6.57 The large, single grade-separated gyratory has been modelled using LinSig and the 2031 Do Something morning and evening peak hour traffic flows shown at Diagrams 63 and 64 at Appendix D of TN6. The results are summarised below and the full model report is contained in **Appendix 36**.



Number	Scenario Name	Flow Group	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2031 do somthing AM	2031 do some AM	07:45 - 08:45	60	-20.9	151.27
2	2031do something PM	2031 do some PM	16:30 - 17:30	60	-16.3	96.13

6.58 The results show that despite the large number of lanes on each approach, the junction would not operate within capacity in the morning and evening peak hours in 2031 Do Something scenario. In the morning peak hour the PRC would be -20.9% with the A43 southbound approach over capacity. In the evening peak hour, the PRC would be -16.3%.

6.59 Given the scale of the junction tested and the poor capacity results, it is concluded that no further work should be undertaken on this option.

Site access

6.60 It is proposed to access the site via a priority controlled roundabout onto the B430. The preliminary design a suitable arrangement is shown on **drawing OxSRFI-BWB-GEN-XX-SK-CH-SK018-S1-P2**. The northern arm would mark the start of the Ardley Bypass (with the existing section of the B430 to the north stopped-up) and the southern arm would be the existing B430. A segregated left-turn lane would be provided from the site access arm to the Ardley Bypass northbound.

6.61 The site access has been assessed using the 2031 Do Something traffic flows for the morning and evening peak hour, as shown at Diagrams 61 and 62 of Appendix D of Tn6. The results are summarised below and provided at **Appendix 37**.

	AM1				PM			
	Set ID	Queue (Veh)	Delay (s)	RFC	Set ID	Queue (Veh)	Delay (s)	RFC
Arm 1	D1	3.7	11.33	0.79	D3	1.3	4.70	0.57
Arm 2		0.1	4.39	0.05		1.4	10.58	0.59
Arm 3		3.6	7.45	0.79		1.5	4.66	0.60

6.62 The results presented above show that the site access roundabout would operate acceptably in both the morning and evening peak hours.

7.0 ACCESS STRATEGY APPRAISAL SUMMARY

7.1 The results of the capacity and geometrical assessments presented in Sections 6 and 5 of this Options Report have been rationalised into the summary table below, before highlighting the Strategic Options that will be taken forward to detailed assessment.

Option	Capacity appraisal		Geometry appraisal	Short list?
	Capacity	Comment		
P-1	No	Over capacity in both peaks	No specific appraisal	No
P-1 (alt)	No	Although modest improvement on Reference Case, junction is over capacity in AM peak	Additional NB and SB lanes required through junction on A43	No
P-2	N/A	Junction removed therefore not a constraint	Only compatible with options C-2, C-4, C-6 that relocate M40SB off-slip to Cherwell Roundabout. These options do not provide require capacity at Cherwell, so P-2 not feasible.	No
P-3	No	Over capacity in PM	No specific appraisal	No
P-4	Yes	Requires A43-M40 southbound link	No specific appraisal	Yes
P-5	N/A	Junction removed therefore not a constraint	Only compatible with options C-2, C-4, C-6 that relocate M40SB off-slip to Cherwell Roundabout. These options do not provide require capacity at Cherwell, so P-5 not feasible.	No
C-1	No	Over capacity in both peaks	M40 SB 2 lane merge (to all-purpose road parameters) is feasible	No
C-2	No	Over capacity in both peaks	M40 SB 2 lane merge (to all-purpose road parameters) is feasible	No
C-3	improvement on Reference Case	Over capacity in AM peak, but is only compatible with options that retain M40 SB merge at Cherwell Roundabout. These options are compatible with junction layout P-1 at Padbury, which does not provide sufficient capacity	M40 SB merge nose length can be reduced to standard length.	No
C-4	No	Over capacity in both peaks	M40 SB merge nose length can be reduced to standard length	No
C-5	Yes	Requires A43-M40 southbound link	A43-M40 southbound link is feasible	Yes
C-6	No	Over capacity in both peaks	No specific appraisal	No
C-7	improvement on Reference Case	Over capacity in PM	New SB free flow merge and retaining existing merge is not possible	No

Option	Capacity appraisal		Geometry appraisal	Short list?
	Capacity	Comment		
A-1	No	Over capacity, 5-arm roundabout not possible	Required two lane M40 NB diverge is not feasible without reconstruction of Ardley Road bridge	No
A-2	Yes	Requires signal control	No specific appraisal	Yes
A-3	Yes	Requires signal control	No specific appraisal	Yes
ACP-1	No	Over capacity in both peak hours	No specific appraisal	No
ACP-2	No	Padbury and Cherwell roundabouts would operate over capacity	Not feasible due to proximity of Baynard's Green roundabout to new merge	No
AE-1	Yes	No south facing slips so operates acceptably. Rejected as new SB slip required in combination with A43-M40 southbound link	No specific appraisal	No
AE-2	N/A	N/A	No specific appraisal but review of vertical alignment for option AE-8 would infer that this is feasible, but is rejected a does not provide south facing slips	No
AE-3	Yes	No south facing slips at junction, so operates acceptably	Ardley Rd Bridge carriageway is too narrow to be used by significant increase in traffic	No
AE-4	Yes	No M40 NB off-slip, so operates acceptably.	Requires M40 NB off-slip to be retain at Ardley Roundabout, but required two lane M40 NB diverge is not feasible without reconstruction of Ardley Road bridge	No
AE-5	No	Five arm junction does not operate with positive PRC	New SB slip bridge and NB slips	No
AE-6	Yes	Requires signal control	New SB slip bridge and NB slips	Yes
AE-7	Yes	Rejected as no A43-M40 southbound link.	New NB slip only and requires M40 to A43 NB free-flow link, which is not feasible due to proximity of Baynard's Green roundabout to new merge	No
AE-8	Yes	Requires signal control	New SB slip bridge and NB slips	Yes
Baynard's Green	No	Better than nil detriment improvement	No specific appraisal	Yes
Site access	Yes	Priority control acceptable	No specific appraisal	Yes

7.2 The junction options short-listed in the table above are compatible with Strategic Options 11, 13, 18 and 19 and will be taken to the next stage of development. These Strategic Options are shown at the following drawings:

- **OxSRFI-BWB-GEN-XX-SK-CH-SK011-S3-P03 '**M40 J10 Strategic Option 11'
- **OxSRFI-BWB-GEN-XX-SK-CH-SK012-S3-P03** 'M40 J10 Strategic Option 13'
- **OxSRFI-BWB-GEN-XX-SK-CH-SK013-S3-P03** 'M40 J10 Strategic Option 18'
- **OxSRFI-BWB-GEN-XX-SK-CH-SK014-S3-P03** 'M40 J10 Strategic Option 19'

8.0 SUMMARY, CONCLUSIONS AND NEXT STEPS

8.1 ADC Infrastructure Ltd and BWB Consulting Ltd are appointed by Oxfordshire Railfreight Interchange Ltd (the Applicant) to assess and design the transport and infrastructure requirements of a Nationally Significant Infrastructure Project (NSIP), that being a proposed Strategic Rail Freight Interchange in Oxfordshire, to be known as Oxfordshire Strategic Rail Freight Interchange (OxSRFI).

8.2 The purpose of this Options Report technical note has been to identify and assess a long list of interventions to be considered at M40 Junction 10 that could be implemented by the OxSRFI scheme to mitigate the impact of the OxSRFI development at the junction.

8.3 The baseline conditions at M40 Junction 10 are described along with the committed highway improvements at the junction, to establish the future baseline (Reference Case) conditions. The operation of M40 Junction 10 is examined in the Reference Case and Do Something scenarios (with the OxSRFI development in place) in a 2031 assessment year.

8.4 A separate report, Technical Note 6 'M40 Junction 10 Options Report – Traffic Flows Derivation' has been prepared by ADC Infrastructure Ltd setting out the traffic flow demands used in this Option Reports. This Options Report cross refers to Technical Note 6 and should be read in conjunction with that document.

8.5 The Applicant considers that a prerequisite for any access strategy that seeks to access the strategic road network (SRN) via M40 Junction 10 is the provision of a bypass around Ardley, including a new bridge over the Chiltern Railway Line. Due to the layout of the Ardley village, which predominantly extends to the west of the B430, the bypass would pass on the eastern side of the village, on the land between the M40 and B430.

8.6 The bypass would connect to M40 Junction 10 at the Ardley roundabout and is proposed as a dual carriageway. At the southern end of the bypass, a new roundabout would be provided south of the Chiltern Mainline railway (via a new bridge over the railway), connecting to the existing B430 (south) and providing direct access into the Proposed Development. The B430 to the north of the new site access roundabout would be stopped up for vehicular traffic, with the existing B430 traffic using the new bypass to access M40 Junction 10. The proposed Ardley Bypass therefore would remove through-traffic from the village and deliver the primary new site access road to the OxSRFI development.

8.7 Having established the prerequisite of the proposed Ardley Bypass, the optioneering for the access strategy has considered the different options for each of the junctions that make up the M40 Junction 10, namely:

- Padbury Roundabout;
- Cherwell Roundabout; and
- Ardley Roundabout.

8.8 In addition, the options surrounding a new junction (Ardley East) that could potentially be provided as part of the Ardley Bypass and would provide the opportunity to link with Ardley Road, and/or provide access to new south facing M40 slip roads, were also considered.

8.9 The resulting long list of junction options are detailed within Section 4 of this Options Report. Where appropriate the options they have been taken forward into a total of 19 wider scheme Strategic Options, that combine the different junction sub-options. High-level sketches of the arrangements for the 19 Strategic Options are presented.

8.10 Section 5 of this Options Report considers the feasibility of the 19 Strategic Options in terms of the required highway geometry. Section 6 summarises the results of the junction capacity modelling that has been undertaken, including the Baynard's Green Roundabout and the proposed OxSRFI Site Access Roundabout.

8.11 Based on the assessment work undertaken a short list of junction options is identified to be taken forward for more detailed consideration. The junction options short-listed in the are compatible with Strategic Options 11, 13, 18 and 19 and will be taken to the next stage of development. These Strategic Options are shown at the following drawings:

- **OxSRFI-BWB-GEN-XX-SK-CH-SK011-S3-P03** M40 J10 Strategic Option 11
- **OxSRFI-BWB-GEN-XX-SK-CH-SK012-S3-P03** M40 J10 Strategic Option 13
- **OxSRFI-BWB-GEN-XX-SK-CH-SK013-S3-P03** M40 J10 Strategic Option 18
- **OxSRFI-BWB-GEN-XX-SK-CH-SK014-S3-P03** M40 J10 Strategic Option 19

8.12 Following feedback from Highways England and Oxfordshire County Council on the findings of this Options Report, the next steps will include:

- Further development of general arrangements, both horizontal and vertical, including provisions for walking, cycling and horse-riding.
- Further assessment and refinement of the shortlisted Strategic Options, including testing within VISSIM.
- Walking, Cycling and Horse-Riding Assessment and Reviews.
- Stage 1 Road Safety Audits.
- Liaison with Highways England regarding departures from standard including obtaining acceptance provisional agreement.

DRAWINGS

Baynard's Green

Filling Station

B4100

A43

Baynards
Barn

Baynard House

Pond

Baynards Green Roundabout

A43

B4100

B4100

B4100

The layout is shown based on strategic options 18 & 19

The layout shown is for proof of concept and is subject to capacity assessment, WCHR reviews, road safety audits and agreement with the highway authority.

Facilities for WCHR are not currently shown and will be added in due course.

Draft Order Limits

Rev	Description	Date

Client:

Oxfordshire Rail Freight Interchange Ltd

Project:

OxSRFI
OXFORDSHIRE
STRATEGIC RAIL FREIGHT INTERCHANGE

Title:

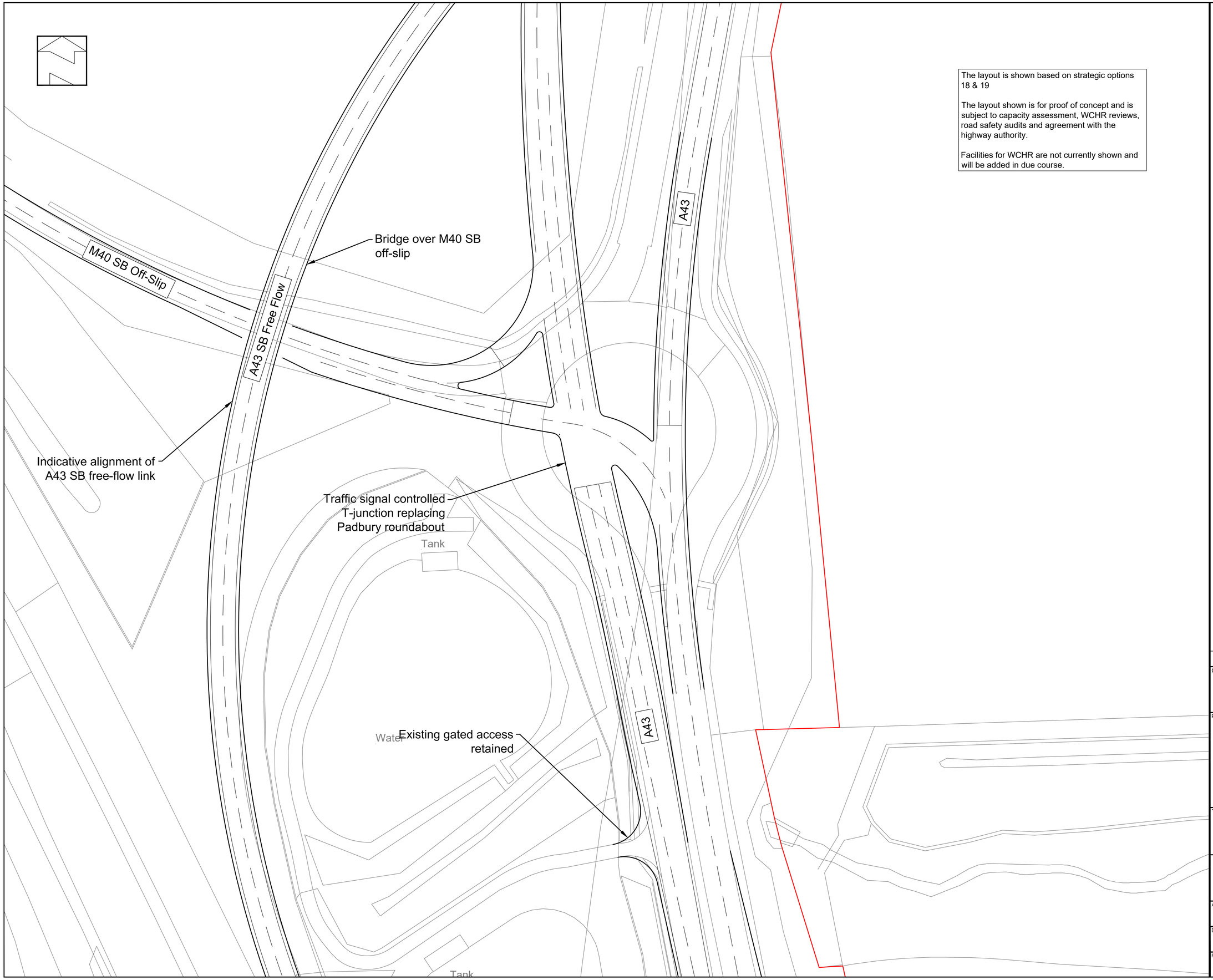
Baynards Green Roundabout
General Arrangement

ADC
INFRASTRUCTURE

ADC Ref:	Drawn:	Reviewed:
ADC1794	M. Higgins	S. Hilditch

Drg Size:	Scale:	Date:
A1	1:500	10/06/2021

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-ADC-GEN-XX-SK-CH-SK01	S1	P1



The layout is shown based on strategic options 18 & 19

The layout shown is for proof of concept and is subject to capacity assessment, WCHR reviews, road safety audits and agreement with the highway authority.

Facilities for WCHR are not currently shown and will be added in due course.

Draft Order Limits

Rev	Description	Date

Client:

Oxfordshire Rail Freight Interchange Ltd

Project:

OxSRFI
OXFORDSHIRE
STRATEGIC RAIL FREIGHT INTERCHANGE

Title:

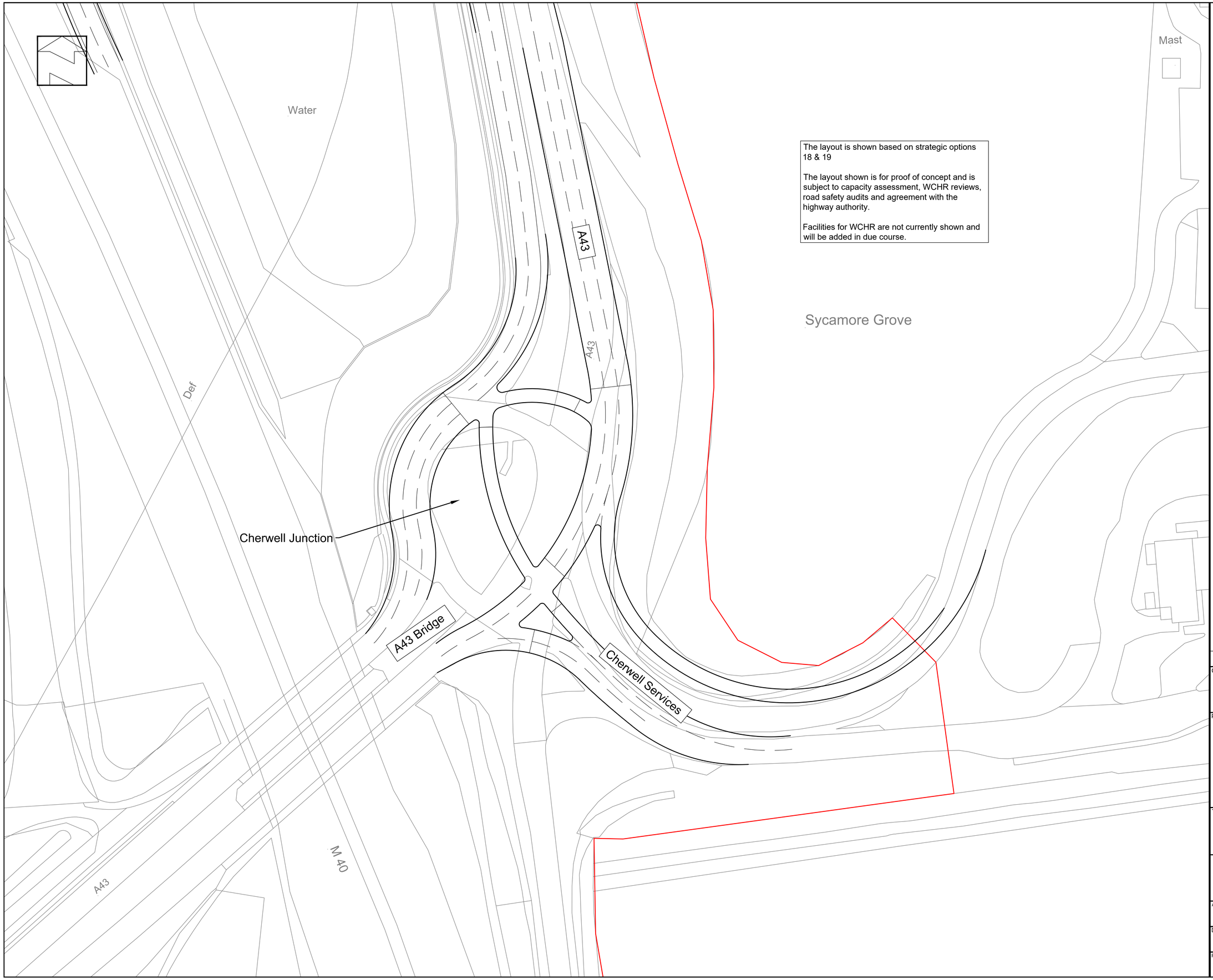
Padbury Roundabout
General Arrangement

ADC INFRASTRUCTURE

ADC Ref:	Drawn:	Reviewed:
ADC1794	M. Higgins	S. Hilditch

Drg Size:	Scale:	Date:
A1	1:500	10/06/2021

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-ADC-GEN-XX-SK-CH-SK02	S1	P1



The layout is shown based on strategic options 18 & 19

The layout shown is for proof of concept and is subject to capacity assessment, WCHR reviews, road safety audits and agreement with the highway authority.

Facilities for WCHR are not currently shown and will be added in due course.

Draft Order Limits

Rev	Description	Date

Client:
Oxfordshire Rail Freight Interchange Ltd

Project:
OxSRFI
OXFORDSHIRE
STRATEGIC RAIL FREIGHT INTERCHANGE

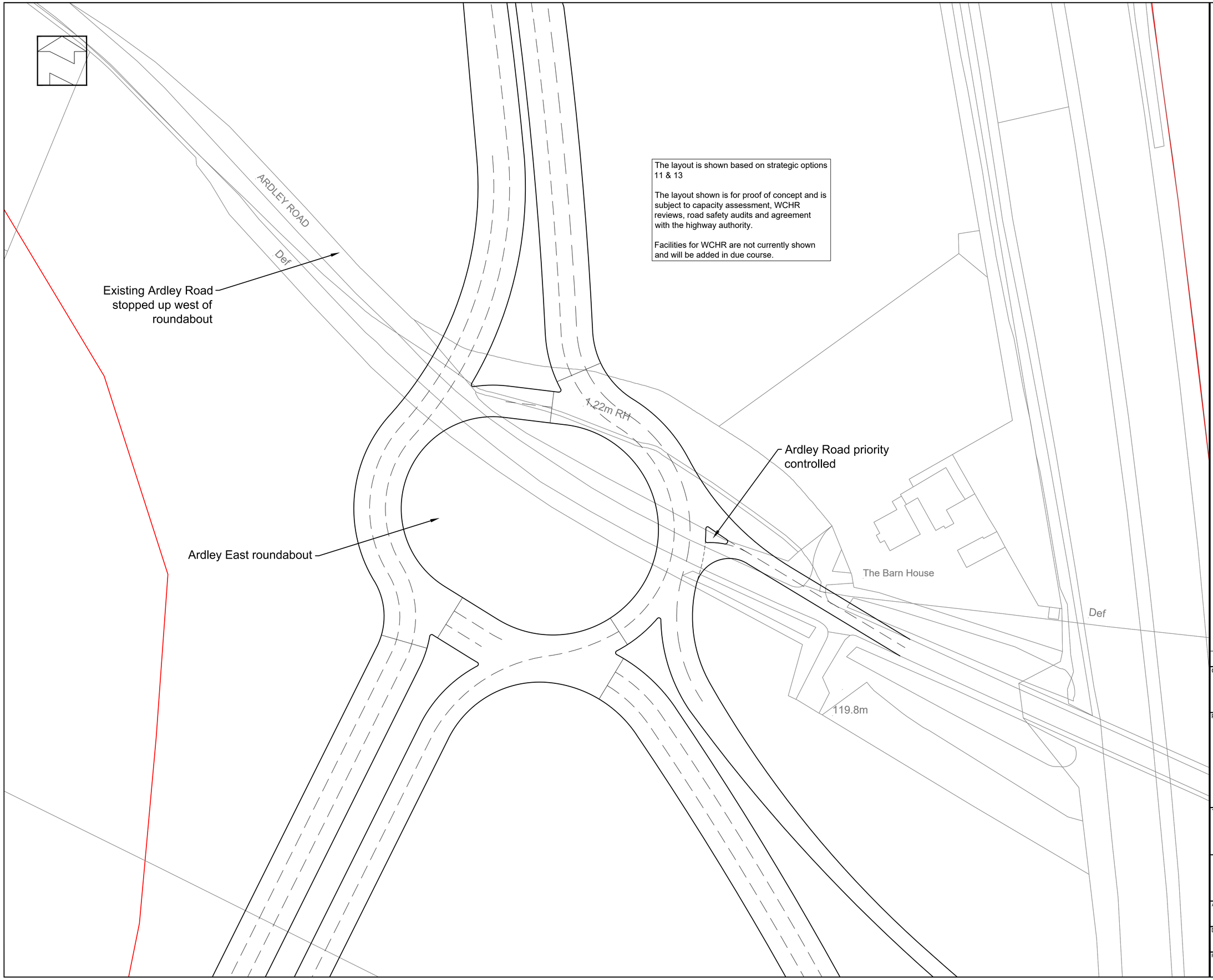
Title:
Cherwell Roundabout
General Arrangement

ADC
INFRASTRUCTURE

ADC Ref:	Drawn:	Reviewed:
ADC1794	M. Higgins	S. Hilditch

Drg Size:	Scale:	Date:
A1	1:500	10/06/2021

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-ADC-GEN-XX-SK-CH-SK03	S1	P1



Rev	Description	Date

Client:
Oxfordshire Rail Freight Interchange Ltd

Project:
OxSRFI
OXFORDSHIRE
STRATEGIC RAIL FREIGHT INTERCHANGE

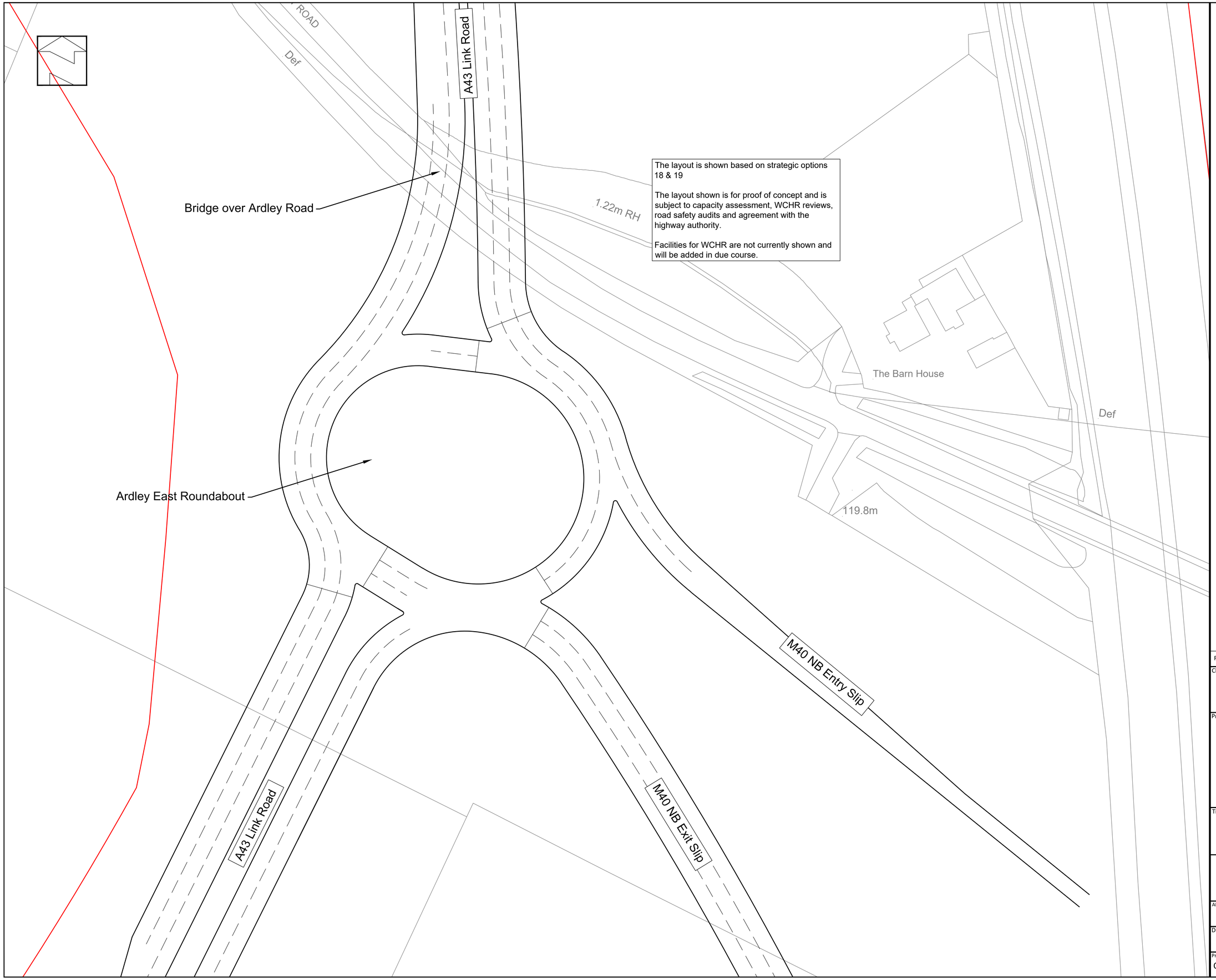
Title:
Ardley East Roundabout
General Arrangement
with link with Ardley Road

ADC
INFRASTRUCTURE

ADC Ref:	Drawn:	Reviewed:
ADC1794	M. Tatler	S. Hilditch

Drg Size:	Scale:	Date:
A1	1:500	10/06/2021

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-ADC-GEN-XX-SK-CH-SK04	S1	P1



Rev	Description	Date

Client:
Oxfordshire Rail Freight Interchange Ltd

Project:
OxSRFI
OXFORDSHIRE
STRATEGIC RAIL FREIGHT INTERCHANGE

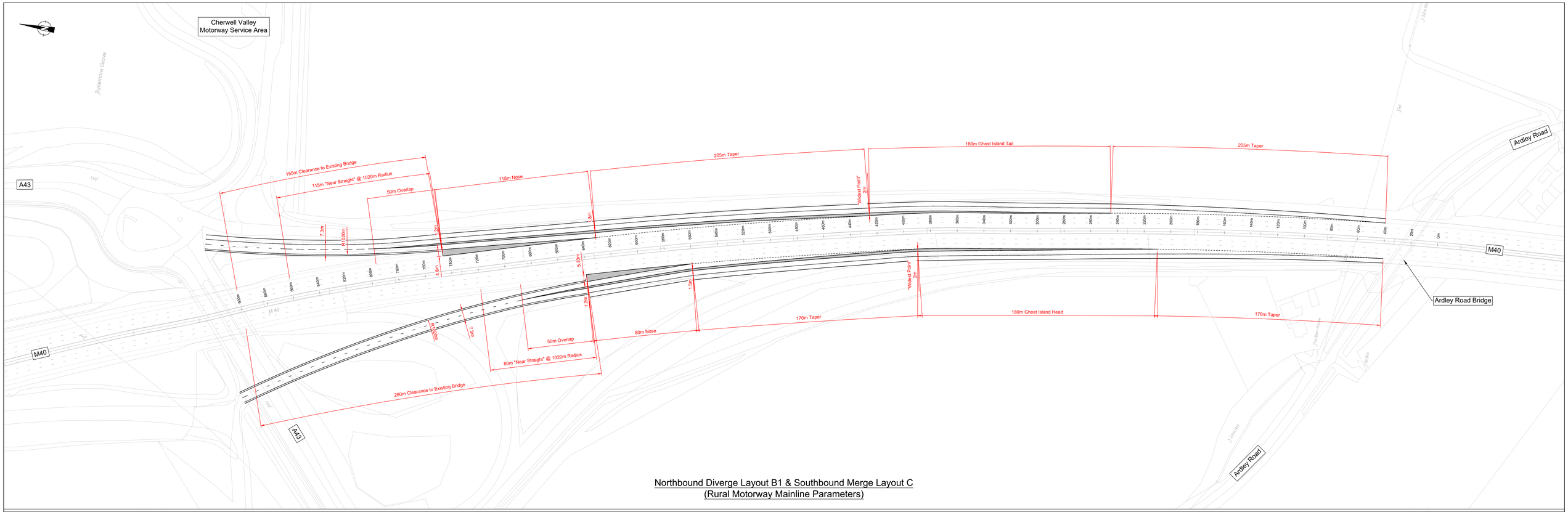
Title:
Ardley East Roundabout
General Arrangement
no link with Ardley Road

ADC
INFRASTRUCTURE

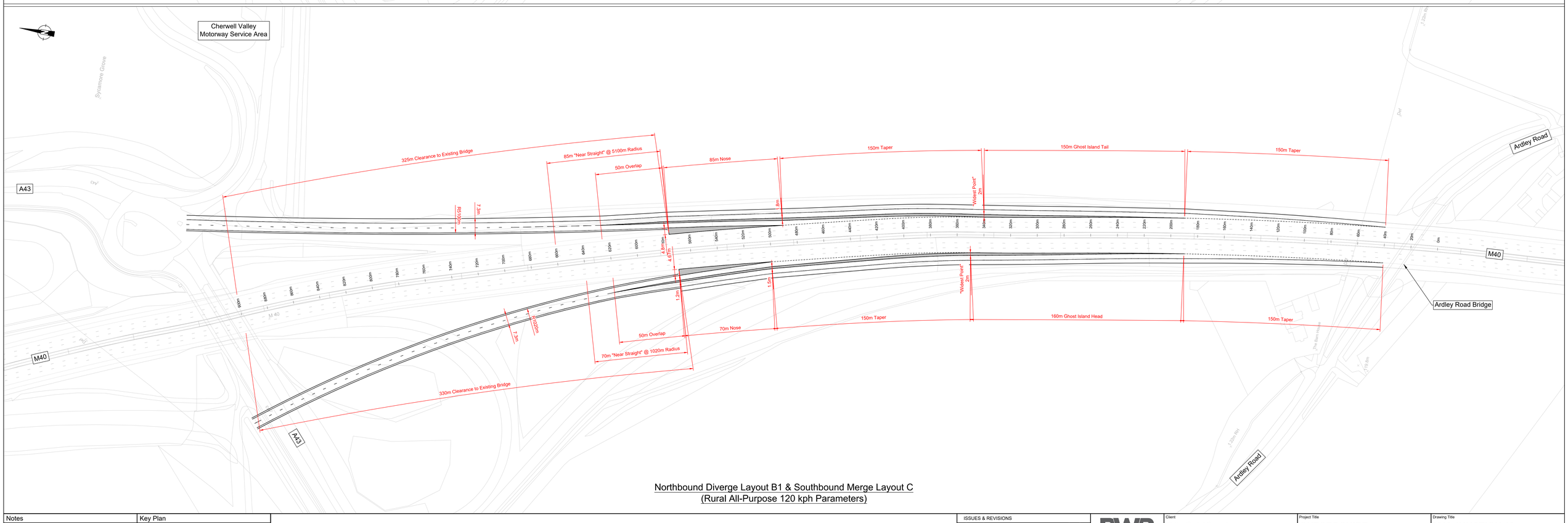
ADC Ref:	Drawn:	Reviewed:
ADC1794	M. Tatler	S. Hilditch

Drg Size:	Scale:	Date:
A1	1:500	10/06/2021

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-ADC-GEN-XX-SK-CH-SK05	S1	P1



Northbound Diverge Layout B1 & Southbound Merge Layout C
(Rural Motorway Mainline Parameters)



Northbound Diverge Layout B1 & Southbound Merge Layout C
(Rural All-Purpose 120 kph Parameters)

Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

© Copyright BWB Consulting Ltd

Key Plan

These layouts are provided to show the feasibility of different merge and diverge layouts

ISSUES & REVISIONS

Rev	Date	Details of issue / revision	Drw	Rev
P01	01.04.21	Preliminary Issue	RAL	SH

BWB CONSULTANCY | ENVIRONMENT INFRASTRUCTURE | BUILDINGS
Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client: **OXFORDSHIRE RAILFREIGHT INTERCHANGE LTD.**

Project Title: **OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE**

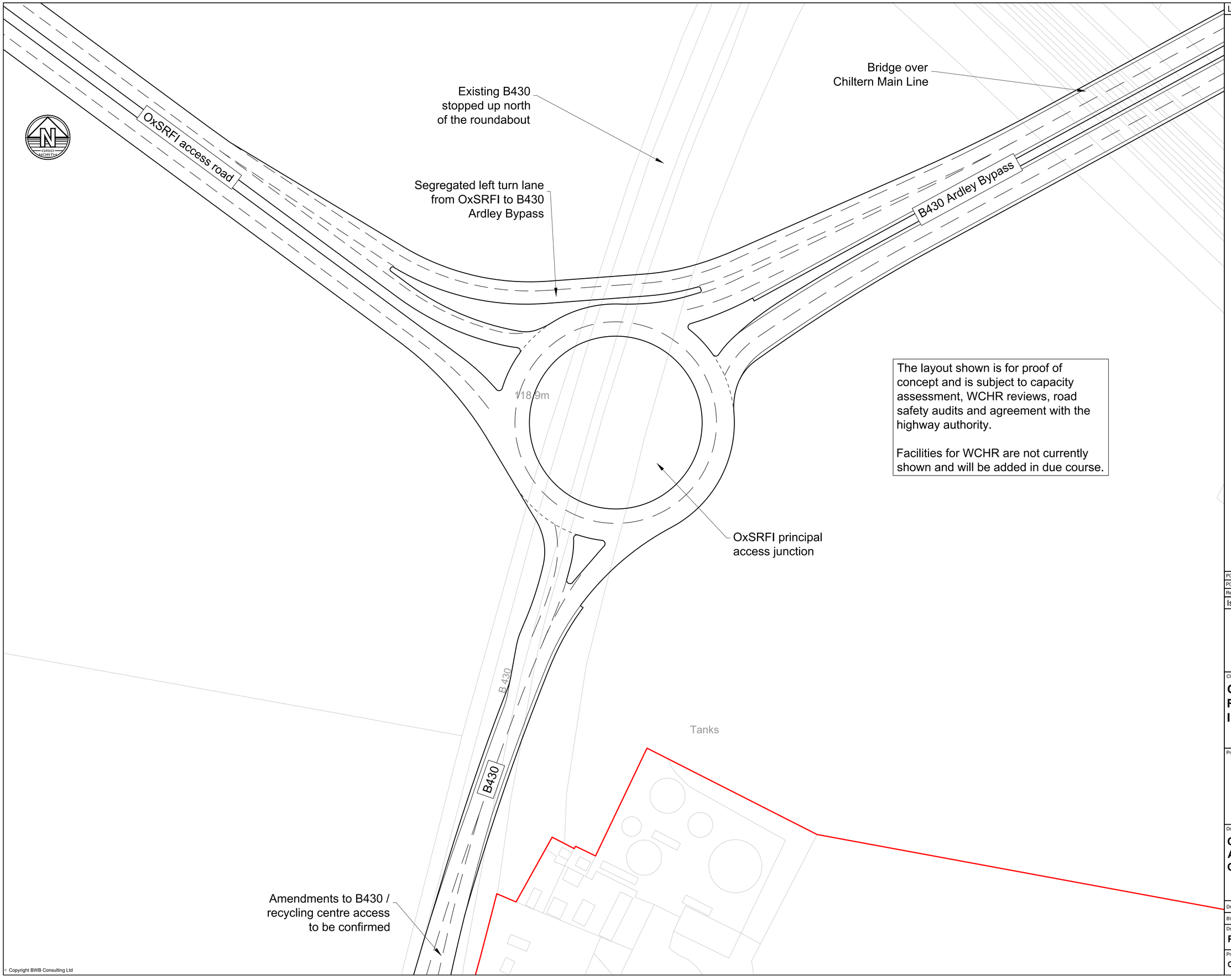
Drawing Title: **M40 JUNCTION 10 SLIP ROAD OPTIONS NORTHBOUND DIVERGE & SOUTHBOUND MERGE**

Drawn:	R. Leyland	Reviewed:	S. Hilditch
BWB Ref.	NTH 2479	Date:	Apr '21
Scale@A0:	1:1000		

Drawing Status: **PRELIMINARY**

Project - Originator - Zone - Level - Type - Role - Number: **OxSRFI-BWB-GEN-XX-SK-CH-SK008**

Status: **S01** Rev: **P01**



The layout shown is for proof of concept and is subject to capacity assessment, WCHR reviews, road safety audits and agreement with the highway authority.

Facilities for WCHR are not currently shown and will be added in due course.

Legend

Draft Order Limits

Rev	Date	Details of issue / revision	Drw	Rev
P02	09.06.21	B430 NB exit widened to two lanes	SRH	SRH
P01	04.06.21	Preliminary issue	SRH	SRH

Issues & Revisions

BWB CONSULTANCY | ENVIRONMENT INFRASTRUCTURE | BUILDINGS
Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7407 3879
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client

OXFORDSHIRE RAILFREIGHT INTERCHANGE LTD.

Project Title

OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title

OxSRFI PRINCIPAL ACCESS ROUNDABOUT GENERAL ARRANGEMENT

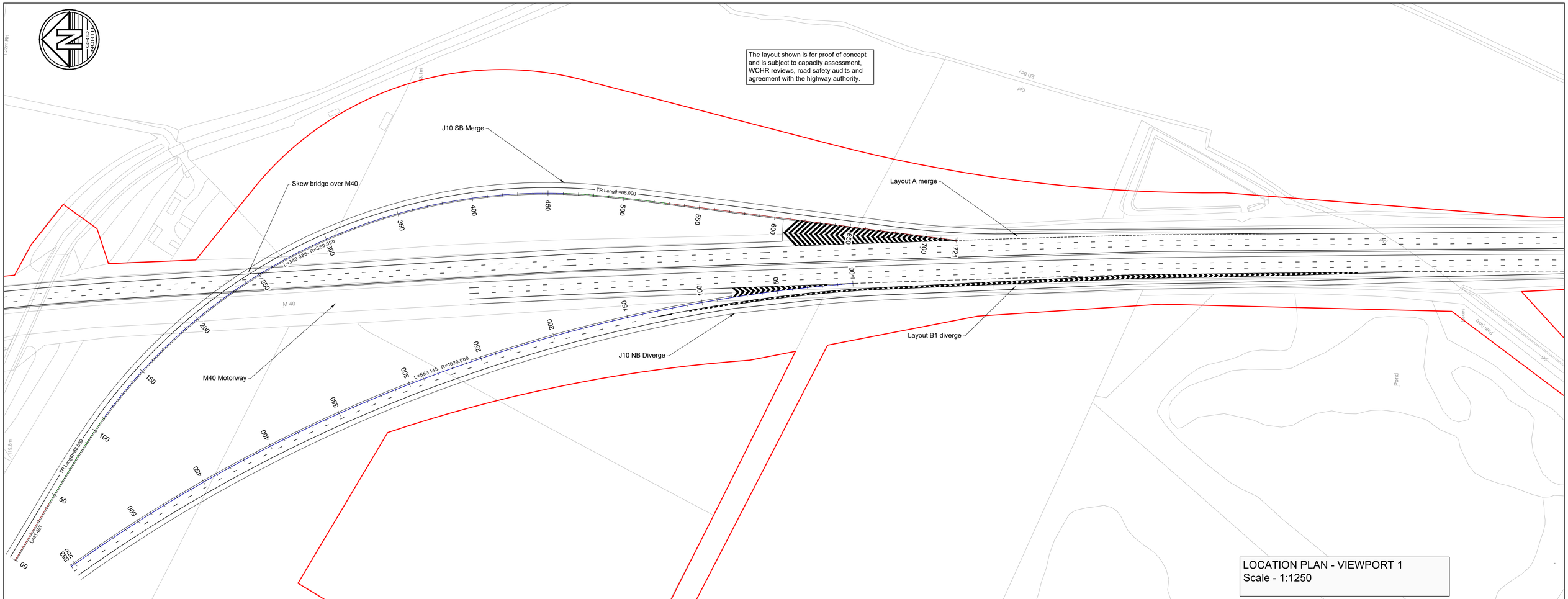
Drawn:	S. Hilditch		Reviewed:	S. Hilditch
BWB Ref:	NTH2479	Date:	04.06.21	Scale@A1: 1:500

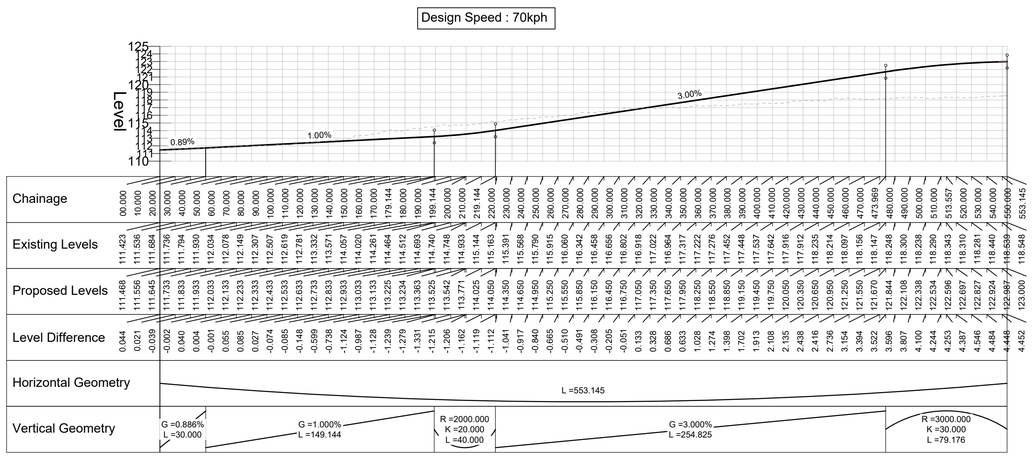
Drawing Status

PRELIMINARY

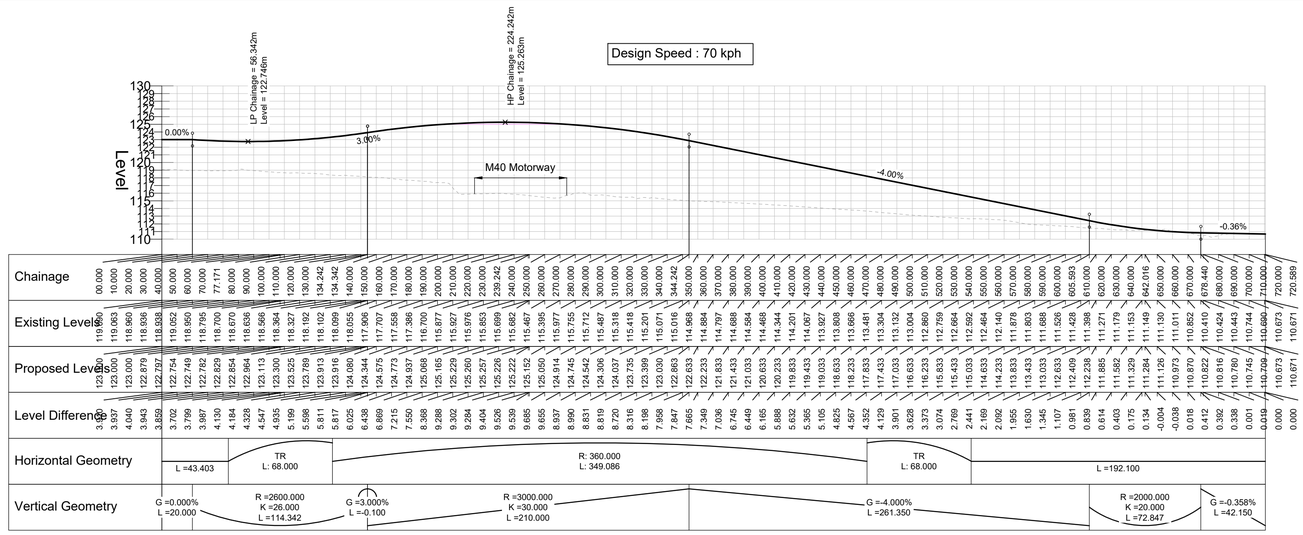
Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-BWB-GEN-ZZ-SK-CH-SK018	S1	P02

© Copyright BWB Consulting Ltd





J10 NB DIVERGE OS LONGSECTION (2)
SCALE: H 1:2000,V 1:400. DATUM: 110.000



J10 SB MERGE OS LONGSECTION
SCALE: H 1:2000,V 1:400. DATUM: 110.000

LONGSECTION VIEW - VIEWPORT 2
SCALE - 1:2000

Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

© Copyright BWB Consulting Ltd

Key Plan

Draft Order Limits

ISSUES & REVISIONS

Rev	Date	Details of issue / revision	Drw	Rev
P01	11.06.21	PRELIMINARY ISSUE	DA	SRH

BWB
A CAF GROUP COMPANY
Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

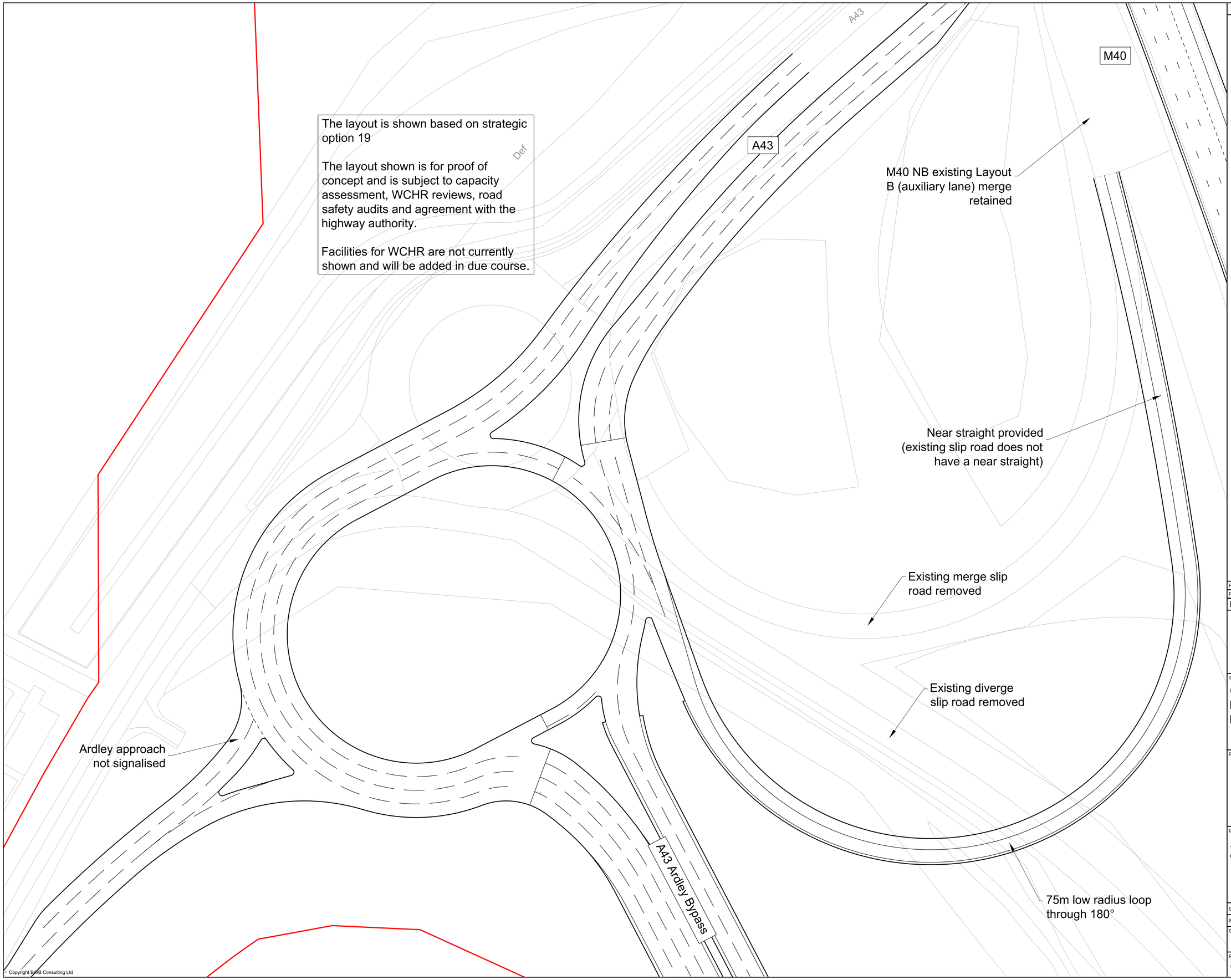
Client
OXFORDSHIRE RAILFREIGHT INTERCHANGE LTD.

Project Title
OxSRFI
OXFORDSHIRE
STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title
J10 SB MERGE & J10 NB DIVERGE GENERAL ARRANGEMENT & VERTICAL ALIGNMENT

Drawn:	D. Ajmal	Reviewed:	S. Hilditch	Drawing Status	Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
BWB Ref:	NTH2479	Date:	11.06.21	Scale@A1: As Shown	PRELIMINARY	OxSRFI-BWB-GEN-XX-SK-CH-SK019	S1	P01

Y:\NTH\NTH2479_Oxfordshire RFI\02. Project Delivery\01. WIP\Sketches\OxSRFI-BWB-GEN-XX-SK-CH-SK019 & SK021_ General Arrangement & Vertical Alignment.dwg



© Copyright BWB Consulting Ltd

Legend

Draft Order Limits

Rev	Date	Details of issue / revision	Drw	Rev
P01	09.06.21	Preliminary issue	SRH	SRH

Issues & Revisions

BWB CONSULTANCY | ENVIRONMENT INFRASTRUCTURE | BUILDINGS

Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7407 3879
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client

OXFORDSHIRE RAILFREIGHT INTERCHANGE LTD.

Project Title

OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title

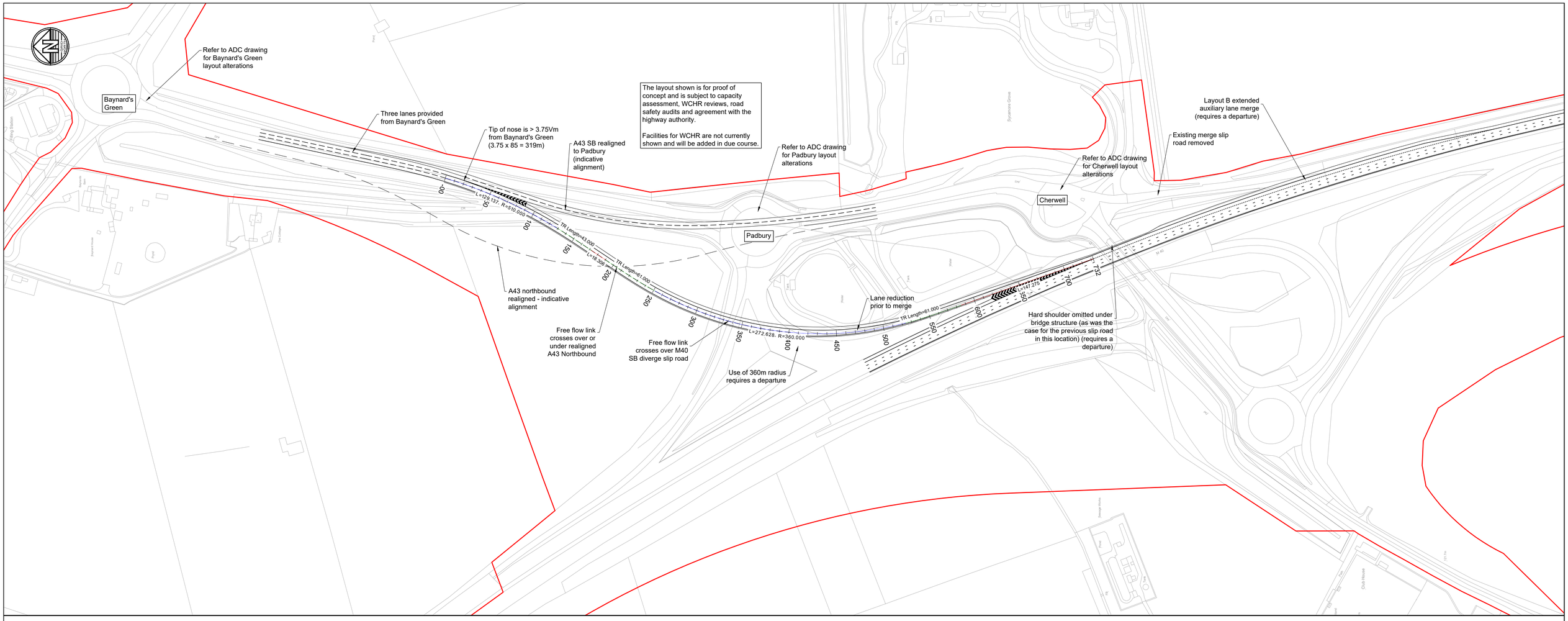
ARDLEY ROUNDABOUT GENERAL ARRANGEMENT

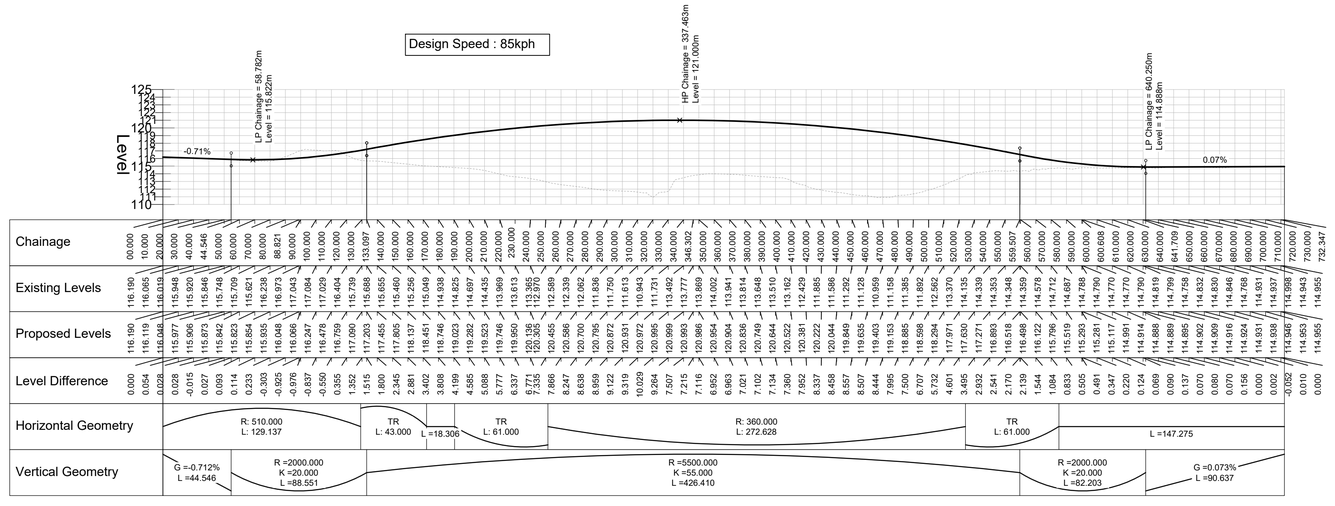
Drawn:	S. Hilditch		Reviewed:	S. Hilditch	
BWB Ref:	NTH2479	Date:	09.06.21	Scale@A1:	1:500

Drawing Status

PRELIMINARY

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-BWB-GEN-ZZ-SK-CH-SK020	S1	P01





A43 TO M40 SB MERGE LONGSECTION (1)
SCALE: H 1:2000,V 1:400. DATUM: 110.000

Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

© Copyright BWB Consulting Ltd

Key Plan

Order Limits

ISSUES & REVISIONS

Rev	Date	Details of issue / revision	Drw	Rev
P01	11.06.21	PRELIMINARY ISSUE	DA	SRH

BWB
A CAF GROUP COMPANY
Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client
OXFORDSHIRE RAILFREIGHT INTERCHANGE LTD.

Project Title
OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title
A43 TO M40 SB FREE FLOW MERGE GENERAL ARRANGEMENT & VERTICAL ALIGNMENT

Drawn:	D. Ajmal	Reviewed:	S. Hilditch		
BWB Ref:	NTH2479	Date:	11.06.21	Scale@A1:	1:2000

Drawing Status: **PRELIMINARY**

Project - Originator - Zone - Level - Type - Role - Number: **OxSRFI-BWB-GEN-XX-SK-CH-SK021**

Status: **S1** Rev: **P01**

Y:\NTH\NTH2479_Oxfordshire RFI\02. Project Delivery\01. WIP\Sketches\OxSRFI-BWB-GEN-XX-SK-CH-SK019 & SK021_ General Arrangement & Vertical Alignment.dwg

Baynard's Green

Further enlargement of A43 Baynard's Green roundabout (Core scheme is part of Oxfordshire Housing Growth Deal improvement delivered by Highways England)

A43 southbound to M40 southbound free flow link road

A43 northbound realigned to allow it to cross southbound free flow link

Bridge crossing of link roads

Bridge over southbound exit slip

Relocated northbound entry slip road

Padbury

Padbury roundabout changed to signalised junction

Southbound exit slip road improved as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Cherwell

Amendments to Cherwell roundabout

New southbound merge uses redundant carriageway

Alterations to MSA exit to direct all traffic to Cherwell roundabout

Ardley

Existing J10 southbound entry slip stopped up

Ardley roundabout enlarged

Existing J10 northbound exit slip stopped up

No vehicle link to Ardley (link retained for NMUs)

Ardley Road connection to Bucknell

Ardley East

New bridge over M40 for new J10 south facing slip

Existing B430 stopped up south of Ardley

J10 south facing slips relocated

Ardley bypass and OxSRFI link road

Segregated left turn lane

Bridge over Chiltern Mainline

Principal OxSRFI access

Roundabout on existing B430

SRFI

Fewcott

Ardley

Stoke Wood

© Copyright BWB Consulting Ltd

Legend

- Motorway (Highways England)
- All-purpose trunk road (Highways England)
- Other roads (OCC or private)
- Existing road stopped up
- Draft order limits

Rev	Date	Details of issue / revision	Drw	Rev
P03	11.06.21	Issued for options report	SRH	SRH
P02	18.05.21	Issued to team for comment	SRH	SRH
P01	17.05.21	Preliminary Issue	SRH	SRH

Issues & Revisions

BWB CONSULTANCY | ENVIRONMENT INFRASTRUCTURE | BUILDINGS

☐ Birmingham | 0121 233 3322
☐ Leeds | 0113 233 8000
☐ London | 020 7407 3879
☐ Manchester | 0161 233 4260
■ Nottingham | 0115 924 1100
www.bwbconsulting.com

Client

OXFORDSHIRE RAILFREIGHT INTERCHANGE LTD.

Project Title

OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title

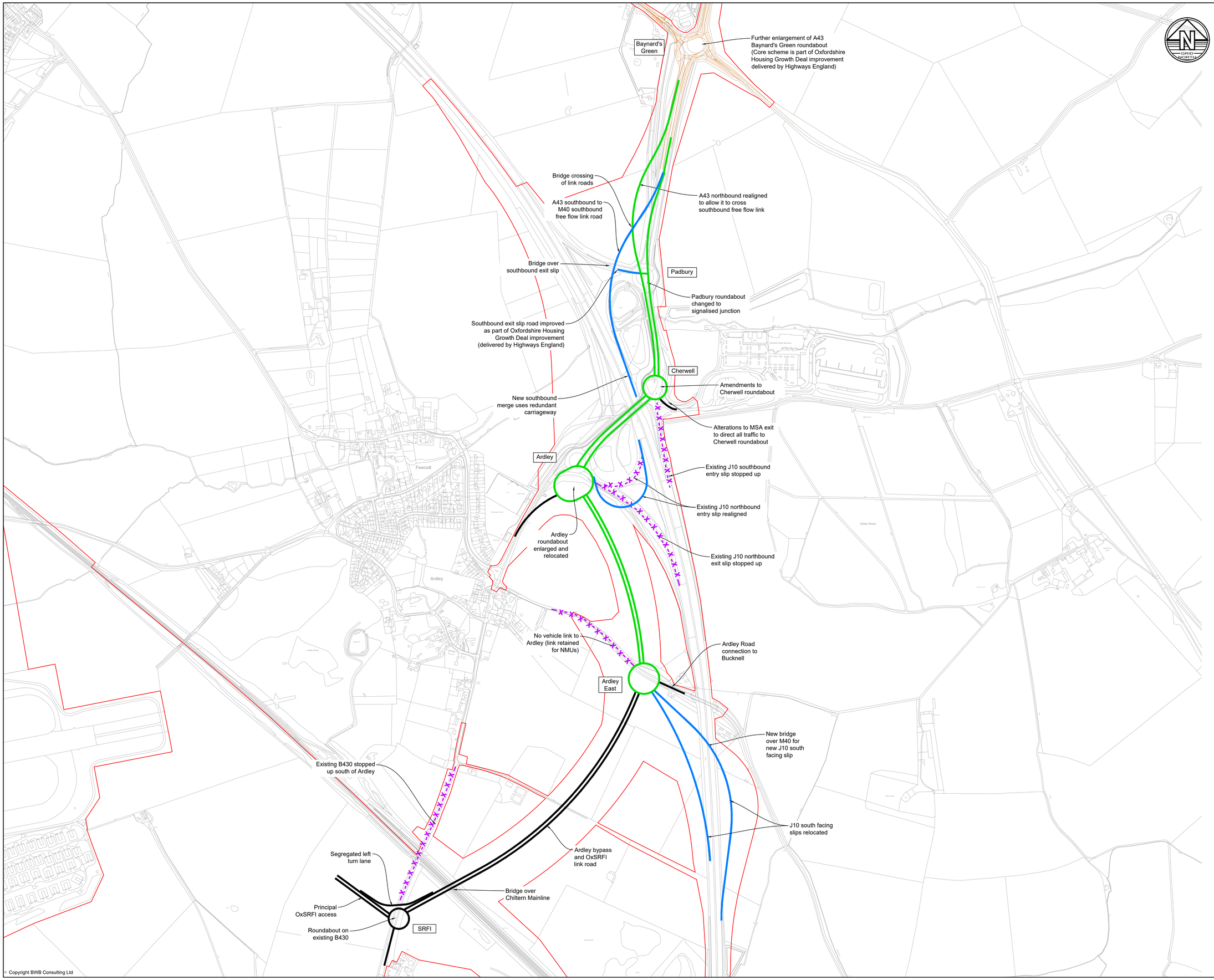
M40 JUNCTION 10 STRATEGIC OPTION 11

Drawn:	S. Hilditch		Reviewed:	S. Hilditch	
BWB Ref:	NTH2479	Date:	17.05.21	Scale@A1:	1:5,000

Drawing Status

FOR COMMENT

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-BWB-GEN-ZZ-SK-CH-SK011	S3	P03



© Copyright BWB Consulting Ltd

Legend

- Motorway (Highways England)
- All-purpose trunk road (Highways England)
- Other roads (OCC or private)
- Existing road stopped up
- Draft order limits

Rev	Date	Details of issue / revision	Drw	Rev
P03	11.06.21	Issued for options report	SRH	SRH
P02	18.05.21	Issued to team for comment	SRH	SRH
P01	17.05.21	Preliminary Issue	SRH	SRH

Issues & Revisions

BWB CONSULTANCY | ENVIRONMENT INFRASTRUCTURE | BUILDINGS

- ☐ Birmingham | 0121 233 3322
- ☐ Leeds | 0113 233 8000
- ☐ London | 020 7407 3879
- ☐ Manchester | 0161 233 4260
- ■ Nottingham | 0115 924 1100

www.bwbconsulting.com

Client

OXFORDSHIRE RAILFREIGHT INTERCHANGE LTD.

Project Title

OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title

M40 JUNCTION 10 STRATEGIC OPTION 13

Drawn:	S. Hilditch		Reviewed:	S. Hilditch	
BWB Ref:	NTH2479	Date:	17.05.21	Scale@A1:	1:5,000

Drawing Status

FOR COMMENT

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-BWB-GEN-ZZ-SK-CH-SK012	S3	P03

Baynard's Green

Further enlargement of A43 Baynard's Green roundabout (Core scheme is part of Oxfordshire Housing Growth Deal improvement delivered by Highways England)

A43 southbound to M40 southbound free flow link road

A43 northbound realigned to allow it to cross southbound free flow link

Bridge crossing of link roads

Bridge over southbound exit slip

Padbury

Relocated northbound entry slip road

Padbury roundabout changed to signalised junction

Southbound exit slip road improved as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Cherwell

Amendments to Cherwell roundabout

New southbound merge uses redundant carriageway

Alterations to MSA exit to direct all traffic to Cherwell roundabout

Ardley

Existing J10 southbound entry slip stopped up

Ardley roundabout enlarged

Existing J10 northbound exit slip stopped up

Ardley Road taken under or over new road link

Ardley East

New bridge over M40 for new J10 south facing slip

Existing B430 stopped up south of Ardley

J10 south facing slips relocated

Ardley bypass and OxSRFI link road

Segregated left turn lane

Bridge over Chiltern Mainline

Principal OxSRFI access

Roundabout on existing B430

SRFI

© Copyright BWB Consulting Ltd

Legend

- Motorway (Highways England)
- All-purpose trunk road (Highways England)
- Other roads (OCC or private)
- Existing road stopped up
- Draft order limits

Rev	Date	Details of issue / revision	Drw	Rev
P03	11.06.21	Issued for options report	SRH	SRH
P02	18.05.21	Issued to team for comment	SRH	SRH
P01	17.05.21	Preliminary Issue	SRH	SRH

Issues & Revisions

BWB CONSULTANCY | ENVIRONMENT INFRASTRUCTURE | BUILDINGS

- Birmingham | 0121 233 3322
- Leeds | 0113 233 8000
- London | 020 7407 3879
- Manchester | 0161 233 4260
- Nottingham | 0115 924 1100

www.bwbconsulting.com

Client

OXFORDSHIRE RAILFREIGHT INTERCHANGE LTD.

Project Title

OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title

M40 JUNCTION 10 STRATEGIC OPTION 18

Drawn:	S. Hilditch	Reviewed:	S. Hilditch
BWB Ref:	NTH2479	Date: 17.05.21	Scale@A1: 1:5,000

Drawing Status

FOR COMMENT

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-BWB-GEN-ZZ-SK-CH-SK013	S3	P03

Baynard's Green

Further enlargement of A43 Baynard's Green roundabout (Core scheme is part of Oxfordshire Housing Growth Deal improvement delivered by Highways England)

Bridge crossing of link roads

A43 southbound to M40 southbound free flow link road

A43 northbound realigned to allow it to cross southbound free flow link

Bridge over southbound exit slip

Padbury

Padbury roundabout changed to signalised junction

Southbound exit slip road improved as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Cherwell

New southbound merge uses redundant carriageway

Amendments to Cherwell roundabout

Alterations to MSA exit to direct all traffic to Cherwell roundabout

Ardley

Existing J10 southbound entry slip stopped up

Existing J10 northbound entry slip realigned

Ardley roundabout enlarged and relocated

Existing J10 northbound exit slip stopped up

Ardley Road taken under or over new road link

Ardley East

New bridge over M40 for new J10 south facing slip

J10 south facing slips relocated

Existing B430 stopped up south of Ardley

Segregated left turn lane

Ardley bypass and OxSRFI link road

Bridge over Chiltern Mainline

Principal OxSRFI access

Roundabout on existing B430

SRFI

Fewcott

Ardley

Stoke Wood

© Copyright BWB Consulting Ltd

Legend

- Motorway (Highways England)
- All-purpose trunk road (Highways England)
- Other roads (OCC or private)
- Existing road stopped up
- Draft order limits

Rev	Date	Details of issue / revision	Drw	Rev
P03	11.06.21	Issued for options report	SRH	SRH
P02	18.05.21	Issued to team for comment	SRH	SRH
P01	17.05.21	Preliminary Issue	SRH	SRH

Issues & Revisions

BWB CONSULTANCY | ENVIRONMENT INFRASTRUCTURE | BUILDINGS

☐ Birmingham | 0121 233 3322
☐ Leeds | 0113 233 8000
☐ London | 020 7407 3879
☐ Manchester | 0161 233 4260
■ Nottingham | 0115 924 1100
www.bwbconsulting.com

Client

OXFORDSHIRE RAILFREIGHT INTERCHANGE LTD.

Project Title

OxSRFI
OXFORDSHIRE
STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title

M40 JUNCTION 10 STRATEGIC OPTION 19

Drawn:	S. Hilditch		Reviewed:	S. Hilditch	
BWB Ref:	NTH2479	Date:	17.05.21	Scale@A1:	1:5,000

Drawing Status

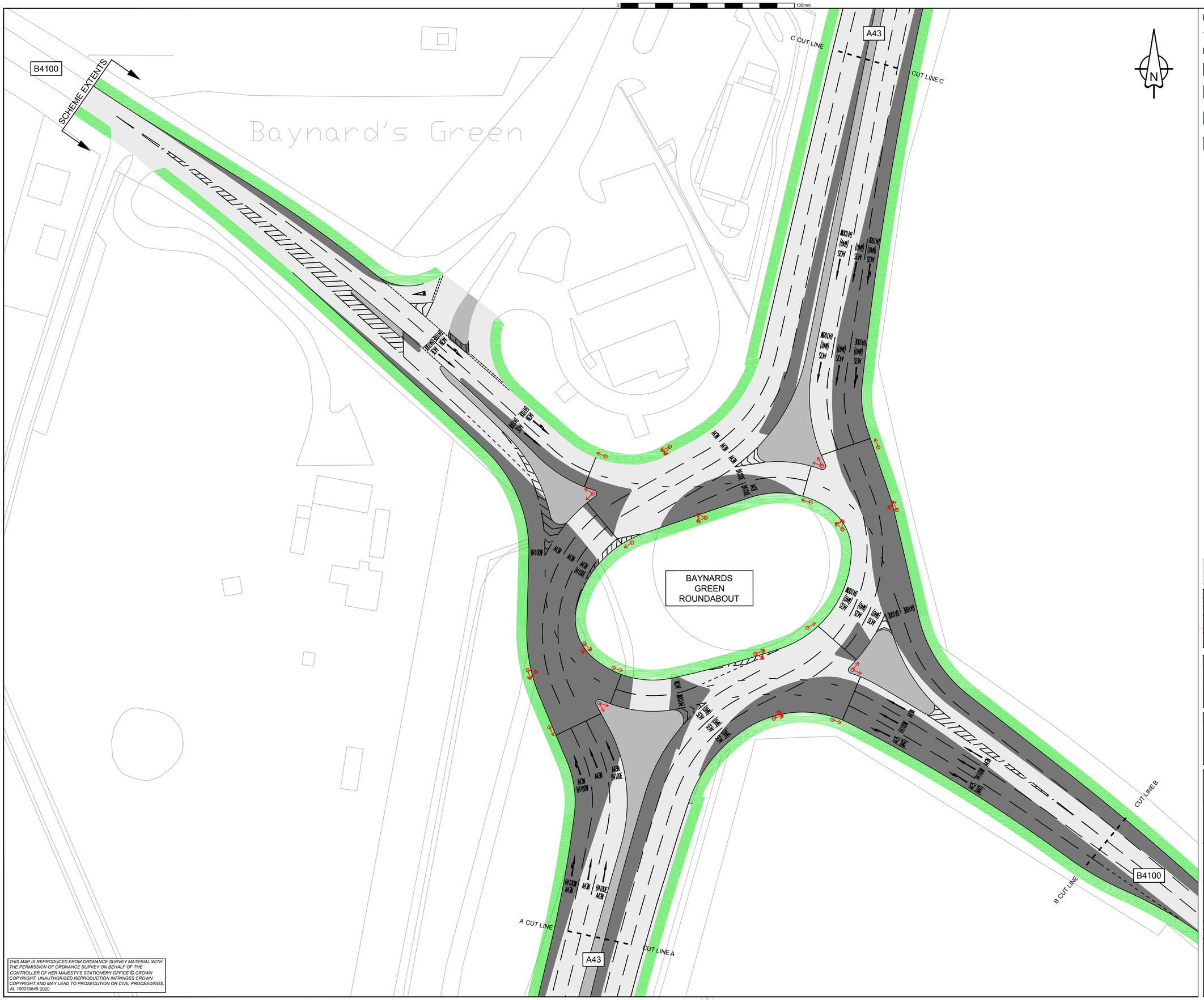
FOR COMMENT

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-BWB-GEN-ZZ-SK-CH-SK014	S3	P03

APPENDIX 1

Highways England committed improvement schemes at Baynard's Green and Padbury Roundabouts

0 100mm



THIS MAP IS REPRODUCED FROM ORDNANCE SURVEY MATERIAL WITH THE PERMISSION OF ORDNANCE SURVEY ON BEHALF OF THE CONTROLLER OF HER MAJESTY'S STATIONERY OFFICE © CROWN COPYRIGHT. UNAUTHORISED REPRODUCTION INFRINGES CROWN COPYRIGHT AND MAY LEAD TO PROSECUTION OR CIVIL PROCEEDINGS. AL 100030649 2020

NOTES:

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE STATED.

KEY:

- PROPOSED CARRIAGEWAY WIDENING WORKS.
- PROPOSED SPLITTER ISLANDS AND HARDSTANDING AREAS.
- VERGE.
- EXISTING CARRIAGEWAY, AREA TO REMAIN WITHIN EXTENTS OF WIDENING WORKS.
- PROPOSED TRAFFIC SIGNALS

REV	DETAILS	CHKD	APPD	DATE

DRAWN : ADB	DRAWING STATUS
DESIGN : ADB	WORK IN PROGRESS ✓
CHKD :	PRELIMINARY DRAWING
APPD :	EXTERNAL ISSUE
DATE :	AS-BUILT
SUITABILITY : S0	NOT FOR ISSUE

CLIENT
highways england

AGENT
KIER

SCHEME NAME
M40 J10 IMPROVEMENT SCHEME

DRAWING TITLE
BAYNARDS GREEN ROUNDABOUT
GENERAL ARRANGEMENT
SHEET 1 OF 2

ORIG DRAWING SIZE : A1	DIMENSIONS : m
COPYRIGHT © KIER	SCALE : 1:500

DRAWING NUMBER

PROJECT	ORIGINATOR	VOLUME
HE604237	KIER	GEN

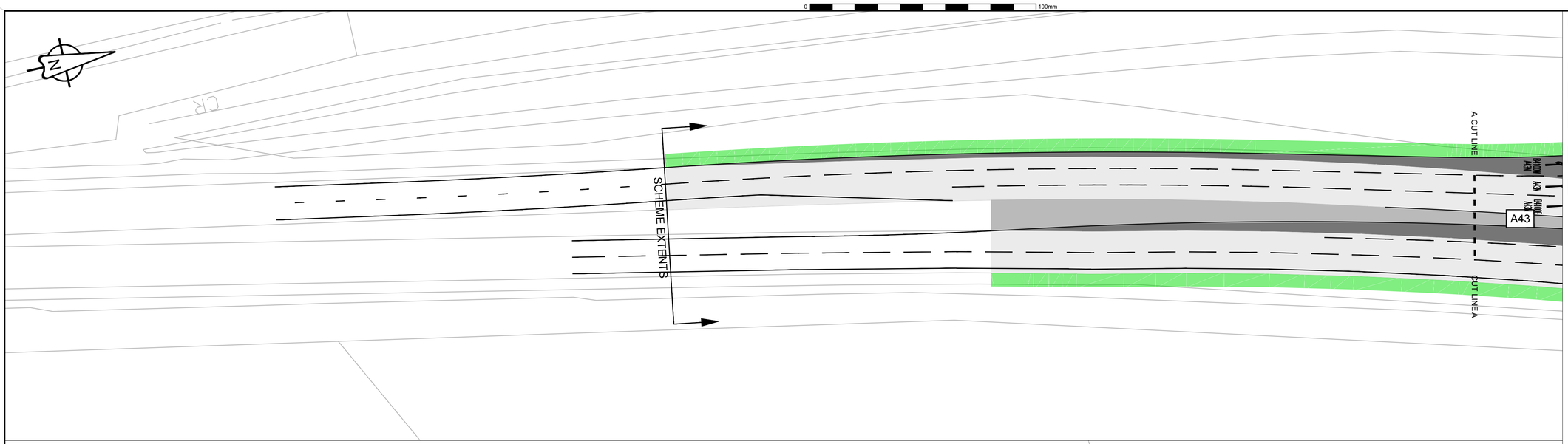
LOCATION	TYPE	ROLE	NUMBER
M40_JN10_Z	DR	CH	0100_02

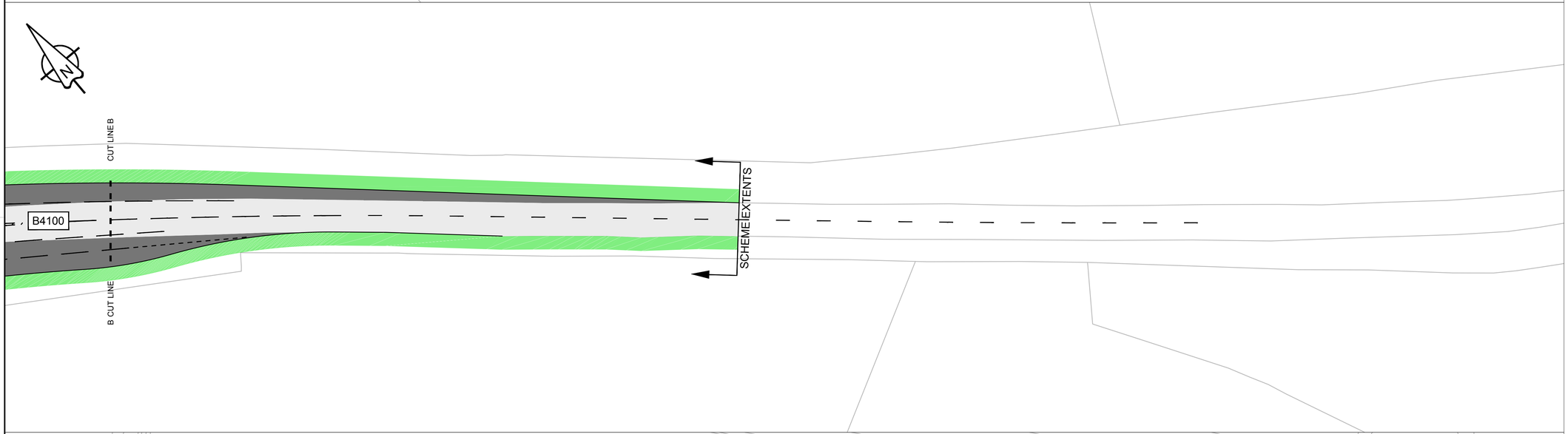
SCHEME REFERENCE No. 2170038

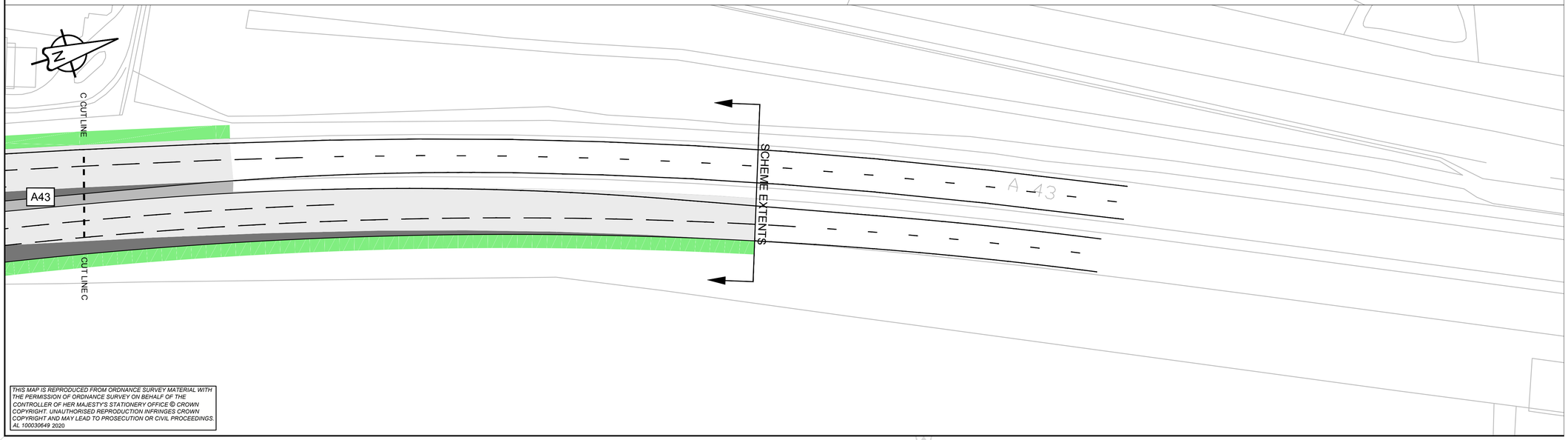
REVISION -

File ref - n:\s278 schemes\604237 - s278 m40 j10 baynards green\03 drawings\01 - live drawings\gen\ga.dwg Plotted 31.03.2020 by Antbenne

0 100mm







NOTES:

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE STATED.

KEY:

- PROPOSED CARRIAGEWAY WIDENING WORKS.
- PROPOSED SPLITTER ISLANDS AND HARDSTANDING AREAS.
- VERGE.
- EXISTING CARRIAGEWAY, AREA TO REMAIN WITHIN EXTENTS OF WIDENING WORKS.
- PROPOSED TRAFFIC SIGNALS

REV	DETAILS	CHKD	APPD	DATE

DRAWN : ADB		DRAWING STATUS:	
DESIGN : ADB		WORK IN PROGRESS	✓
CHKD :		PRELIMINARY DRAWING	
APPD :		EXTERNAL ISSUE	
DATE :		AS-BUILT	

SUITABILITY: S0 NOT FOR ISSUE

CLIENT: highways england

AGENT: KIER

SCHEME NAME
M40 J10 IMPROVEMENT SCHEME

DRAWING TITLE
BAYNARDS GREEN ROUNDABOUT
GENERAL ARRANGEMENT
SHEET 2 OF 2

ORIG DRAWING SIZE : A1	DIMENSIONS : m
COPYRIGHT © KIER	SCALE : 1:500

DRAWING NUMBER

PROJECT	ORIGINATOR	VOLUME	SCHEME REFERENCE No.
HE604237	KIER	GEN	2170038

LOCATION	TYPE	ROLE	NUMBER	REVISION
M40_JN10_Z	DR	CH	0100_03	-

THIS MAP IS REPRODUCED FROM ORDNANCE SURVEY MATERIAL WITH THE PERMISSION OF ORDNANCE SURVEY ON BEHALF OF THE CONTROLLER OF HER MAJESTY'S STATIONERY OFFICE © CROWN COPYRIGHT. UNAUTHORISED REPRODUCTION INFRINGES CROWN COPYRIGHT AND MAY LEAD TO PROSECUTION OR CIVIL PROCEEDINGS. AL 100030649 2020

0 100mm

N

SCHEME EXTENTS

EXISTING HARDSHOULDER TO BE TERMINATED IN ADVANCE OF THE PROPOSED LEFT TURN LANE. END OF HARD SHOULDER MARKINGS SHALL BE IN ACCORDANCE WITH TSRGD DIA 1040.5

EXISTING TRAFFIC SIGNS WITHIN THE PROPOSED SCHEME EXTENTS TO BE REMOVED. ALL NEW TRAFFIC SIGNS SHALL BE MOUNTED ON PASSIVELY SAFE POSTS WHERE THERE IS A REQUIREMENT TO PROTECT SUCH SIGNS AGAINST VEHICLE IMPACT

M40 J10 SB EXIT SLIP ROAD

PROPOSED STREET LIGHTING EXTENTS ON THE M40 J10 SB EXIT SLIP ROAD TO BE REVIEWED AS PART OF THE DETAILED DESIGN. ALL NEW STREET LIGHTING SHALL BE PASSIVELY SAFE

EXISTING M40 J10 SB EXIT SLIP ROAD TO HAVE AN ADDITIONAL LANE NEARSIDE LANE CONSTRUCTED WHICH IS TO UTILISE PART OF THE EXISTING HARDSHOULDER. TOTAL LENGTH OF NEW LANE SHALL BE 80M, WITH 3.65M WIDE LANES

EXISTING OFFSIDE RRS TO BE REMOVED

M40 DBFO HIGHWAY BOUNDARY

AREE 7 HIGHWAY BOUNDARY

M40 J10 EXIT SLIP RD TO A43 PADBURY ROUNDABOUT TO BE SIGNALISED. LOCATION OF MOVA LOOPS & DUCTING TO BE INSTALLED WITHIN THE SLIP ROAD TO BE DETERMINED AT DETAILED DESIGN

EXISTING M40 J10 EXIT SLIP RD & A43 HIGHWAY DRAINAGE TO BE REVIEWED AT DETAILED DESIGN TO DETERMINE EXISTING CAPACITY. ANY ADDITIONAL HIGHWAY FLOWS SHALL BE ATTENUATED WITHIN THE EXISTING HIGHWAY BOUNDARY PRIOR TO IT BEING DISCHARGED INTO THE EXISTING ATTENUATION BASIN

EXISTING ATTENUATION BASIN

M40 SB

M40 NB

SCHEME EXTENTS

A43 RESURFACING EXTENTS SHALL BE DETERMINED AT THE DETAILED DESIGN STAGE, ONCE ALL GEOMETRY REQUIREMENTS ARE KNOWN

A43 N

A43 S

EXISTING A43 PADBURY ROUNDABOUT TO BE FULLY SIGNALISED

A43/M40 J10 PADBURY ROUNDABOUT

EXISTING STREET LIGHTING AT A43 PADBURY ROUNDABOUT TO BE REVIEWED WITHIN SCHEME EXTENTS AS PART OF THE DETAILED DESIGN. ALL NEW STREET LIGHTING SHALL BE PASSIVELY SAFE

A43 N

A43 S

A43 RESURFACING EXTENTS SHALL BE DETERMINED AT THE DETAILED DESIGN STAGE, ONCE ALL GEOMETRY REQUIREMENTS ARE KNOWN

SCHEME EXTENTS

THIS MAP IS REPRODUCED FROM ORDNANCE SURVEY MATERIAL WITH THE PERMISSION OF ORDNANCE SURVEY ON BEHALF OF THE CONTROLLER OF HER MAJESTY'S STATIONERY OFFICE © CROWN COPYRIGHT. UNAUTHORISED REPRODUCTION INFRINGES CROWN COPYRIGHT AND MAY LEAD TO PROSECUTION OR CIVIL PROCEEDINGS. AL 100030649 2020

NOTES:

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE STATED.

KEY:

- PROPOSED CARRIAGEWAY WIDENING WORKS.
- PROPOSED SPLITTER ISLANDS AND HARDSTANDING AREAS.
- EXISTING VERGE.
- EXISTING CARRIAGEWAY, AREA TO REMAIN WITHIN EXTENTS OF WIDENING WORKS.
- PROPOSED TRAFFIC SIGNALS
- HIGHWAYS ENGLAND MAINTENANCE BOUNDARY

REV	DETAILS	CHKD	APPD	DATE

DRAWN : JSL	
DESIGN : ADB	
CHKD :	
APPD :	
DATE :	
SUITABILITY: S0	NOT FOR ISSUE

DRAWING STATUS	
WORK IN PROGRESS	✓
PRELIMINARY DRAWING	
EXTERNAL ISSUE	
AS-BUILT	

CLIENT
highways england

AGENT
KIER

SCHEME NAME
M40 J10 IMPROVEMENT SCHEME

DRAWING TITLE
PADBURY ROUNDABOUT GENERAL ARRANGEMENT

ORIG DRAWING SIZE : A1	DIMENSIONS : m
COPYRIGHT © KIER	SCALE : 1:500

DRAWING NUMBER

PROJECT	ORIGINATOR	VOLUME
HE604237	KIER	GEN

LOCATION	TYPE	ROLE	NUMBER
M40_JN10_Z	DR	CH	0100_04

SCHEME REFERENCE No. 2170038

REVISION -

APPENDIX 2

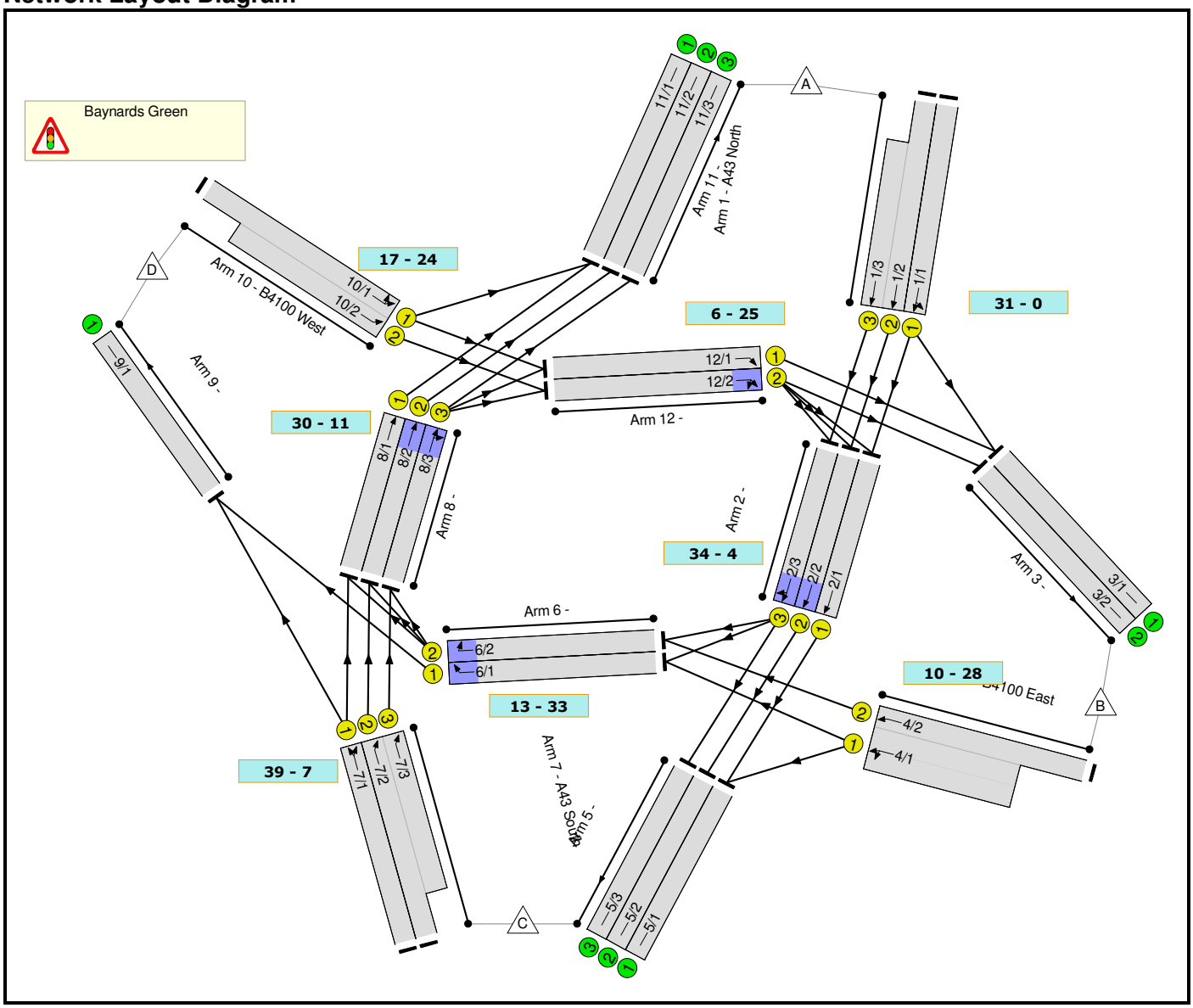
Baynards Green Roundabout committed scheme – LinSig results

Full Input Data And Results

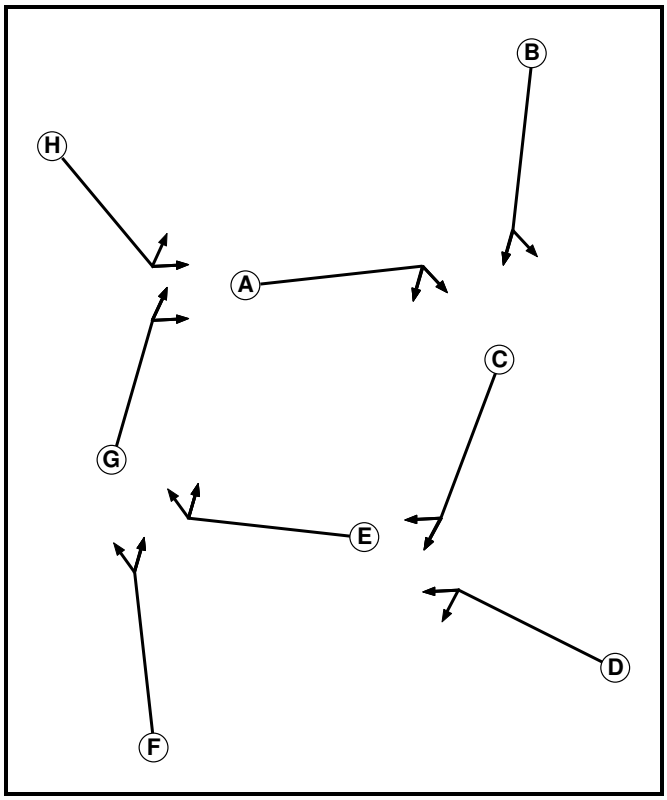
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Baynards Green Committed Scheme**
Location:	
Additional detail:	
File name:	210406 Baynards Gn - committed scheme.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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
E	Traffic	3		7	7
F	Traffic	3		7	7
G	Traffic	4		7	7
H	Traffic	4		7	7

Phase Intergreens Matrix

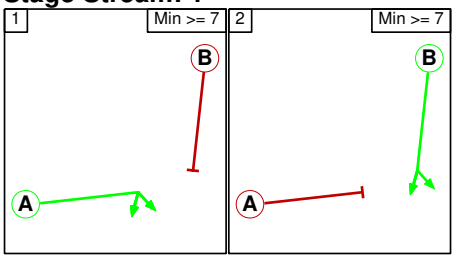
		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A		6	-	-	-	-	-	-
	B	6		-	-	-	-	-	-
	C	-	-		6	-	-	-	-
	D	-	-	6		-	-	-	-
	E	-	-	-	-		6	-	-
	F	-	-	-	-	6		-	-
	G	-	-	-	-	-	-		6
	H	-	-	-	-	-	-	6	

Phases in Stage

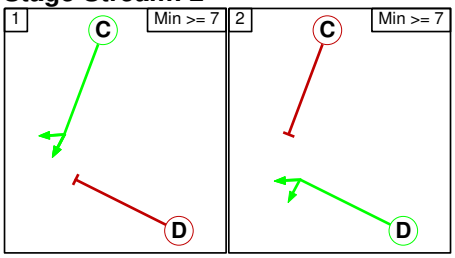
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F
4	1	G
4	2	H

Stage Diagram

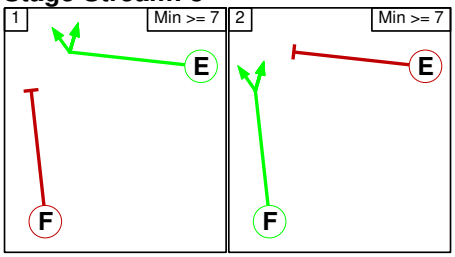
Stage Stream: 1



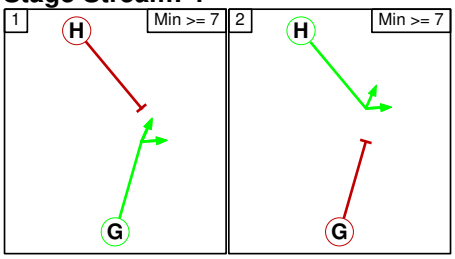
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Prohibited Stage Change

Stage Stream: 1

	To Stage		
From Stage		1	2
	1		6
	2	6	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		6
	2	6	

Stage Stream: 3

	To Stage		
From Stage		1	2
	1		6
	2	6	

Stage Stream: 4

	To Stage		
From Stage		1	2
	1		6
	2	6	

Lane Input Data

Junction: Baynards Green												
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 (A43 North)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 2 Ahead	50.00
											Arm 3 Left	50.00
1/2 (A43 North)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 2 Ahead	50.00
1/3 (A43 North)	U	B	2	3	24.3	Geom	-	3.65	0.00	Y	Arm 2 Ahead	50.00
2/1	U	C	2	3	8.7	User	1850	-	-	-	-	-
2/2	U	C	2	3	8.7	User	1850	-	-	-	-	-
2/3	U	C	2	3	8.7	User	1850	-	-	-	-	-
3/1	U		2	3	60.0	Inf	-	-	-	-	-	-
3/2	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1 (B4100 East)	U	D	2	3	10.4	User	3600	-	-	-	-	-
4/2 (B4100 East)	U	D	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 6 Ahead	50.00
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
5/3	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U	E	2	3	10.4	User	1800	-	-	-	-	-
6/2	U	E	2	3	10.4	User	1800	-	-	-	-	-
7/1 (A43 South)	U	F	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 8 Ahead	50.00
											Arm 9 Ahead	50.00
7/2 (A43 South)	U	F	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 8 Ahead	50.00
7/3 (A43 South)	U	F	2	3	22.6	Geom	-	3.65	0.00	Y	Arm 8 Ahead	50.00
8/1	U	G	2	3	8.7	User	1850	-	-	-	-	-
8/2	U	G	2	3	8.7	User	1850	-	-	-	-	-
8/3	U	G	2	3	8.7	User	1850	-	-	-	-	-
9/1	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (B4100 West)	U	H	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 11 Left	30.00
											Arm 12 Ahead	40.00

10/2 (B4100 West)	U	H	2	3	22.6	Geom	-	3.50	0.00	Y	Arm 12 Ahead	40.00
11/1	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2	U		2	3	60.0	Inf	-	-	-	-	-	-
11/3	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1	U	A	2	3	9.6	User	1800	-	-	-	-	-
12/2	U	A	2	3	9.6	User	1800	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Baynards1_AM'	07:45	08:45	01:00	
3: 'Baynards1_PM'	16:30	17:30	01:00	
5: 'BaynardsRef1_AM'	07:45	08:45	01:00	
7: 'BaynardsRef1_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Reference Case - AM Peak' (FG5: 'BaynardsRef1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	446	2247	70	2763
	B	350	0	212	306	868
	C	1468	287	0	125	1880
	D	72	296	123	1	492
	Tot.	1890	1029	2582	502	6003

Traffic Lane Flows

Lane	Scenario 1: 2031 Reference Case - AM Peak
Junction: Baynards Green	
1/1	978
1/2 (with short)	1785(In) 892(Out)
1/3 (short)	893
2/1	569
2/2	929
2/3	943
3/1	785
3/2	244
4/1 (short)	518
4/2 (with short)	868(In) 350(Out)
5/1	781
5/2	929
5/3	872
6/1	377
6/2	350
7/1	553
7/2 (with short)	1327(In) 663(Out)
7/3 (short)	664
8/1	544
8/2	780
8/3	781
9/1	502
10/1 (with short)	492(In) 252(Out)
10/2 (short)	240
11/1	616
11/2	780
11/3	494
12/1	339
12/2	368

Lane Saturation Flows

Junction: Baynards Green

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 (A43 North)	3.65	0.00	Y	Arm 2 Ahead	50.00	54.4 %	1922	1922
				Arm 3 Left	50.00	45.6 %		
1/2 (A43 North)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/3 (A43 North)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
2/1	This lane uses a directly entered Saturation Flow						1850	1850
2/2	This lane uses a directly entered Saturation Flow						1850	1850
2/3	This lane uses a directly entered Saturation Flow						1850	1850
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1 (B4100 East Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
4/2 (B4100 East)	3.50	0.00	Y	Arm 6 Ahead	50.00	100.0 %	1908	1908
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf
6/1	This lane uses a directly entered Saturation Flow						1800	1800
6/2	This lane uses a directly entered Saturation Flow						1800	1800
7/1 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	50.00	77.4 %	1922	1922
				Arm 9 Ahead	50.00	22.6 %		
7/2 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
7/3 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
8/1	This lane uses a directly entered Saturation Flow						1850	1850
8/2	This lane uses a directly entered Saturation Flow						1850	1850
8/3	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
10/1 (B4100 West)	3.50	0.00	Y	Arm 11 Left	30.00	28.6 %	1887	1887
				Arm 12 Ahead	40.00	71.4 %		
10/2 (B4100 West)	3.50	0.00	Y	Arm 12 Ahead	40.00	100.0 %	1894	1894
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
11/3	Infinite Saturation Flow						Inf	Inf
12/1	This lane uses a directly entered Saturation Flow						1800	1800
12/2	This lane uses a directly entered Saturation Flow						1800	1800

Scenario 2: '2031 Do Something - AM Peak' (FG1: 'Baynards1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	446	2516	70	3032
	B	350	0	212	306	868
	C	1587	287	0	125	1999
	D	72	296	123	1	492
	Tot.	2009	1029	2851	502	6391

Traffic Lane Flows

Lane	Scenario 2: 2031 Do Something - AM Peak
Junction: Baynards Green	
1/1	1140
1/2 (with short)	1892(In) 925(Out)
1/3 (short)	967
2/1	732
2/2	962
2/3	1016
3/1	778
3/2	251
4/1 (short)	518
4/2 (with short)	868(In) 350(Out)
5/1	944
5/2	962
5/3	945
6/1	377
6/2	350
7/1	625
7/2 (with short)	1374(In) 687(Out)
7/3 (short)	687
8/1	620
8/2	802
8/3	802
9/1	502
10/1 (with short)	492(In) 252(Out)
10/2 (short)	240
11/1	692
11/2	802
11/3	515
12/1	332
12/2	375

Lane Saturation Flows

Junction: Baynards Green

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 (A43 North)	3.65	0.00	Y	Arm 2 Ahead	50.00	60.9 %	1922	1922
				Arm 3 Left	50.00	39.1 %		
1/2 (A43 North)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/3 (A43 North)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
2/1	This lane uses a directly entered Saturation Flow						1850	1850
2/2	This lane uses a directly entered Saturation Flow						1850	1850
2/3	This lane uses a directly entered Saturation Flow						1850	1850
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1 (B4100 East Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
4/2 (B4100 East)	3.50	0.00	Y	Arm 6 Ahead	50.00	100.0 %	1908	1908
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf
6/1	This lane uses a directly entered Saturation Flow						1800	1800
6/2	This lane uses a directly entered Saturation Flow						1800	1800
7/1 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	50.00	80.0 %	1922	1922
				Arm 9 Ahead	50.00	20.0 %		
7/2 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
7/3 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
8/1	This lane uses a directly entered Saturation Flow						1850	1850
8/2	This lane uses a directly entered Saturation Flow						1850	1850
8/3	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
10/1 (B4100 West)	3.50	0.00	Y	Arm 11 Left	30.00	28.6 %	1887	1887
				Arm 12 Ahead	40.00	71.4 %		
10/2 (B4100 West)	3.50	0.00	Y	Arm 12 Ahead	40.00	100.0 %	1894	1894
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
11/3	Infinite Saturation Flow						Inf	Inf
12/1	This lane uses a directly entered Saturation Flow						1800	1800
12/2	This lane uses a directly entered Saturation Flow						1800	1800

Scenario 3: '2031 Reference Case - PM Peak' (FG7: 'BaynardsRef1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	2	467	1283	45	1797
	B	637	0	240	372	1249
	C	2198	230	0	90	2518
	D	37	244	47	3	331
	Tot.	2874	941	1570	510	5895

Traffic Lane Flows

Lane	Scenario 3: 2031 Reference Case - PM Peak
Junction: Baynards Green	
1/1	536
1/2 (with short)	1261(In) 631(Out)
1/3 (short)	630
2/1	113
2/2	633
2/3	634
3/1	714
3/2	227
4/1 (short)	612
4/2 (with short)	1249(In) 637(Out)
5/1	353
5/2	633
5/3	584
6/1	420
6/2	639
7/1	811
7/2 (with short)	1707(In) 848(Out)
7/3 (short)	859
8/1	946
8/2	1062
8/3	1059
9/1	510
10/1 (with short)	331(In) 169(Out)
10/2 (short)	162
11/1	983
11/2	1062
11/3	829
12/1	247
12/2	277

Lane Saturation Flows

Junction: Baynards Green

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 (A43 North)	3.65	0.00	Y	Arm 2 Ahead	50.00	12.9 %	1922	1922
				Arm 3 Left	50.00	87.1 %		
1/2 (A43 North)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/3 (A43 North)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
2/1	This lane uses a directly entered Saturation Flow						1850	1850
2/2	This lane uses a directly entered Saturation Flow						1850	1850
2/3	This lane uses a directly entered Saturation Flow						1850	1850
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1 (B4100 East Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
4/2 (B4100 East)	3.50	0.00	Y	Arm 6 Ahead	50.00	100.0 %	1908	1908
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf
6/1	This lane uses a directly entered Saturation Flow						1800	1800
6/2	This lane uses a directly entered Saturation Flow						1800	1800
7/1 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	50.00	88.9 %	1922	1922
				Arm 9 Ahead	50.00	11.1 %		
7/2 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
7/3 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
8/1	This lane uses a directly entered Saturation Flow						1850	1850
8/2	This lane uses a directly entered Saturation Flow						1850	1850
8/3	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
10/1 (B4100 West)	3.50	0.00	Y	Arm 11 Left	30.00	21.9 %	1889	1889
				Arm 12 Ahead	40.00	78.1 %		
10/2 (B4100 West)	3.50	0.00	Y	Arm 12 Ahead	40.00	100.0 %	1894	1894
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
11/3	Infinite Saturation Flow						Inf	Inf
12/1	This lane uses a directly entered Saturation Flow						1800	1800
12/2	This lane uses a directly entered Saturation Flow						1800	1800

Scenario 4: '2031 Do Something - PM Peak' (FG3: 'Baynards1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	2	467	1435	45	1949
	B	637	0	240	372	1249
	C	2473	230	0	90	2793
	D	37	244	47	3	331
	Tot.	3149	941	1722	510	6322

Traffic Lane Flows

Lane	Scenario 4: 2031 Do Something - PM Peak
Junction: Baynards Green	
1/1	581
1/2 (with short)	1368(In) 684(Out)
1/3 (short)	684
2/1	119
2/2	708
2/3	705
3/1	715
3/2	226
4/1 (short)	612
4/2 (with short)	1249(In) 637(Out)
5/1	359
5/2	708
5/3	655
6/1	420
6/2	639
7/1	946
7/2 (with short)	1847(In) 911(Out)
7/3 (short)	936
8/1	1067
8/2	1125
8/3	1150
9/1	510
10/1 (with short)	331(In) 169(Out)
10/2 (short)	162
11/1	1104
11/2	1125
11/3	920
12/1	248
12/2	276

Lane Saturation Flows

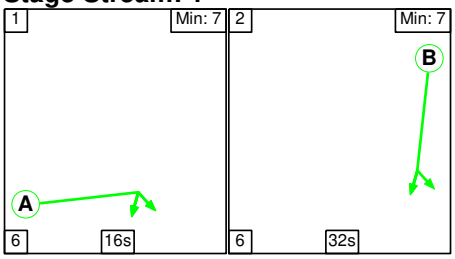
Junction: Baynards Green

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 (A43 North)	3.65	0.00	Y	Arm 2 Ahead	50.00	19.6 %	1922	1922
				Arm 3 Left	50.00	80.4 %		
1/2 (A43 North)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/3 (A43 North)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
2/1	This lane uses a directly entered Saturation Flow						1850	1850
2/2	This lane uses a directly entered Saturation Flow						1850	1850
2/3	This lane uses a directly entered Saturation Flow						1850	1850
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1 (B4100 East Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
4/2 (B4100 East)	3.50	0.00	Y	Arm 6 Ahead	50.00	100.0 %	1908	1908
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf
6/1	This lane uses a directly entered Saturation Flow						1800	1800
6/2	This lane uses a directly entered Saturation Flow						1800	1800
7/1 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	50.00	90.5 %	1922	1922
				Arm 9 Ahead	50.00	9.5 %		
7/2 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
7/3 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
8/1	This lane uses a directly entered Saturation Flow						1850	1850
8/2	This lane uses a directly entered Saturation Flow						1850	1850
8/3	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
10/1 (B4100 West)	3.50	0.00	Y	Arm 11 Left	30.00	21.9 %	1889	1889
				Arm 12 Ahead	40.00	78.1 %		
10/2 (B4100 West)	3.50	0.00	Y	Arm 12 Ahead	40.00	100.0 %	1894	1894
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
11/3	Infinite Saturation Flow						Inf	Inf
12/1	This lane uses a directly entered Saturation Flow						1800	1800
12/2	This lane uses a directly entered Saturation Flow						1800	1800

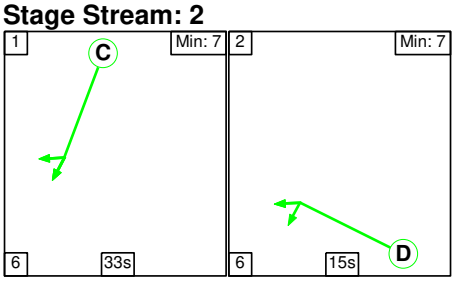
Scenario 1: '2031 Reference Case - AM Peak' (FG5: 'BaynardsRef1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

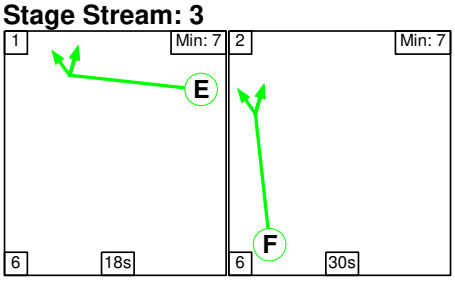
Stage Stream: 1



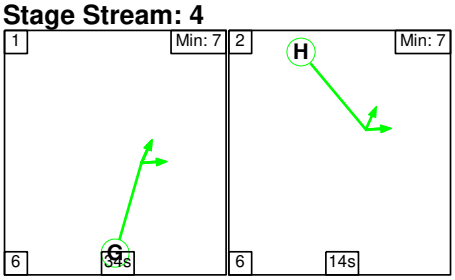
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	16	32
Change Point	0	22

Stage Stream: 2

Stage	1	2
Duration	33	15
Change Point	25	4

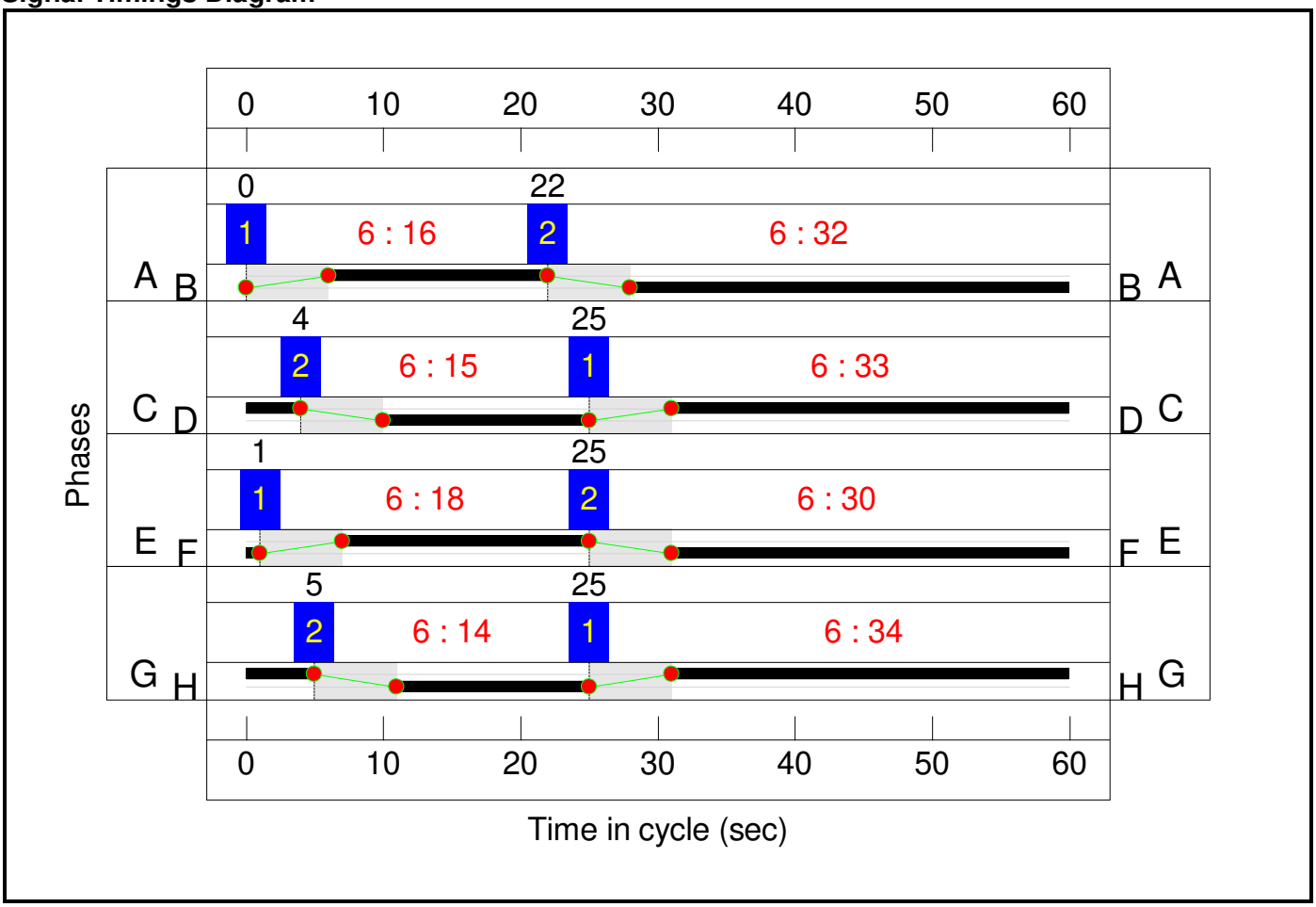
Stage Stream: 3

Stage	1	2
Duration	18	30
Change Point	1	25

Stage Stream: 4

Stage	1	2
Duration	34	14
Change Point	25	5

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: Baynards Green Committed Scheme	-	-	**N/A**	-	-		-	-	-	-	-	-	**92.9%**
Baynards Green	-	-	**N/A**	-	-		-	-	-	-	-	-	**92.9%**
1/1	A43 North Ahead Left	U	1	N/A	B		1	32	-	978	1922	1057	92.5%
1/2+1/3	A43 North Ahead	U	1	N/A	B		1	32	-	1785	1922:1922	960+962	92.9 : 92.9%
2/1	Ahead	U	2	N/A	C		1	33	-	569	1850	1048	54.3%
2/2	Ahead	U	2	N/A	C		1	33	-	929	1850	1048	88.6%
2/3	Ahead Right	U	2	N/A	C		1	33	-	943	1850	1048	90.0%
4/2+4/1	B4100 East Left Ahead	U	2	N/A	D		1	15	-	868	1908:3600	509+753	68.8 : 68.8%
6/1	Right	U	3	N/A	E		1	18	-	377	1800	570	66.1%
6/2	Right	U	3	N/A	E		1	18	-	350	1800	570	61.4%
7/1	A43 South Ahead Ahead2	U	3	N/A	F		1	30	-	553	1922	993	55.7%
7/2+7/3	A43 South Ahead	U	3	N/A	F		1	30	-	1327	1922:1922	960+962	69.0 : 69.0%
8/1	Ahead	U	4	N/A	G		1	34	-	544	1850	1079	50.4%
8/2	Ahead	U	4	N/A	G		1	34	-	780	1850	1079	72.3%
8/3	Ahead Right	U	4	N/A	G		1	34	-	781	1850	1079	72.4%
10/1+10/2	B4100 West Left Ahead	U	4	N/A	H		1	14	-	492	1887:1894	472+474	53.4 : 50.7%
12/1	Right	U	1	N/A	A		1	16	-	339	1800	510	66.5%
12/2	Right Right2	U	1	N/A	A		1	16	-	368	1800	510	72.2%

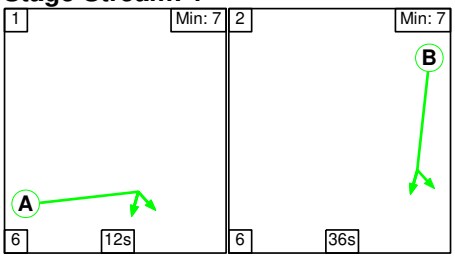
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Baynards Green Committed Scheme	**-**	**-**	**0**	**0**	**0**	**26.3**	**14.8**	**0.0**	**41.1**	**-**	**-**	**-**	**-**
Baynards Green	**-**	**-**	**0**	**0**	**0**	**26.3**	**14.8**	**0.0**	**41.1**	**-**	**-**	**-**	**-**
1/1	978	978	-	-	-	3.4	5.4	-	8.8	32.4	14.7	5.4	20.1
1/2+1/3	1785	1785	-	-	-	5.6	6.0	-	11.6	23.4	12.4	6.0	18.4
2/1	569	569	-	-	-	0.1	0.0	-	0.1	0.6	0.6	0.0	0.6
2/2	929	929	-	-	-	0.2	0.0	-	0.2	0.9	0.6	0.0	0.6
2/3	943	943	-	-	-	0.4	0.0	-	0.4	1.4	0.8	0.0	0.8
4/2+4/1	868	868	-	-	-	4.6	1.1	-	5.7	23.8	5.2	1.1	6.2
6/1	377	377	-	-	-	0.7	0.0	-	0.7	6.3	1.6	0.0	1.6
6/2	350	350	-	-	-	0.3	0.0	-	0.3	3.5	0.5	0.0	0.5
7/1	553	553	-	-	-	1.5	0.6	-	2.1	13.9	6.1	0.6	6.8
7/2+7/3	1327	1327	-	-	-	3.9	1.1	-	5.1	13.7	8.1	1.1	9.2
8/1	544	544	-	-	-	0.3	0.0	-	0.3	1.8	1.9	0.0	1.9
8/2	780	780	-	-	-	0.3	0.0	-	0.3	1.5	1.9	0.0	1.9
8/3	781	781	-	-	-	0.3	0.0	-	0.3	1.5	1.9	0.0	1.9
10/1+10/2	492	492	-	-	-	2.7	0.5	-	3.2	23.4	3.6	0.5	4.1
12/1	339	339	-	-	-	1.0	0.0	-	1.0	10.6	3.0	0.0	3.0
12/2	368	368	-	-	-	0.9	0.0	-	0.9	9.1	2.6	0.0	2.6

C1	Stream: 1 PRC for Signalled Lanes (%):	-3.2	Total Delay for Signalled Lanes (pcuHr):	22.34	Cycle Time (s): 60
C1	Stream: 2 PRC for Signalled Lanes (%):	0.1	Total Delay for Signalled Lanes (pcuHr):	6.44	Cycle Time (s): 60
C1	Stream: 3 PRC for Signalled Lanes (%):	30.4	Total Delay for Signalled Lanes (pcuHr):	8.20	Cycle Time (s): 60
C1	Stream: 4 PRC for Signalled Lanes (%):	24.4	Total Delay for Signalled Lanes (pcuHr):	4.12	Cycle Time (s): 60
	PRC Over All Lanes (%):	-3.2	Total Delay Over All Lanes(pcuHr):	41.09	

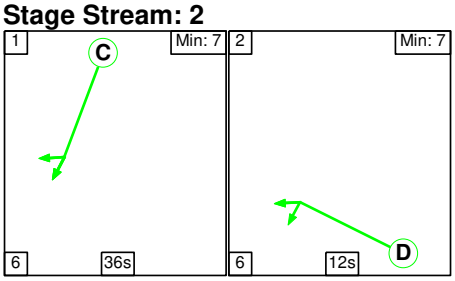
Scenario 2: '2031 Do Something - AM Peak' (FG1: 'Baynards1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

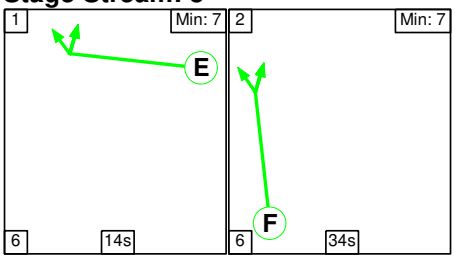
Stage Stream: 1



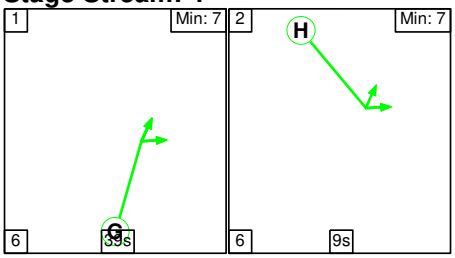
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	12	36
Change Point	0	18

Stage Stream: 2

Stage	1	2
Duration	36	12
Change Point	17	59

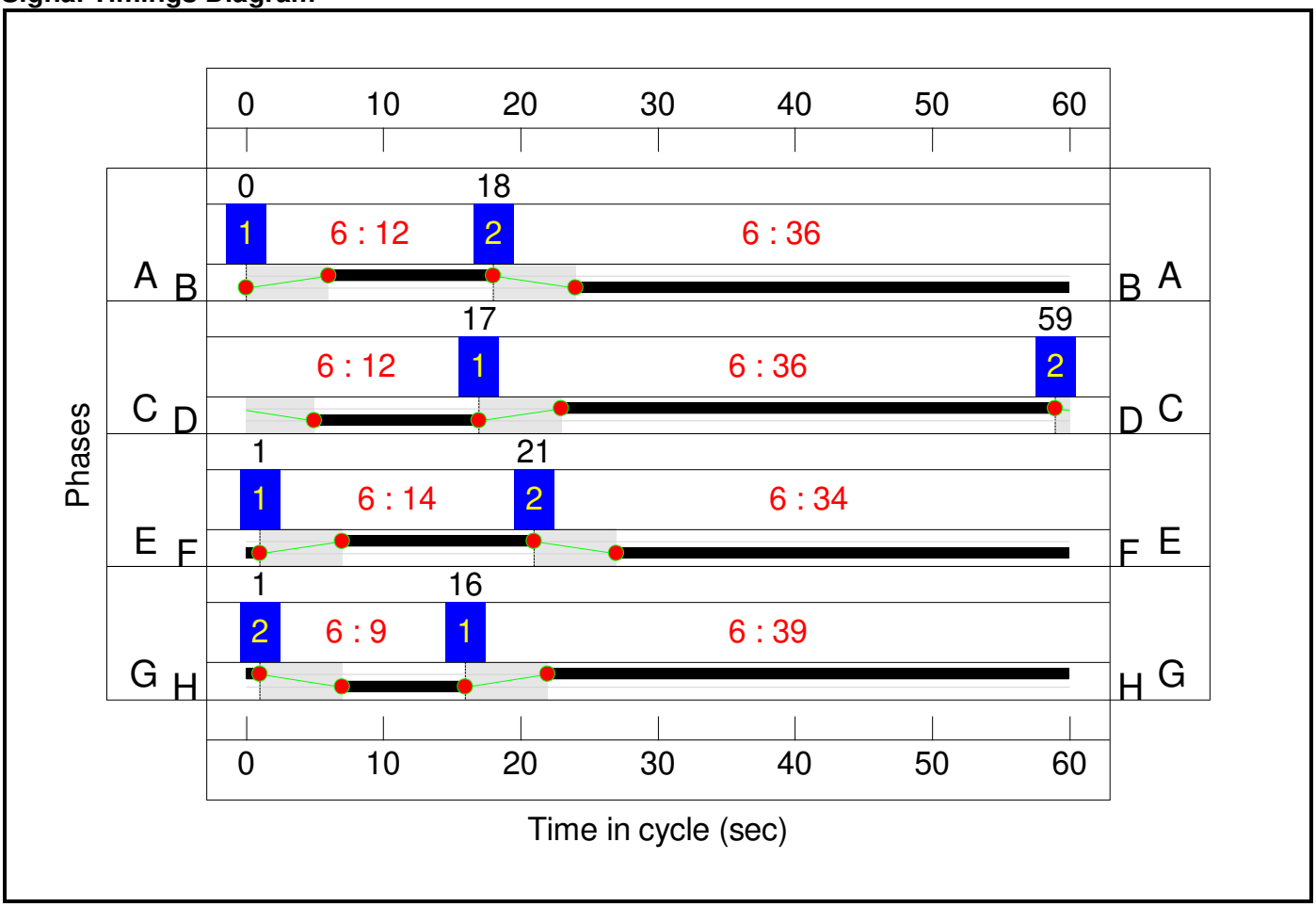
Stage Stream: 3

Stage	1	2
Duration	14	34
Change Point	1	21

Stage Stream: 4

Stage	1	2
Duration	39	9
Change Point	16	1

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: Baynards Green Committed Scheme	-	-	**N/A**	-	-		-	-	-	-	-	-	**98.4%**
Baynards Green	-	-	**N/A**	-	-		-	-	-	-	-	-	**98.4%**
1/1	A43 North Ahead Left	U	1	N/A	B		1	36	-	1140	1922	1185	96.2%
1/2+1/3	A43 North Ahead	U	1	N/A	B		1	36	-	1892	1922:1922	940+982	98.4 : 98.4%
2/1	Ahead	U	2	N/A	C		1	36	-	732	1850	1141	64.2%
2/2	Ahead	U	2	N/A	C		1	36	-	962	1850	1141	84.3%
2/3	Ahead Right	U	2	N/A	C		1	36	-	1016	1850	1141	89.1%
4/2+4/1	B4100 East Left Ahead	U	2	N/A	D		1	12	-	868	1908:3600	413+774	84.7 : 67.0%
6/1	Right	U	3	N/A	E		1	14	-	377	1800	450	83.8%
6/2	Right	U	3	N/A	E		1	14	-	350	1800	450	77.8%
7/1	A43 South Ahead Ahead2	U	3	N/A	F		1	34	-	625	1922	1121	55.7%
7/2+7/3	A43 South Ahead	U	3	N/A	F		1	34	-	1374	1922:1922	961+961	71.5 : 71.5%
8/1	Ahead	U	4	N/A	G		1	39	-	620	1850	1233	50.3%
8/2	Ahead	U	4	N/A	G		1	39	-	802	1850	1233	65.0%
8/3	Ahead Right	U	4	N/A	G		1	39	-	802	1850	1233	65.0%
10/1+10/2	B4100 West Left Ahead	U	4	N/A	H		1	9	-	492	1887:1894	314+316	80.1 : 76.0%
12/1	Right	U	1	N/A	A		1	12	-	332	1800	390	85.1%
12/2	Right Right2	U	1	N/A	A		1	12	-	375	1800	390	96.2%

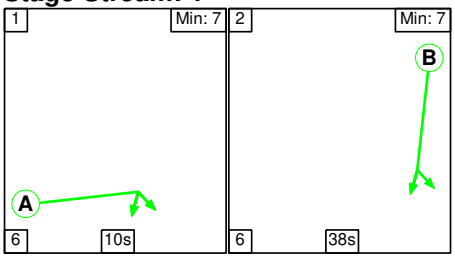
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Baynards Green Committed Scheme	**-**	**-**	**0**	**0**	**0**	**26.6**	**29.5**	**0.0**	**56.1**	**-**	**-**	**-**	**-**
Baynards Green	**-**	**-**	**0**	**0**	**0**	**26.6**	**29.5**	**0.0**	**56.1**	**-**	**-**	**-**	**-**
1/1	1140	1140	-	-	-	3.4	9.0	-	12.4	39.3	17.7	9.0	26.7
1/2+1/3	1892	1892	-	-	-	4.6	15.5	-	20.1	38.2	12.4	15.5	27.9
2/1	732	732	-	-	-	0.5	0.0	-	0.5	2.4	1.8	0.0	1.8
2/2	962	962	-	-	-	0.6	0.0	-	0.6	2.3	1.9	0.0	1.9
2/3	1016	1016	-	-	-	0.7	0.0	-	0.7	2.4	2.2	0.0	2.2
4/2+4/1	868	868	-	-	-	5.3	1.3	-	6.6	27.5	5.5	1.3	6.9
6/1	377	377	-	-	-	0.6	0.0	-	0.6	5.4	1.3	0.0	1.3
6/2	350	350	-	-	-	0.1	0.0	-	0.1	1.1	0.3	0.0	0.3
7/1	625	625	-	-	-	1.3	0.6	-	2.0	11.3	6.4	0.6	7.1
7/2+7/3	1374	1374	-	-	-	3.1	1.2	-	4.3	11.4	7.3	1.2	8.5
8/1	620	620	-	-	-	0.3	0.0	-	0.3	1.9	2.5	0.0	2.5
8/2	802	802	-	-	-	0.4	0.0	-	0.4	1.9	2.6	0.0	2.6
8/3	802	802	-	-	-	0.4	0.0	-	0.4	1.9	2.6	0.0	2.6
10/1+10/2	492	492	-	-	-	3.3	1.7	-	5.0	36.7	4.0	1.7	5.7
12/1	332	332	-	-	-	1.0	0.0	-	1.0	11.0	3.0	0.0	3.0
12/2	375	375	-	-	-	0.9	0.0	-	0.9	9.0	2.4	0.0	2.4

C1	Stream: 1 PRC for Signalled Lanes (%):	-9.4	Total Delay for Signalled Lanes (pcuHr):	34.47	Cycle Time (s): 60
C1	Stream: 2 PRC for Signalled Lanes (%):	1.1	Total Delay for Signalled Lanes (pcuHr):	8.42	Cycle Time (s): 60
C1	Stream: 3 PRC for Signalled Lanes (%):	7.4	Total Delay for Signalled Lanes (pcuHr):	6.98	Cycle Time (s): 60
C1	Stream: 4 PRC for Signalled Lanes (%):	12.3	Total Delay for Signalled Lanes (pcuHr):	6.18	Cycle Time (s): 60
	PRC Over All Lanes (%):	-9.4	Total Delay Over All Lanes(pcuHr):	56.05	

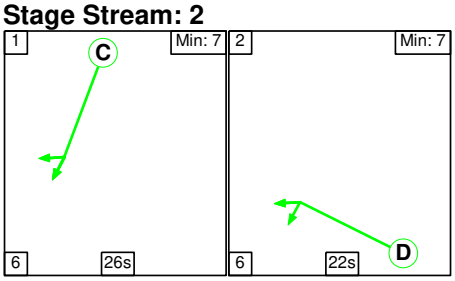
Scenario 3: '2031 Reference Case - PM Peak' (FG7: 'BaynardsRef1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

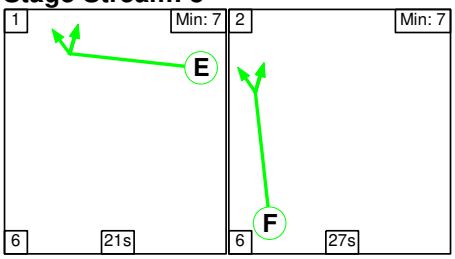
Stage Stream: 1



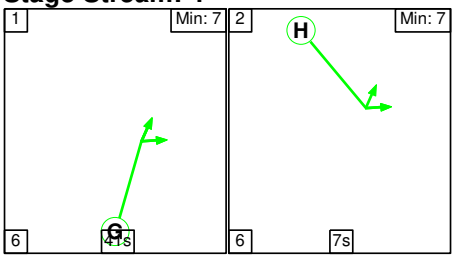
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	10	38
Change Point	0	16

Stage Stream: 2

Stage	1	2
Duration	26	22
Change Point	15	47

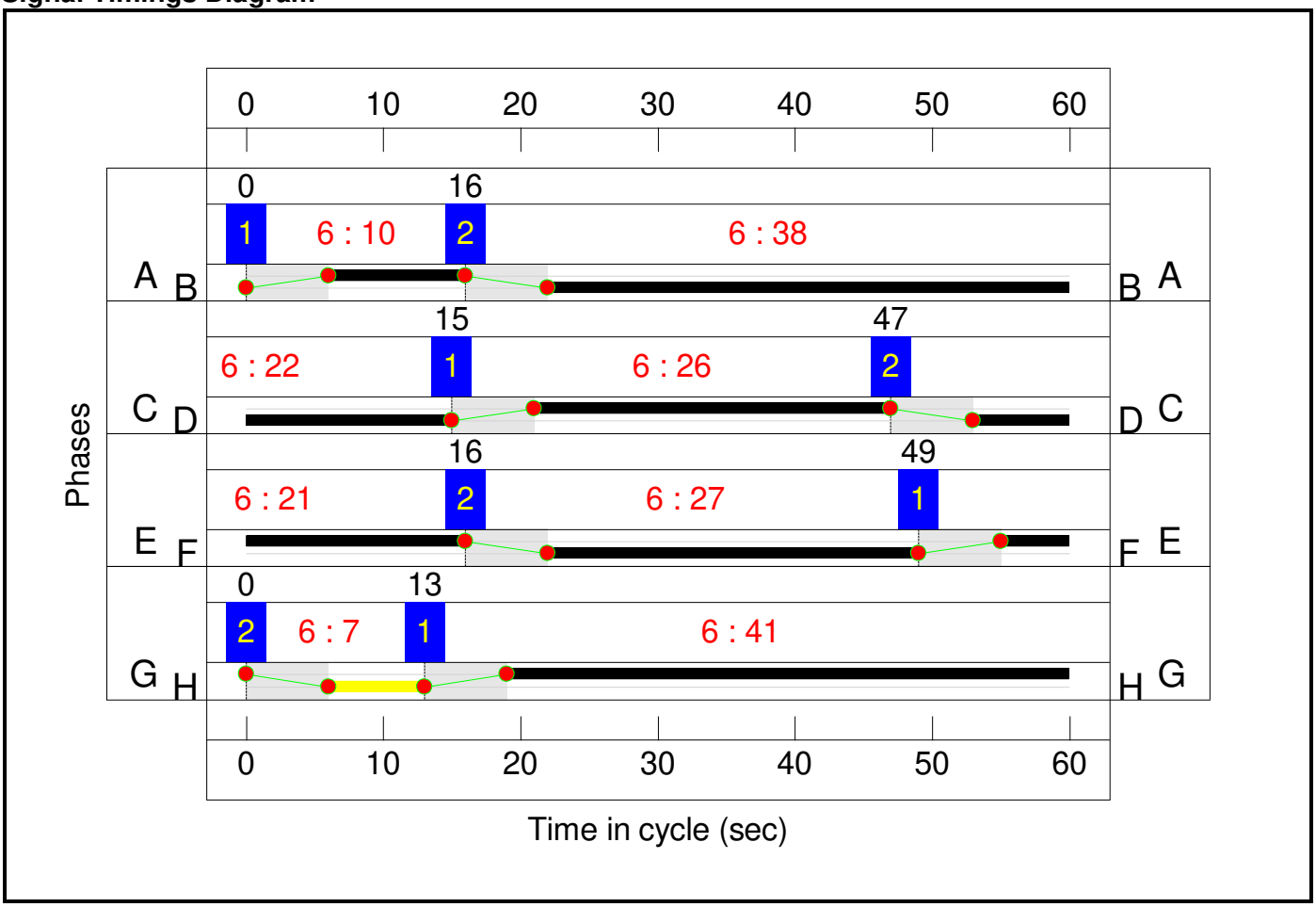
Stage Stream: 3

Stage	1	2
Duration	21	27
Change Point	49	16

Stage Stream: 4

Stage	1	2
Duration	41	7
Change Point	13	0

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: Baynards Green Committed Scheme	-	-	**N/A**	-	-		-	-	-	-	-	-	**96.8%**
Baynards Green	-	-	**N/A**	-	-		-	-	-	-	-	-	**96.8%**
1/1	A43 North Ahead Left	U	1	N/A	B		1	38	-	536	1922	1249	42.9%
1/2+1/3	A43 North Ahead	U	1	N/A	B		1	38	-	1261	1922:1922	962+960	65.6 : 65.6%
2/1	Ahead	U	2	N/A	C		1	26	-	113	1850	833	13.6%
2/2	Ahead	U	2	N/A	C		1	26	-	633	1850	833	76.0%
2/3	Ahead Right	U	2	N/A	C		1	26	-	634	1850	833	76.2%
4/2+4/1	B4100 East Left Ahead	U	2	N/A	D		1	22	-	1249	1908:3600	683+656	93.3 : 93.3%
6/1	Right	U	3	N/A	E		1	21	-	420	1800	660	63.6%
6/2	Right	U	3	N/A	E		1	21	-	639	1800	660	96.8%
7/1	A43 South Ahead Ahead2	U	3	N/A	F		1	27	-	811	1922	897	90.4%
7/2+7/3	A43 South Ahead	U	3	N/A	F		1	27	-	1707	1922:1922	897+897	94.5 : 95.8%
8/1	Ahead	U	4	N/A	G		1	41	-	946	1850	1295	73.1%
8/2	Ahead	U	4	N/A	G		1	41	-	1062	1850	1295	82.0%
8/3	Ahead Right	U	4	N/A	G		1	41	-	1059	1850	1295	81.8%
10/1+10/2	B4100 West Left Ahead	U	4	N/A	H		1	7	-	331	1889:1894	252+253	67.1 : 64.1%
12/1	Right	U	1	N/A	A		1	10	-	247	1800	330	74.8%
12/2	Right Right2	U	1	N/A	A		1	10	-	277	1800	330	83.9%

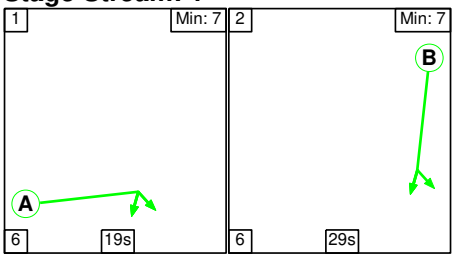
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Baynards Green Committed Scheme	**-**	**-**	**0**	**0**	**0**	**29.0**	**20.9**	**0.0**	**49.9**	**-**	**-**	**-**	**-**
Baynards Green	**-**	**-**	**0**	**0**	**0**	**29.0**	**20.9**	**0.0**	**49.9**	**-**	**-**	**-**	**-**
1/1	536	536	-	-	-	0.8	0.4	-	1.1	7.6	4.3	0.4	4.7
1/2+1/3	1261	1261	-	-	-	1.9	1.0	-	2.9	8.2	5.4	1.0	6.4
2/1	113	113	-	-	-	0.2	0.0	-	0.2	6.2	1.1	0.0	1.1
2/2	633	633	-	-	-	1.5	0.0	-	1.5	8.3	3.0	0.0	3.0
2/3	634	634	-	-	-	1.5	0.0	-	1.5	8.4	3.0	0.0	3.0
4/2+4/1	1249	1249	-	-	-	5.4	6.1	-	11.5	33.0	9.7	6.1	15.8
6/1	420	420	-	-	-	0.6	0.0	-	0.6	5.0	1.2	0.0	1.2
6/2	639	639	-	-	-	0.8	0.0	-	0.8	4.5	1.1	0.0	1.1
7/1	811	811	-	-	-	3.3	4.3	-	7.6	33.8	12.4	4.3	16.7
7/2+7/3	1707	1707	-	-	-	7.3	8.3	-	15.5	32.8	13.6	8.3	21.9
8/1	946	946	-	-	-	0.6	0.0	-	0.6	2.4	3.6	0.0	3.6
8/2	1062	1062	-	-	-	0.7	0.0	-	0.7	2.4	3.4	0.0	3.4
8/3	1059	1059	-	-	-	0.7	0.0	-	0.7	2.3	3.2	0.0	3.2
10/1+10/2	331	331	-	-	-	2.3	0.9	-	3.2	35.0	2.7	0.9	3.6
12/1	247	247	-	-	-	0.8	0.0	-	0.8	11.2	2.0	0.0	2.0
12/2	277	277	-	-	-	0.8	0.0	-	0.8	10.1	2.0	0.0	2.0

C1 Stream: 1 PRC for Signalled Lanes (%):	7.2	Total Delay for Signalled Lanes (pcuHr):	5.55	Cycle Time (s):	60
C1 Stream: 2 PRC for Signalled Lanes (%):	-3.6	Total Delay for Signalled Lanes (pcuHr):	14.59	Cycle Time (s):	60
C1 Stream: 3 PRC for Signalled Lanes (%):	-7.6	Total Delay for Signalled Lanes (pcuHr):	24.54	Cycle Time (s):	60
C1 Stream: 4 PRC for Signalled Lanes (%):	9.7	Total Delay for Signalled Lanes (pcuHr):	5.23	Cycle Time (s):	60
PRC Over All Lanes (%):	-7.6	Total Delay Over All Lanes(pcuHr):	49.91		

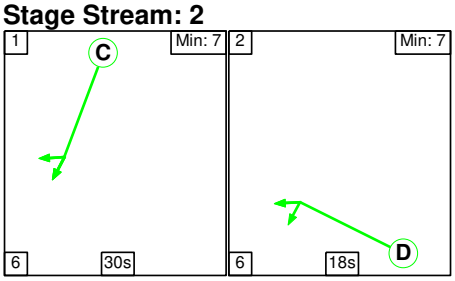
Scenario 4: '2031 Do Something - PM Peak' (FG3: 'Baynards1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

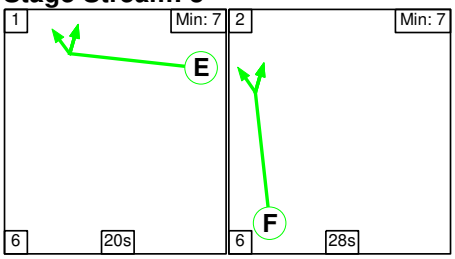
Stage Stream: 1



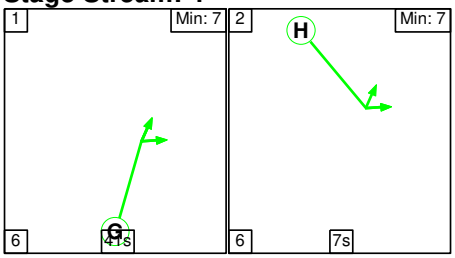
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	19	29
Change Point	0	25

Stage Stream: 2

Stage	1	2
Duration	30	18
Change Point	28	4

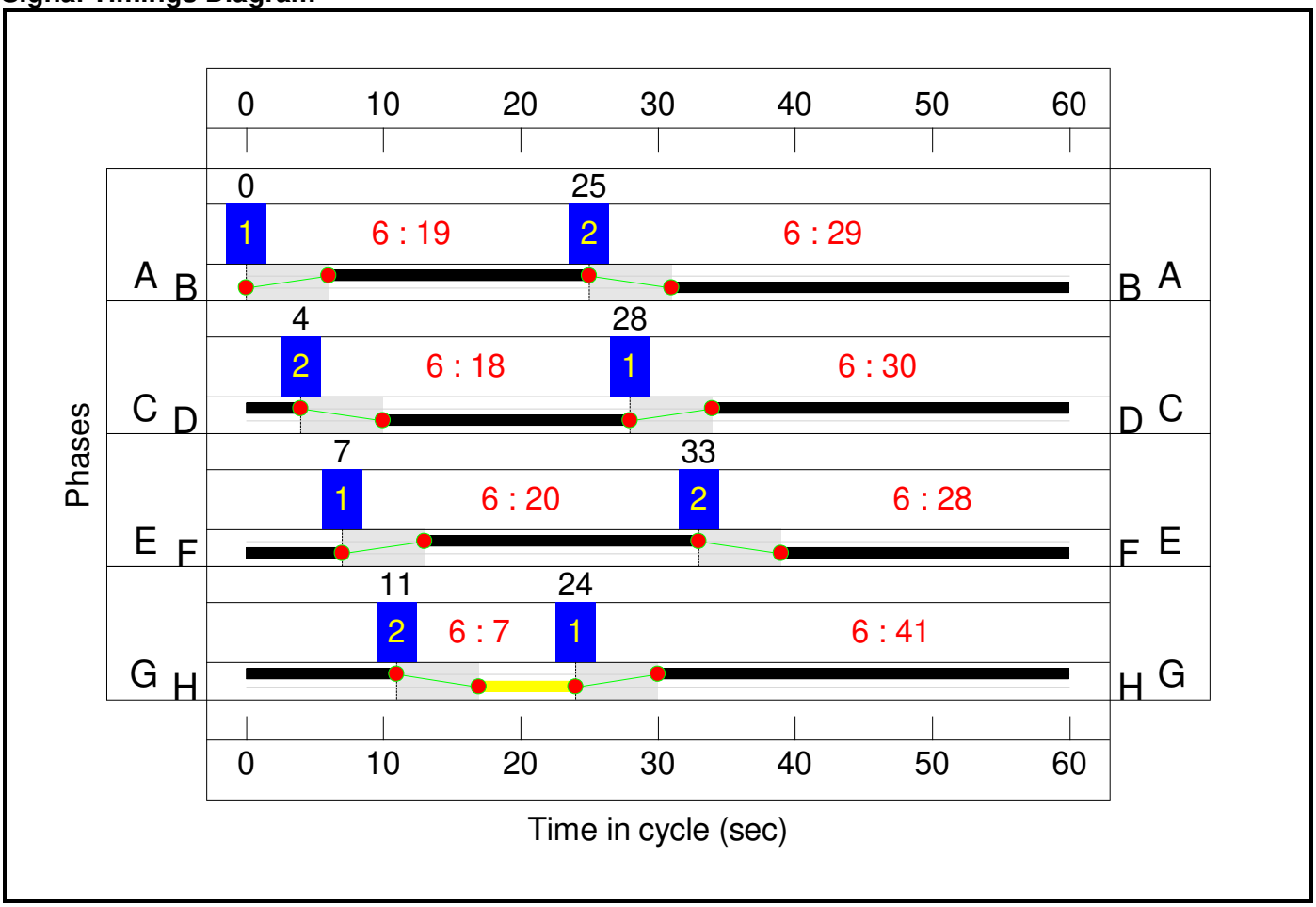
Stage Stream: 3

Stage	1	2
Duration	20	28
Change Point	7	33

Stage Stream: 4

Stage	1	2
Duration	41	7
Change Point	24	11

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: Baynards Green Committed Scheme	-	-	**N/A**	-	-		-	-	-	-	-	-	**105.4%**
Baynards Green	-	-	**N/A**	-	-		-	-	-	-	-	-	**105.4%**
1/1	A43 North Ahead Left	U	1	N/A	B		1	29	-	581	1922	961	60.5%
1/2+1/3	A43 North Ahead	U	1	N/A	B		1	29	-	1368	1922:1922	961+961	71.2 : 71.2%
2/1	Ahead	U	2	N/A	C		1	30	-	119	1850	956	12.4%
2/2	Ahead	U	2	N/A	C		1	30	-	708	1850	956	74.1%
2/3	Ahead Right	U	2	N/A	C		1	30	-	705	1850	956	73.8%
4/2+4/1	B4100 East Left Ahead	U	2	N/A	D		1	18	-	1249	1908:3600	604+580	105.4 : 105.4%
6/1	Right	U	3	N/A	E		1	20	-	420	1800	630	63.8%
6/2	Right	U	3	N/A	E		1	20	-	639	1800	630	96.2%
7/1	A43 South Ahead Ahead2	U	3	N/A	F		1	28	-	946	1922	929	101.8%
7/2+7/3	A43 South Ahead	U	3	N/A	F		1	28	-	1847	1922:1922	929+929	98.1 : 100.8%
8/1	Ahead	U	4	N/A	G		1	41	-	1067	1850	1295	80.4%
8/2	Ahead	U	4	N/A	G		1	41	-	1125	1850	1295	86.0%
8/3	Ahead Right	U	4	N/A	G		1	41	-	1150	1850	1295	87.4%
10/1+10/2	B4100 West Left Ahead	U	4	N/A	H		1	7	-	331	1889:1894	252+253	67.1 : 64.1%
12/1	Right	U	1	N/A	A		1	19	-	248	1800	600	41.2%
12/2	Right Right2	U	1	N/A	A		1	19	-	276	1800	600	45.9%

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: Baynards Green Committed Scheme	**-**	**-**	**0**	**0**	**0**	**32.0**	**85.6**	**0.0**	**117.6**	**-**	**-**	**-**	**-**
Baynards Green	**-**	**-**	**0**	**0**	**0**	**32.0**	**85.6**	**0.0**	**117.6**	**-**	**-**	**-**	**-**
1/1	581	581	-	-	-	1.7	0.8	-	2.5	15.5	6.8	0.8	7.5
1/2+1/3	1368	1368	-	-	-	4.4	1.2	-	5.7	14.9	8.7	1.2	10.0
2/1	119	119	-	-	-	0.0	0.0	-	0.0	0.3	0.1	0.0	0.1
2/2	708	708	-	-	-	0.1	0.0	-	0.1	0.5	0.4	0.0	0.4
2/3	705	705	-	-	-	0.1	0.0	-	0.1	0.5	0.4	0.0	0.4
4/2+4/1	1249	1186	-	-	-	7.7	40.0	-	47.7	137.4	15.3	40.0	55.2
6/1	402	402	-	-	-	0.4	0.0	-	0.4	3.4	0.9	0.0	0.9
6/2	606	606	-	-	-	0.5	0.0	-	0.5	2.8	0.6	0.0	0.6
7/1	946	929	-	-	-	4.7	20.2	-	24.9	94.7	16.1	20.2	36.3
7/2+7/3	1847	1840	-	-	-	8.0	22.4	-	30.5	59.4	15.6	22.4	38.0
8/1	1041	1041	-	-	-	0.3	0.0	-	0.3	0.9	2.7	0.0	2.7
8/2	1114	1114	-	-	-	0.5	0.0	-	0.5	1.6	3.0	0.0	3.0
8/3	1132	1132	-	-	-	0.6	0.0	-	0.6	2.0	3.5	0.0	3.5
10/1+10/2	331	331	-	-	-	2.3	0.9	-	3.2	35.0	2.7	0.9	3.6
12/1	247	247	-	-	-	0.3	0.0	-	0.3	5.0	1.6	0.0	1.6
12/2	275	275	-	-	-	0.4	0.0	-	0.4	4.9	1.5	0.0	1.5

C1	Stream: 1 PRC for Signalled Lanes (%):	26.4	Total Delay for Signalled Lanes (pcuHr):	8.87	Cycle Time (s): 60
C1	Stream: 2 PRC for Signalled Lanes (%):	-17.1	Total Delay for Signalled Lanes (pcuHr):	47.88	Cycle Time (s): 60
C1	Stream: 3 PRC for Signalled Lanes (%):	-13.1	Total Delay for Signalled Lanes (pcuHr):	56.20	Cycle Time (s): 60
C1	Stream: 4 PRC for Signalled Lanes (%):	3.0	Total Delay for Signalled Lanes (pcuHr):	4.62	Cycle Time (s): 60
	PRC Over All Lanes (%):	-17.1	Total Delay Over All Lanes(pcuHr):	117.57	

APPENDIX 3

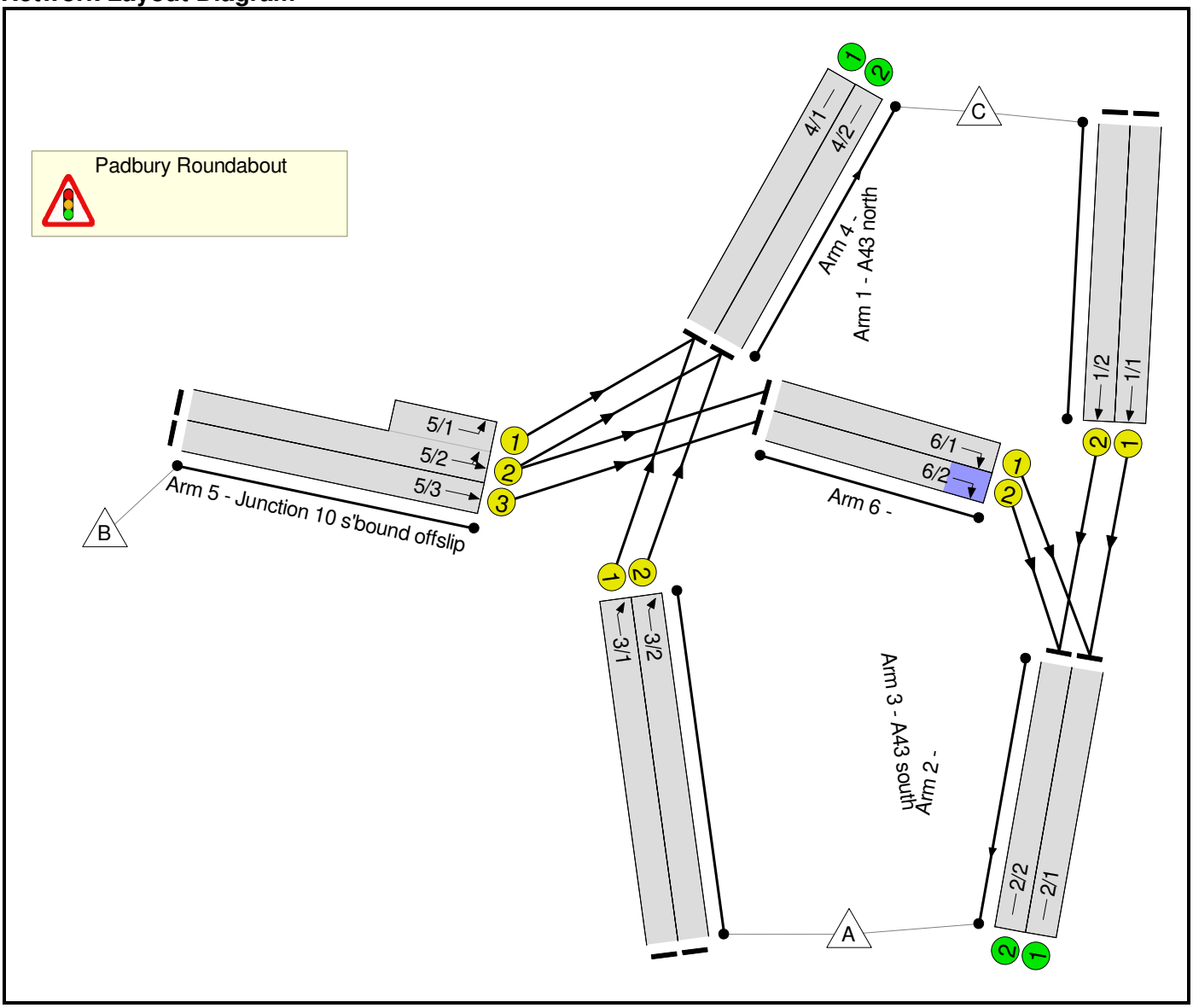
Padbury Roundabout committed scheme – LinSig results

Full Input Data And Results

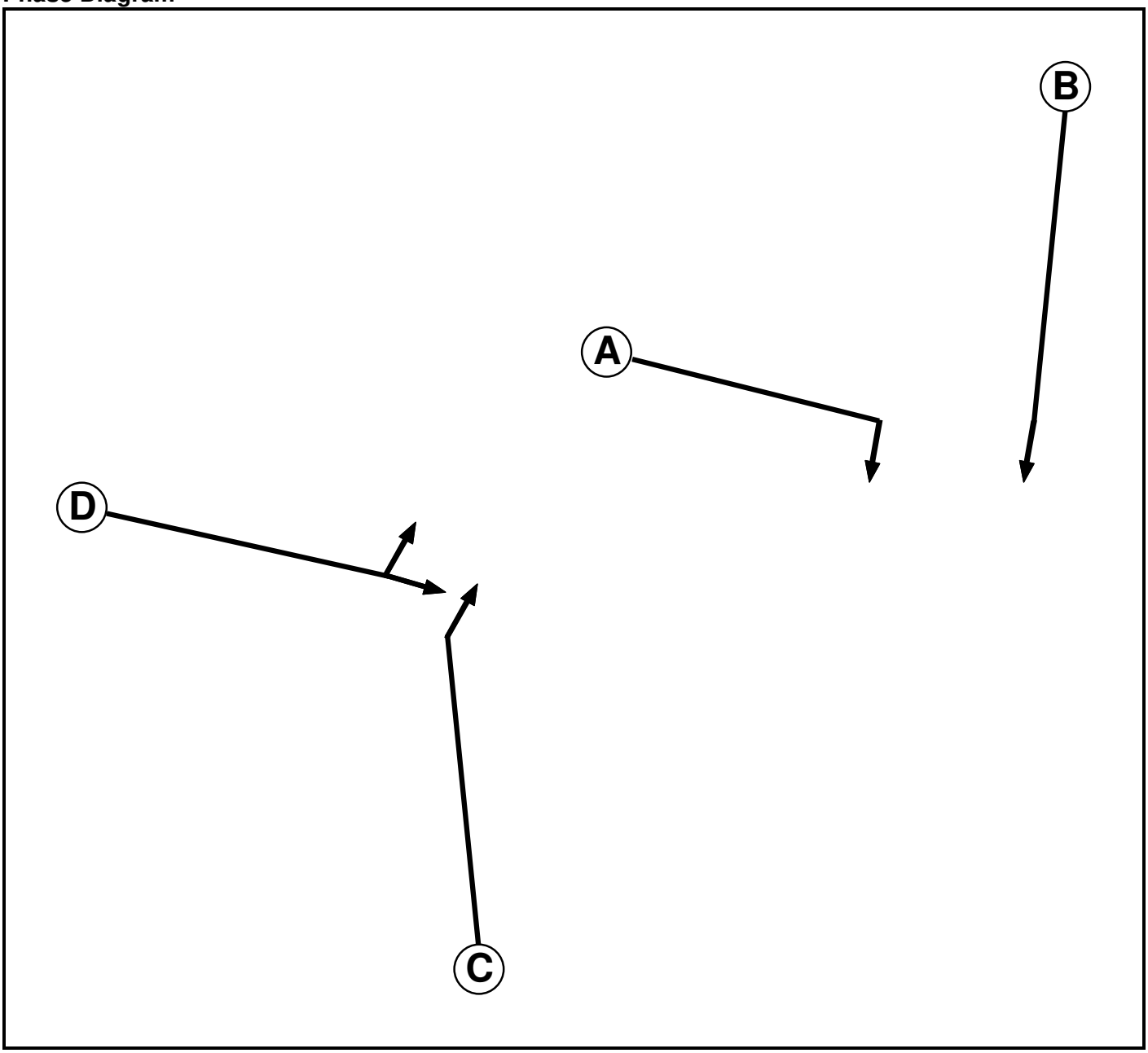
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Padbury HE scheme**
Location:	
Additional detail:	
File name:	210407 Padbury - committed scheme.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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

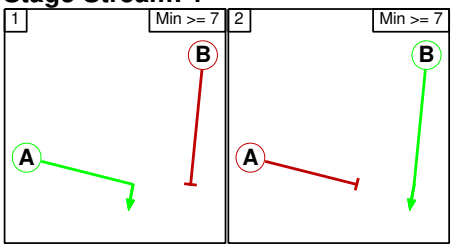
		Starting Phase			
		A	B	C	D
Terminating Phase	A		6	-	-
	B	6		-	-
	C	-	-		6
	D	-	-	6	

Phases in Stage

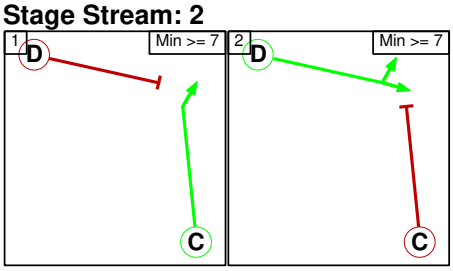
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Prohibited Stage Change

Stage Stream: 1

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

		To Stage	
		1	2
From Stage	1		6
	2	6	

Lane Input Data

Junction: Padbury Roundabout												
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 (A43 north)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 2 Ahead	50.00
1/2 (A43 north)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 2 Ahead	50.00
2/1	U		2	3	60.0	Inf	-	-	-	-	-	-
2/2	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1 (A43 south)	U	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Ahead	40.00
3/2 (A43 south)	U	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Ahead	40.00
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
4/2	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Junction 10 s'bound offslip)	U	D	2	3	5.0	Geom	-	3.65	0.00	Y	Arm 4 Left	40.00
5/2 (Junction 10 s'bound offslip)	U	D	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Left	40.00
											Arm 6 Ahead	40.00
5/3 (Junction 10 s'bound offslip)	U	D	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 6 Ahead	40.00
6/1	U	A	2	3	8.7	User	1850	-	-	-	-	-
6/2	U	A	2	3	8.7	User	1850	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'PadburyRef1_AM'	07:45	08:45	01:00	
3: 'PadburyRef1_PM'	16:30	17:30	01:00	
5: 'Padbury1_AM'	07:45	08:45	01:00	
7: 'Padbury1_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Reference Case - AM Peak' (FG1: 'PadburyRef1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	0	1543	1543
	B	535	0	337	872
	C	2582	0	0	2582
	Tot.	3117	0	1880	4997

Traffic Lane Flows

Lane	Scenario 1: 2031 Reference Case - AM Peak
Junction: Padbury Roundabout	
1/1	1291
1/2	1291
2/1	1541
2/2	1576
3/1	771
3/2	772
4/1	1064
4/2	816
5/1 (short)	293
5/2 (with short)	587(In) 294(Out)
5/3	285
6/1	250
6/2	285

Lane Saturation Flows

Junction: Padbury Roundabout

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 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/2 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	40.00	100.0 %	1908	1908
3/2 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	40.00	100.0 %	1908	1908
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 4 Left	40.00	100.0 %	1908	1908
5/2 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 4 Left	40.00	15.0 %	1908	1908
				Arm 6 Ahead	40.00	85.0 %		
5/3 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 6 Ahead	40.00	100.0 %	1908	1908
6/1	This lane uses a directly entered Saturation Flow						1850	1850
6/2	This lane uses a directly entered Saturation Flow						1850	1850

Scenario 2: '2031 Do Something - AM Peak' (FG5: 'Padbury1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	0	1662	1662
	B	738	0	337	1075
	C	2851	0	0	2851
	Tot.	3589	0	1999	5588

Traffic Lane Flows

Lane	Scenario 2: 2031 Do Something - AM Peak
Junction: Padbury Roundabout	
1/1	1425
1/2	1426
2/1	1777
2/2	1812
3/1	831
3/2	831
4/1	1158
4/2	841
5/1 (short)	327
5/2 (with short)	689(In) 362(Out)
5/3	386
6/1	352
6/2	386

Lane Saturation Flows

Junction: Padbury Roundabout

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 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/2 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	40.00	100.0 %	1908	1908
3/2 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	40.00	100.0 %	1908	1908
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 4 Left	40.00	100.0 %	1908	1908
5/2 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 4 Left	40.00	2.8 %	1908	1908
				Arm 6 Ahead	40.00	97.2 %		
5/3 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 6 Ahead	40.00	100.0 %	1908	1908
6/1	This lane uses a directly entered Saturation Flow						1850	1850
6/2	This lane uses a directly entered Saturation Flow						1850	1850

Scenario 3: '2031 Reference Case - PM Peak' (FG3: 'PadburyRef1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	0	2200	2200
	B	505	0	318	823
	C	1570	0	0	1570
	Tot.	2075	0	2518	4593

Traffic Lane Flows

Lane	Scenario 3: 2031 Reference Case - PM Peak
Junction: Padbury Roundabout	
1/1	785
1/2	785
2/1	1032
2/2	1043
3/1	1100
3/2	1100
4/1	1381
4/2	1137
5/1 (short)	281
5/2 (with short)	565(In) 284(Out)
5/3	258
6/1	247
6/2	258

Lane Saturation Flows

Junction: Padbury Roundabout

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 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/2 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	40.00	100.0 %	1908	1908
3/2 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	40.00	100.0 %	1908	1908
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 4 Left	40.00	100.0 %	1908	1908
5/2 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 4 Left	40.00	13.0 %	1908	1908
				Arm 6 Ahead	40.00	87.0 %		
5/3 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 6 Ahead	40.00	100.0 %	1908	1908
6/1	This lane uses a directly entered Saturation Flow						1850	1850
6/2	This lane uses a directly entered Saturation Flow						1850	1850

Scenario 4: '2031 Do Something - PM Peak' (FG7: 'Padbury1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	0	2475	2475
	B	609	0	318	927
	C	1722	0	0	1722
	Tot.	2331	0	2793	5124

Traffic Lane Flows

Lane	Scenario 4: 2031 Do Something - PM Peak
Junction: Padbury Roundabout	
1/1	861
1/2	861
2/1	1127
2/2	1204
3/1	1237
3/2	1238
4/1	1482
4/2	1311
5/1 (short)	245
5/2 (with short)	584(In) 339(Out)
5/3	343
6/1	266
6/2	343

Lane Saturation Flows

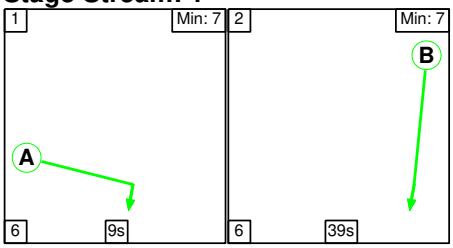
Junction: Padbury Roundabout

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 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/2 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	40.00	100.0 %	1908	1908
3/2 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	40.00	100.0 %	1908	1908
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 4 Left	40.00	100.0 %	1908	1908
5/2 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 4 Left	40.00	21.5 %	1908	1908
				Arm 6 Ahead	40.00	78.5 %		
5/3 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 6 Ahead	40.00	100.0 %	1908	1908
6/1	This lane uses a directly entered Saturation Flow						1850	1850
6/2	This lane uses a directly entered Saturation Flow						1850	1850

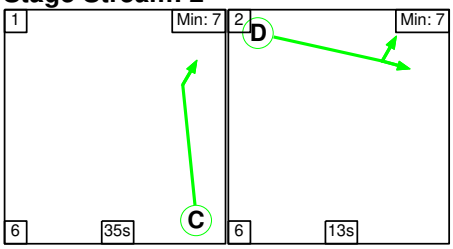
Scenario 1: '2031 Reference Case - AM Peak' (FG1: 'PadburyRef1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

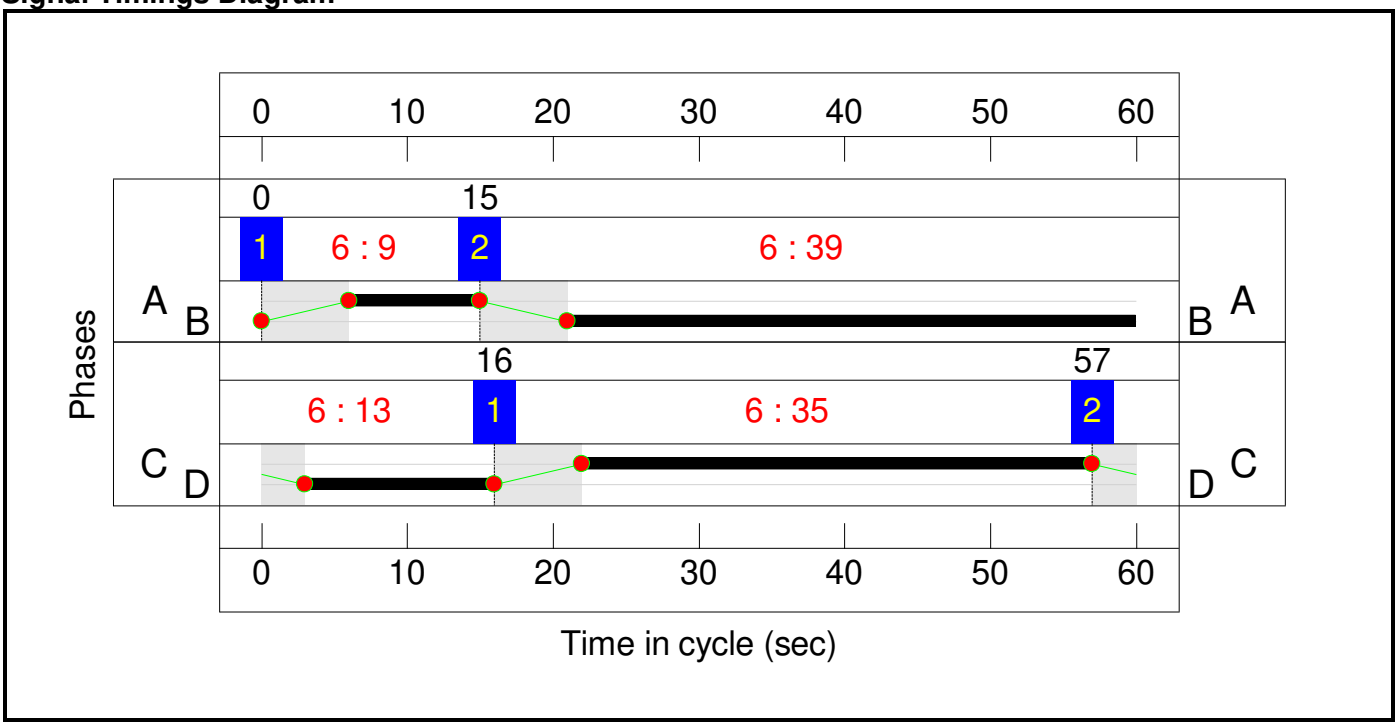
Stage Stream: 1

Stage	1	2
Duration	9	39
Change Point	0	15

Stage Stream: 2

Stage	1	2
Duration	35	13
Change Point	16	57

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: Padbury HE scheme	-	-	**N/A**	-	-		-	-	-	-	-	-	**100.8%**
Padbury Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**100.8%**
1/1	A43 north Ahead	U	1	N/A	B		1	39	-	1291	1922	1281	100.8%
1/2	A43 north Ahead	U	1	N/A	B		1	39	-	1291	1922	1281	100.8%
3/1	A43 south Ahead	U	2	N/A	C		1	35	-	771	1908	1145	67.3%
3/2	A43 south Ahead	U	2	N/A	C		1	35	-	772	1908	1145	67.4%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	2	N/A	D		1	13	-	587	1908:1908	380+378	77.4 : 77.4%
5/3	Junction 10 s'bound offslip Ahead	U	2	N/A	D		1	13	-	285	1908	445	64.0%
6/1	Right	U	1	N/A	A		1	9	-	250	1850	308	81.1%
6/2	Right	U	1	N/A	A		1	9	-	285	1850	308	92.4%

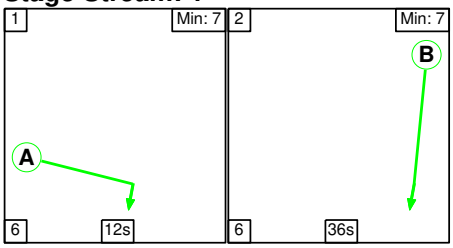
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Padbury HE scheme	**-**	**-**	**0**	**0**	**0**	**17.2**	**45.7**	**0.0**	**63.0**	**-**	**-**	**-**	**-**
Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**17.2**	**45.7**	**0.0**	**63.0**	**-**	**-**	**-**	**-**
1/1	1291	1281	-	-	-	4.0	20.5	-	24.5	68.3	21.7	20.5	42.2
1/2	1291	1281	-	-	-	4.0	20.5	-	24.5	68.3	21.7	20.5	42.2
3/1	771	771	-	-	-	1.7	1.0	-	2.8	12.8	8.6	1.0	9.6
3/2	772	772	-	-	-	1.7	1.0	-	2.8	12.9	8.6	1.0	9.6
5/2+5/1	587	587	-	-	-	3.4	1.7	-	5.1	31.2	4.4	1.7	6.1
5/3	285	285	-	-	-	1.6	0.9	-	2.5	31.8	4.3	0.9	5.2
6/1	250	250	-	-	-	0.4	0.0	-	0.4	5.7	1.0	0.0	1.0
6/2	285	285	-	-	-	0.4	0.0	-	0.4	5.6	1.2	0.0	1.2

C1 Stream: 1 PRC for Signalled Lanes (%): -11.9 Total Delay for Signalled Lanes (pcuHr): 49.84 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 16.2 Total Delay for Signalled Lanes (pcuHr): 13.11 Cycle Time (s): 60
PRC Over All Lanes (%): -11.9 Total Delay Over All Lanes(pcuHr): 62.95

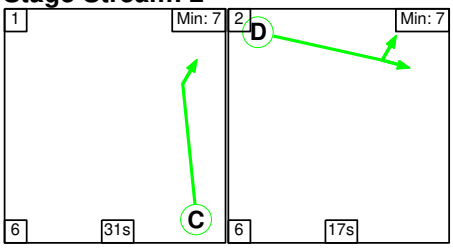
Scenario 2: '2031 Do Something - AM Peak' (FG5: 'Padbury1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

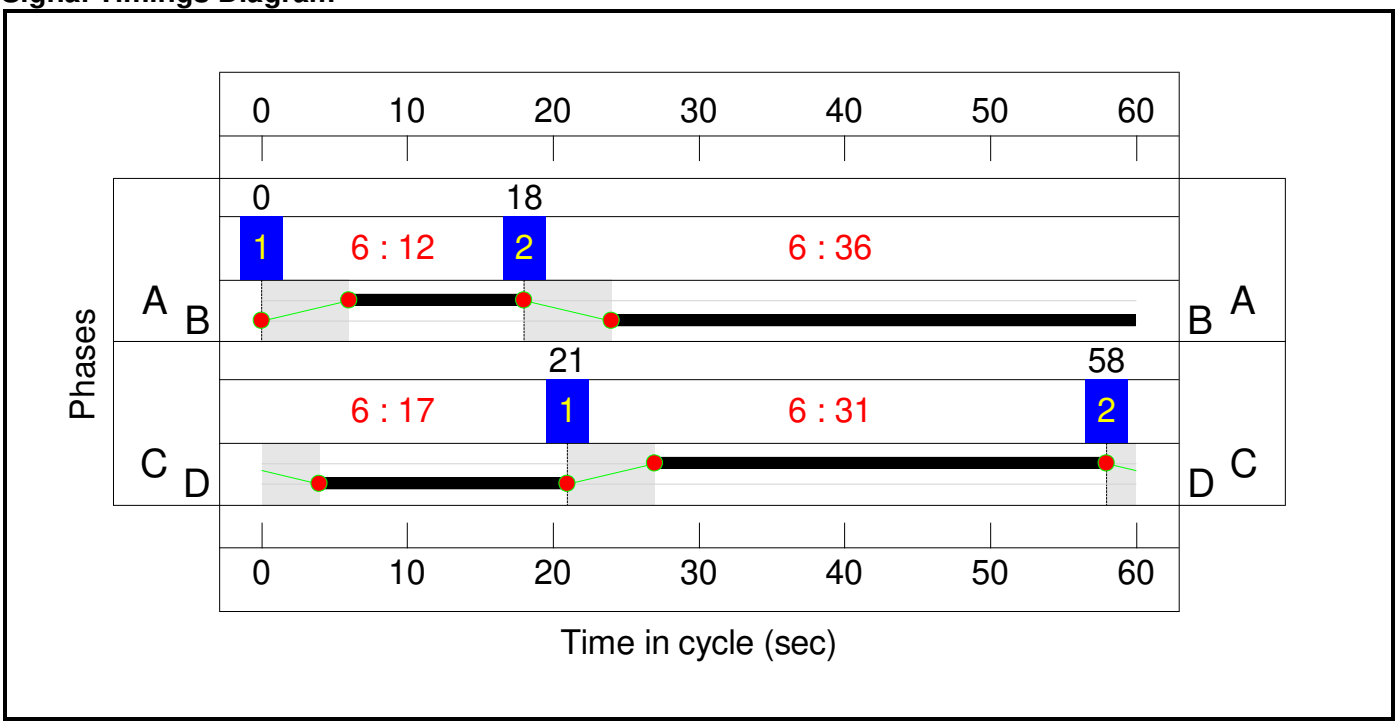
Stage Stream: 1

Stage	1	2
Duration	12	36
Change Point	0	18

Stage Stream: 2

Stage	1	2
Duration	31	17
Change Point	21	58

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: Padbury HE scheme	-	-	**N/A**	-	-		-	-	-	-	-	-	**120.3%**
Padbury Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**120.3%**
1/1	A43 north Ahead	U	1	N/A	B		1	36	-	1425	1922	1185	120.2%
1/2	A43 north Ahead	U	1	N/A	B		1	36	-	1426	1922	1185	120.3%
3/1	A43 south Ahead	U	2	N/A	C		1	31	-	831	1908	1018	81.7%
3/2	A43 south Ahead	U	2	N/A	C		1	31	-	831	1908	1018	81.7%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	2	N/A	D		1	17	-	689	1908:1908	450+407	80.4 : 80.4%
5/3	Junction 10 s'bound offslip Ahead	U	2	N/A	D		1	17	-	386	1908	572	67.4%
6/1	Right	U	1	N/A	A		1	12	-	352	1850	401	87.8%
6/2	Right	U	1	N/A	A		1	12	-	386	1850	401	96.3%

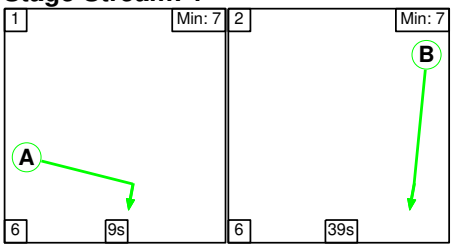
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Padbury HE scheme	**-**	**-**	**0**	**0**	**0**	**39.3**	**253.4**	**0.0**	**292.8**	**-**	**-**	**-**	**-**
Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**39.3**	**253.4**	**0.0**	**292.8**	**-**	**-**	**-**	**-**
1/1	1425	1185	-	-	-	13.6	122.8	-	136.4	344.6	30.6	122.8	153.3
1/2	1426	1185	-	-	-	13.7	123.3	-	136.9	345.7	30.6	123.3	153.9
3/1	831	831	-	-	-	2.7	2.2	-	4.8	21.0	11.3	2.2	13.5
3/2	831	831	-	-	-	2.7	2.2	-	4.8	21.0	11.3	2.2	13.5
5/2+5/1	689	689	-	-	-	3.4	2.0	-	5.4	28.4	5.4	2.0	7.4
5/3	386	386	-	-	-	2.0	1.0	-	3.0	28.0	5.6	1.0	6.6
6/1	352	352	-	-	-	0.6	0.0	-	0.6	6.0	1.0	0.0	1.0
6/2	386	386	-	-	-	0.7	0.0	-	0.7	6.6	1.2	0.0	1.2

C1 Stream: 1 PRC for Signalled Lanes (%): -33.7 Total Delay for Signalled Lanes (pcuHr): 274.62 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 10.2 Total Delay for Signalled Lanes (pcuHr): 18.14 Cycle Time (s): 60
PRC Over All Lanes (%): -33.7 Total Delay Over All Lanes(pcuHr): 292.76

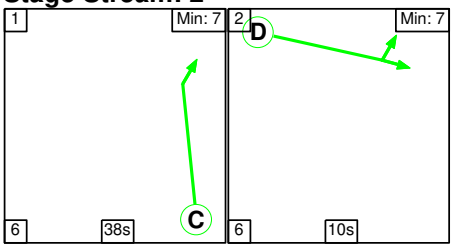
Scenario 3: '2031 Reference Case - PM Peak' (FG3: 'PadburyRef1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

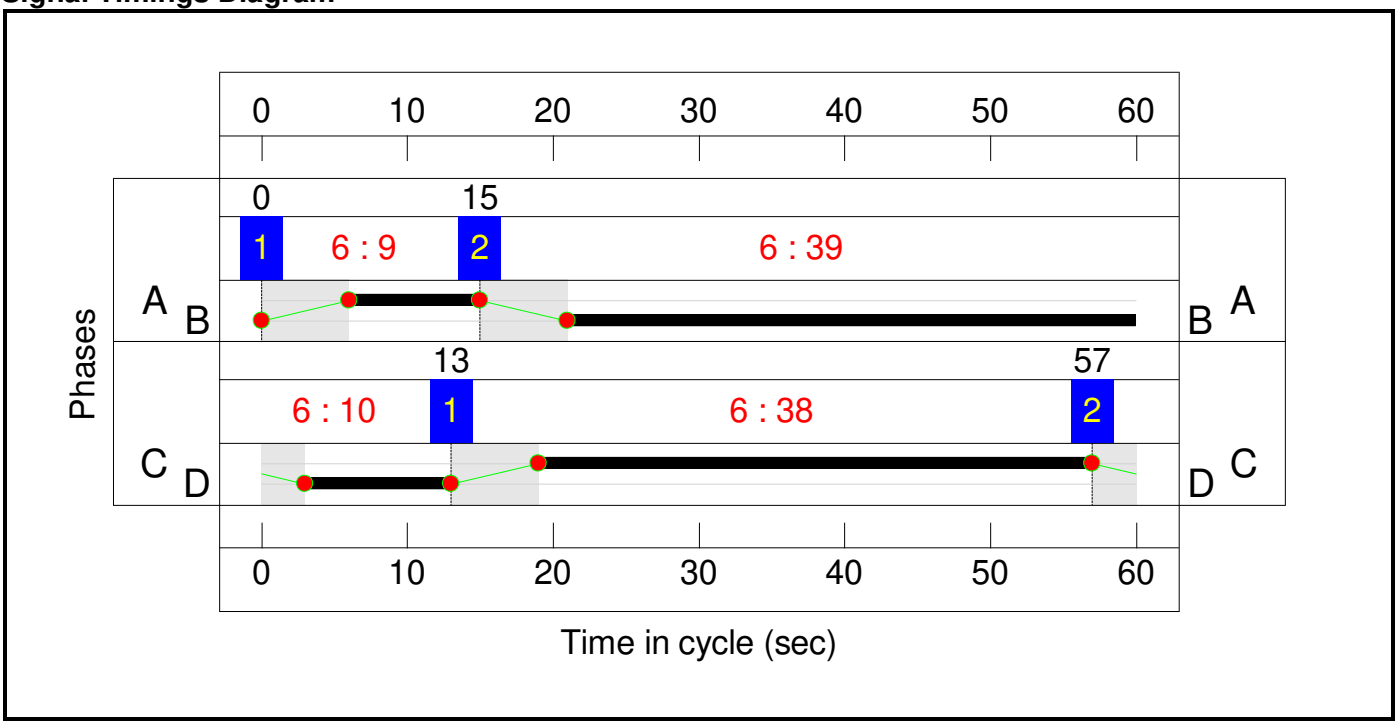
Stage Stream: 1

Stage	1	2
Duration	9	39
Change Point	0	15

Stage Stream: 2

Stage	1	2
Duration	38	10
Change Point	13	57

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: Padbury HE scheme	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.7%**
Padbury Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.7%**
1/1	A43 north Ahead	U	1	N/A	B		1	39	-	785	1922	1281	61.3%
1/2	A43 north Ahead	U	1	N/A	B		1	39	-	785	1922	1281	61.3%
3/1	A43 south Ahead	U	2	N/A	C		1	38	-	1100	1908	1240	88.7%
3/2	A43 south Ahead	U	2	N/A	C		1	38	-	1100	1908	1240	88.7%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	2	N/A	D		1	10	-	565	1908:1908	332+328	85.6 : 85.6%
5/3	Junction 10 s'bound offslip Ahead	U	2	N/A	D		1	10	-	258	1908	350	73.8%
6/1	Right	U	1	N/A	A		1	9	-	247	1850	308	80.1%
6/2	Right	U	1	N/A	A		1	9	-	258	1850	308	83.7%

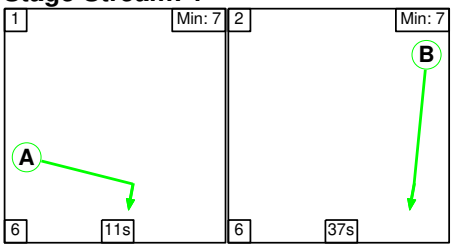
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Padbury HE scheme	**-**	**-**	**0**	**0**	**0**	**13.6**	**13.2**	**0.0**	**26.8**	**-**	**-**	**-**	**-**
Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**13.6**	**13.2**	**0.0**	**26.8**	**-**	**-**	**-**	**-**
1/1	785	785	-	-	-	1.2	0.8	-	2.0	9.3	7.2	0.8	8.0
1/2	785	785	-	-	-	1.2	0.8	-	2.0	9.3	7.2	0.8	8.0
3/1	1100	1100	-	-	-	2.7	3.7	-	6.4	20.9	15.0	3.7	18.7
3/2	1100	1100	-	-	-	2.7	3.7	-	6.4	20.9	15.0	3.7	18.7
5/2+5/1	565	565	-	-	-	3.7	2.8	-	6.5	41.3	4.5	2.8	7.3
5/3	258	258	-	-	-	1.7	1.4	-	3.0	42.2	4.0	1.4	5.4
6/1	247	247	-	-	-	0.3	0.0	-	0.3	3.7	0.5	0.0	0.5
6/2	258	258	-	-	-	0.2	0.0	-	0.2	2.9	0.3	0.0	0.3

C1 Stream: 1 PRC for Signalled Lanes (%): 7.6 Total Delay for Signalled Lanes (pcuHr): 4.49 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 1.5 Total Delay for Signalled Lanes (pcuHr): 22.26 Cycle Time (s): 60
PRC Over All Lanes (%): 1.5 Total Delay Over All Lanes(pcuHr): 26.75

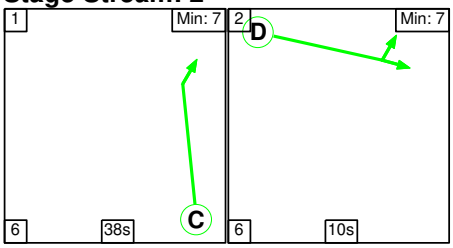
Scenario 4: '2031 Do Something - PM Peak' (FG7: 'Padbury1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

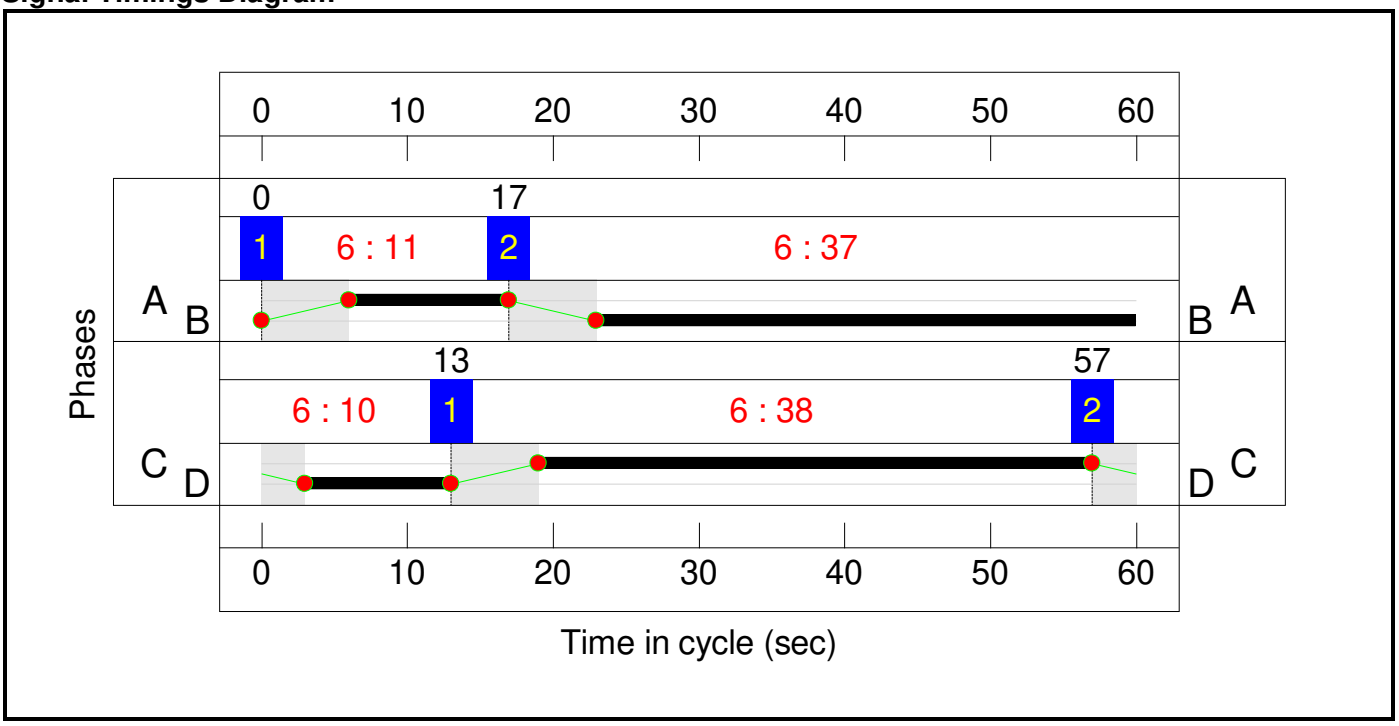
Stage Stream: 1

Stage	1	2
Duration	11	37
Change Point	0	17

Stage Stream: 2

Stage	1	2
Duration	38	10
Change Point	13	57

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: Padbury HE scheme	-	-	**N/A**	-	-		-	-	-	-	-	-	**100.6%**
Padbury Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**100.6%**
1/1	A43 north Ahead	U	1	N/A	B		1	37	-	861	1922	1217	70.7%
1/2	A43 north Ahead	U	1	N/A	B		1	37	-	861	1922	1217	70.7%
3/1	A43 south Ahead	U	2	N/A	C		1	38	-	1237	1908	1240	99.7%
3/2	A43 south Ahead	U	2	N/A	C		1	38	-	1238	1908	1240	99.8%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	2	N/A	D		1	10	-	584	1908:1908	337+243	100.6 : 100.6%
5/3	Junction 10 s'bound offslip Ahead	U	2	N/A	D		1	10	-	343	1908	350	98.1%
6/1	Right	U	1	N/A	A		1	11	-	266	1850	370	71.5%
6/2	Right	U	1	N/A	A		1	11	-	343	1850	370	92.7%

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: Padbury HE scheme	**-**	**-**	**0**	**0**	**0**	**17.3**	**57.0**	**0.0**	**74.3**	**-**	**-**	**-**	**-**
Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**17.3**	**57.0**	**0.0**	**74.3**	**-**	**-**	**-**	**-**
1/1	861	861	-	-	-	1.7	1.2	-	2.9	12.3	9.3	1.2	10.5
1/2	861	861	-	-	-	1.7	1.2	-	2.9	12.3	9.3	1.2	10.5
3/1	1237	1237	-	-	-	3.6	16.8	-	20.4	59.4	20.3	16.8	37.1
3/2	1238	1238	-	-	-	3.6	17.1	-	20.7	60.0	20.3	17.1	37.3
5/2+5/1	584	580	-	-	-	4.0	13.0	-	17.0	104.7	6.2	13.0	19.2
5/3	343	343	-	-	-	2.3	7.7	-	10.0	105.4	5.6	7.7	13.3
6/1	264	264	-	-	-	0.1	0.0	-	0.1	1.9	0.2	0.0	0.2
6/2	343	343	-	-	-	0.2	0.0	-	0.2	2.1	0.3	0.0	0.3

C1 Stream: 1 PRC for Signalled Lanes (%): -3.0 Total Delay for Signalled Lanes (pcuHr): 6.24 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): -11.8 Total Delay for Signalled Lanes (pcuHr): 68.07 Cycle Time (s): 60
PRC Over All Lanes (%): -11.8 Total Delay Over All Lanes(pcuHr): 74.31

APPENDIX 4

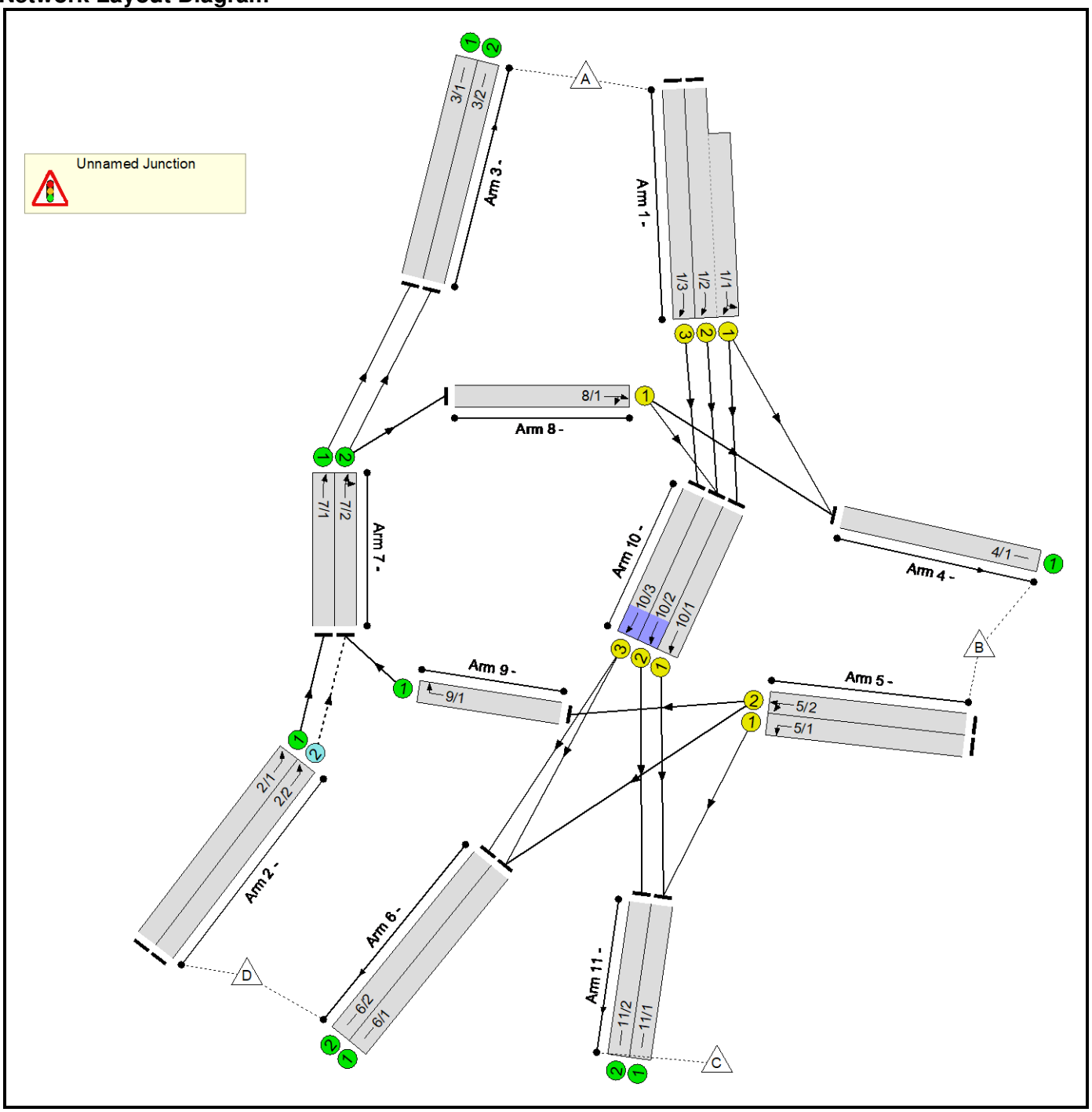
Cherwell Roundabout existing layout – LinSig results

Full Input Data And Results

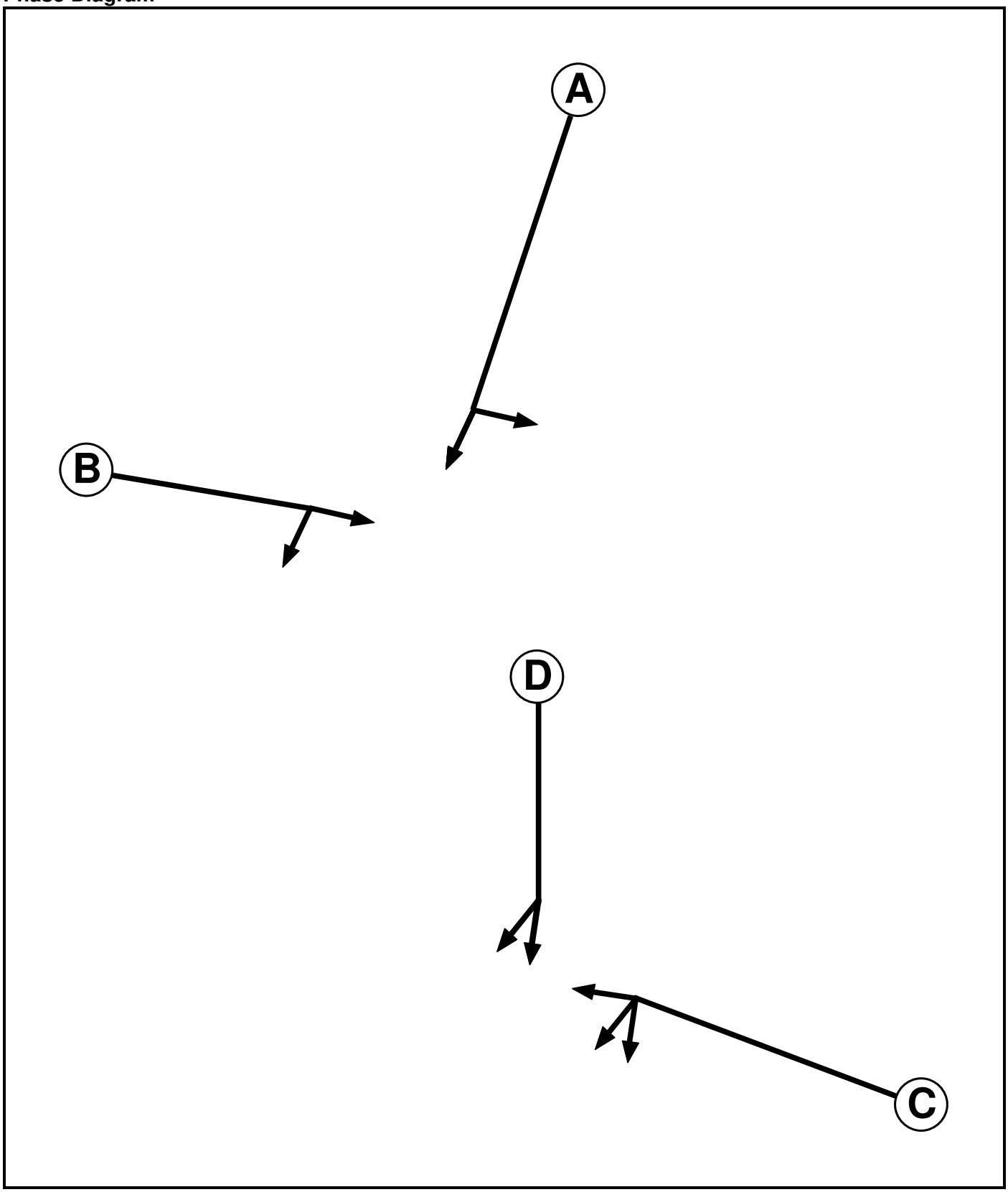
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Existing Cherwell Roundabout**
Location:	
Additional detail:	
File name:	2031_DS_M40J10_Cherwell_reference case.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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

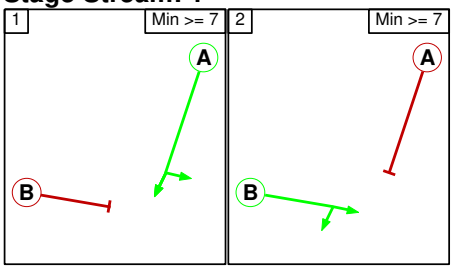
		Starting Phase			
		A	B	C	D
Terminating Phase	A		6	-	-
	B	6		-	-
	C	-	-		6
	D	-	-	6	

Phases in Stage

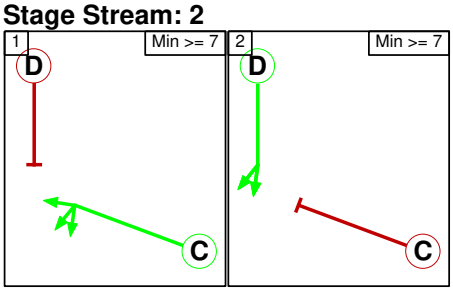
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Prohibited Stage Change

Stage Stream: 1

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

	To Stage		
		1	2
From Stage	1		6
	2	6	

Lane Input Data

Junction: Unnamed Junction

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	U	A	2	3	13.9	Geom	-	3.65	0.00	Y	Arm 4 Left	20.00
											Arm 10 Ahead	Inf
1/2	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 10 Ahead	Inf
1/3	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 10 Ahead	Inf
2/1	U		2	3	60.0	Inf	-	-	-	-	-	-
2/2	O		2	3	60.0	Inf	-	-	-	-	-	-
3/1	U		2	3	60.0	Inf	-	-	-	-	-	-
3/2	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 11 Left	Inf
5/2	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 6 Left	Inf
											Arm 9 Ahead	Inf
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	7.0	Inf	-	-	-	-	-	-
7/2	U		2	3	7.0	Inf	-	-	-	-	-	-
8/1	U	B	2	3	5.2	User	1850	-	-	-	-	-
9/1	U		2	3	7.8	Inf	-	-	-	-	-	-
10/1	U	D	2	3	8.7	User	1850	-	-	-	-	-
10/2	U	D	2	3	8.7	User	1850	-	-	-	-	-
10/3	U	D	2	3	8.7	User	1850	-	-	-	-	-
11/1	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Cherwell1_AM'	07:45	08:45	01:00	
2: 'Cherwell1_PM'	16:30	17:30	01:00	
3: 'CherwellRef1_AM'	07:45	08:45	01:00	
4: 'CherwellRef1_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Reference Case - AM Peak' (FG3: 'CherwellRef1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	343	1605	1169	3117
	B	85	0	295	202	582
	C	0	0	0	0	0
	D	1458	239	101	0	1798
	Tot.	1543	582	2001	1371	5497

Traffic Lane Flows

Lane	Scenario 1: 2031 Reference Case - AM Peak
Junction: Unnamed Junction	
1/1 (short)	936
1/2 (with short)	1948(In) 1012(Out)
1/3	1169
2/1	1458
2/2	340
3/1	1458
3/2	85
4/1	582
5/1	295
5/2	287
6/1	787
6/2	584
7/1	1458
7/2	425
8/1	340
9/1	85
10/1	593
10/2	1113
10/3	1169
11/1	888
11/2	1113

Lane Saturation Flows

Junction: Unnamed Junction

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	3.65	0.00	Y	Arm 4 Left	20.00	36.6 %	1927	1927
				Arm 10 Ahead	Inf	63.4 %		
1/2	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
1/3	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	3.50	0.00	Y	Arm 11 Left	Inf	100.0 %	1965	1965
5/2	3.50	0.00	Y	Arm 6 Left	Inf	70.4 %	1965	1965
				Arm 9 Ahead	Inf	29.6 %		
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
10/1	This lane uses a directly entered Saturation Flow						1850	1850
10/2	This lane uses a directly entered Saturation Flow						1850	1850
10/3	This lane uses a directly entered Saturation Flow						1850	1850
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2031 Do Something - AM Peak' (FG1: 'Cherwell1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	343	1605	1641	3589
	B	85	0	295	202	582
	C	0	0	0	0	0
	D	1577	239	282	0	2098
	Tot.	1662	582	2182	1843	6269

Traffic Lane Flows

Lane	Scenario 2: 2031 Do Something - AM Peak
Junction: Unnamed Junction	
1/1 (short)	985
1/2 (with short)	1948(In) 963(Out)
1/3	1641
2/1	1577
2/2	521
3/1	1577
3/2	85
4/1	582
5/1	295
5/2	287
6/1	1023
6/2	820
7/1	1577
7/2	606
8/1	521
9/1	85
10/1	642
10/2	1245
10/3	1641
11/1	937
11/2	1245

Lane Saturation Flows

Junction: Unnamed Junction

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	3.65	0.00	Y	Arm 4 Left	20.00	34.8 %	1930	1930
				Arm 10 Ahead	Inf	65.2 %		
1/2	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
1/3	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	3.50	0.00	Y	Arm 11 Left	Inf	100.0 %	1965	1965
5/2	3.50	0.00	Y	Arm 6 Left	Inf	70.4 %	1965	1965
				Arm 9 Ahead	Inf	29.6 %		
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
10/1	This lane uses a directly entered Saturation Flow						1850	1850
10/2	This lane uses a directly entered Saturation Flow						1850	1850
10/3	This lane uses a directly entered Saturation Flow						1850	1850
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2031 Reference Case - PM Peak' (FG4: 'CherwellRef1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	336	939	800	2075
	B	129	0	258	213	600
	C	0	0	0	0	0
	D	2071	268	88	0	2427
	Tot.	2200	604	1285	1013	5102

Traffic Lane Flows

Lane	Scenario 3: 2031 Reference Case - PM Peak
Junction: Unnamed Junction	
1/1 (short)	558
1/2 (with short)	1275(In) 717(Out)
1/3	800
2/1	2071
2/2	356
3/1	2071
3/2	129
4/1	604
5/1	258
5/2	342
6/1	613
6/2	400
7/1	2071
7/2	485
8/1	356
9/1	129
10/1	222
10/2	805
10/3	800
11/1	480
11/2	805

Lane Saturation Flows

Junction: Unnamed Junction

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	3.65	0.00	Y	Arm 4 Left	20.00	60.2 %	1894	1894
				Arm 10 Ahead	Inf	39.8 %		
1/2	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
1/3	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	3.50	0.00	Y	Arm 11 Left	Inf	100.0 %	1965	1965
5/2	3.50	0.00	Y	Arm 6 Left	Inf	62.3 %	1965	1965
				Arm 9 Ahead	Inf	37.7 %		
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
10/1	This lane uses a directly entered Saturation Flow						1850	1850
10/2	This lane uses a directly entered Saturation Flow						1850	1850
10/3	This lane uses a directly entered Saturation Flow						1850	1850
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2031 Do something - PM Peak' (FG2: 'Cherwell1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	336	939	1056	2331
	B	129	0	258	213	600
	C	0	0	0	0	0
	D	2346	268	472	0	3086
	Tot.	2475	604	1669	1269	6017

Traffic Lane Flows

Lane	Scenario 4: 2031 Do something - PM Peak
Junction: Unnamed Junction	
1/1 (short)	625
1/2 (with short)	1275(In) 650(Out)
1/3	1056
2/1	2346
2/2	740
3/1	2346
3/2	129
4/1	604
5/1	258
5/2	342
6/1	741
6/2	528
7/1	2346
7/2	869
8/1	740
9/1	129
10/1	289
10/2	1122
10/3	1056
11/1	547
11/2	1122

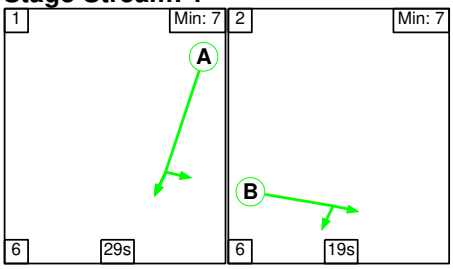
Lane Saturation Flows

Junction: Unnamed Junction								
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	3.65	0.00	Y	Arm 4 Left	20.00	53.8 %	1903	1903
				Arm 10 Ahead	Inf	46.2 %		
1/2	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
1/3	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	3.50	0.00	Y	Arm 11 Left	Inf	100.0 %	1965	1965
5/2	3.50	0.00	Y	Arm 6 Left	Inf	62.3 %	1965	1965
				Arm 9 Ahead	Inf	37.7 %		
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
10/1	This lane uses a directly entered Saturation Flow						1850	1850
10/2	This lane uses a directly entered Saturation Flow						1850	1850
10/3	This lane uses a directly entered Saturation Flow						1850	1850
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf

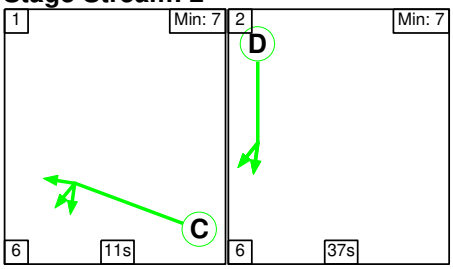
Scenario 1: '2031 Reference Case - AM Peak' (FG3: 'CherwellRef1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

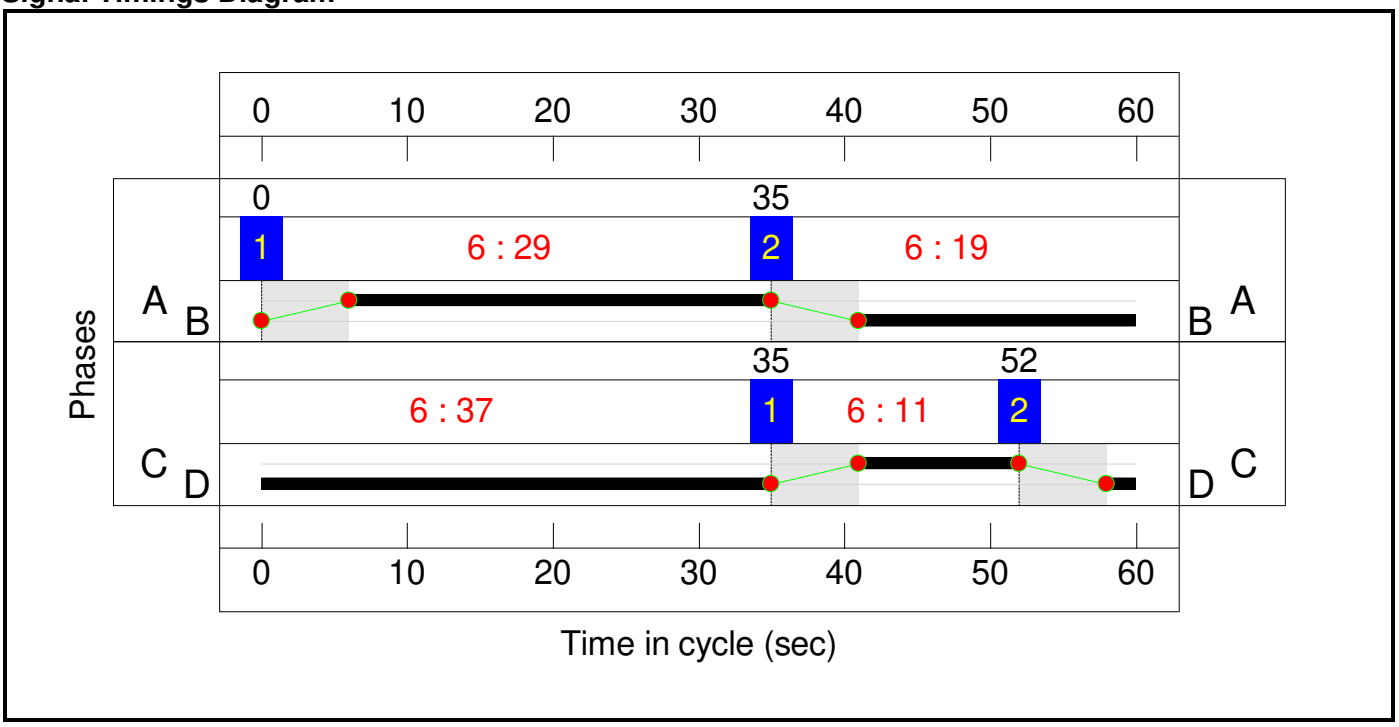
Stage Stream: 1

Stage	1	2
Duration	29	19
Change Point	0	35

Stage Stream: 2

Stage	1	2
Duration	11	37
Change Point	35	52

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: Existing Cherwell Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**118.1%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**118.1%**
1/2+1/1	Left Ahead	U	1	N/A	A		1	29	-	1948	1980:1927	922+852	109.8 : 109.8%
1/3	Ahead	U	1	N/A	A		1	29	-	1169	1980	990	118.1%
2/2	Ahead	O	N/A	N/A	-		-	-	-	340	Inf	972	35.0%
5/1	Left	U	2	N/A	C		1	11	-	295	1965	393	75.1%
5/2	Left Ahead	U	2	N/A	C		1	11	-	287	1965	393	73.0%
8/1	Ahead Right	U	1	N/A	B		1	19	-	340	1850	617	55.1%
10/1	Ahead	U	2	N/A	D		1	37	-	593	1850	1172	46.1%
10/2	Ahead	U	2	N/A	D		1	37	-	1113	1850	1172	87.3%
10/3	Ahead	U	2	N/A	D		1	37	-	1169	1850	1172	84.5%

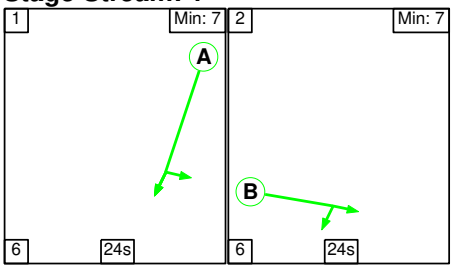
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Existing Cherwell Roundabout	**-**	**-**	**340**	**0**	**0**	**30.1**	**189.0**	**0.0**	**219.1**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**340**	**0**	**0**	**30.1**	**189.0**	**0.0**	**219.1**	**-**	**-**	**-**	**-**
1/2+1/1	1948	1774	-	-	-	12.2	92.3	-	104.5	193.1	33.0	92.3	125.2
1/3	1169	990	-	-	-	9.7	92.7	-	102.4	315.3	22.5	92.7	115.1
2/2	340	340	340	0	0	0.0	0.3	-	0.3	2.8	0.0	0.3	0.3
5/1	295	295	-	-	-	1.9	1.5	-	3.3	40.4	4.6	1.5	6.1
5/2	287	287	-	-	-	1.8	1.3	-	3.1	39.1	4.5	1.3	5.8
8/1	340	340	-	-	-	1.5	0.6	-	2.2	22.8	4.6	0.6	5.2
10/1	540	540	-	-	-	0.2	0.4	-	0.7	4.4	0.7	0.4	1.1
10/2	1023	1023	-	-	-	1.3	0.0	-	1.3	4.6	7.6	0.0	7.6
10/3	990	990	-	-	-	1.4	0.0	-	1.4	5.2	7.6	0.0	7.6

C1 Stream: 1 PRC for Signalled Lanes (%): -31.2 Total Delay for Signalled Lanes (pcuHr): 209.02 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 3.1 Total Delay for Signalled Lanes (pcuHr): 9.83 Cycle Time (s): 60
PRC Over All Lanes (%): -31.2 Total Delay Over All Lanes(pcuHr): 219.12

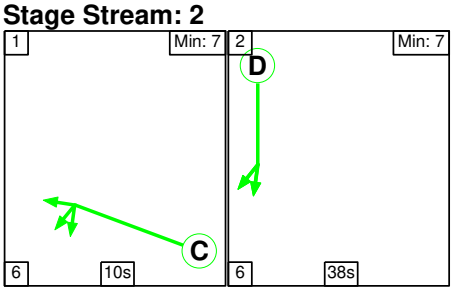
Scenario 2: '2031 Do Something - AM Peak' (FG1: 'Cherwell1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

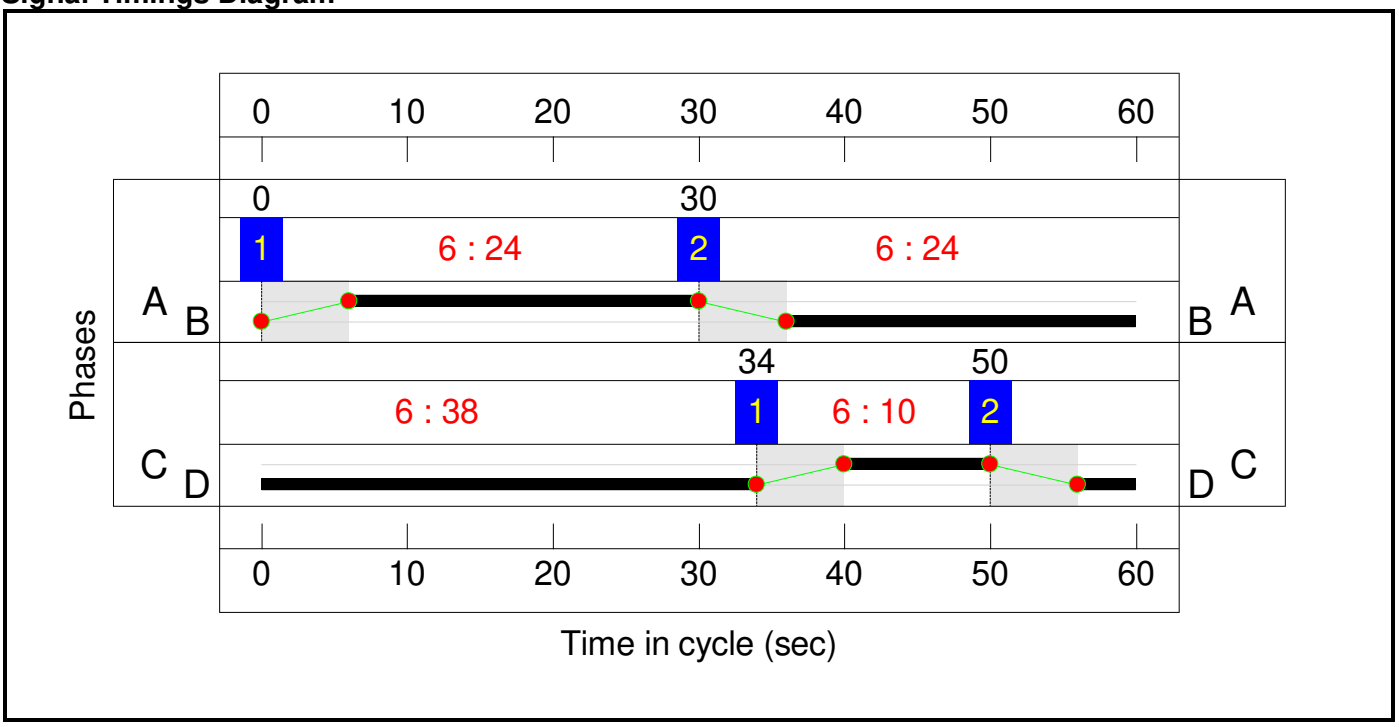
Stage Stream: 1

Stage	1	2
Duration	24	24
Change Point	0	30

Stage Stream: 2

Stage	1	2
Duration	10	38
Change Point	34	50

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: Existing Cherwell Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**198.9%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**198.9%**
1/2+1/1	Left Ahead	U	1	N/A	A		1	24	-	1948	1980:1930	786+804	122.5 : 122.5%
1/3	Ahead	U	1	N/A	A		1	24	-	1641	1980	825	198.9%
2/2	Ahead	O	N/A	N/A	-		-	-	-	521	Inf	972	53.6%
5/1	Left	U	2	N/A	C		1	10	-	295	1965	360	81.9%
5/2	Left Ahead	U	2	N/A	C		1	10	-	287	1965	360	79.7%
8/1	Ahead Right	U	1	N/A	B		1	24	-	521	1850	771	67.6%
10/1	Ahead	U	2	N/A	D		1	38	-	642	1850	1203	43.6%
10/2	Ahead	U	2	N/A	D		1	38	-	1245	1850	1203	88.8%
10/3	Ahead	U	2	N/A	D		1	38	-	1641	1850	1203	68.6%

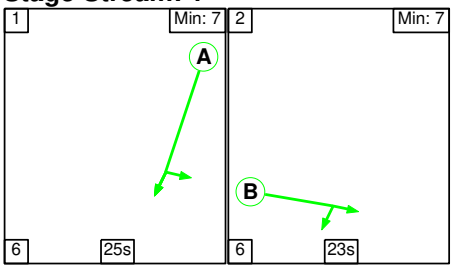
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Existing Cherwell Roundabout	**-**	**-**	**521**	**0**	**0**	**58.3**	**596.5**	**0.0**	**654.7**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**521**	**0**	**0**	**58.3**	**596.5**	**0.0**	**654.7**	**-**	**-**	**-**	**-**
1/2+1/1	1948	1590	-	-	-	18.7	181.5	-	200.2	370.0	32.2	181.5	213.7
1/3	1641	825	-	-	-	31.9	409.0	-	440.9	967.3	42.2	409.0	451.2
2/2	521	521	521	0	0	0.0	0.6	-	0.6	4.0	0.0	0.6	0.6
5/1	295	295	-	-	-	1.9	2.1	-	4.1	49.5	4.7	2.1	6.8
5/2	287	287	-	-	-	1.9	1.9	-	3.7	46.8	4.5	1.9	6.4
8/1	521	521	-	-	-	2.1	1.0	-	3.1	21.4	6.9	1.0	8.0
10/1	524	524	-	-	-	0.0	0.4	-	0.4	2.7	0.0	0.4	0.4
10/2	1068	1068	-	-	-	1.2	0.0	-	1.2	4.0	6.4	0.0	6.4
10/3	825	825	-	-	-	0.5	0.0	-	0.5	2.3	7.1	0.0	7.1

C1 Stream: 1 PRC for Signalled Lanes (%): -121.0 Total Delay for Signalled Lanes (pcuHr): 644.27 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 1.3 Total Delay for Signalled Lanes (pcuHr): 9.89 Cycle Time (s): 60
PRC Over All Lanes (%): -121.0 Total Delay Over All Lanes(pcuHr): 654.73

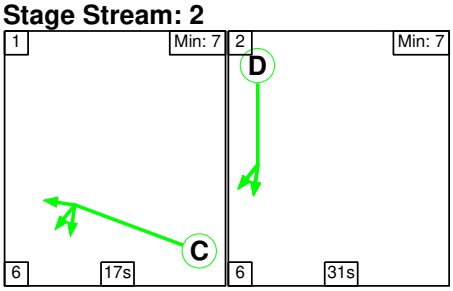
Scenario 3: '2031 Reference Case - PM Peak' (FG4: 'CherwellRef1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

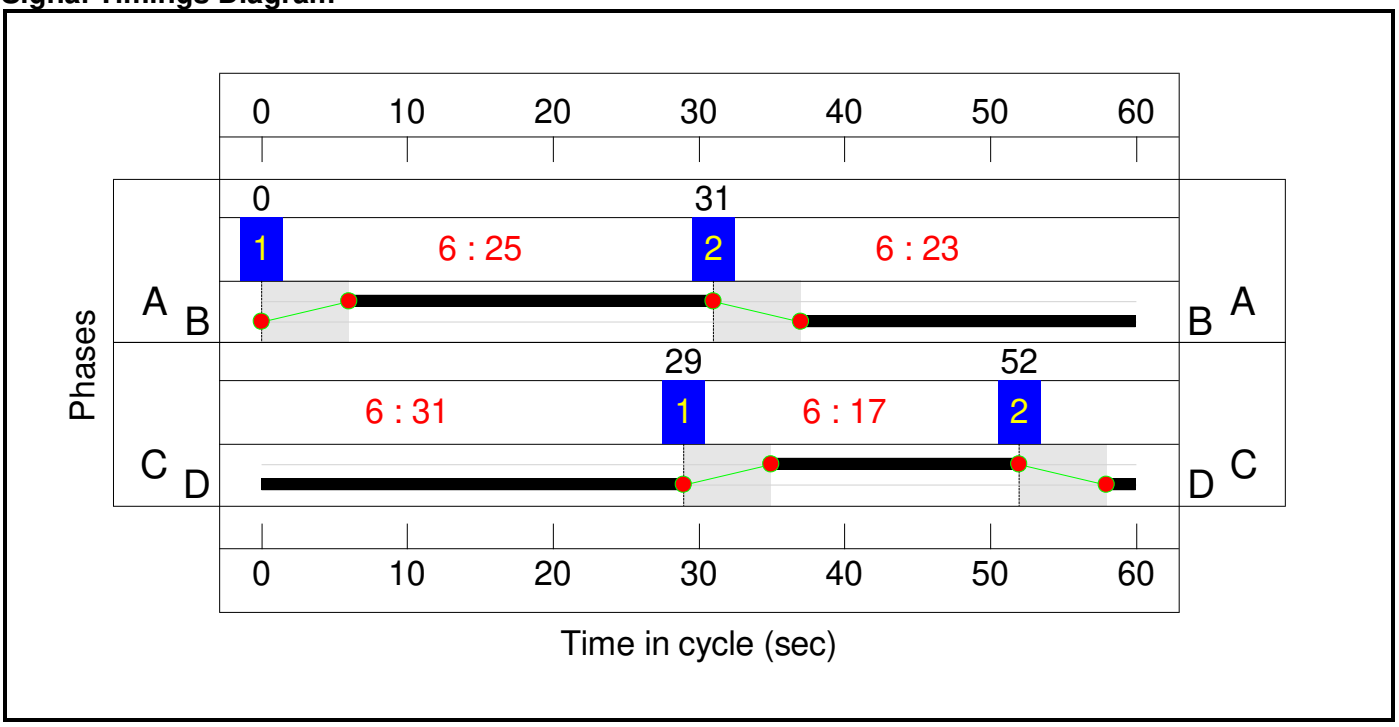
Stage Stream: 1

Stage	1	2
Duration	25	23
Change Point	0	31

Stage Stream: 2

Stage	1	2
Duration	17	31
Change Point	29	52

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: Existing Cherwell Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**93.2%**
Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**93.2%**
1/2+1/1	Left Ahead	U	1	N/A	A		1	25	-	1275	1980:1894	855+666	83.8 : 83.8%
1/3	Ahead	U	1	N/A	A		1	25	-	800	1980	858	93.2%
2/2	Ahead	O	N/A	N/A	-		-	-	-	356	Inf	957	37.2%
5/1	Left	U	2	N/A	C		1	17	-	258	1965	590	43.8%
5/2	Left Ahead	U	2	N/A	C		1	17	-	342	1965	590	58.0%
8/1	Ahead Right	U	1	N/A	B		1	23	-	356	1850	740	48.1%
10/1	Ahead	U	2	N/A	D		1	31	-	222	1850	987	22.5%
10/2	Ahead	U	2	N/A	D		1	31	-	805	1850	987	81.6%
10/3	Ahead	U	2	N/A	D		1	31	-	800	1850	987	81.1%

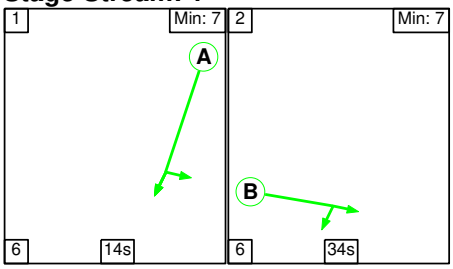
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Existing Cherwell Roundabout	**-**	**-**	**356**	**0**	**0**	**15.9**	**10.3**	**0.0**	**26.2**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**356**	**0**	**0**	**15.9**	**10.3**	**0.0**	**26.2**	**-**	**-**	**-**	**-**
1/2+1/1	1275	1275	-	-	-	5.1	2.5	-	7.7	21.6	10.6	2.5	13.1
1/3	800	800	-	-	-	3.6	5.8	-	9.3	42.1	12.7	5.8	18.4
2/2	356	356	356	0	0	0.0	0.3	-	0.3	3.0	0.0	0.3	0.3
5/1	258	258	-	-	-	1.2	0.4	-	1.6	22.4	3.4	0.4	3.8
5/2	342	342	-	-	-	1.7	0.7	-	2.4	25.0	4.7	0.7	5.4
8/1	356	356	-	-	-	1.3	0.5	-	1.8	18.1	4.4	0.5	4.8
10/1	222	222	-	-	-	0.2	0.1	-	0.3	4.9	0.4	0.1	0.5
10/2	805	805	-	-	-	1.2	0.0	-	1.2	5.5	4.1	0.0	4.1
10/3	800	800	-	-	-	1.6	0.0	-	1.6	7.2	4.3	0.0	4.3

C1 Stream: 1 PRC for Signalled Lanes (%): -3.6 Total Delay for Signalled Lanes (pcuHr): 18.80 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 10.3 Total Delay for Signalled Lanes (pcuHr): 7.12 Cycle Time (s): 60
PRC Over All Lanes (%): -3.6 Total Delay Over All Lanes(pcuHr): 26.22

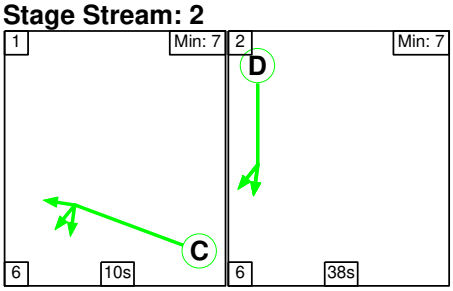
Scenario 4: '2031 Do something - PM Peak' (FG2: 'Cherwell1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

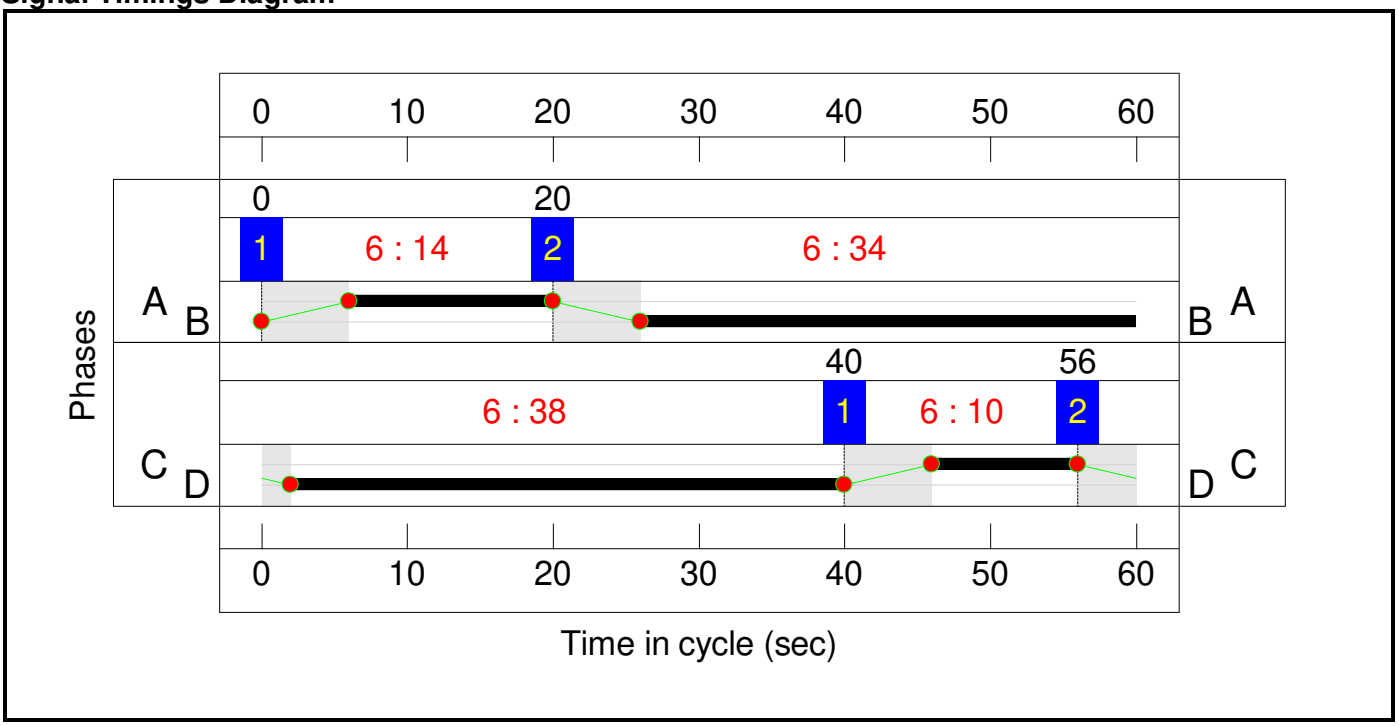
Stage Stream: 1

Stage	1	2
Duration	14	34
Change Point	0	20

Stage Stream: 2

Stage	1	2
Duration	10	38
Change Point	40	56

Signal Timings Diagram



Network Results

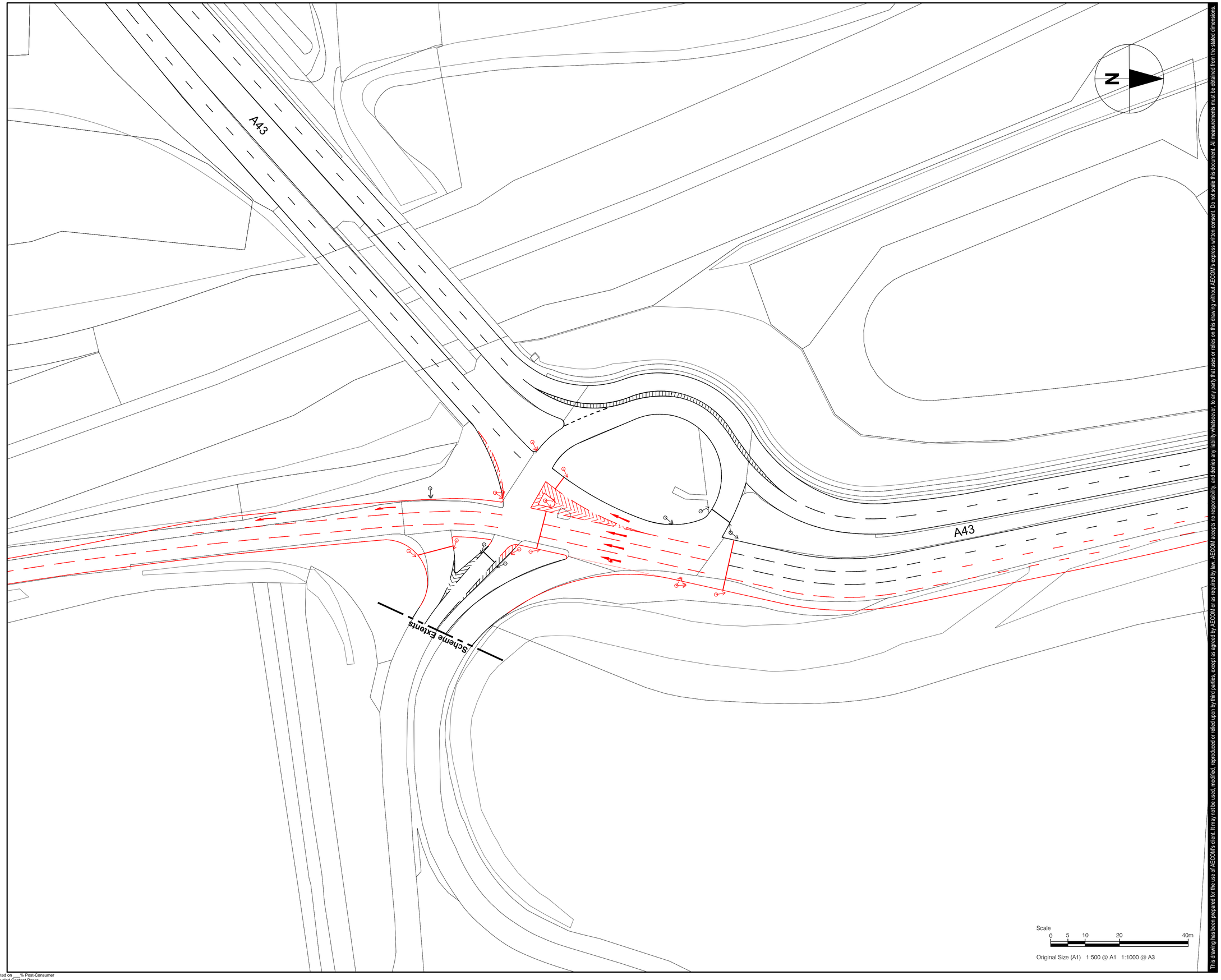
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Existing Cherwell Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**213.3%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**213.3%**
1/2+1/1	Left Ahead	U	1	N/A	A		1	14	-	1275	1980:1903	495+476	131.3 : 131.4%
1/3	Ahead	U	1	N/A	A		1	14	-	1056	1980	495	213.3%
2/2	Ahead	O	N/A	N/A	-		-	-	-	740	Inf	957	77.3%
5/1	Left	U	2	N/A	C		1	10	-	258	1965	360	71.6%
5/2	Left Ahead	U	2	N/A	C		1	10	-	342	1965	360	94.9%
8/1	Ahead Right	U	1	N/A	B		1	34	-	740	1850	1079	68.6%
10/1	Ahead	U	2	N/A	D		1	38	-	289	1850	1203	18.3%
10/2	Ahead	U	2	N/A	D		1	38	-	1122	1850	1203	80.4%
10/3	Ahead	U	2	N/A	D		1	38	-	1056	1850	1203	41.2%

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: Existing Cherwell Roundabout	**-**	**-**	**740**	**0**	**0**	**46.8**	**445.5**	**0.0**	**492.3**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**740**	**0**	**0**	**46.8**	**445.5**	**0.0**	**492.3**	**-**	**-**	**-**	**-**
1/2+1/1	1275	971	-	-	-	16.8	154.2	-	171.0	482.9	17.1	154.2	171.3
1/3	1056	495	-	-	-	23.0	281.4	-	304.4	1037.7	29.6	281.4	311.0
2/2	740	740	740	0	0	0.0	1.7	-	1.7	8.2	0.0	1.7	1.7
5/1	258	258	-	-	-	1.7	1.2	-	2.9	40.2	4.0	1.2	5.2
5/2	342	342	-	-	-	2.3	5.7	-	8.1	84.7	5.6	5.7	11.4
8/1	740	740	-	-	-	1.8	1.1	-	2.9	14.0	8.4	1.1	9.5
10/1	220	220	-	-	-	0.0	0.1	-	0.1	1.8	0.0	0.1	0.1
10/2	967	967	-	-	-	1.2	0.0	-	1.2	4.5	4.8	0.0	4.8
10/3	495	495	-	-	-	0.1	0.0	-	0.1	0.5	1.6	0.0	1.6

C1 Stream: 1 PRC for Signalled Lanes (%): -137.0 Total Delay for Signalled Lanes (pcuHr): 478.30 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): -5.5 Total Delay for Signalled Lanes (pcuHr): 12.34 Cycle Time (s): 60
PRC Over All Lanes (%): -137.0 Total Delay Over All Lanes(pcuHr): 492.32

APPENDIX 5

Potential improvement at Cherwell Roundabout



Scale
0 5 10 20 40m

Original Size (A1) 1:500 @ A1 1:1000 @ A3

This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as agreed by AECOM or as required by law. AECOM accepts no responsibility, and denies any liability whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. Do not scale this document. All measurements must be obtained from the stated dimensions.

AECOM

PROJECT

M40 JUNCTION 10 OPTION DEVELOPMENT & TESTING

CLIENT

highways england
driving forward

CONSULTANT

AECOM
The Colmore Building
Colmore Circus Queensway
Birmingham
0121 262 1900 tel 0121 262 1999 fax
www.aecom.com

SCALE

1:500 @ A1, 1:1000 @ A3

REGISTRATION

©Crown copyright. All rights reserved. License Number 100019139

NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DOCUMENTATION. ANY DISCREPANCIES, ERRORS OR OMISSIONS TO BE BROUGHT TO THE ATTENTION OF THE OVERSEEING ORGANISATION.

2. ALL DIMENSIONS IN METRES UNLESS OTHERWISE STATED.

3. ALL EXISTING ROAD MARKINGS SHOWN ARE INDICATIVE ONLY.

4. SCHEME EXTENTS ARE INDICATIVE ONLY.

5. THIS IS A CONCEPT DESIGN FOR INFORMATION ONLY. IT HAS YET TO BE ROAD SAFETY AUDITED. A PRINCIPAL DESIGNER HAS YET TO BE APPOINTED.

KEY

- PROPOSED SCHEME
- PROPOSED SIGNAL HEAD (PRIMARY)
- PROPOSED SIGNAL HEAD (SECONDARY)

IN DESIGN DEVELOPMENT

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JAN 2018	OPTION DEVELOP. & TESTING

PROJECT NUMBER

60540307

SHEET TITLE

M40 JUNCTION 10
OPTION DEVELOPMENT & TESTING
SHEET 2 OF 5
A43 CHERWELL JUNCTION

SHEET NUMBER

60540307-SHT-1-C-0003

Project Management Initials: Designer: RCH Checked: PSE Approved: MJ ISO A1 594mm x 841mm

Last saved by: CASILLASR(2018-01-17) Last Plotted: 2018-01-17
Filename: \\UKBHM2FP002\UKBHM2FP001-V1\TP\PROJECT\TRAFFIC - HESPA - 17\STUDIES\EM S 107 M40 J10 BASE MODEL TAME RE VALI\03 EXECUTION\07 DRAWINGS\02 SHEETS\60540307-SHT-1-C-0001.DWG

Printed on ___% Post-Consumer Recycled Content Paper

APPENDIX 6

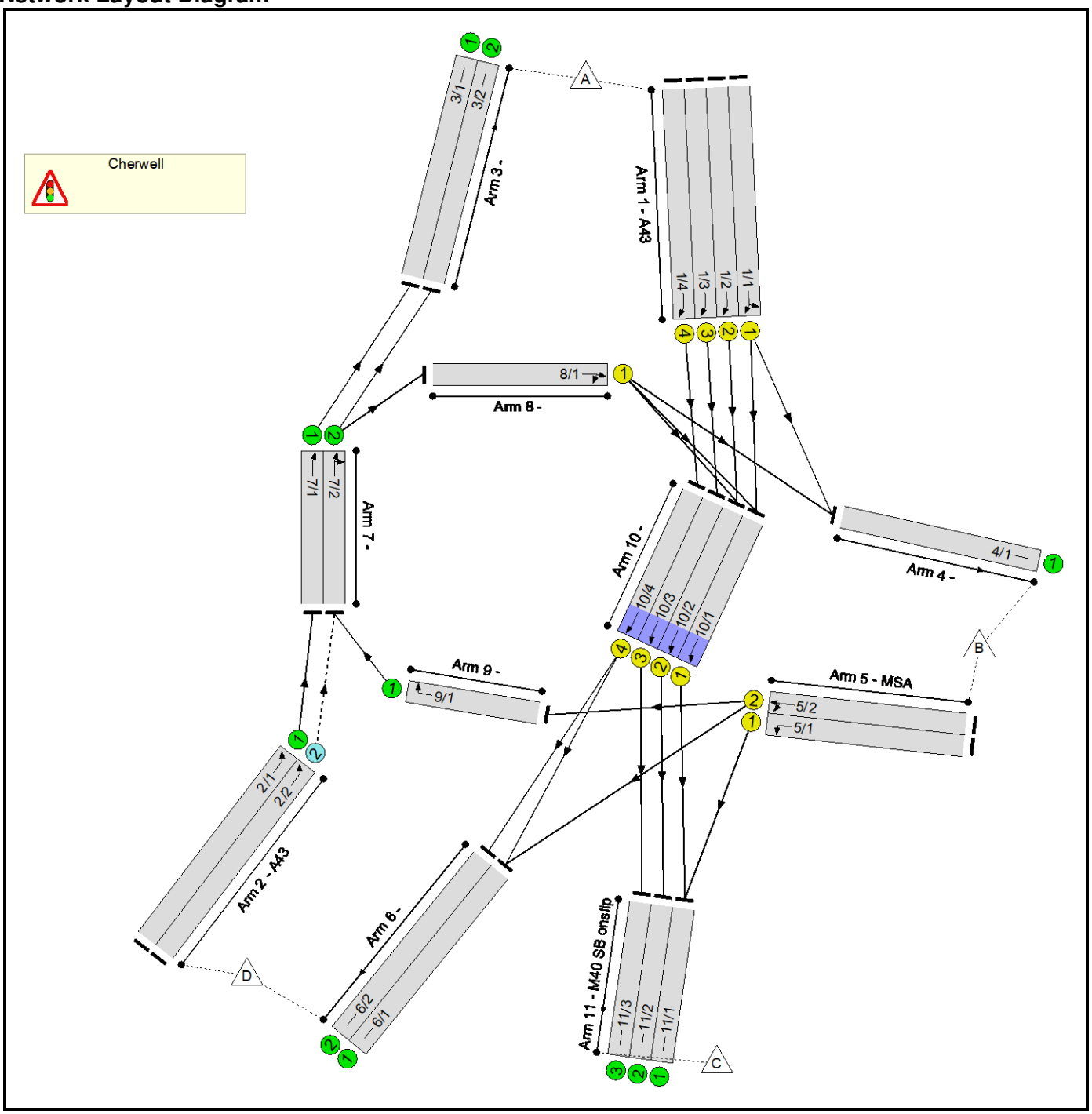
Cherwell Roundabout potential improvement – LinSig results

Full Input Data And Results

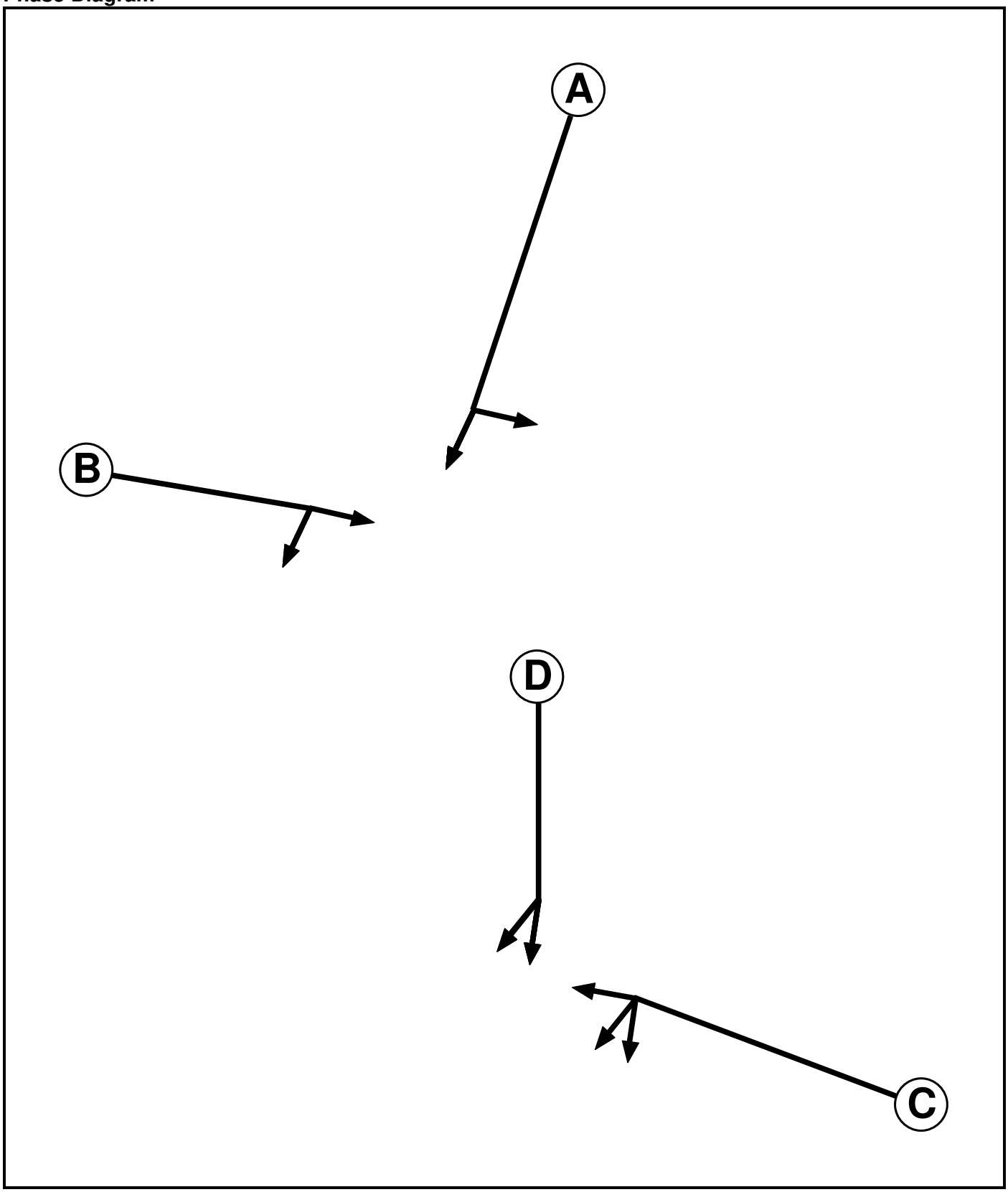
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Cherwell Roundabout - HE Potential Scheme**
Location:	
Additional detail:	
File name:	2031_DS_M40J10_Cherwell_reference case Aecom option.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	

Network Layout Diagram



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

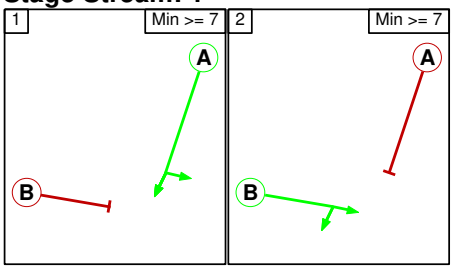
		Starting Phase			
		A	B	C	D
Terminating Phase	A		6	-	-
	B	6		-	-
	C	-	-		6
	D	-	-	6	

Phases in Stage

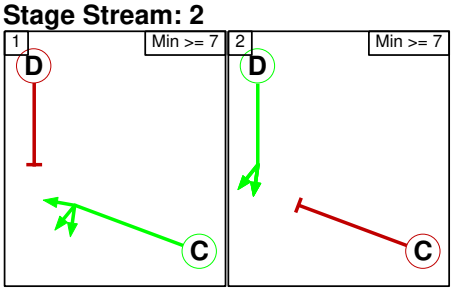
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Prohibited Stage Change

Stage Stream: 1

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		6
	2	6	

Lane Input Data

Junction: Cherwell

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 (A43)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Left	Inf
											Arm 10 Ahead	Inf
1/2 (A43)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 10 Ahead	Inf
1/3 (A43)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 10 Ahead	Inf
1/4 (A43)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 10 Ahead	Inf
2/1 (A43)	U		2	3	60.0	Inf	-	-	-	-	-	-
2/2 (A43)	O		2	3	60.0	Inf	-	-	-	-	-	-
3/1	U		2	3	60.0	Inf	-	-	-	-	-	-
3/2	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 11 Left	Inf
5/2 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 6 Left	Inf
											Arm 9 Ahead	Inf
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	7.0	Inf	-	-	-	-	-	-
7/2	U		2	3	7.0	Inf	-	-	-	-	-	-
8/1	U	B	2	3	5.2	User	1850	-	-	-	-	-
9/1	U		2	3	7.8	Inf	-	-	-	-	-	-
10/1	U	D	2	3	8.7	User	1850	-	-	-	-	-
10/2	U	D	2	3	8.7	User	1850	-	-	-	-	-
10/3	U	D	2	3	8.7	User	1850	-	-	-	-	-
10/4	U	D	2	3	8.7	User	1850	-	-	-	-	-
11/1 (M40 SB onslip)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2 (M40 SB onslip)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/3 (M40 SB onslip)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Cherwell1_AM'	07:45	08:45	01:00	
2: 'Cherwell1_PM'	16:30	17:30	01:00	
3: 'CherwellRef1_AM'	07:45	08:45	01:00	
4: 'CherwellRef1_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Reference Case - AM Peak' (FG3: 'CherwellRef1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	343	1605	1169	3117
	B	85	0	295	202	582
	C	0	0	0	0	0
	D	1458	239	101	0	1798
	Tot.	1543	582	2001	1371	5497

Traffic Lane Flows

Lane	Scenario 1: 2031 Reference Case - AM Peak
Junction: Cherwell	
1/1	661
1/2	644
1/3	643
1/4	1169
2/1	1458
2/2	340
3/1	1458
3/2	85
4/1	582
5/1	295
5/2	287
6/1	786
6/2	585
7/1	1458
7/2	425
8/1	340
9/1	85
10/1	391
10/2	672
10/3	643
10/4	1169
11/1	686
11/2	672
11/3	643

Lane Saturation Flows

Junction: Cherwell

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 (A43)	3.65	0.00	Y	Arm 4 Left	Inf	51.9 %	1980	1980
				Arm 10 Ahead	Inf	48.1 %		
1/2 (A43)	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
1/3 (A43)	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
1/4 (A43)	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1 (MSA)	3.50	0.00	Y	Arm 11 Left	Inf	100.0 %	1965	1965
5/2 (MSA)	3.50	0.00	Y	Arm 6 Left	Inf	70.4 %	1965	1965
				Arm 9 Ahead	Inf	29.6 %		
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
10/1	This lane uses a directly entered Saturation Flow						1850	1850
10/2	This lane uses a directly entered Saturation Flow						1850	1850
10/3	This lane uses a directly entered Saturation Flow						1850	1850
10/4	This lane uses a directly entered Saturation Flow						1850	1850
11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/3 (M40 SB onslip Lane 3)	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2031 Do Something - AM Peak' (FG1: 'Cherwell1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	343	1605	1641	3589
	B	85	0	295	202	582
	C	0	0	0	0	0
	D	1577	239	282	0	2098
	Tot.	1662	582	2182	1843	6269

Traffic Lane Flows

Lane	Scenario 2: 2031 Do Something - AM Peak
Junction: Cherwell	
1/1	655
1/2	647
1/3	646
1/4	1641
2/1	1577
2/2	521
3/1	1577
3/2	85
4/1	582
5/1	295
5/2	287
6/1	1022
6/2	821
7/1	1577
7/2	606
8/1	521
9/1	85
10/1	453
10/2	788
10/3	646
10/4	1641
11/1	748
11/2	788
11/3	646

Lane Saturation Flows

Junction: Cherwell

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 (A43)	3.65	0.00	Y	Arm 4 Left	Inf	52.4 %	1980	1980
				Arm 10 Ahead	Inf	47.6 %		
1/2 (A43)	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
1/3 (A43)	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
1/4 (A43)	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1 (MSA)	3.50	0.00	Y	Arm 11 Left	Inf	100.0 %	1965	1965
5/2 (MSA)	3.50	0.00	Y	Arm 6 Left	Inf	70.4 %	1965	1965
				Arm 9 Ahead	Inf	29.6 %		
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
10/1	This lane uses a directly entered Saturation Flow						1850	1850
10/2	This lane uses a directly entered Saturation Flow						1850	1850
10/3	This lane uses a directly entered Saturation Flow						1850	1850
10/4	This lane uses a directly entered Saturation Flow						1850	1850
11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/3 (M40 SB onslip Lane 3)	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2031 Reference Case - PM Peak' (FG4: 'CherwellRef1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	336	939	800	2075
	B	129	0	258	213	600
	C	0	0	0	0	0
	D	2071	268	88	0	2427
	Tot.	2200	604	1285	1013	5102

Traffic Lane Flows

Lane	Scenario 3: 2031 Reference Case - PM Peak
Junction: Cherwell	
1/1	434
1/2	421
1/3	420
1/4	800
2/1	2071
2/2	356
3/1	2071
3/2	129
4/1	604
5/1	258
5/2	342
6/1	613
6/2	400
7/1	2071
7/2	485
8/1	356
9/1	129
10/1	172
10/2	435
10/3	420
10/4	800
11/1	430
11/2	435
11/3	420

Lane Saturation Flows

Junction: Cherwell

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 (A43)	3.65	0.00	Y	Arm 4 Left	Inf	77.4 %	1980	1980
				Arm 10 Ahead	Inf	22.6 %		
1/2 (A43)	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
1/3 (A43)	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
1/4 (A43)	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1 (MSA)	3.50	0.00	Y	Arm 11 Left	Inf	100.0 %	1965	1965
5/2 (MSA)	3.50	0.00	Y	Arm 6 Left	Inf	62.3 %	1965	1965
				Arm 9 Ahead	Inf	37.7 %		
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
10/1	This lane uses a directly entered Saturation Flow						1850	1850
10/2	This lane uses a directly entered Saturation Flow						1850	1850
10/3	This lane uses a directly entered Saturation Flow						1850	1850
10/4	This lane uses a directly entered Saturation Flow						1850	1850
11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/3 (M40 SB onslip Lane 3)	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2031 Do Something - PM Peak' (FG2: 'Cherwell1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	336	939	1056	2331
	B	129	0	258	213	600
	C	0	0	0	0	0
	D	2346	268	472	0	3086
	Tot.	2475	604	1669	1269	6017

Traffic Lane Flows

Lane	Scenario 4: 2031 Do Something - PM Peak
Junction: Cherwell	
1/1	427
1/2	424
1/3	424
1/4	1056
2/1	2346
2/2	740
3/1	2346
3/2	129
4/1	604
5/1	258
5/2	342
6/1	741
6/2	528
7/1	2346
7/2	869
8/1	740
9/1	129
10/1	327
10/2	660
10/3	424
10/4	1056
11/1	585
11/2	660
11/3	424

Lane Saturation Flows

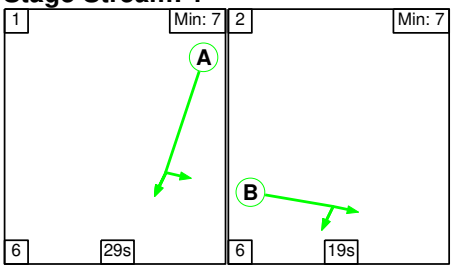
Junction: Cherwell

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 (A43)	3.65	0.00	Y	Arm 4 Left	Inf	78.7 %	1980	1980
				Arm 10 Ahead	Inf	21.3 %		
1/2 (A43)	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
1/3 (A43)	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
1/4 (A43)	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1 (MSA)	3.50	0.00	Y	Arm 11 Left	Inf	100.0 %	1965	1965
5/2 (MSA)	3.50	0.00	Y	Arm 6 Left	Inf	62.3 %	1965	1965
				Arm 9 Ahead	Inf	37.7 %		
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
10/1	This lane uses a directly entered Saturation Flow						1850	1850
10/2	This lane uses a directly entered Saturation Flow						1850	1850
10/3	This lane uses a directly entered Saturation Flow						1850	1850
10/4	This lane uses a directly entered Saturation Flow						1850	1850
11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/3 (M40 SB onslip Lane 3)	Infinite Saturation Flow						Inf	Inf

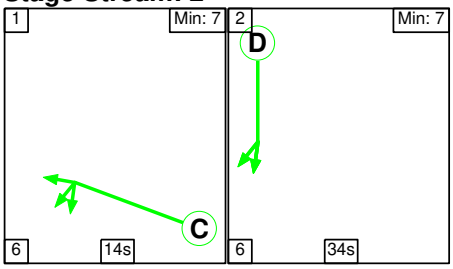
Scenario 1: '2031 Reference Case - AM Peak' (FG3: 'CherwellRef1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

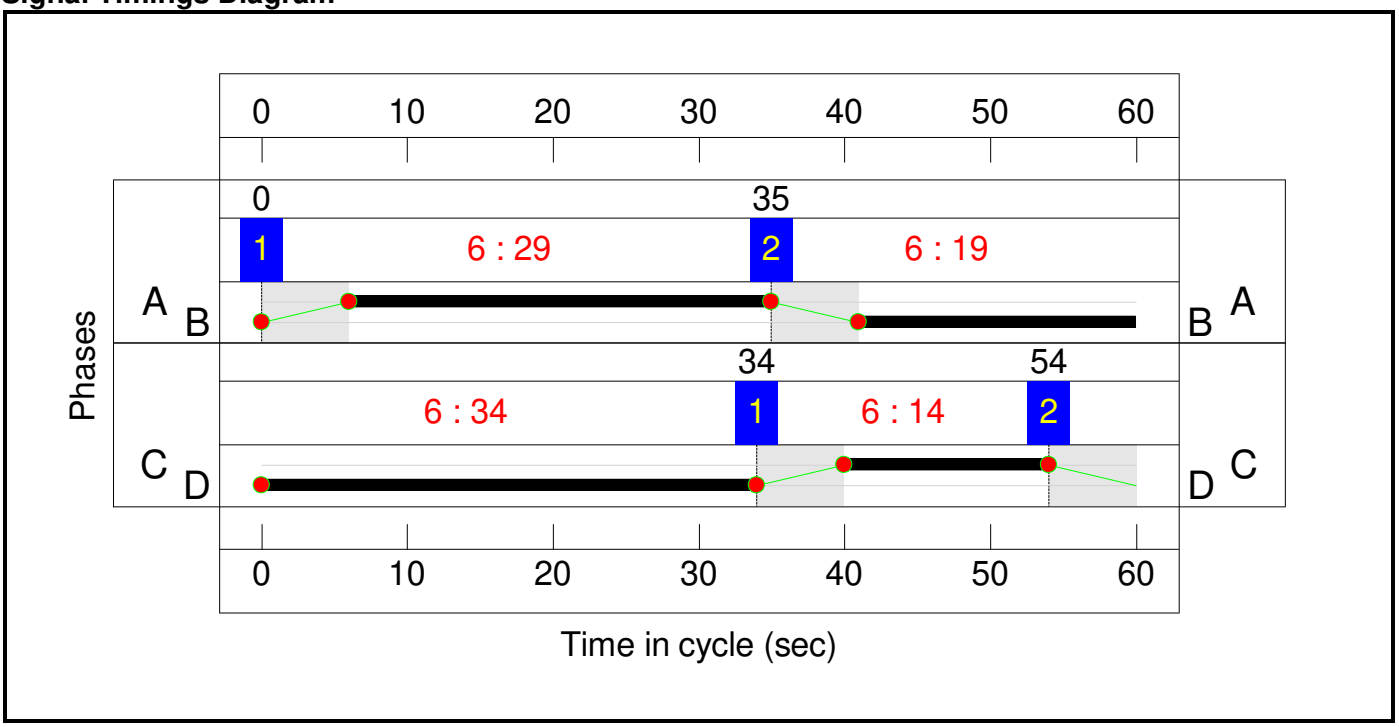
Stage Stream: 1

Stage	1	2
Duration	29	19
Change Point	0	35

Stage Stream: 2

Stage	1	2
Duration	14	34
Change Point	34	54

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: Cherwell Roundabout - HE Potential Scheme	-	-	**N/A**	-	-		-	-	-	-	-	-	**118.1%**
Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**118.1%**
1/1	A43 Left Ahead	U	1	N/A	A		1	29	-	661	1980	990	66.8%
1/2	A43 Ahead	U	1	N/A	A		1	29	-	644	1980	990	65.1%
1/3	A43 Ahead	U	1	N/A	A		1	29	-	643	1980	990	64.9%
1/4	A43 Ahead	U	1	N/A	A		1	29	-	1169	1980	990	118.1%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	340	Inf	972	35.0%
5/1	MSA Left	U	2	N/A	C		1	14	-	295	1965	491	60.1%
5/2	MSA Left Ahead	U	2	N/A	C		1	14	-	287	1965	491	58.4%
8/1	Ahead Right	U	1	N/A	B		1	19	-	340	1850	617	55.1%
10/1	Ahead	U	2	N/A	D		1	34	-	391	1850	1079	36.2%
10/2	Ahead	U	2	N/A	D		1	34	-	672	1850	1079	62.3%
10/3	Ahead	U	2	N/A	D		1	34	-	643	1850	1079	59.6%
10/4	Ahead	U	2	N/A	D		1	34	-	1169	1850	1079	91.7%

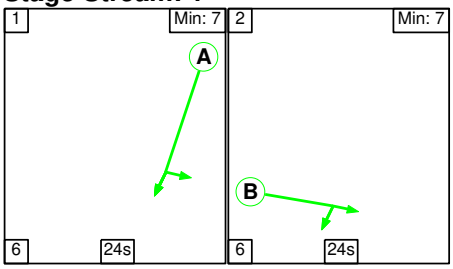
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Cherwell Roundabout - HE Potential Scheme	**-**	**-**	**340**	**0**	**0**	**23.2**	**97.8**	**0.0**	**121.1**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**340**	**0**	**0**	**23.2**	**97.8**	**0.0**	**121.1**	**-**	**-**	**-**	**-**
1/1	661	661	-	-	-	2.1	1.0	-	3.1	16.7	8.3	1.0	9.3
1/2	644	644	-	-	-	2.0	0.9	-	2.9	16.3	7.9	0.9	8.8
1/3	643	643	-	-	-	2.0	0.9	-	2.9	16.3	7.9	0.9	8.8
1/4	1169	990	-	-	-	9.7	92.7	-	102.4	315.3	22.5	92.7	115.1
2/2	340	340	340	0	0	0.0	0.3	-	0.3	2.8	0.0	0.3	0.3
5/1	295	295	-	-	-	1.6	0.7	-	2.4	29.0	4.3	0.7	5.0
5/2	287	287	-	-	-	1.6	0.7	-	2.3	28.5	4.1	0.7	4.8
8/1	340	340	-	-	-	1.5	0.6	-	2.2	22.8	4.6	0.6	5.2
10/1	391	391	-	-	-	0.4	0.0	-	0.4	3.2	1.5	0.0	1.5
10/2	672	672	-	-	-	0.4	0.0	-	0.4	2.3	1.5	0.0	1.5
10/3	643	643	-	-	-	0.4	0.0	-	0.4	2.0	1.4	0.0	1.4
10/4	990	990	-	-	-	1.6	0.0	-	1.6	5.8	7.6	0.0	7.6

C1 Stream: 1 PRC for Signalled Lanes (%): -31.2 Total Delay for Signalled Lanes (pcuHr): 113.41 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): -1.9 Total Delay for Signalled Lanes (pcuHr): 7.38 Cycle Time (s): 60
PRC Over All Lanes (%): -31.2 Total Delay Over All Lanes(pcuHr): 121.07

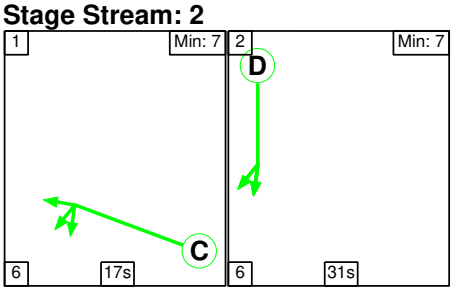
Scenario 2: '2031 Do Something - AM Peak' (FG1: 'Cherwell1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

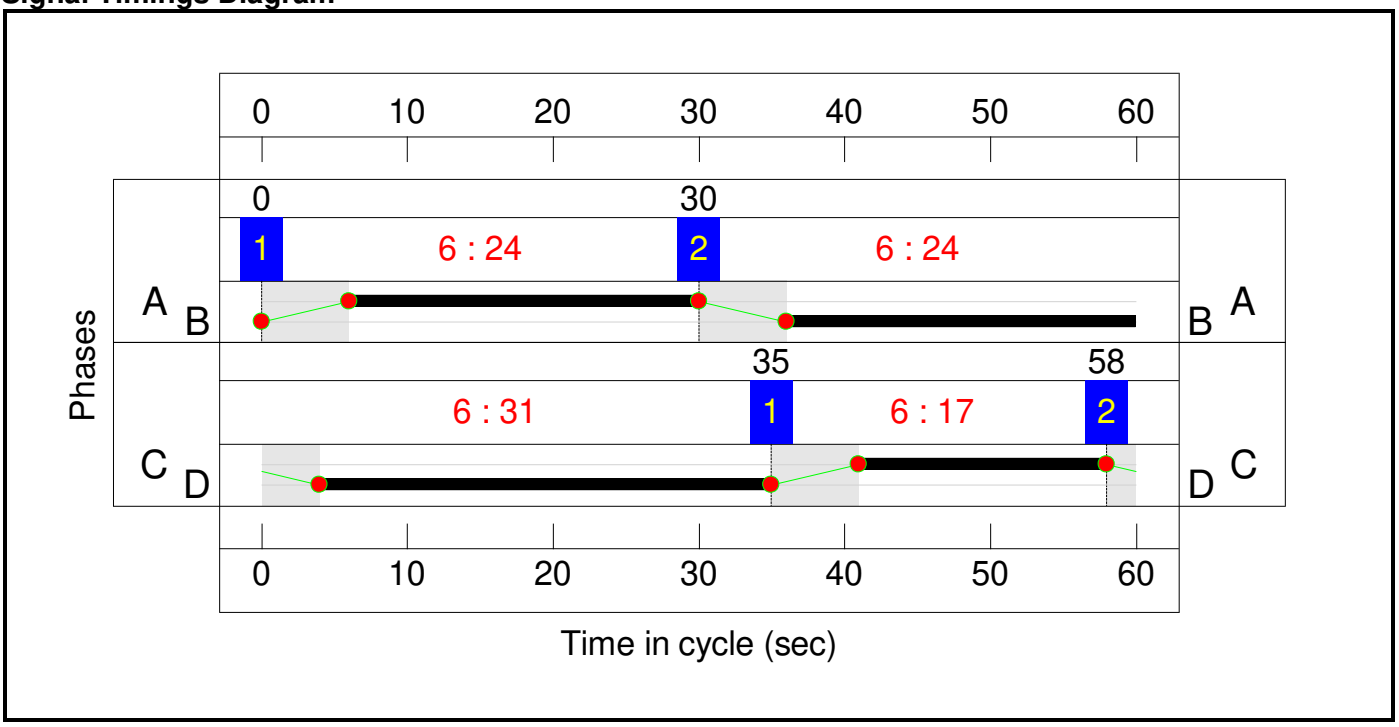
Stage Stream: 1

Stage	1	2
Duration	24	24
Change Point	0	30

Stage Stream: 2

Stage	1	2
Duration	17	31
Change Point	35	58

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: Cherwell Roundabout - HE Potential Scheme	-	-	**N/A**	-	-		-	-	-	-	-	-	**198.9%**
Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**198.9%**
1/1	A43 Left Ahead	U	1	N/A	A		1	24	-	655	1980	825	79.4%
1/2	A43 Ahead	U	1	N/A	A		1	24	-	647	1980	825	78.4%
1/3	A43 Ahead	U	1	N/A	A		1	24	-	646	1980	825	78.3%
1/4	A43 Ahead	U	1	N/A	A		1	24	-	1641	1980	825	198.9%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	521	Inf	972	53.6%
5/1	MSA Left	U	2	N/A	C		1	17	-	295	1965	590	50.0%
5/2	MSA Left Ahead	U	2	N/A	C		1	17	-	287	1965	590	48.7%
8/1	Ahead Right	U	1	N/A	B		1	24	-	521	1850	771	67.6%
10/1	Ahead	U	2	N/A	D		1	31	-	453	1850	987	45.9%
10/2	Ahead	U	2	N/A	D		1	31	-	788	1850	987	79.9%
10/3	Ahead	U	2	N/A	D		1	31	-	646	1850	987	65.5%
10/4	Ahead	U	2	N/A	D		1	31	-	1641	1850	987	83.6%

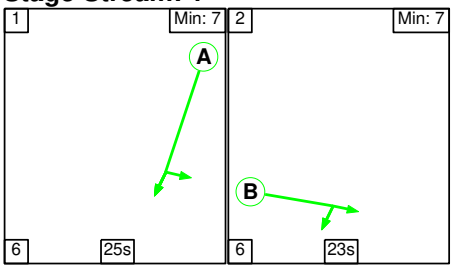
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Cherwell Roundabout - HE Potential Scheme	**-**	**-**	**521**	**0**	**0**	**46.7**	**417.0**	**0.0**	**463.8**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**521**	**0**	**0**	**46.7**	**417.0**	**0.0**	**463.8**	**-**	**-**	**-**	**-**
1/1	655	655	-	-	-	2.8	1.9	-	4.7	25.6	9.5	1.9	11.3
1/2	647	647	-	-	-	2.7	1.8	-	4.5	25.1	9.2	1.8	10.9
1/3	646	646	-	-	-	2.7	1.8	-	4.5	25.0	9.2	1.8	10.9
1/4	1641	825	-	-	-	31.9	409.0	-	440.9	967.3	42.2	409.0	451.2
2/2	521	521	521	0	0	0.0	0.6	-	0.6	4.0	0.0	0.6	0.6
5/1	295	295	-	-	-	1.4	0.5	-	1.9	23.4	4.0	0.5	4.5
5/2	287	287	-	-	-	1.4	0.5	-	1.8	23.2	3.9	0.5	4.4
8/1	521	521	-	-	-	2.1	1.0	-	3.1	21.4	6.9	1.0	8.0
10/1	453	453	-	-	-	0.7	0.0	-	0.7	5.3	2.4	0.0	2.4
10/2	788	788	-	-	-	0.8	0.0	-	0.8	3.5	2.8	0.0	2.8
10/3	646	646	-	-	-	0.1	0.0	-	0.1	0.5	2.8	0.0	2.8
10/4	825	825	-	-	-	0.2	0.0	-	0.2	0.9	7.1	0.0	7.1

C1 Stream: 1 PRC for Signalled Lanes (%): -121.0 Total Delay for Signalled Lanes (pcuHr): 457.69 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 7.6 Total Delay for Signalled Lanes (pcuHr): 5.50 Cycle Time (s): 60
PRC Over All Lanes (%): -121.0 Total Delay Over All Lanes(pcuHr): 463.76

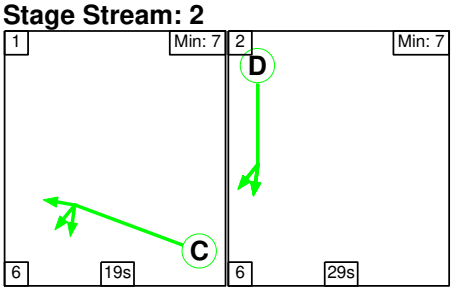
Scenario 3: '2031 Reference Case - PM Peak' (FG4: 'CherwellRef1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

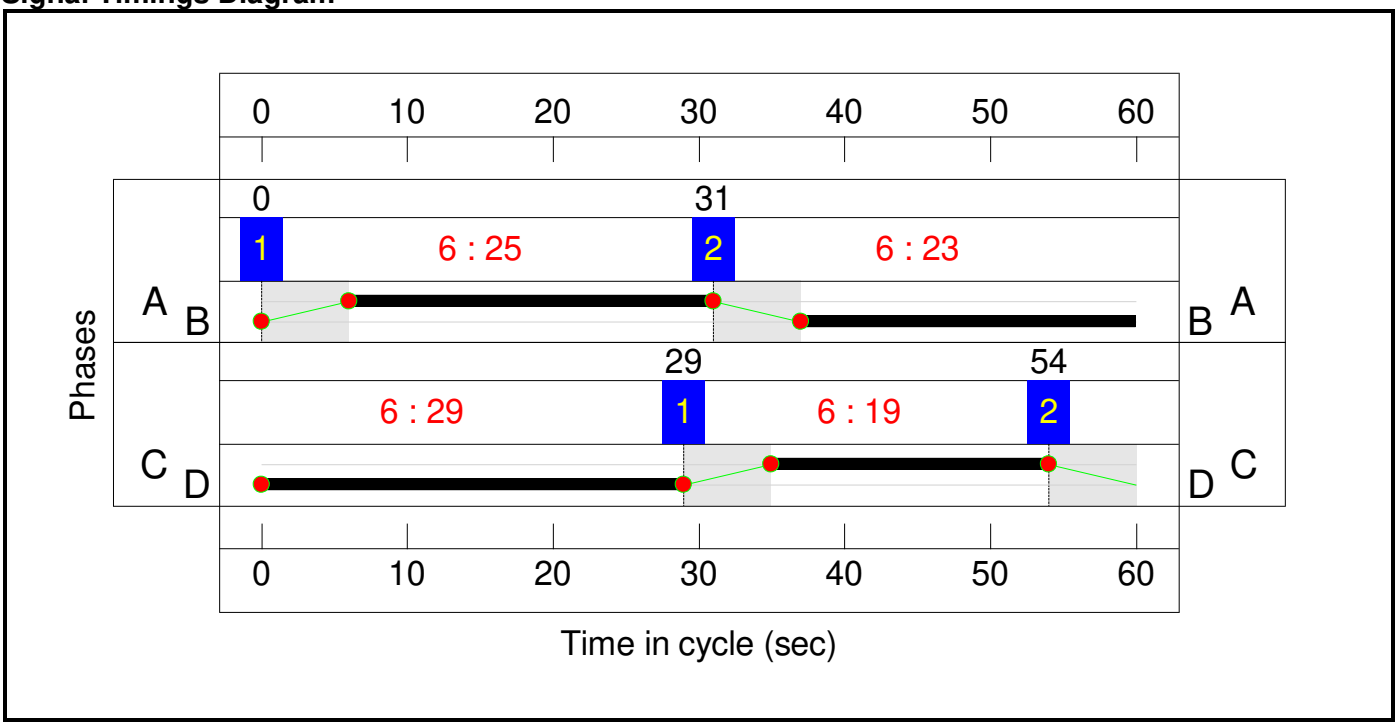
Stage Stream: 1

Stage	1	2
Duration	25	23
Change Point	0	31

Stage Stream: 2

Stage	1	2
Duration	19	29
Change Point	29	54

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: Cherwell Roundabout - HE Potential Scheme	-	-	**N/A**	-	-		-	-	-	-	-	-	**93.2%**
Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**93.2%**
1/1	A43 Left Ahead	U	1	N/A	A		1	25	-	434	1980	858	50.6%
1/2	A43 Ahead	U	1	N/A	A		1	25	-	421	1980	858	49.1%
1/3	A43 Ahead	U	1	N/A	A		1	25	-	420	1980	858	49.0%
1/4	A43 Ahead	U	1	N/A	A		1	25	-	800	1980	858	93.2%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	356	Inf	957	37.2%
5/1	MSA Left	U	2	N/A	C		1	19	-	258	1965	655	39.4%
5/2	MSA Left Ahead	U	2	N/A	C		1	19	-	342	1965	655	52.2%
8/1	Ahead Right	U	1	N/A	B		1	23	-	356	1850	740	48.1%
10/1	Ahead	U	2	N/A	D		1	29	-	172	1850	925	18.6%
10/2	Ahead	U	2	N/A	D		1	29	-	435	1850	925	47.0%
10/3	Ahead	U	2	N/A	D		1	29	-	420	1850	925	45.4%
10/4	Ahead	U	2	N/A	D		1	29	-	800	1850	925	86.5%

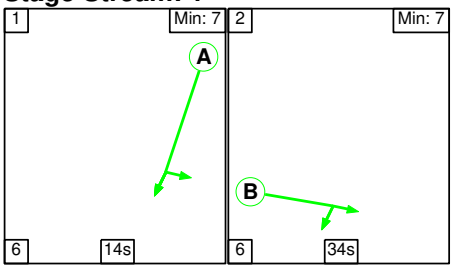
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Cherwell Roundabout - HE Potential Scheme	**-**	**-**	**356**	**0**	**0**	**14.3**	**8.9**	**0.0**	**23.2**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**356**	**0**	**0**	**14.3**	**8.9**	**0.0**	**23.2**	**-**	**-**	**-**	**-**
1/1	434	434	-	-	-	1.5	0.5	-	2.0	16.6	5.2	0.5	5.7
1/2	421	421	-	-	-	1.4	0.5	-	1.9	16.3	5.0	0.5	5.5
1/3	420	420	-	-	-	1.4	0.5	-	1.9	16.3	5.0	0.5	5.5
1/4	800	800	-	-	-	3.6	5.8	-	9.3	42.1	12.7	5.8	18.4
2/2	356	356	356	0	0	0.0	0.3	-	0.3	3.0	0.0	0.3	0.3
5/1	258	258	-	-	-	1.1	0.3	-	1.4	19.9	3.3	0.3	3.6
5/2	342	342	-	-	-	1.5	0.5	-	2.1	21.9	4.6	0.5	5.1
8/1	356	356	-	-	-	1.3	0.5	-	1.8	18.1	4.4	0.5	4.8
10/1	172	172	-	-	-	0.3	0.0	-	0.3	7.0	1.3	0.0	1.3
10/2	435	435	-	-	-	0.4	0.0	-	0.4	2.9	0.8	0.0	0.8
10/3	420	420	-	-	-	0.3	0.0	-	0.3	2.6	0.6	0.0	0.6
10/4	800	800	-	-	-	1.5	0.0	-	1.5	6.5	4.9	0.0	4.9

C1 Stream: 1 PRC for Signalled Lanes (%): -3.6 Total Delay for Signalled Lanes (pcuHr): 16.95 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 4.1 Total Delay for Signalled Lanes (pcuHr): 5.94 Cycle Time (s): 60
PRC Over All Lanes (%): -3.6 Total Delay Over All Lanes(pcuHr): 23.19

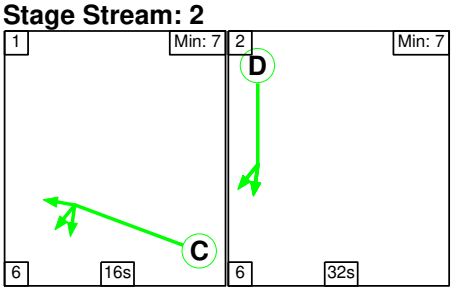
Scenario 4: '2031 Do Something - PM Peak' (FG2: 'Cherwell1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

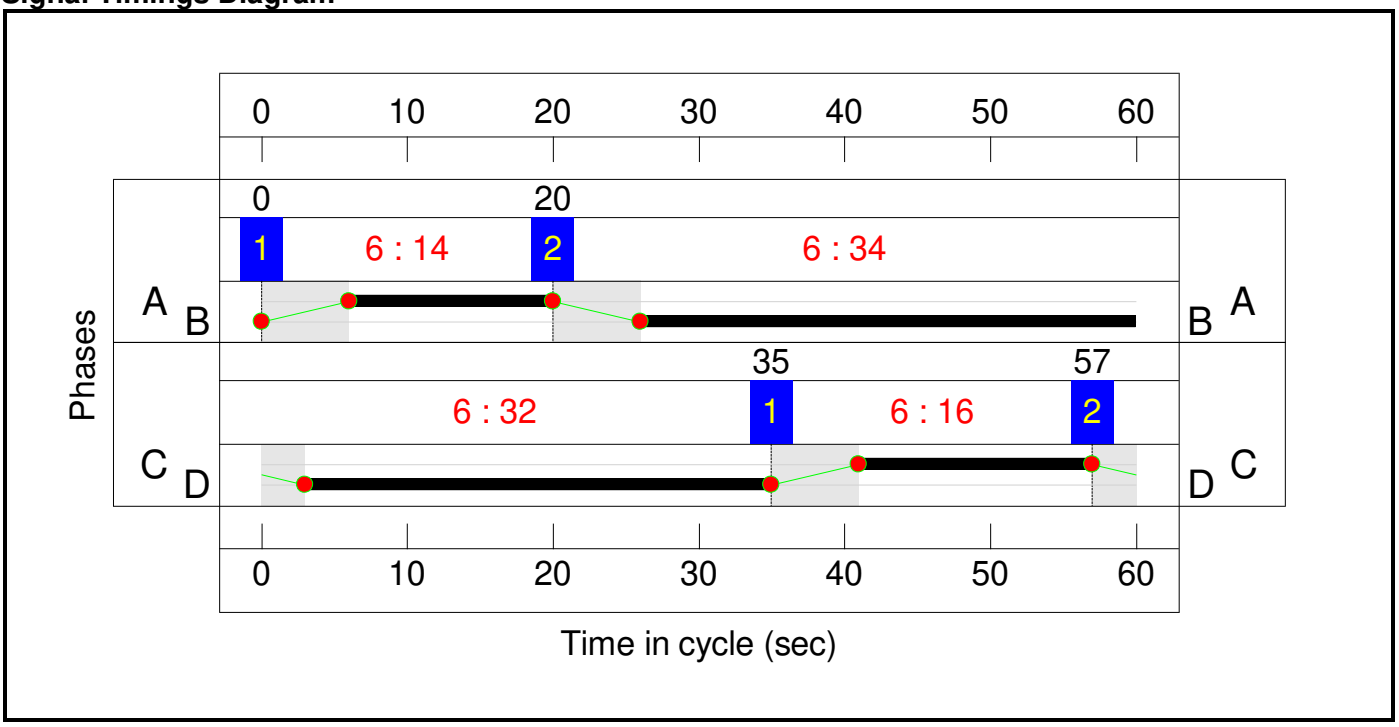
Stage Stream: 1

Stage	1	2
Duration	14	34
Change Point	0	20

Stage Stream: 2

Stage	1	2
Duration	16	32
Change Point	35	57

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: Cherwell Roundabout - HE Potential Scheme	-	-	**N/A**	-	-		-	-	-	-	-	-	**213.3%**
Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**213.3%**
1/1	A43 Left Ahead	U	1	N/A	A		1	14	-	427	1980	495	86.3%
1/2	A43 Ahead	U	1	N/A	A		1	14	-	424	1980	495	85.7%
1/3	A43 Ahead	U	1	N/A	A		1	14	-	424	1980	495	85.7%
1/4	A43 Ahead	U	1	N/A	A		1	14	-	1056	1980	495	213.3%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	740	Inf	957	77.3%
5/1	MSA Left	U	2	N/A	C		1	16	-	258	1965	557	46.3%
5/2	MSA Left Ahead	U	2	N/A	C		1	16	-	342	1965	557	61.4%
8/1	Ahead Right	U	1	N/A	B		1	34	-	740	1850	1079	68.6%
10/1	Ahead	U	2	N/A	D		1	32	-	327	1850	1018	32.1%
10/2	Ahead	U	2	N/A	D		1	32	-	660	1850	1018	64.9%
10/3	Ahead	U	2	N/A	D		1	32	-	424	1850	1018	41.7%
10/4	Ahead	U	2	N/A	D		1	32	-	1056	1850	1018	48.6%

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: Cherwell Roundabout - HE Potential Scheme	**-**	**-**	**740**	**0**	**0**	**37.4**	**293.9**	**0.0**	**331.3**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**740**	**0**	**0**	**37.4**	**293.9**	**0.0**	**331.3**	**-**	**-**	**-**	**-**
1/1	427	427	-	-	-	2.6	2.9	-	5.4	45.9	6.8	2.9	9.7
1/2	424	424	-	-	-	2.5	2.8	-	5.3	45.0	6.7	2.8	9.5
1/3	424	424	-	-	-	2.5	2.8	-	5.3	45.0	6.7	2.8	9.5
1/4	1056	495	-	-	-	23.0	281.4	-	304.4	1037.7	29.6	281.4	311.0
2/2	740	740	740	0	0	0.0	1.7	-	1.7	8.2	0.0	1.7	1.7
5/1	258	258	-	-	-	1.3	0.4	-	1.7	23.8	3.5	0.4	3.9
5/2	342	342	-	-	-	1.8	0.8	-	2.6	27.0	4.9	0.8	5.7
8/1	740	740	-	-	-	1.8	1.1	-	2.9	14.0	8.4	1.1	9.5
10/1	327	327	-	-	-	0.9	0.0	-	0.9	10.1	3.0	0.0	3.0
10/2	660	660	-	-	-	1.0	0.0	-	1.0	5.3	3.0	0.0	3.0
10/3	424	424	-	-	-	0.0	0.0	-	0.0	0.4	0.4	0.0	0.4
10/4	495	495	-	-	-	0.1	0.0	-	0.1	0.5	1.6	0.0	1.6

C1 Stream: 1 PRC for Signalled Lanes (%): -137.0 Total Delay for Signalled Lanes (pcuHr): 323.31 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 38.7 Total Delay for Signalled Lanes (pcuHr): 6.27 Cycle Time (s): 60
PRC Over All Lanes (%): -137.0 Total Delay Over All Lanes(pcuHr): 331.26

APPENDIX 7

Ardley Roundabout existing layout – LinSig results

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: Ardley Roundabout - Existing Layout - 2031 Ref Case.j9
Path: D:\Dropbox (ADC Infrastructure)\!!! ADC Projects\ADC1794 Oxfordshire SRFI\Documents\reports\ADC\M. M40 J10 options\Options Report\3. Ardley
Report generation date: 11/06/2021 13:53:39

»2031 Ref Case - 2031 Ref, AM1
»2031 Ref Case - 2031 Ref, AM2
»2031 Ref Case - 2031 Ref, PM

Summary of junction performance

	AM1				AM2				PM			
	Set ID	Queue (PCU)	Delay (s)	RFC	Set ID	Queue (PCU)	Delay (s)	RFC	Set ID	Queue (PCU)	Delay (s)	RFC
	2031 Ref Case - 2031 Ref											
Arm 1	D1	1.0	5.39	0.49	D2	1.2	6.23	0.53	D3	2.3	11.69	0.69
Arm 2		1.9	4.92	0.65		2.0	4.94	0.66		0.9	3.14	0.47
Arm 3		3.6	9.99	0.76		4.8	12.08	0.81		27.5	49.53	0.99

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

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

File summary

File Description

Title	Ardley Roundabout
Location	
Site number	
Date	11/06/2021
Version	
Status	Existing Layout
Identifier	
Client	
Jobnumber	
Enumerator	[redacted]
Description	

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031 Ref	AM1	ONE HOUR	06:30	08:00	15
D2	2031 Ref	AM2	ONE HOUR	07:30	09:00	15
D3	2031 Ref	PM	ONE HOUR	16:30	18:00	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	2031 Ref Case	100.000

2031 Ref Case - 2031 Ref, AM1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley Roundabout (Exg)	Standard Roundabout		1, 2, 3	6.95	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	B430	
2	A43 Bridge	
3	M40 Slips	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.70	9.00	36.7	19.0	70.0	43.0	
2	7.30	8.70	5.1	30.0	70.0	38.0	
3	7.00	7.80	6.5	54.0	70.0	22.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.559	2114
2	0.614	2410
3	0.634	2429

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031 Ref	AM1	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	631	100.000
2		✓	1299	100.000
3		✓	1189	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	309	322
	2	1002	0	297
	3	47	1142	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	13	2
	2	2	0	12
	3	19	17	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.49	5.39	1.0	A
2	0.65	4.92	1.9	A
3	0.76	9.99	3.6	A

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	475	856	1635	0.291	473	0.4	3.315	A
2	978	242	2261	0.432	975	0.8	2.906	A
3	895	752	1952	0.458	891	1.0	3.958	A

06:45 - 07:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	567	1024	1541	0.368	567	0.6	3.956	A
2	1168	289	2232	0.523	1166	1.1	3.512	A
3	1069	900	1859	0.575	1067	1.6	5.304	A

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	695	1250	1415	0.491	693	1.0	5.333	A
2	1430	354	2192	0.652	1427	1.9	4.877	A
3	1309	1101	1731	0.756	1301	3.5	9.639	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	695	1257	1411	0.493	695	1.0	5.385	A
2	1430	355	2192	0.652	1430	1.9	4.920	A
3	1309	1103	1730	0.757	1309	3.6	9.994	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	567	1034	1535	0.369	569	0.6	3.997	A
2	1168	290	2231	0.523	1171	1.2	3.544	A
3	1069	903	1856	0.576	1077	1.6	5.457	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	475	862	1631	0.291	476	0.4	3.337	A
2	978	243	2261	0.433	979	0.8	2.928	A
3	895	755	1950	0.459	898	1.0	4.014	A

2031 Ref Case - 2031 Ref, AM2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley Roundabout (Exg)	Standard Roundabout		1, 2, 3	8.08	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2031 Ref	AM2	ONE HOUR	07:30	09:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	646	100.000
2		✓	1311	100.000
3		✓	1323	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	339	307
	2	918	0	393
	3	58	1265	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	12	4
	2	3	0	7
	3	14	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.53	6.23	1.2	A
2	0.66	4.94	2.0	A
3	0.81	12.08	4.8	B

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	486	948	1583	0.307	484	0.5	3.533	A
2	987	230	2268	0.435	984	0.8	2.912	A
3	996	689	1992	0.500	992	1.1	4.014	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	581	1134	1479	0.393	580	0.7	4.322	A
2	1179	276	2240	0.526	1177	1.1	3.522	A
3	1189	824	1907	0.624	1186	1.8	5.581	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	711	1382	1341	0.531	709	1.2	6.141	A
2	1443	337	2203	0.655	1440	2.0	4.898	A
3	1457	1008	1790	0.814	1446	4.6	11.377	B

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	711	1392	1335	0.533	711	1.2	6.235	A
2	1443	338	2202	0.655	1443	2.0	4.942	A
3	1457	1011	1788	0.815	1456	4.8	12.083	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	581	1148	1472	0.395	583	0.7	4.388	A
2	1179	277	2240	0.526	1182	1.2	3.554	A
3	1189	828	1904	0.625	1201	1.9	5.826	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	486	955	1579	0.308	487	0.5	3.566	A
2	987	232	2268	0.435	988	0.8	2.934	A
3	996	692	1990	0.500	999	1.1	4.084	A

2031 Ref Case - 2031 Ref, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley Roundabout (Exg)	Standard Roundabout		1, 2, 3	29.61	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2031 Ref	PM	ONE HOUR	16:30	18:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	648	100.000
2		✓	959	100.000
3		✓	1857	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	438	210
	2	514	0	445
	3	73	1784	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	4	2
	2	3	0	9
	3	4	11	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.69	11.69	2.3	B
2	0.47	3.14	0.9	A
3	0.99	49.53	27.5	E

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	488	1336	1367	0.357	486	0.6	4.211	A
2	722	157	2313	0.312	720	0.5	2.385	A
3	1398	386	2185	0.640	1390	1.9	4.972	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	583	1597	1221	0.477	581	0.9	5.804	A
2	862	188	2294	0.376	861	0.6	2.654	A
3	1669	462	2136	0.781	1662	3.8	8.269	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	713	1900	1051	0.679	709	2.1	10.721	B
2	1056	230	2269	0.465	1055	0.9	3.131	A
3	2045	565	2071	0.987	1977	20.6	30.888	D

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	713	1937	1030	0.693	713	2.3	11.690	B
2	1056	231	2268	0.466	1056	0.9	3.138	A
3	2045	566	2070	0.988	2017	27.5	49.531	E

17:30 - 17:45

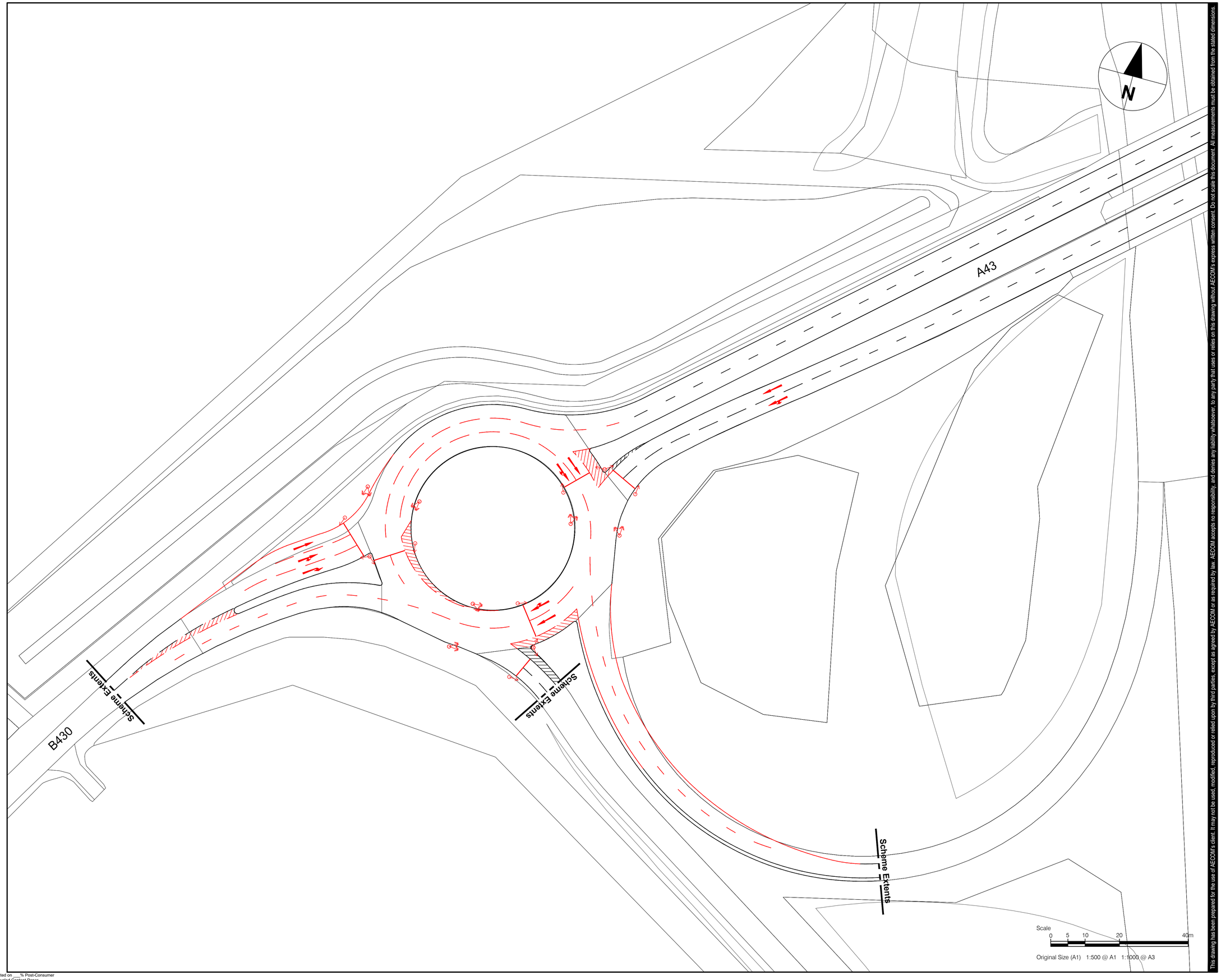
Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	583	1694	1166	0.499	587	1.0	6.479	A
2	862	190	2293	0.376	863	0.6	2.663	A
3	1669	463	2136	0.782	1763	4.2	13.270	B

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	488	1351	1358	0.359	490	0.6	4.294	A
2	722	159	2312	0.312	723	0.5	2.396	A
3	1398	387	2184	0.640	1407	2.0	5.184	A

APPENDIX 8

Potential improvement at Ardley Roundabout



This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as agreed by AECOM or as required by law. AECOM accepts no responsibility, and denies any liability whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. Do not scale this document. All measurements must be obtained from the stated dimensions.

AECOM

PROJECT

M40 JUNCTION 10 OPTION DEVELOPMENT & TESTING

CLIENT

highways england
driving forward

CONSULTANT

AECOM
The Colmore Building
Colmore Circus Queensway
Birmingham
0121 262 1900 tel 0121 262 1999 fax
www.aecom.com

SCALE

1:500 @ A1, 1:1000 @ A3

REGISTRATION

©Crown copyright. All rights reserved. License Number 100019139

NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DOCUMENTATION. ANY DISCREPANCIES, ERRORS OR OMISSIONS TO BE BROUGHT TO THE ATTENTION OF THE OVERSEEING ORGANISATION.

2. ALL DIMENSIONS IN METRES UNLESS OTHERWISE STATED.

3. ALL EXISTING ROAD MARKINGS SHOWN ARE INDICATIVE ONLY.

4. SCHEME EXTENTS ARE INDICATIVE ONLY.

5. THIS IS A CONCEPT DESIGN FOR INFORMATION ONLY. IT HAS YET TO BE ROAD SAFETY AUDITED. A PRINCIPAL DESIGNER HAS YET TO BE APPOINTED.

KEY

- PROPOSED SCHEME
- PROPOSED SIGNAL HEAD (PRIMARY)
- PROPOSED SIGNAL HEAD (SECONDARY)

IN DESIGN DEVELOPMENT

ISSUE/REVISION

I/R	DATE	DESCRIPTION
1	JAN 2018	OPTION DEVELOP. & TESTING

PROJECT NUMBER

60540307

SHEET TITLE

M40 JUNCTION 10
OPTION DEVELOPMENT & TESTING
SHEET 1 OF 5
A43 ARDLEY JUNCTION

SHEET NUMBER

60540307-SHT-1-C-0002

ISO A1 594mm x 841mm
Approved: MJ
Checked: PSE
Designer: RCH
Project Management Initials:
Last saved by: CASILLASR(2018-01-17) Last Plotted: 2018-01-17
Filename: \\UKBHM2FP002\UKBHM2FP001-V1TP\1TPROJECT\TRAFFIC - HESPA - 17\STUDIES\EM S 107 M40 J10 BASE MODEL TAME RE VALI\03 EXECUTION\07 DRAWINGS\02 SHEETS\60540307-SHT-1-C-0001.DWG
Printed on ___% Post-Consumer Recycled Content Paper

APPENDIX 9

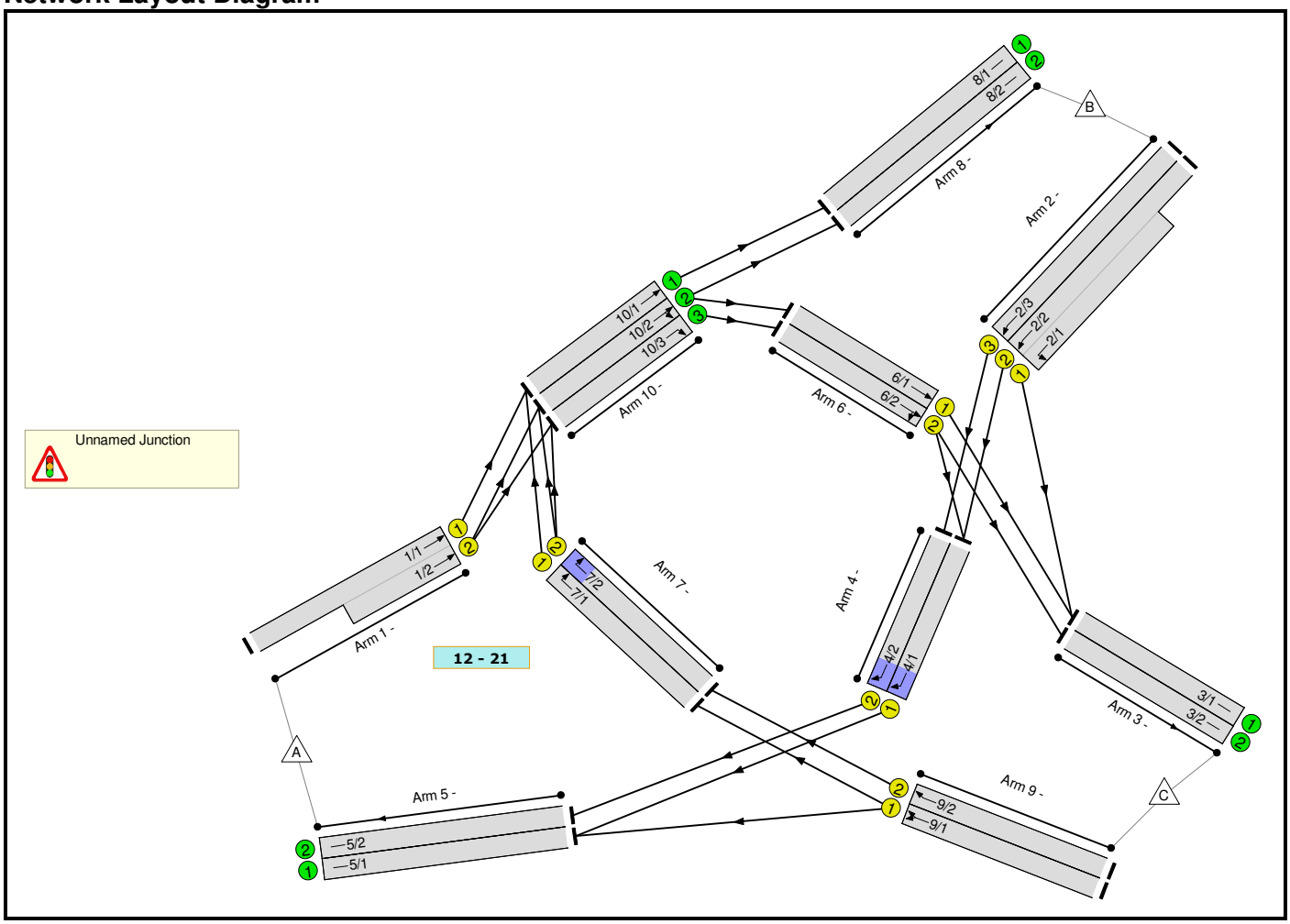
Ardley Roundabout potential improvement – LinSig results

Full Input Data And Results

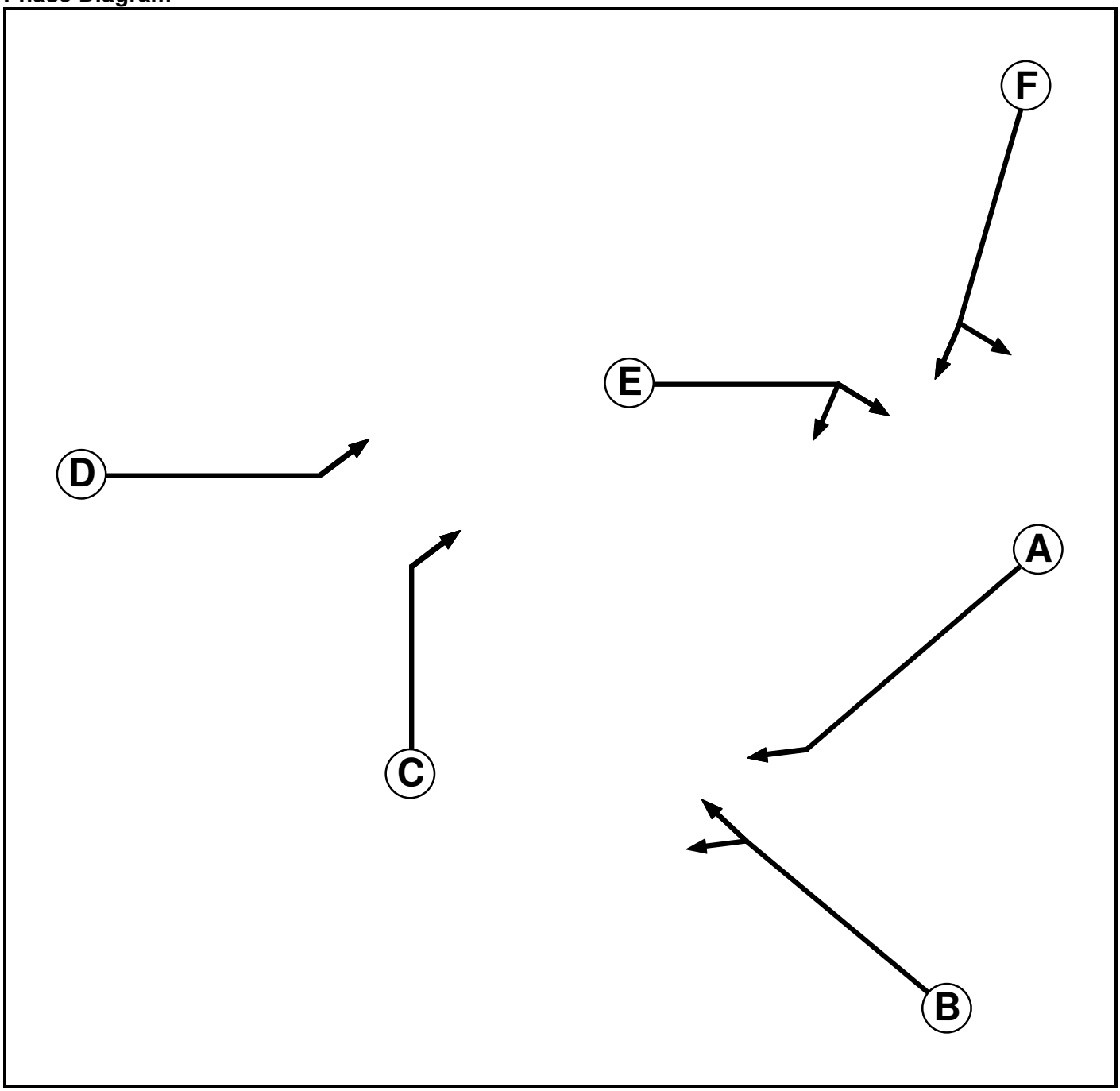
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Potential HE Ardley junction improvement**
Location:	
Additional detail:	
File name:	2031_DS_M40J10_Ardley_ref case.lsg3x
Author:	Mark Higgins
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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
E	Traffic	3		7	7
F	Traffic	3		7	7

Phase Intergreens Matrix

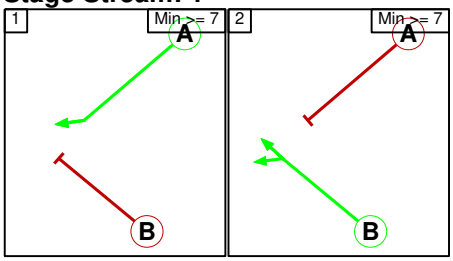
		Starting Phase					
		A	B	C	D	E	F
Terminating Phase	A		6	-	-	-	-
	B	6		-	-	-	-
	C	-	-		6	-	-
	D	-	-	6		-	-
	E	-	-	-	-		6
	F	-	-	-	-	6	

Phases in Stage

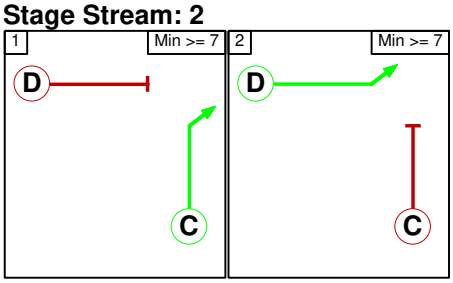
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F

Stage Diagram

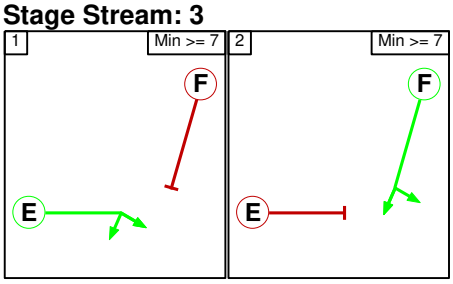
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Prohibited Stage Change

Stage Stream: 1

From Stage \ To Stage		1	2
	1		6
	2	6	

Stage Stream: 2

From Stage \ To Stage		1	2
	1		6
	2	6	

Stage Stream: 3

From Stage \ To Stage		1	2
	1		6
	2	6	

Lane Input Data

Junction: Unnamed Junction												
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	U	D	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 10 Ahead	Inf
1/2	U	D	2	3	8.7	Geom	-	3.62	0.00	Y	Arm 10 Ahead	Inf
2/1	U	F	2	3	17.4	Geom	-	3.65	0.00	Y	Arm 3 Left	40.00
2/2	U	F	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Ahead	54.00
2/3	U	F	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Ahead	54.00
3/1	U		2	3	60.0	Inf	-	-	-	-	-	-
3/2	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1	U	A	2	3	9.6	User	1850	-	-	-	-	-
4/2	U	A	2	3	9.6	User	1850	-	-	-	-	-
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U	E	2	3	5.2	User	1850	-	-	-	-	-
6/2	U	E	2	3	5.2	User	1850	-	-	-	-	-
7/1	U	C	2	3	7.8	User	1850	-	-	-	-	-
7/2	U	C	2	3	7.8	User	1850	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/2	U		2	3	60.0	Inf	-	-	-	-	-	-
9/1	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 5 Ahead	Inf
											Arm 7 Ahead	Inf
9/2	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 7 Ahead	Inf
10/1	U		2	3	8.7	Inf	-	-	-	-	-	-
10/2	U		2	3	8.7	Inf	-	-	-	-	-	-
10/3	U		2	3	8.7	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'ArdleyRef1_AM'	07:45	08:45	01:00	
2: 'ArdleyRef1_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Reference Case - AM Peak' (FG1: 'ArdleyRef1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	378	318	696
	B	949	0	422	1371
	C	66	1420	0	1486
	Tot.	1015	1798	740	3553

Traffic Lane Flows

Lane	Scenario 1: 2031 Reference Case - AM Peak
Junction: Unnamed Junction	
1/1 (with short)	696(In) 348(Out)
1/2 (short)	348
2/1 (short)	422
2/2 (with short)	941(In) 519(Out)
2/3	430
3/1	581
3/2	159
4/1	519
4/2	430
5/1	585
5/2	430
6/1	159
6/2	159
7/1	683
7/2	737
8/1	1031
8/2	767
9/1	749
9/2	737
10/1	1031
10/2	926
10/3	159

Lane Saturation Flows

Junction: Unnamed Junction

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	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
1/2	3.62	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1977	1977
2/1	3.65	0.00	Y	Arm 3 Left	40.00	100.0 %	1908	1908
2/2	3.65	0.00	Y	Arm 4 Ahead	54.00	100.0 %	1926	1926
2/3	3.65	0.00	Y	Arm 4 Ahead	54.00	100.0 %	1926	1926
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	This lane uses a directly entered Saturation Flow						1850	1850
4/2	This lane uses a directly entered Saturation Flow						1850	1850
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	This lane uses a directly entered Saturation Flow						1850	1850
6/2	This lane uses a directly entered Saturation Flow						1850	1850
7/1	This lane uses a directly entered Saturation Flow						1850	1850
7/2	This lane uses a directly entered Saturation Flow						1850	1850
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1	3.65	0.00	Y	Arm 5 Ahead	Inf	8.8 %	1980	1980
				Arm 7 Ahead	Inf	91.2 %		
9/2	3.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1980	1980
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
10/3	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2031 Reference Case - PM Peak' (FG2: 'ArdleyRef1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	455	214	669
	B	528	0	485	1013
	C	76	1972	0	2048
	Tot.	604	2427	699	3730

Traffic Lane Flows

Lane	Scenario 2: 2031 Reference Case - PM Peak
Junction: Unnamed Junction	
1/1 (with short)	669(In) 335(Out)
1/2 (short)	334
2/1 (short)	485
2/2 (with short)	763(In) 278(Out)
2/3	250
3/1	592
3/2	107
4/1	278
4/2	250
5/1	354
5/2	250
6/1	107
6/2	107
7/1	956
7/2	1016
8/1	1291
8/2	1136
9/1	1032
9/2	1016
10/1	1291
10/2	1243
10/3	107

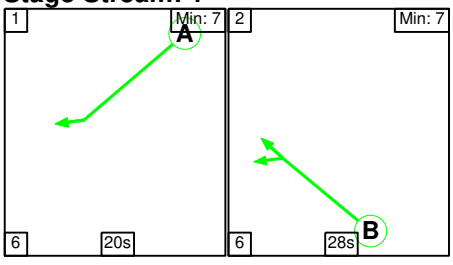
Lane Saturation Flows

Junction: Unnamed Junction								
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	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
1/2	3.62	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1977	1977
2/1	3.65	0.00	Y	Arm 3 Left	40.00	100.0 %	1908	1908
2/2	3.65	0.00	Y	Arm 4 Ahead	54.00	100.0 %	1926	1926
2/3	3.65	0.00	Y	Arm 4 Ahead	54.00	100.0 %	1926	1926
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	This lane uses a directly entered Saturation Flow						1850	1850
4/2	This lane uses a directly entered Saturation Flow						1850	1850
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	This lane uses a directly entered Saturation Flow						1850	1850
6/2	This lane uses a directly entered Saturation Flow						1850	1850
7/1	This lane uses a directly entered Saturation Flow						1850	1850
7/2	This lane uses a directly entered Saturation Flow						1850	1850
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1	3.65	0.00	Y	Arm 5 Ahead	Inf	7.4 %	1980	1980
				Arm 7 Ahead	Inf	92.6 %		
9/2	3.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1980	1980
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
10/3	Infinite Saturation Flow						Inf	Inf

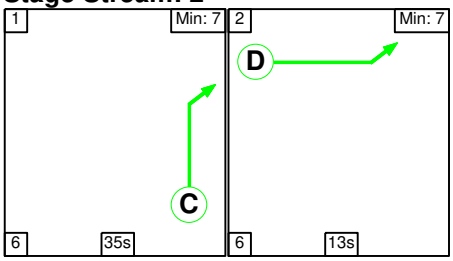
Scenario 1: '2031 Reference Case - AM Peak' (FG1: 'ArdleyRef1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

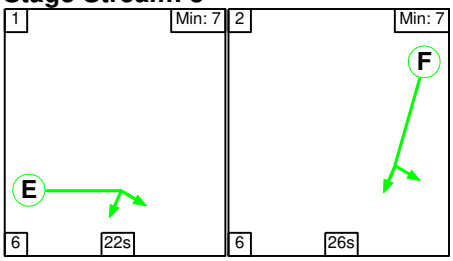
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	20	28
Change Point	0	26

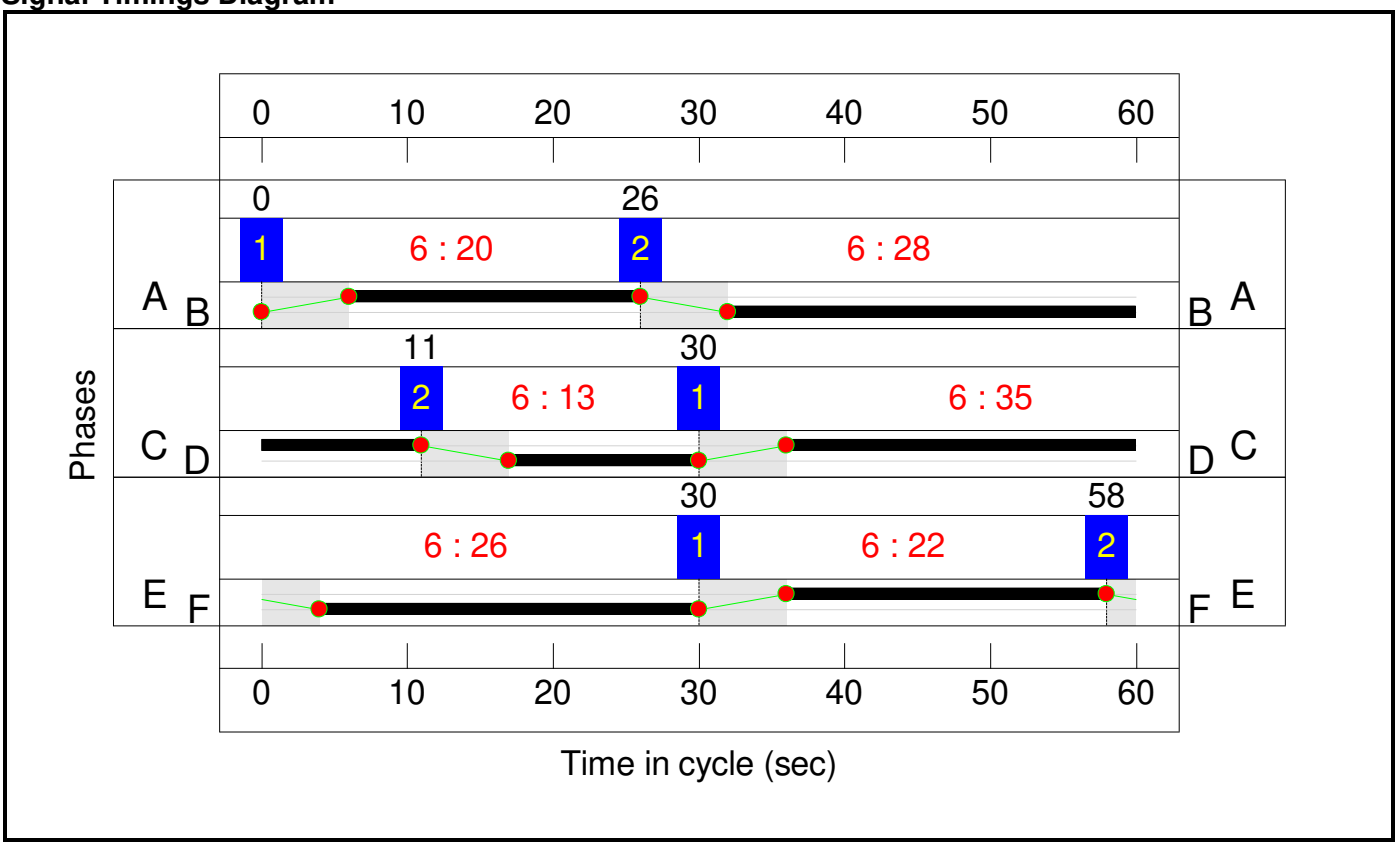
Stage Stream: 2

Stage	1	2
Duration	35	13
Change Point	30	11

Stage Stream: 3

Stage	1	2
Duration	22	26
Change Point	30	58

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: Potential HE Ardley junction improvement	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**80.2%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**80.2%**
1/1+1/2	Ahead	U	2	N/A	D		1	13	-	696	1980:1977	462+461	75.3 : 75.4%
2/2+2/1	Left Ahead	U	3	N/A	F		1	26	-	941	1926:1908	867+706	59.9 : 59.8%
2/3	Ahead	U	3	N/A	F		1	26	-	430	1926	867	49.6%
4/1	Right	U	1	N/A	A		1	20	-	519	1850	647	80.2%
4/2	Right	U	1	N/A	A		1	20	-	430	1850	647	66.4%
6/1	Ahead	U	3	N/A	E		1	22	-	159	1850	709	22.4%
6/2	Ahead Right	U	3	N/A	E		1	22	-	159	1850	709	22.4%
7/1	Right	U	2	N/A	C		1	35	-	683	1850	1110	61.5%
7/2	Right	U	2	N/A	C		1	35	-	737	1850	1110	66.4%
9/1	Ahead Ahead2	U	1	N/A	B		1	28	-	749	1980	957	78.3%
9/2	Ahead	U	1	N/A	B		1	28	-	737	1980	957	77.0%

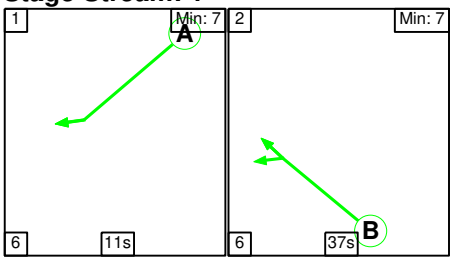
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Potential HE Ardley junction improvement	**-**	**-**	**0**	**0**	**0**	**16.4**	**6.5**	**0.0**	**22.9**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**16.4**	**6.5**	**0.0**	**22.9**	**-**	**-**	**-**	**-**
1/1+1/2	696	696	-	-	-	4.1	1.5	-	5.6	29.2	5.3	1.5	6.8
2/2+2/1	941	941	-	-	-	3.2	0.7	-	3.9	14.9	6.5	0.7	7.2
2/3	430	430	-	-	-	1.4	0.5	-	1.9	15.8	5.0	0.5	5.5
4/1	519	519	-	-	-	0.7	0.0	-	0.7	5.2	1.7	0.0	1.7
4/2	430	430	-	-	-	0.6	0.0	-	0.6	4.9	1.0	0.0	1.0
6/1	159	159	-	-	-	0.5	0.1	-	0.6	14.5	2.7	0.1	2.8
6/2	159	159	-	-	-	0.5	0.1	-	0.6	14.5	2.7	0.1	2.8
7/1	683	683	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	737	737	-	-	-	0.1	0.0	-	0.1	0.6	3.8	0.0	3.8
9/1	749	749	-	-	-	2.7	1.8	-	4.5	21.4	10.2	1.8	12.0
9/2	737	737	-	-	-	2.6	1.7	-	4.3	20.8	10.0	1.7	11.7

C1 Stream: 1 PRC for Signalled Lanes (%): 12.3 Total Delay for Signalled Lanes (pcuHr): 10.05 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 19.3 Total Delay for Signalled Lanes (pcuHr): 5.76 Cycle Time (s): 60
C1 Stream: 3 PRC for Signalled Lanes (%): 50.3 Total Delay for Signalled Lanes (pcuHr): 7.07 Cycle Time (s): 60
PRC Over All Lanes (%): 12.3 Total Delay Over All Lanes(pcuHr): 22.88

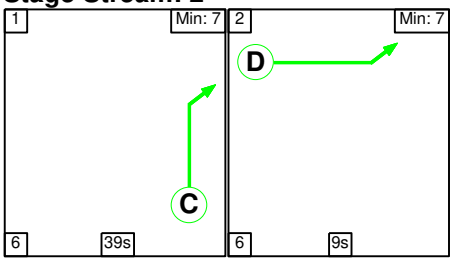
Scenario 2: '2031 Reference Case - PM Peak' (FG2: 'ArdleyRef1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

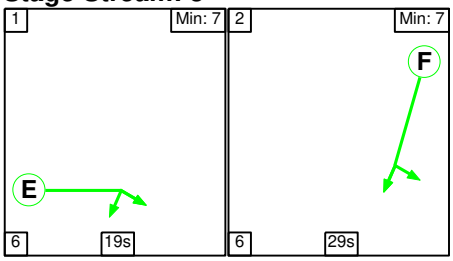
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	11	37
Change Point	0	17

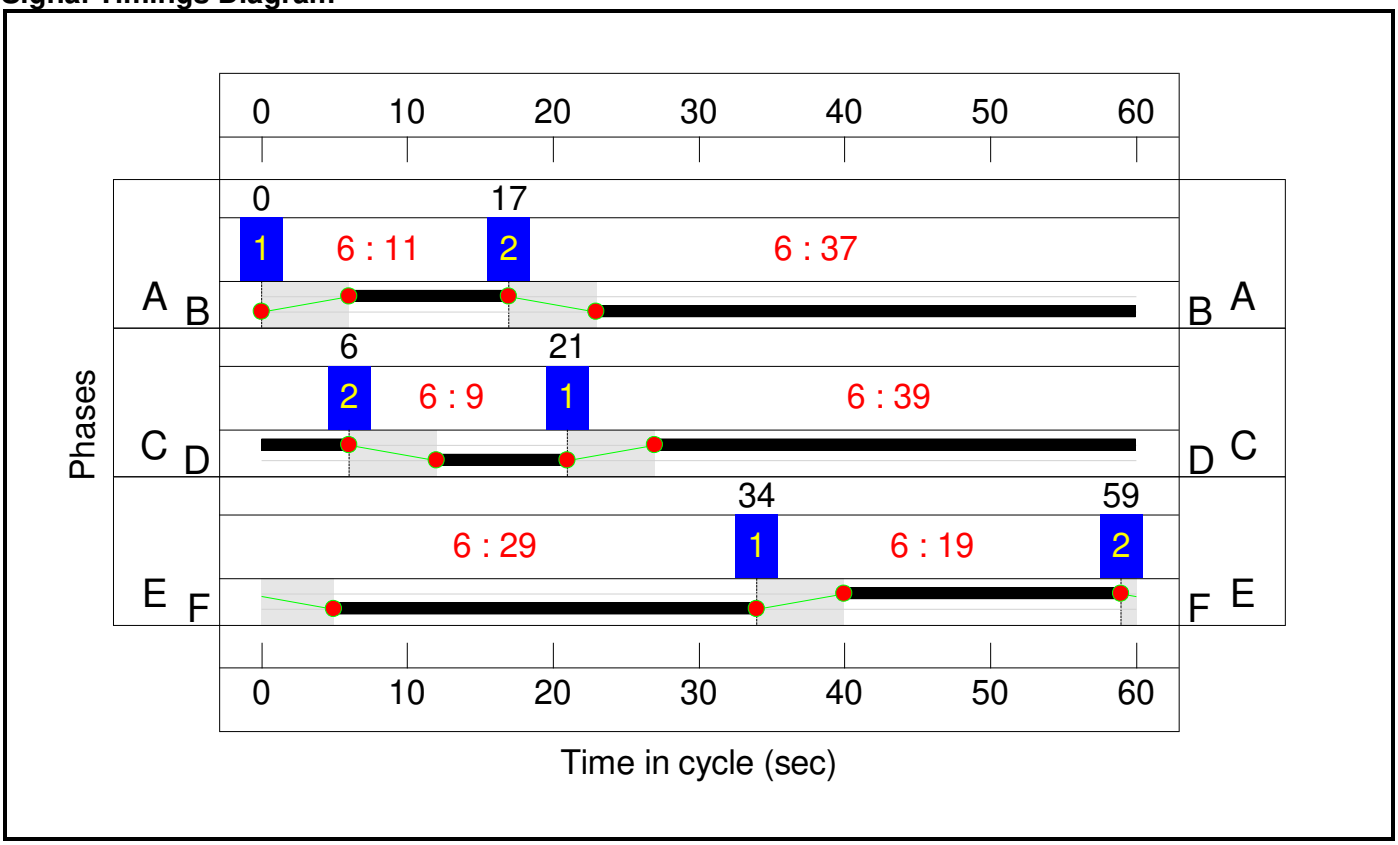
Stage Stream: 2

Stage	1	2
Duration	39	9
Change Point	21	6

Stage Stream: 3

Stage	1	2
Duration	19	29
Change Point	34	59

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: Potential HE Ardley junction improvement	-	-	**N/A**	-	-		-	-	-	-	-	-	**101.5%**
Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**101.5%**
1/1+1/2	Ahead	U	2	N/A	D		1	9	-	669	1980:1977	330+330	101.5 : 101.4%
2/2+2/1	Left Ahead	U	3	N/A	F		1	29	-	763	1926:1908	547+954	50.8 : 50.8%
2/3	Ahead	U	3	N/A	F		1	29	-	250	1926	963	26.0%
4/1	Right	U	1	N/A	A		1	11	-	278	1850	370	75.1%
4/2	Right	U	1	N/A	A		1	11	-	250	1850	370	67.6%
6/1	Ahead	U	3	N/A	E		1	19	-	107	1850	617	17.1%
6/2	Ahead Right	U	3	N/A	E		1	19	-	107	1850	617	17.1%
7/1	Right	U	2	N/A	C		1	39	-	956	1850	1233	77.5%
7/2	Right	U	2	N/A	C		1	39	-	1016	1850	1233	82.4%
9/1	Ahead Ahead2	U	1	N/A	B		1	37	-	1032	1980	1254	82.3%
9/2	Ahead	U	1	N/A	B		1	37	-	1016	1980	1254	81.0%

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: Potential HE Ardley junction improvement	**-**	**-**	**0**	**0**	**0**	**15.7**	**20.8**	**0.0**	**36.5**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**15.7**	**20.8**	**0.0**	**36.5**	**-**	**-**	**-**	**-**
1/1+1/2	669	660	-	-	-	4.9	15.5	-	20.4	110.0	5.7	15.5	21.2
2/2+2/1	763	763	-	-	-	2.0	0.5	-	2.5	12.0	5.4	0.5	5.9
2/3	250	250	-	-	-	0.6	0.2	-	0.8	11.2	2.4	0.2	2.5
4/1	278	278	-	-	-	1.1	0.0	-	1.1	13.8	2.2	0.0	2.2
4/2	250	250	-	-	-	1.0	0.0	-	1.0	13.7	1.5	0.0	1.5
6/1	106	106	-	-	-	0.6	0.1	-	0.7	23.3	1.8	0.1	1.9
6/2	106	106	-	-	-	0.6	0.1	-	0.7	23.3	1.8	0.1	1.9
7/1	956	956	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	1016	1016	-	-	-	0.2	0.0	-	0.2	0.7	6.9	0.0	6.9
9/1	1032	1032	-	-	-	2.4	2.3	-	4.7	16.4	12.9	2.3	15.2
9/2	1016	1016	-	-	-	2.3	2.1	-	4.4	15.7	12.7	2.1	14.8

C1 Stream: 1 PRC for Signalled Lanes (%): 9.4 Total Delay for Signalled Lanes (pcuHr): 11.15 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): -12.8 Total Delay for Signalled Lanes (pcuHr): 20.62 Cycle Time (s): 60
C1 Stream: 3 PRC for Signalled Lanes (%): 77.0 Total Delay for Signalled Lanes (pcuHr): 4.69 Cycle Time (s): 60
PRC Over All Lanes (%): -12.8 Total Delay Over All Lanes(pcuHr): 36.46

APPENDIX 10

Draft features plan

N

1:5000 @ A0

0 100 200 300 400 500m

KEY

Draft Order Limits

Designations

Source MAGIC and Cherwell Local Plan Online Map (cherwell.maps.arcgis.com)

Sites of Special Scientific Interest (SSSI)

Historic Parks and Gardens

Scheduled Ancient Monument

Conservation Areas

Listed Buildings

Natural Environment & Ecology

Existing Watercourse & Ponds *(Vectormap)*

Existing Public Right of Way *(Definitive Mapping, Oxfordshire County Council)*

Flood Zone 2 *(Indicative EA Mapping)*

Existing Contours - Wider Context *(Lidar Data, DEFRA)*

Existing Trees and Hedgerows *(Vectormap, Indicative Google & Bing Aerial Photography)*

Local Wildlife Site (LWS) *(Cherwell Local Plan Online Map - cherwell.maps.arcgis.com)*

Ancient Woodland *(Cherwell Local Plan Online Map - cherwell.maps.arcgis.com)*

Fritwell

Ardley

Somerton Road

Upper Heyford Airfield (disused)

B430

Railway Line

M40

Camp Road

Viridor Ardley ERF

120m

115m

110m

Inset Plan

Middleton Stoney

DRAFT FOR SCOPING ONLY

client
Oxfordshire Railfreight Interchange Limited

project
Oxfordshire Strategic Railfreight Interchange

drawing title
FEATURES PLAN

scale
1:5000 @ A0

revision date
03.06.2021

drawing number
8308-L-10

rev
A

CAD file:

APPENDIX 11

Strategic Options 1 to 19

OxSRFI J10 improvements
Strategic Option No. 1

GRID NORTH

Motorway (Highways England)

All-purpose trunk road (Highways England)

Other roads (OCC or private)

Existing road removed / stopped up

Baynard's Green

Enlargement and signalisation of A43 Baynard's Green roundabout as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Padbury

Padbury roundabout improved as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Relocated northbound entry slip road

Cherwell

Amendments to Cherwell roundabout

Ardley

Existing J10 northbound entry slip stopped up

Existing J10 northbound exit slip realigned

Existing J10 southbound entry slip improved to 2 lane entry

Ardley East

Roundabout could be omitted and a bridge provided

Existing B430 stopped up south of Ardley

SRFI

Principal OxSRFI access

Ardley bypass and OxSRFI link road

Bridge over Chiltern Mainline

Roundabout on existing B430

OxSRFI J10 improvements
Strategic Option No. 2

GRID NORTH

Motorway (Highways England)

All-purpose trunk road (Highways England)

Other roads (OCC or private)

Existing road removed / stopped up

Baynard's Green

Enlargement and signalisation of A43 Baynard's Green roundabout as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Existing J10 southbound exit slip stopped up

Relocated northbound entry slip road

Padbury

Padbury roundabout removed

Relocated southbound exit slip road

Cherwell

Amendments to Cherwell roundabout

Ardley

Existing J10 northbound entry slip stopped up

Existing J10 northbound exit slip realigned

Existing J10 southbound entry slip improved to 2 lane entry

Ardley East

Roundabout could be omitted and a bridge provided

Existing B430 stopped up south of Ardley

SRFI

Principal OxSRFI access

Ardley bypass and OxSRFI link road

Bridge over Chiltern Mainline

Roundabout on existing B430

OxSRFI J10 improvements
Strategic Option No. 3

GRID NORTH

Motorway (Highways England)

All-purpose trunk road (Highways England)

Other roads (OCC or private)

Existing road removed / stopped up

Baynard's Green

Enlargement and signalisation of A43 Baynard's Green roundabout as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Existing J10 southbound exit slip stopped up

Padbury

Padbury roundabout removed

Relocated northbound entry slip road

Relocated southbound exit slip road

Cherwell

Amendments to Cherwell roundabout

Existing J10 northbound entry slip stopped up

Ardley

Existing B430 stopped up north of Ardley

Relocated J10 southbound exit slip road

Existing J10 southbound entry slip improved to 2 lane entry

Existing J10 northbound exit slip stopped up

Ardley East

Existing B430 stopped up south of Ardley

SRFI

Principal OxSRFI access

Ardley bypass and OxSRFI link road

Bridge over Chiltern Mainline

Roundabout on existing B430

OxSRFI J10 improvements
Strategic Option No. 4

GRID NORTH

Motorway (Highways England)

All-purpose trunk road (Highways England)

Other roads (OCC or private)

Existing road removed / stopped up

Baynard's Green

Enlargement and signalisation of A43 Baynard's Green roundabout as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Padbury

Padbury roundabout improved as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Relocated northbound entry slip road

Cherwell

Amendments to Cherwell roundabout

Ardley

Existing J10 northbound entry slip stopped up

Existing J10 northbound exit slip realigned

Existing J10 southbound entry slip nose reduced to standard length

Ardley East

Ardley Road roundabout with new slip road

New southbound merge slip road

Existing B430 stopped up south of Ardley

SRFI

Principal OxSRFI access

Ardley bypass and OxSRFI link road

Bridge over Chiltern Mainline

Roundabout on existing B430

OxSRFI J10 improvements
Strategic Option No. 5

GRID NORTH

Motorway (Highways England)

All-purpose trunk road (Highways England)

Other roads (OCC or private)

Existing road removed / stopped up

Baynard's Green

Enlargement and signalisation of A43 Baynard's Green roundabout as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Padbury

Padbury roundabout improved as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Relocated northbound entry slip road

Cherwell

Amendments to Cherwell roundabout

Ardley

Existing J10 northbound entry slip stopped up

Existing J10 northbound exit slip realigned

Existing J10 southbound entry slip nose reduced to standard length

Ardley East

New bridge over M40 for new J10 south facing slip

New southbound merge slip road

Existing B430 stopped up south of Ardley

SRFI

Principal OxSRFI access

Ardley bypass and OxSRFI link road

Bridge over Chiltern Mainline

Roundabout on existing B430

OxSRFI J10 improvements
Strategic Option No. 6

GRID NORTH

Motorway (Highways England)

All-purpose trunk road (Highways England)

Other roads (OCC or private)

Existing road removed / stopped up

Baynard's Green

Enlargement and signalisation of A43 Baynard's Green roundabout as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Padbury

Padbury roundabout improved as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Cherwell

Amendments to Cherwell roundabout

Ardley

Existing J10 northbound entry slip realigned

Existing J10 southbound entry slip nose reduced to standard length

Existing J10 northbound exit slip stopped up

Ardley East

New bridge over M40

Existing B430 stopped up south of Ardley

Relocated northbound exit slip road

New southbound merge slip road

SRFI

Principal OxSRFI access

Ardley bypass and OxSRFI link road

Bridge over Chiltern Mainline

Roundabout on existing B430

OxSRFI J10 improvements
Strategic Option No. 7

GRID NORTH

Motorway (Highways England)

All-purpose trunk road (Highways England)

Other roads (OCC or private)

Existing road removed / stopped up

Baynard's Green

Enlargement and signalisation of A43 Baynard's Green roundabout as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Padbury

Padbury roundabout improved as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Cherwell

Amendments to Cherwell roundabout

Ardley

Existing J10 northbound entry slip realigned

Existing J10 southbound entry slip nose reduced to standard length

Existing J10 northbound exit slip stopped up

No vehicle link to Ardley (link retained for NMUs)

Ardley East

New bridge over M40

Existing B430 stopped up south of Ardley

Relocated northbound exit slip road

New southbound merge slip road

SRFI

Principal OxSRFI access

Ardley bypass and OxSRFI link road

Bridge over Chiltern Mainline

Roundabout on existing B430

OxSRFI J10 improvements
Strategic Option No. 8

Motorway (Highways England)

All-purpose trunk road (Highways England)

Other roads (OCC or private)

Existing road removed / stopped up

Baynard's Green

Enlargement and signalisation of A43 Baynard's Green roundabout as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Padbury

Padbury roundabout improved as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Relocated northbound entry slip road

Cherwell

Amendments to Cherwell roundabout

Ardley

Existing J10 northbound entry slip stopped up

Existing J10 southbound entry slip nose reduced to standard length

Existing J10 northbound exit slip stopped up

No vehicle link to Ardley (link retained for NMUs)

New bridge over M40

Existing B430 stopped up south of Ardley

Relocated northbound exit slip road

New southbound merge slip road

SRFI

Principal OxSRFI access

Ardley bypass and OxSRFI link road

Bridge over Chiltern Mainline

Roundabout on existing B430

OxSRFI J10 improvements
Strategic Option No. 9

Motorway (Highways England)

All-purpose trunk road (Highways England)

Other roads (OCC or private)

Existing road removed / stopped up

Baynard's Green

Enlargement and signalisation of A43 Baynard's Green roundabout as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Existing J10 southbound exit slip stopped up

Relocated northbound entry slip road

Padbury

Padbury roundabout removed

Relocated southbound exit slip road

Cherwell

Amendments to Cherwell roundabout

Existing J10 northbound entry slip stopped up

Ardley

Existing J10 southbound entry slip nose reduced to standard length

Existing J10 northbound exit slip stopped up

No vehicle link to Ardley (link retained for NMUs)

Ardley East

Existing B430 stopped up south of Ardley

Relocated northbound exit slip road

New southbound merge slip road

SRFI

Principal OxSRFI access

Ardley bypass and OxSRFI link road

Bridge over Chiltern Mainline

Roundabout on existing B430

OxSRFI J10 improvements
Strategic Option No. 10

Motorway (Highways England)

All-purpose trunk road (Highways England)

Other roads (OCC or private)

Existing road removed / stopped up

Baynard's Green

Enlargement and signalisation of A43 Baynard's Green roundabout as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Bridge crossing of link roads

A43 southbound to M40 southbound free flow link road

A43 northbound realigned to allow it to cross southbound free flow link

Padbury

Bridge over southbound exit slip

Padbury roundabout improved as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England), minor amendments to north arm

Relocated northbound entry slip road

Cherwell

New southbound merge uses redundant carriageway

Amendments to Cherwell roundabout

Alterations to MSA exit to direct all traffic to Cherwell roundabout

Ardley

Existing J10 southbound entry slip stopped up

Existing J10 northbound exit slip stopped up

No vehicle link to Ardley (link retained for NMUs)

Ardley East

New bridge over M40 for new J10 south facing slip

Existing B430 stopped up south of Ardley

J10 south facing slips relocated

SRFI

Principal OxSRFI access

Ardley bypass and OxSRFI link road

Bridge over Chiltern Mainline

Roundabout on existing B430

OxSRFI J10 improvements
Strategic Option No. 12

Motorway (Highways England)

All-purpose trunk road (Highways England)

Other roads (OCC or private)

Existing road removed / stopped up

Baynard's Green

Enlargement and signalisation of A43 Baynard's Green roundabout as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Bridge crossing of link roads

A43 southbound to M40 southbound free flow link road

A43 northbound realigned to allow it to cross southbound free flow link

Padbury

Relocated northbound entry slip road

Padbury roundabout removed

Bridge crossing of slip roads

Cherwell

Relocated southbound exit slip road

Amendments to Cherwell roundabout

New southbound merge uses redundant carriageway

Alterations to MSA exit to direct all traffic to Cherwell roundabout

Ardley

Existing J10 southbound entry slip stopped up

Existing J10 northbound exit slip stopped up

No vehicle link to Ardley (link retained for NMUs)

Ardley East

New bridge over M40 for new J10 south facing slip

Existing B430 stopped up south of Ardley

J10 south facing slips relocated

SRFI

Principal OxSRFI access

Ardley bypass and OxSRFI link road

Bridge over Chiltern Mainline

Roundabout on existing B430

OxSRFI J10 improvements
Strategic Option No. 14

GRID NORTH

Motorway (Highways England)

All-purpose trunk road (Highways England)

Other roads (OCC or private)

Existing road removed / stopped up

Baynard's Green

Enlargement and signalisation of A43 Baynard's Green roundabout as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Bridge crossing of link roads

A43 northbound realigned to allow it to cross southbound free flow link

A43 southbound to M40 southbound free flow link road

Padbury

Bridge over southbound exit slip

Padbury roundabout improved as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England), minor amendments to north arm

Relocated northbound entry slip road

Cherwell

Amendments to Cherwell roundabout

New southbound merge uses redundant carriageway

Ardley

Existing J10 northbound entry slip stopped up

Existing J10 northbound exit slip realigned

Existing J10 southbound entry slip improved to 2 lane entry

Ardley East

Roundabout could be omitted and a bridge provided

Existing B430 stopped up south of Ardley

SRFI

Principal OxSRFI access

Ardley bypass and OxSRFI link road

Bridge over Chiltern Mainline

Roundabout on existing B430

OxSRFI J10 improvements
Strategic Option No. 15

GRID NORTH

Motorway (Highways England)

All-purpose trunk road (Highways England)

Other roads (OCC or private)

Existing road removed / stopped up

Baynard's Green

Enlargement and signalisation of A43 Baynard's Green roundabout as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Bridge crossing of link roads

A43 northbound realigned to allow it to cross southbound free flow link

A43 southbound to M40 southbound free flow link road

Bridge over southbound exit slip

Relocated northbound entry slip road

Padbury

Padbury roundabout changed to signalised junction

Southbound exit slip road improved as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Cherwell

Amendments to Cherwell roundabout

New southbound merge uses redundant carriageway

Ardley

Existing J10 northbound entry slip stopped up

Existing J10 northbound exit slip realigned

Existing J10 southbound entry slip improved to 2 lane entry

Ardley East

Roundabout could be omitted and a bridge provided

Existing B430 stopped up south of Ardley

SRFI

Principal OxSRFI access

Ardley bypass and OxSRFI link road

Bridge over Chiltern Mainline

Roundabout on existing B430

OxSRFI J10 improvements
Strategic Option No. 16

GRID NORTH

Motorway (Highways England)

All-purpose trunk road (Highways England)

Other roads (OCC or private)

Existing road removed / stopped up

Baynard's Green

Enlargement and signalisation of A43 Baynard's Green roundabout as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Existing J10 southbound exit slip stopped up

New bridge crossing of the M40

Padbury

Relocated northbound entry slip road

Padbury roundabout removed

New M40NB to A43NB free flow link

Relocated southbound exit slip road

Cherwell

Amendments to Cherwell roundabout

Ardley

Existing J10 northbound entry slip stopped up

Existing J10 southbound entry slip improved to 2 lane entry

Existing J10 northbound exit slip stopped up

Ardley East

Existing B430 stopped up south of Ardley

Relocated northbound exit slip road

SRFI

Principal OxSRFI access

Ardley bypass and OxSRFI link road

Bridge over Chiltern Mainline

Roundabout on existing B430

OxSRFI J10 improvements
Strategic Option No. 17

Motorway (Highways England)

All-purpose trunk road (Highways England)

Other roads (OCC or private)

Existing road removed / stopped up

Baynard's Green

Enlargement and signalisation of A43 Baynard's Green roundabout as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Existing J10 southbound exit slip stopped up

New bridge crossing of the M40

Padbury

Relocated northbound entry slip road

Padbury roundabout removed

New M40NB to A43NB free flow link

Cherwell

Relocated southbound exit slip road

Amendments to Cherwell roundabout

Ardley

Existing J10 northbound entry slip stopped up

Existing J10 southbound entry slip nose reduced to standard length

Existing J10 northbound exit slip stopped up

Ardley East

New bridge over M40 for new J10 south facing slip

New south facing slips

Existing B430 stopped up south of Ardley

SRFI

Principal OxSRFI access

Ardley bypass and OxSRFI link road

Bridge over Chiltern Mainline

Roundabout on existing B430

Baynard's Green

Further enlargement of A43 Baynard's Green roundabout (Core scheme is part of Oxfordshire Housing Growth Deal improvement delivered by Highways England)

A43 southbound to M40 southbound free flow link road

A43 northbound realigned to allow it to cross southbound free flow link

Bridge crossing of link roads

Bridge over southbound exit slip

Relocated northbound entry slip road

Padbury

Padbury roundabout changed to signalised junction

Southbound exit slip road improved as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Cherwell

Amendments to Cherwell roundabout

New southbound merge uses redundant carriageway

Alterations to MSA exit to direct all traffic to Cherwell roundabout

Ardley

Existing J10 southbound entry slip stopped up

Ardley roundabout enlarged

Existing J10 northbound exit slip stopped up

No vehicle link to Ardley (link retained for NMUs)

Ardley Road connection to Bucknell

Ardley East

New bridge over M40 for new J10 south facing slip

Existing B430 stopped up south of Ardley

J10 south facing slips relocated

Ardley bypass and OxSRFI link road

Segregated left turn lane

Bridge over Chiltern Mainline

Principal OxSRFI access

Roundabout on existing B430

SRFI

Fewcott

Ardley

Stoke Wood

© Copyright BWB Consulting Ltd

Legend

- Motorway (Highways England)
- All-purpose trunk road (Highways England)
- Other roads (OCC or private)
- Existing road stopped up
- Draft order limits

Rev	Date	Details of issue / revision	Drw	Rev
P03	11.06.21	Issued for options report	SRH	SRH
P02	18.05.21	Issued to team for comment	SRH	SRH
P01	17.05.21	Preliminary Issue	SRH	SRH

Issues & Revisions

BWB CONSULTANCY | ENVIRONMENT INFRASTRUCTURE | BUILDINGS

☐ Birmingham | 0121 233 3322
☐ Leeds | 0113 233 8000
☐ London | 020 7407 3879
☐ Manchester | 0161 233 4260
■ Nottingham | 0115 924 1100
www.bwbconsulting.com

Client

OXFORDSHIRE RAILFREIGHT INTERCHANGE LTD.

Project Title

OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title

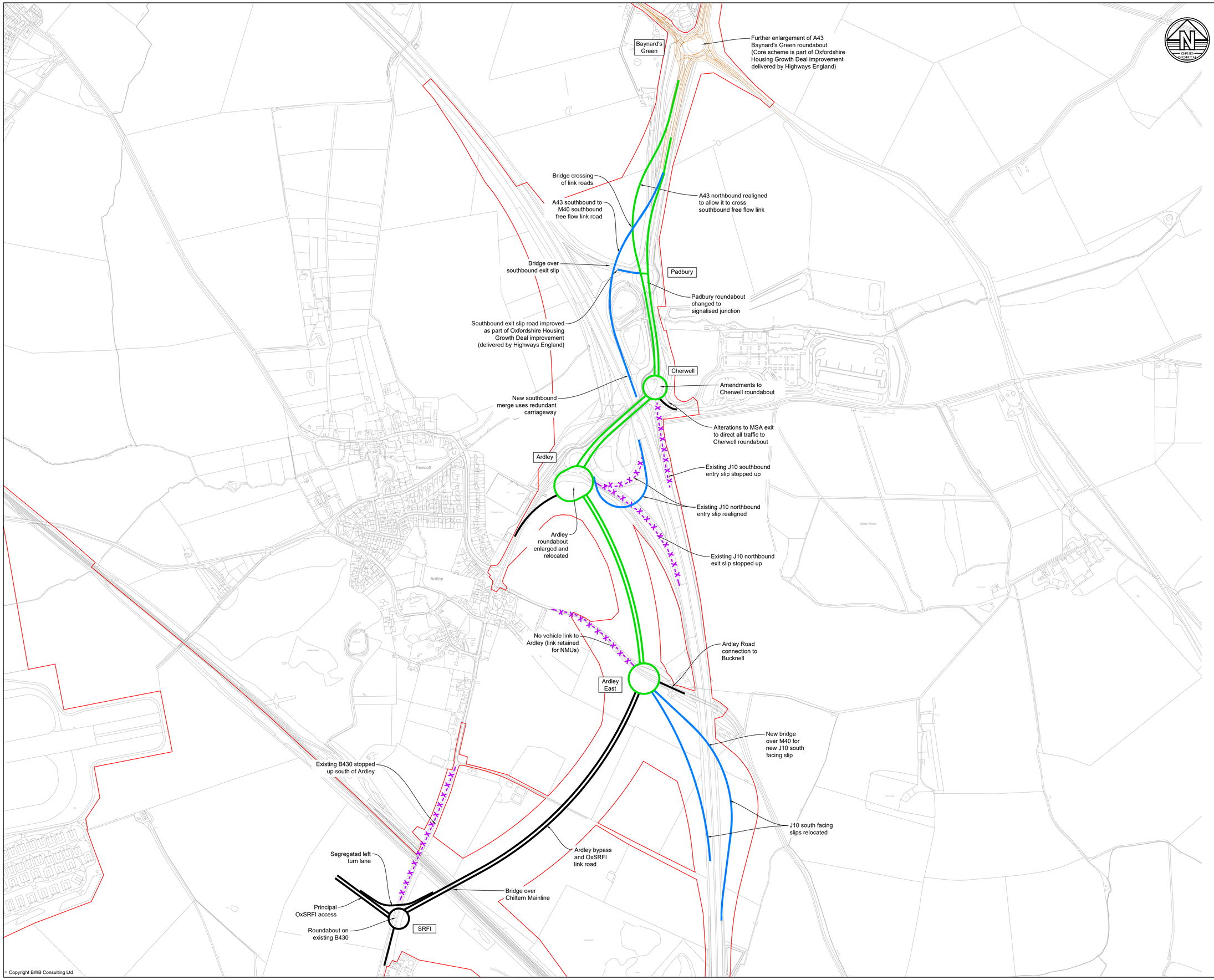
M40 JUNCTION 10 STRATEGIC OPTION 11

Drawn:	S. Hilditch		Reviewed:	S. Hilditch	
BWB Ref:	NTH2479	Date:	17.05.21	Scale@A1:	1:5,000

Drawing Status

FOR COMMENT

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-BWB-GEN-ZZ-SK-CH-SK011	S3	P03



© Copyright BWB Consulting Ltd

Legend

- Motorway (Highways England)
- All-purpose trunk road (Highways England)
- Other roads (OCC or private)
- Existing road stopped up
- Draft order limits

Rev	Date	Details of issue / revision	Drw	Rev
P03	11.06.21	Issued for options report	SRH	SRH
P02	18.05.21	Issued to team for comment	SRH	SRH
P01	17.05.21	Preliminary Issue	SRH	SRH

Issues & Revisions

BWB CONSULTANCY | ENVIRONMENT INFRASTRUCTURE | BUILDINGS
Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7407 3879
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client

OXFORDSHIRE RAILFREIGHT INTERCHANGE LTD.

Project Title

OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title

M40 JUNCTION 10 STRATEGIC OPTION 13

Drawn:	S. Hilditch		Reviewed:	S. Hilditch	
BWB Ref:	NTH2479	Date:	17.05.21	Scale@A1:	1:5,000

Drawing Status

FOR COMMENT

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-BWB-GEN-ZZ-SK-CH-SK012	S3	P03

Baynard's Green

Further enlargement of A43 Baynard's Green roundabout (Core scheme is part of Oxfordshire Housing Growth Deal improvement delivered by Highways England)

A43 southbound to M40 southbound free flow link road

A43 northbound realigned to allow it to cross southbound free flow link

Bridge crossing of link roads

Bridge over southbound exit slip

Padbury

Relocated northbound entry slip road

Padbury roundabout changed to signalised junction

Southbound exit slip road improved as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Cherwell

Amendments to Cherwell roundabout

New southbound merge uses redundant carriageway

Alterations to MSA exit to direct all traffic to Cherwell roundabout

Ardley

Existing J10 southbound entry slip stopped up

Ardley roundabout enlarged

Existing J10 northbound exit slip stopped up

Ardley Road taken under or over new road link

Ardley East

New bridge over M40 for new J10 south facing slip

Existing B430 stopped up south of Ardley

J10 south facing slips relocated

Ardley bypass and OxSRFI link road

Segregated left turn lane

Bridge over Chiltern Mainline

Principal OxSRFI access

Roundabout on existing B430

SRFI

Fewcott

Ardley

Stoke Wood

© Copyright BWB Consulting Ltd

Legend

- Motorway (Highways England)
- All-purpose trunk road (Highways England)
- Other roads (OCC or private)
- Existing road stopped up
- Draft order limits

Rev	Date	Details of issue / revision	Drw	Rev
P03	11.06.21	Issued for options report	SRH	SRH
P02	18.05.21	Issued to team for comment	SRH	SRH
P01	17.05.21	Preliminary Issue	SRH	SRH

Issues & Revisions

BWB CONSULTANCY | ENVIRONMENT INFRASTRUCTURE | BUILDINGS

- Birmingham | 0121 233 3322
- Leeds | 0113 233 8000
- London | 020 7407 3879
- Manchester | 0161 233 4260
- Nottingham | 0115 924 1100

www.bwbconsulting.com

Client

OXFORDSHIRE RAILFREIGHT INTERCHANGE LTD.

Project Title

OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title

M40 JUNCTION 10 STRATEGIC OPTION 18

Drawn:	S. Hilditch	Reviewed:	S. Hilditch
BWB Ref:	NTH2479	Date:	17.05.21
Scale@A1:	1:5,000		

Drawing Status

FOR COMMENT

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-BWB-GEN-ZZ-SK-CH-SK013	S3	P03

Baynard's Green

Further enlargement of A43 Baynard's Green roundabout (Core scheme is part of Oxfordshire Housing Growth Deal improvement delivered by Highways England)

Bridge crossing of link roads

A43 southbound to M40 southbound free flow link road

A43 northbound realigned to allow it to cross southbound free flow link

Bridge over southbound exit slip

Padbury

Padbury roundabout changed to signalised junction

Southbound exit slip road improved as part of Oxfordshire Housing Growth Deal improvement (delivered by Highways England)

Cherwell

New southbound merge uses redundant carriageway

Amendments to Cherwell roundabout

Alterations to MSA exit to direct all traffic to Cherwell roundabout

Ardley

Existing J10 southbound entry slip stopped up

Existing J10 northbound entry slip realigned

Ardley roundabout enlarged and relocated

Existing J10 northbound exit slip stopped up

Ardley Road taken under or over new road link

Ardley East

New bridge over M40 for new J10 south facing slip

J10 south facing slips relocated

Existing B430 stopped up south of Ardley

Segregated left turn lane

Ardley bypass and OxSRFI link road

Bridge over Chiltern Mainline

Principal OxSRFI access

Roundabout on existing B430

SRFI

Fewcott

Ardley

Stoke Wood

© Copyright BWB Consulting Ltd

Legend

- Motorway (Highways England)
- All-purpose trunk road (Highways England)
- Other roads (OCC or private)
- Existing road stopped up
- Draft order limits

Rev	Date	Details of issue / revision	Drw	Rev
P03	11.06.21	Issued for options report	SRH	SRH
P02	18.05.21	Issued to team for comment	SRH	SRH
P01	17.05.21	Preliminary Issue	SRH	SRH

Issues & Revisions

BWB CONSULTANCY | ENVIRONMENT INFRASTRUCTURE | BUILDINGS

Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7407 3879
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client

OXFORDSHIRE RAILFREIGHT INTERCHANGE LTD.

Project Title

OxSRFI
OXFORDSHIRE
STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title

M40 JUNCTION 10 STRATEGIC OPTION 19

Drawn:	S. Hilditch	Reviewed:	S. Hilditch
BWB Ref:	NTH2479	Date:	17.05.21
Scale@A1:	1:5,000		

Drawing Status

FOR COMMENT

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-BWB-GEN-ZZ-SK-CH-SK014	S3	P03

APPENDIX 12

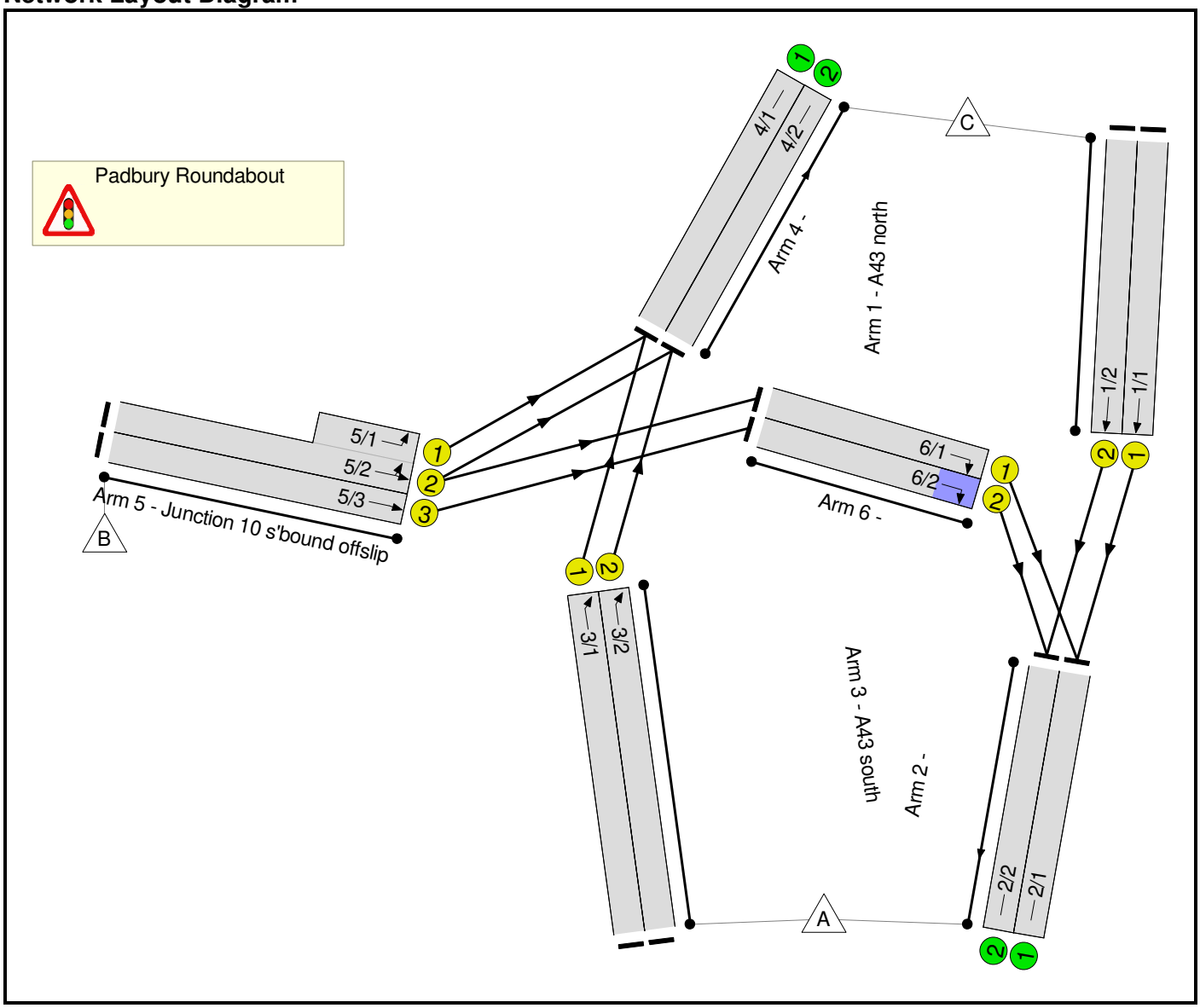
Padbury Roundabout junction options P-1 and P-3 – LinSig results

Full Input Data And Results

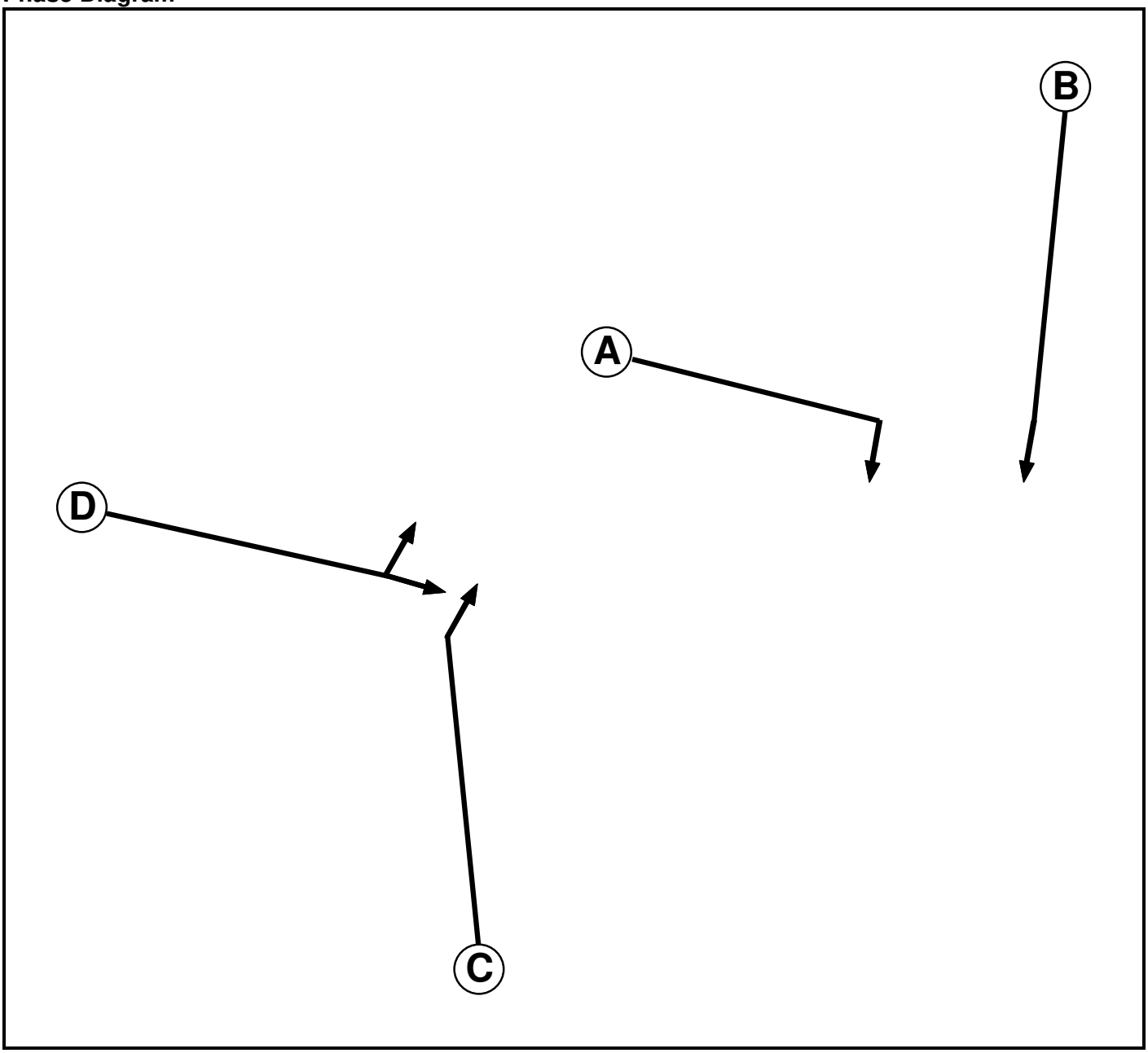
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Padbury committed scheme - P-1 and P-3**
Location:	
Additional detail:	
File name:	210419 Padbury committed scheme – P-1 and P-3.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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

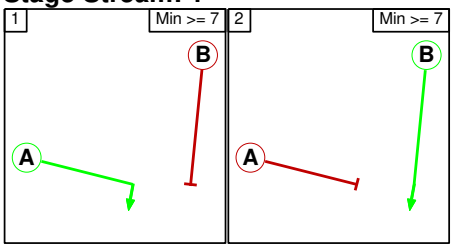
		Starting Phase			
		A	B	C	D
Terminating Phase	A		6	-	-
	B	6		-	-
	C	-	-		6
	D	-	-	6	

Phases in Stage

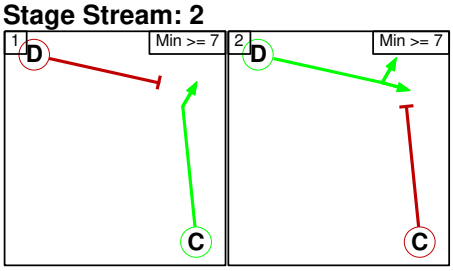
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Prohibited Stage Change

Stage Stream: 1

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

		To Stage	
		1	2
From Stage	1		6
	2	6	

Lane Input Data

Junction: Padbury Roundabout												
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 (A43 north)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 2 Ahead	50.00
1/2 (A43 north)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 2 Ahead	50.00
2/1	U		2	3	60.0	Inf	-	-	-	-	-	-
2/2	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1 (A43 south)	U	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Ahead	40.00
3/2 (A43 south)	U	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Ahead	40.00
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
4/2	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Junction 10 s'bound offslip)	U	D	2	3	5.0	Geom	-	3.65	0.00	Y	Arm 4 Left	40.00
5/2 (Junction 10 s'bound offslip)	U	D	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Left	40.00
											Arm 6 Ahead	40.00
5/3 (Junction 10 s'bound offslip)	U	D	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 6 Ahead	40.00
6/1	U	A	2	3	8.7	User	1850	-	-	-	-	-
6/2	U	A	2	3	8.7	User	1850	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Padbury1_AM'	07:45	08:45	01:00	
2: 'Padbury1_PM'	16:30	17:30	01:00	
3: 'Padbury2_AM'	07:45	08:45	01:00	
4: 'Padbury2_PM'	16:30	17:30	01:00	

Scenario 1: '2031 do some 1,4,5,6,7,8 - AM Peak' (FG1: 'Padbury1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	0	1662	1662
	B	738	0	337	1075
	C	2851	0	0	2851
	Tot.	3589	0	1999	5588

Traffic Lane Flows

Lane	Scenario 1: 2031 do some 1,4,5,6,7,8 - AM Peak
Junction: Padbury Roundabout	
1/1	1425
1/2	1426
2/1	1769
2/2	1820
3/1	831
3/2	831
4/1	1159
4/2	840
5/1 (short)	328
5/2 (with short)	681(In) 353(Out)
5/3	394
6/1	344
6/2	394

Lane Saturation Flows

Junction: Padbury Roundabout

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 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/2 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	40.00	100.0 %	1908	1908
3/2 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	40.00	100.0 %	1908	1908
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 4 Left	40.00	100.0 %	1908	1908
5/2 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 4 Left	40.00	2.5 %	1908	1908
				Arm 6 Ahead	40.00	97.5 %		
5/3 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 6 Ahead	40.00	100.0 %	1908	1908
6/1	This lane uses a directly entered Saturation Flow						1850	1850
6/2	This lane uses a directly entered Saturation Flow						1850	1850

Scenario 2: '2031 do some 1,4,5,6,7,8 - PM Peak' (FG2: 'Padbury1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	0	2475	2475
	B	609	0	318	927
	C	1722	0	0	1722
	Tot.	2331	0	2793	5124

Traffic Lane Flows

Lane	Scenario 2: 2031 do some 1,4,5,6,7,8 - PM Peak
Junction: Padbury Roundabout	
1/1	861
1/2	861
2/1	1158
2/2	1173
3/1	1237
3/2	1238
4/1	1537
4/2	1256
5/1 (short)	300
5/2 (with short)	615(In) 315(Out)
5/3	312
6/1	297
6/2	312

Lane Saturation Flows

Junction: Padbury Roundabout

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 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/2 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	40.00	100.0 %	1908	1908
3/2 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	40.00	100.0 %	1908	1908
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 4 Left	40.00	100.0 %	1908	1908
5/2 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 4 Left	40.00	5.7 %	1908	1908
				Arm 6 Ahead	40.00	94.3 %		
5/3 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 6 Ahead	40.00	100.0 %	1908	1908
6/1	This lane uses a directly entered Saturation Flow						1850	1850
6/2	This lane uses a directly entered Saturation Flow						1850	1850

Scenario 3: '2031 do some 10,14 - AM Peak' (FG3: 'Padbury2_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	0	1662	1662
	B	738	0	337	1075
	C	1246	0	0	1246
	Tot.	1984	0	1999	3983

Traffic Lane Flows

Lane	Scenario 3: 2031 do some 10,14 - AM Peak
Junction: Padbury Roundabout	
1/1	623
1/2	623
2/1	978
2/2	1006
3/1	831
3/2	831
4/1	1167
4/2	832
5/1 (short)	336
5/2 (with short)	692(In) 356(Out)
5/3	383
6/1	355
6/2	383

Lane Saturation Flows

Junction: Padbury Roundabout

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 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/2 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	40.00	100.0 %	1908	1908
3/2 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	40.00	100.0 %	1908	1908
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 4 Left	40.00	100.0 %	1908	1908
5/2 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 4 Left	40.00	0.3 %	1908	1908
				Arm 6 Ahead	40.00	99.7 %		
5/3 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 6 Ahead	40.00	100.0 %	1908	1908
6/1	This lane uses a directly entered Saturation Flow						1850	1850
6/2	This lane uses a directly entered Saturation Flow						1850	1850

Scenario 4: '2031 do some 10,14 - PM Peak' (FG4: 'Padbury2_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	0	2475	2475
	B	609	0	318	927
	C	783	0	0	783
	Tot.	1392	0	2793	4185

Traffic Lane Flows

Lane	Scenario 4: 2031 do some 10,14 - PM Peak
Junction: Padbury Roundabout	
1/1	391
1/2	392
2/1	685
2/2	707
3/1	1237
3/2	1238
4/1	1534
4/2	1259
5/1 (short)	297
5/2 (with short)	612(In) 315(Out)
5/3	315
6/1	294
6/2	315

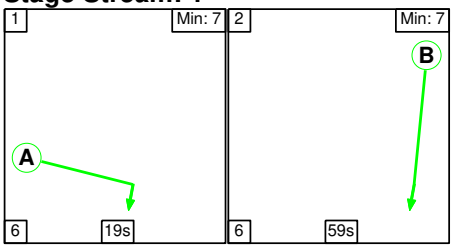
Lane Saturation Flows

Junction: Padbury Roundabout								
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 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/2 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	40.00	100.0 %	1908	1908
3/2 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	40.00	100.0 %	1908	1908
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 4 Left	40.00	100.0 %	1908	1908
5/2 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 4 Left	40.00	6.7 %	1908	1908
				Arm 6 Ahead	40.00	93.3 %		
5/3 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 6 Ahead	40.00	100.0 %	1908	1908
6/1	This lane uses a directly entered Saturation Flow						1850	1850
6/2	This lane uses a directly entered Saturation Flow						1850	1850

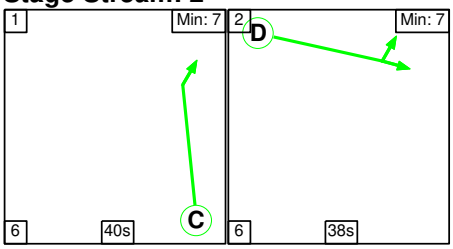
Scenario 1: '2031 do some 1,4,5,6,7,8 - AM Peak' (FG1: 'Padbury1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

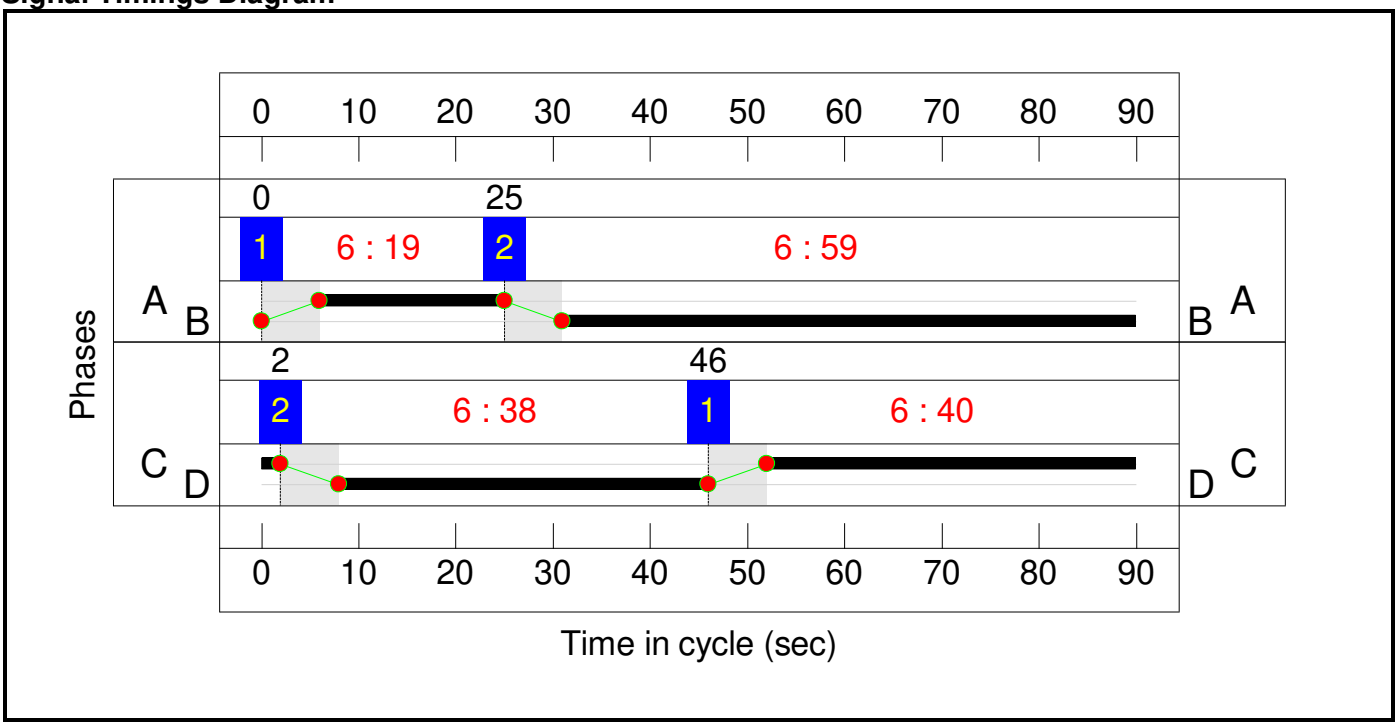
Stage Stream: 1

Stage	1	2
Duration	19	59
Change Point	0	25

Stage Stream: 2

Stage	1	2
Duration	40	38
Change Point	46	2

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: Padbury committed scheme - P-1 and P-3	-	-	**N/A**	-	-		-	-	-	-	-	-	**111.3%**
Padbury Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**111.3%**
1/1	A43 north Ahead	U	1	N/A	B		1	59	-	1425	1922	1281	111.2%
1/2	A43 north Ahead	U	1	N/A	B		1	59	-	1426	1922	1281	111.3%
3/1	A43 south Ahead	U	2	N/A	C		1	40	-	831	1908	869	95.6%
3/2	A43 south Ahead	U	2	N/A	C		1	40	-	831	1908	869	95.6%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	2	N/A	D		1	38	-	681	1908:1908	530+492	66.6 : 66.6%
5/3	Junction 10 s'bound offslip Ahead	U	2	N/A	D		1	38	-	394	1908	827	47.7%
6/1	Right	U	1	N/A	A		1	19	-	344	1850	411	83.7%
6/2	Right	U	1	N/A	A		1	19	-	394	1850	411	95.8%

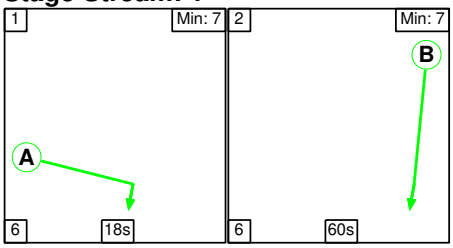
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Padbury committed scheme - P-1 and P-3	**-**	**-**	**0**	**0**	**0**	**48.4**	**170.4**	**0.0**	**218.8**	**-**	**-**	**-**	**-**
Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**48.4**	**170.4**	**0.0**	**218.8**	**-**	**-**	**-**	**-**
1/1	1425	1281	-	-	-	14.2	76.5	-	90.7	229.2	41.6	76.5	118.1
1/2	1426	1281	-	-	-	14.3	77.0	-	91.2	230.4	41.7	77.0	118.7
3/1	831	831	-	-	-	5.5	7.7	-	13.2	57.2	19.9	7.7	27.6
3/2	831	831	-	-	-	5.5	7.7	-	13.2	57.2	19.9	7.7	27.6
5/2+5/1	681	681	-	-	-	3.4	1.0	-	4.3	23.0	7.5	1.0	8.5
5/3	394	394	-	-	-	2.0	0.5	-	2.4	22.4	7.0	0.5	7.5
6/1	344	344	-	-	-	1.7	0.0	-	1.7	17.5	2.5	0.0	2.5
6/2	394	394	-	-	-	2.0	0.0	-	2.0	17.9	3.1	0.0	3.1

C1 Stream: 1 PRC for Signalled Lanes (%): -23.7 Total Delay for Signalled Lanes (pcuHr): 185.58 Cycle Time (s): 90
C1 Stream: 2 PRC for Signalled Lanes (%): -6.2 Total Delay for Signalled Lanes (pcuHr): 33.19 Cycle Time (s): 90
PRC Over All Lanes (%): -23.7 Total Delay Over All Lanes(pcuHr): 218.77

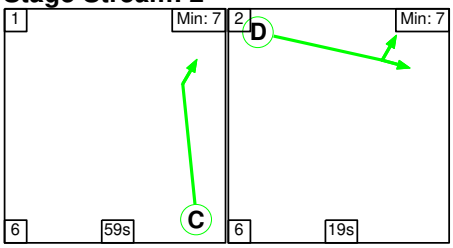
Scenario 2: '2031 do some 1,4,5,6,7,8 - PM Peak' (FG2: 'Padbury1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

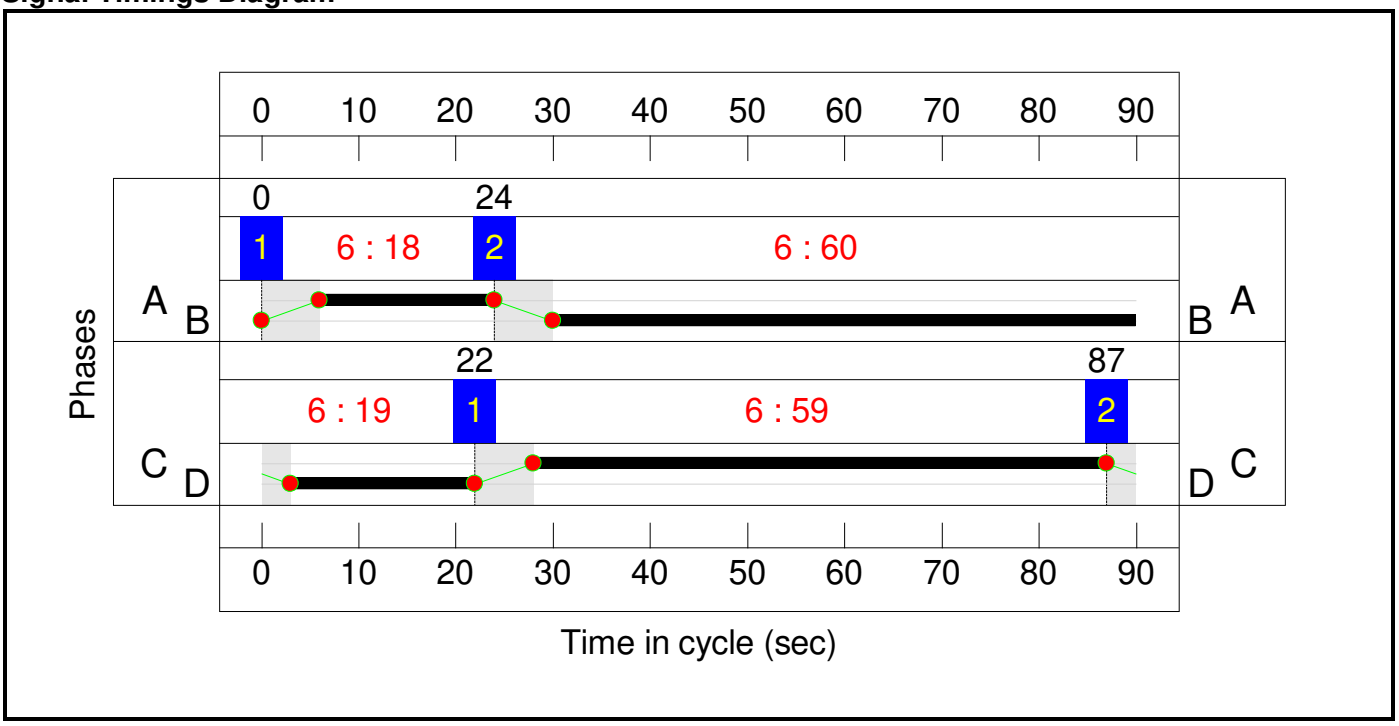
Stage Stream: 1

Stage	1	2
Duration	18	60
Change Point	0	24

Stage Stream: 2

Stage	1	2
Duration	59	19
Change Point	22	87

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: Padbury committed scheme - P-1 and P-3	-	-	**N/A**	-	-		-	-	-	-	-	-	**98.6%**
Padbury Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**98.6%**
1/1	A43 north Ahead	U	1	N/A	B		1	60	-	861	1922	1303	66.1%
1/2	A43 north Ahead	U	1	N/A	B		1	60	-	861	1922	1303	66.1%
3/1	A43 south Ahead	U	2	N/A	C		1	59	-	1237	1908	1272	97.2%
3/2	A43 south Ahead	U	2	N/A	C		1	59	-	1238	1908	1272	97.3%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	2	N/A	D		1	19	-	615	1908:1908	319+304	98.6 : 98.6%
5/3	Junction 10 s'bound offslip Ahead	U	2	N/A	D		1	19	-	312	1908	424	73.6%
6/1	Right	U	1	N/A	A		1	18	-	297	1850	391	76.0%
6/2	Right	U	1	N/A	A		1	18	-	312	1850	391	79.9%

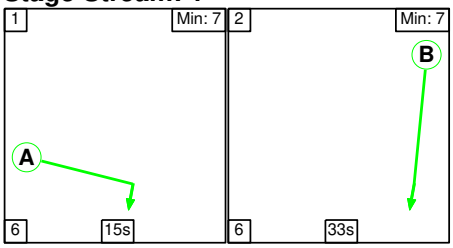
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Padbury committed scheme - P-1 and P-3	**-**	**-**	**0**	**0**	**0**	**22.8**	**35.7**	**0.0**	**58.4**	**-**	**-**	**-**	**-**
Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**22.8**	**35.7**	**0.0**	**58.4**	**-**	**-**	**-**	**-**
1/1	861	861	-	-	-	2.0	1.0	-	3.0	12.5	12.4	1.0	13.4
1/2	861	861	-	-	-	2.0	1.0	-	3.0	12.5	12.4	1.0	13.4
3/1	1237	1237	-	-	-	4.9	10.9	-	15.8	45.9	29.2	10.9	40.1
3/2	1238	1238	-	-	-	4.9	11.0	-	15.9	46.3	29.2	11.0	40.3
5/2+5/1	615	615	-	-	-	5.7	10.4	-	16.1	94.1	10.4	10.4	20.9
5/3	312	312	-	-	-	2.8	1.4	-	4.2	48.2	7.2	1.4	8.6
6/1	297	297	-	-	-	0.3	0.0	-	0.3	4.0	1.0	0.0	1.0
6/2	312	312	-	-	-	0.2	0.0	-	0.2	1.8	0.2	0.0	0.2

C1 Stream: 1 PRC for Signalled Lanes (%): 12.7 Total Delay for Signalled Lanes (pcuHr): 6.47 Cycle Time (s): 90
C1 Stream: 2 PRC for Signalled Lanes (%): -9.6 Total Delay for Signalled Lanes (pcuHr): 51.98 Cycle Time (s): 90
PRC Over All Lanes (%): -9.6 Total Delay Over All Lanes(pcuHr): 58.45

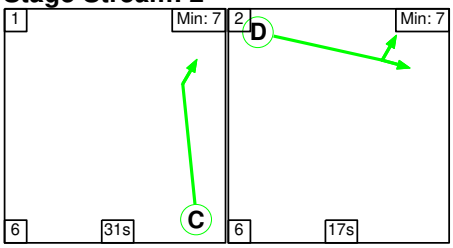
Scenario 3: '2031 do some 10,14 - AM Peak' (FG3: 'Padbury2_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

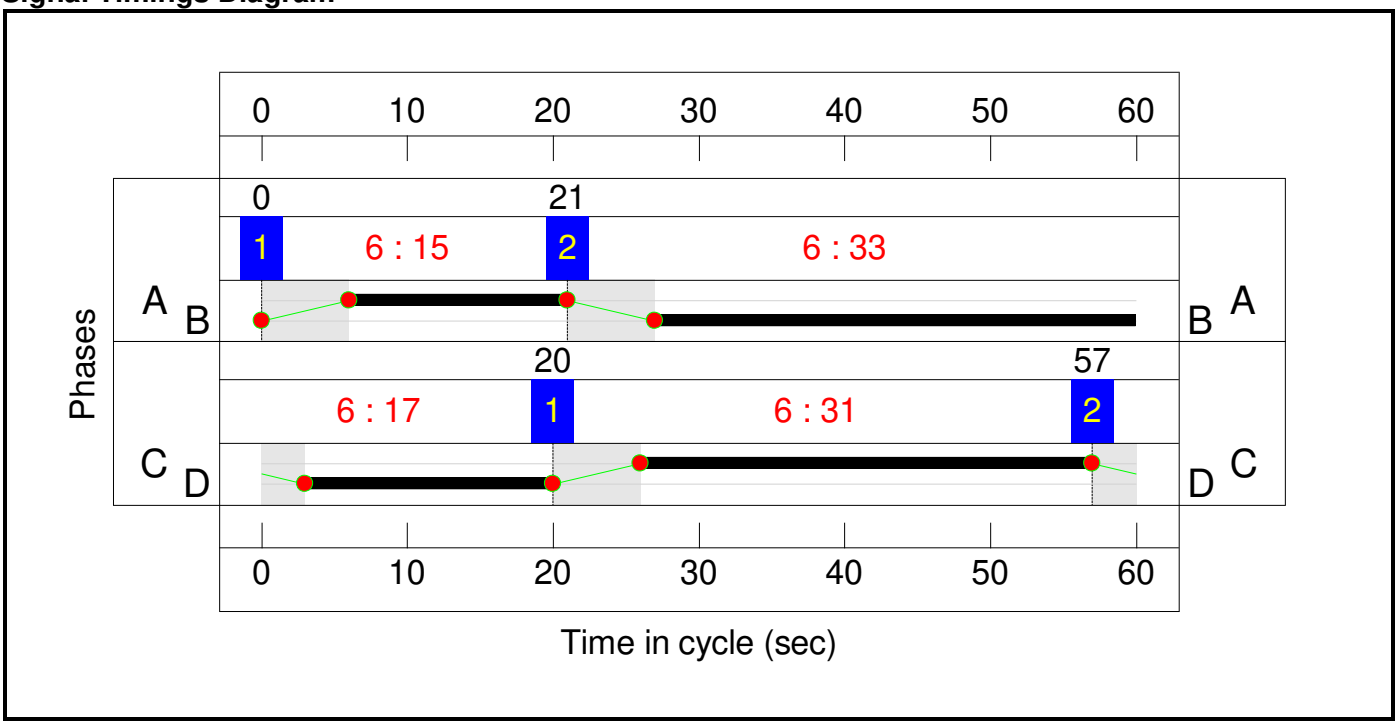
Stage Stream: 1

Stage	1	2
Duration	15	33
Change Point	0	21

Stage Stream: 2

Stage	1	2
Duration	31	17
Change Point	20	57

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: Padbury committed scheme - P-1 and P-3	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**81.7%**
Padbury Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**81.7%**
1/1	A43 north Ahead	U	1	N/A	B		1	33	-	623	1922	1089	57.2%
1/2	A43 north Ahead	U	1	N/A	B		1	33	-	623	1922	1089	57.2%
3/1	A43 south Ahead	U	2	N/A	C		1	31	-	831	1908	1018	81.7%
3/2	A43 south Ahead	U	2	N/A	C		1	31	-	831	1908	1018	81.7%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	2	N/A	D		1	17	-	692	1908:1908	447+422	79.6 : 79.6%
5/3	Junction 10 s'bound offslip Ahead	U	2	N/A	D		1	17	-	383	1908	572	66.9%
6/1	Right	U	1	N/A	A		1	15	-	355	1850	493	72.0%
6/2	Right	U	1	N/A	A		1	15	-	383	1850	493	77.6%

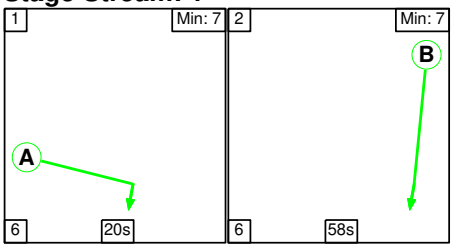
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Padbury committed scheme - P-1 and P-3	**-**	**-**	**0**	**0**	**0**	**14.1**	**8.6**	**0.0**	**22.7**	**-**	**-**	**-**	**-**
Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**14.1**	**8.6**	**0.0**	**22.7**	**-**	**-**	**-**	**-**
1/1	623	623	-	-	-	1.4	0.7	-	2.1	12.2	6.6	0.7	7.2
1/2	623	623	-	-	-	1.4	0.7	-	2.1	12.2	6.6	0.7	7.2
3/1	831	831	-	-	-	2.7	2.2	-	4.8	21.0	11.3	2.2	13.5
3/2	831	831	-	-	-	2.7	2.2	-	4.8	21.0	11.3	2.2	13.5
5/2+5/1	692	692	-	-	-	3.5	1.9	-	5.4	27.9	5.2	1.9	7.1
5/3	383	383	-	-	-	2.0	1.0	-	3.0	27.8	5.5	1.0	6.5
6/1	355	355	-	-	-	0.2	0.0	-	0.2	2.2	2.1	0.0	2.1
6/2	383	383	-	-	-	0.2	0.0	-	0.2	2.3	0.3	0.0	0.3

C1 Stream: 1 PRC for Signalled Lanes (%): 15.9 Total Delay for Signalled Lanes (pcuHr): 4.68 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 10.2 Total Delay for Signalled Lanes (pcuHr): 18.02 Cycle Time (s): 60
PRC Over All Lanes (%): 10.2 Total Delay Over All Lanes(pcuHr): 22.70

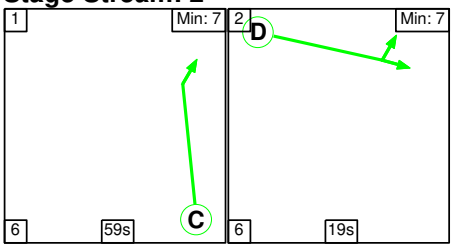
Scenario 4: '2031 do some 10,14 - PM Peak' (FG4: 'Padbury2_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

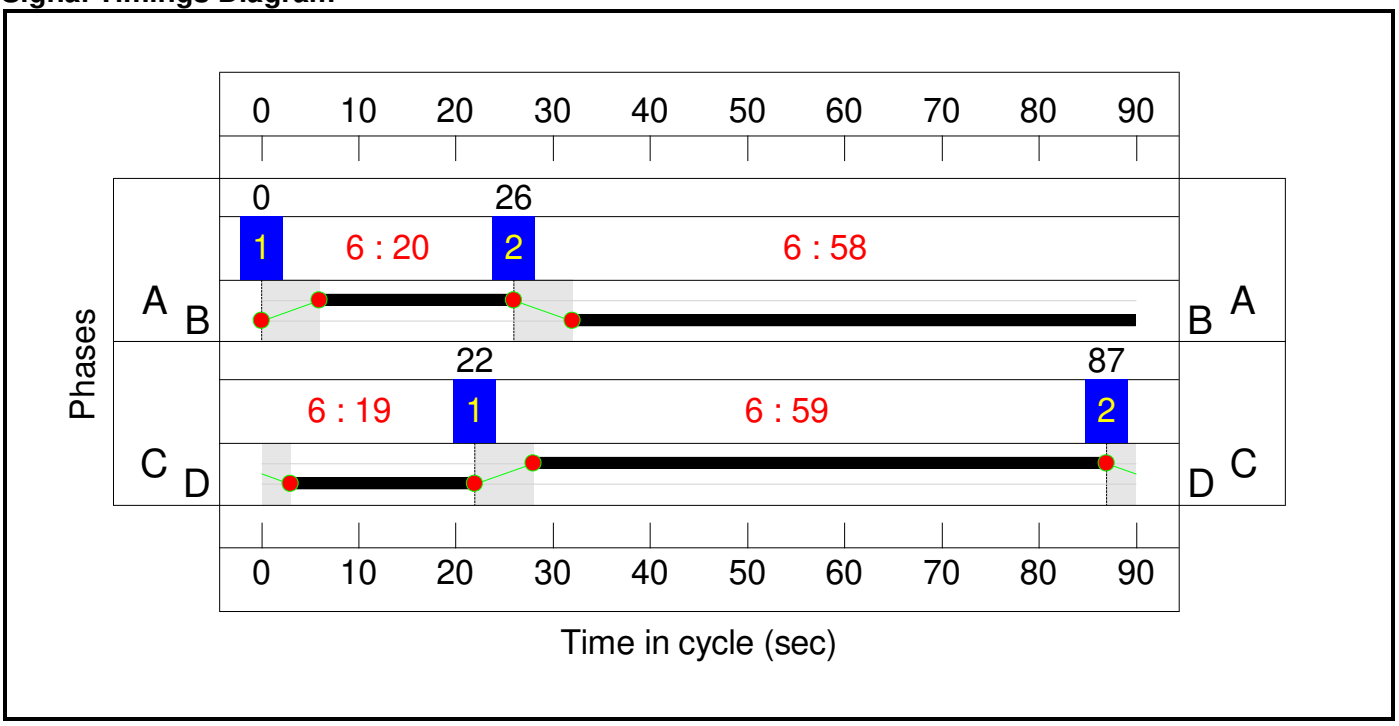
Stage Stream: 1

Stage	1	2
Duration	20	58
Change Point	0	26

Stage Stream: 2

Stage	1	2
Duration	59	19
Change Point	22	87

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: Padbury committed scheme - P-1 and P-3	-	-	**N/A**	-	-		-	-	-	-	-	-	**98.4%**
Padbury Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**98.4%**
1/1	A43 north Ahead	U	1	N/A	B		1	58	-	391	1922	1260	31.0%
1/2	A43 north Ahead	U	1	N/A	B		1	58	-	392	1922	1260	31.1%
3/1	A43 south Ahead	U	2	N/A	C		1	59	-	1237	1908	1272	97.2%
3/2	A43 south Ahead	U	2	N/A	C		1	59	-	1238	1908	1272	97.3%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	2	N/A	D		1	19	-	612	1908:1908	320+302	98.4 : 98.4%
5/3	Junction 10 s'bound offslip Ahead	U	2	N/A	D		1	19	-	315	1908	424	74.3%
6/1	Right	U	1	N/A	A		1	20	-	294	1850	432	68.1%
6/2	Right	U	1	N/A	A		1	20	-	315	1850	432	73.0%

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: Padbury committed scheme - P-1 and P-3	**-**	**-**	**0**	**0**	**0**	**19.9**	**34.0**	**0.0**	**53.8**	**-**	**-**	**-**	**-**
Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**19.9**	**34.0**	**0.0**	**53.8**	**-**	**-**	**-**	**-**
1/1	391	391	-	-	-	0.7	0.2	-	1.0	8.8	4.1	0.2	4.4
1/2	392	392	-	-	-	0.7	0.2	-	1.0	8.8	4.1	0.2	4.4
3/1	1237	1237	-	-	-	4.9	10.9	-	15.8	45.9	29.2	10.9	40.1
3/2	1238	1238	-	-	-	4.9	11.0	-	15.9	46.3	29.2	11.0	40.3
5/2+5/1	612	612	-	-	-	5.6	10.2	-	15.8	92.9	10.4	10.2	20.6
5/3	315	315	-	-	-	2.9	1.4	-	4.3	48.7	7.3	1.4	8.7
6/1	294	294	-	-	-	0.1	0.0	-	0.1	1.0	0.1	0.0	0.1
6/2	315	315	-	-	-	0.0	0.0	-	0.0	0.5	0.1	0.0	0.1

C1 Stream: 1 PRC for Signalled Lanes (%): 23.3 Total Delay for Signalled Lanes (pcuHr): 2.03 Cycle Time (s): 90
C1 Stream: 2 PRC for Signalled Lanes (%): -9.4 Total Delay for Signalled Lanes (pcuHr): 51.77 Cycle Time (s): 90
PRC Over All Lanes (%): -9.4 Total Delay Over All Lanes(pcuHr): 53.81

APPENDIX 13

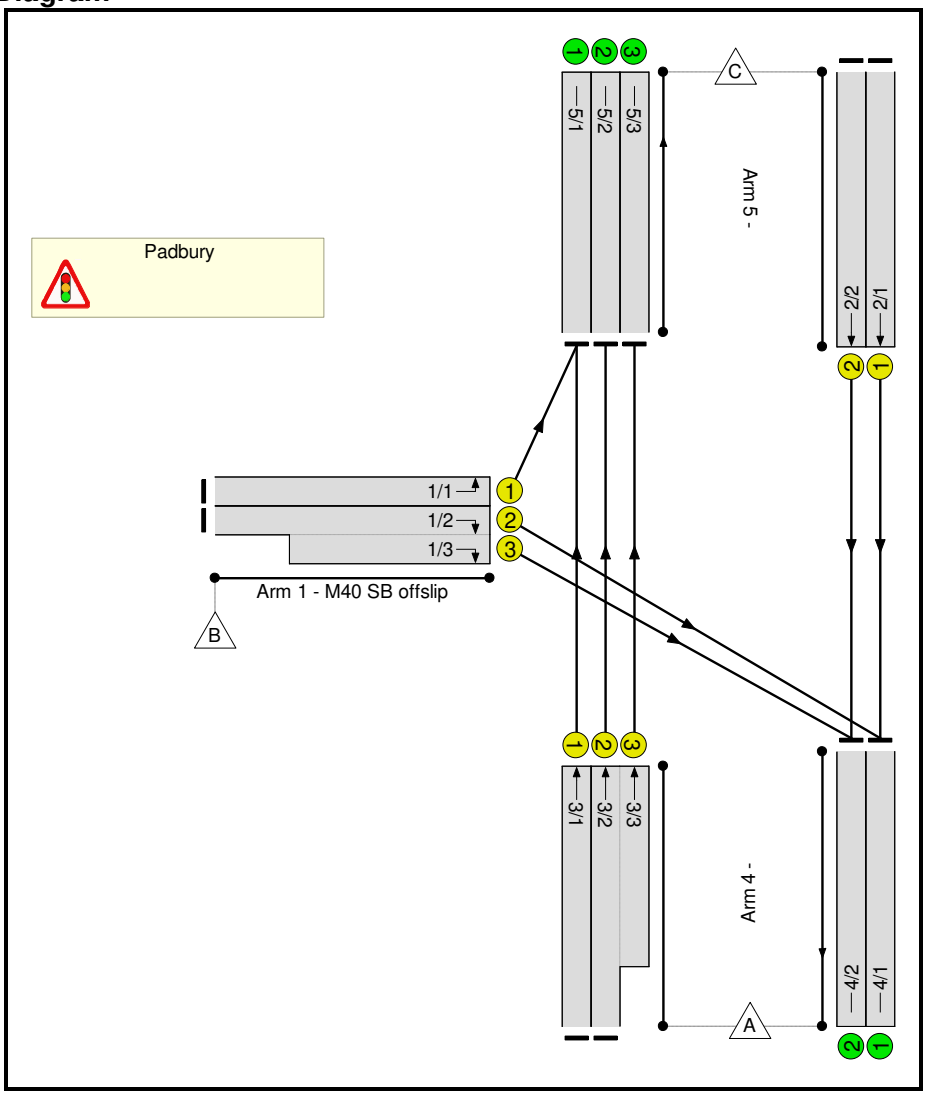
Padbury T- junction option P-4 – LinSig results

Full Input Data And Results

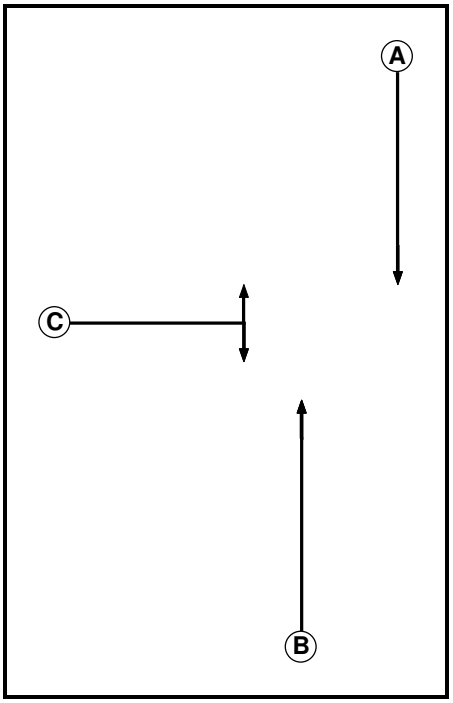
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Padbury T-junction option**
Location:	
Additional detail:	
File name:	210408 Padbury T-junction - strategic options 10,11,13,14,15.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



Phase Diagram



Phase Input Data

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

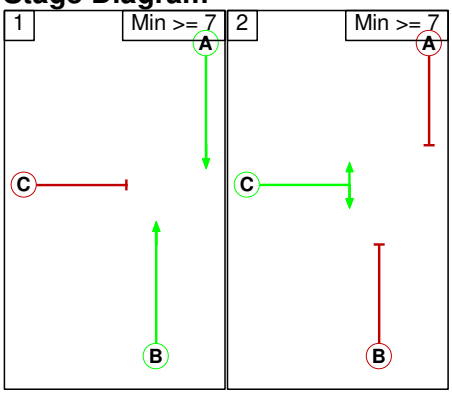
Phase Intergreens Matrix

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

Phases in Stage

Stage No.	Phases in Stage
1	A B
2	C

Stage Diagram



Prohibited Stage Change

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

Lane Input Data

Junction: Padbury

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 (M40 SB offslip)	U	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 5 Left	20.00
1/2 (M40 SB offslip)	U	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Right	20.00
1/3 (M40 SB offslip)	U	C	2	3	10.4	Geom	-	3.65	0.00	Y	Arm 4 Right	20.00
2/1 (A43 north)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Ahead	Inf
2/2 (A43 north)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Ahead	Inf
3/1 (A43 south)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 5 Ahead	Inf
3/2 (A43 south)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 5 Ahead	Inf
3/3 (A43 south)	U	B	2	3	10.4	Geom	-	3.65	0.00	Y	Arm 5 Ahead	Inf
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
4/2	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
5/3	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Padbury2_AM'	07:45	08:45	01:00	
2: 'Padbury2_PM'	16:30	17:30	01:00	

Scenario 1: '2031 do some 11,13,15,18,19 - AM Peak' (FG1: 'Padbury2_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	0	1662	1662
	B	738	0	337	1075
	C	1246	0	0	1246
	Tot.	1984	0	1999	3983

Traffic Lane Flows

Lane	Scenario 1: 2031 do some 11,13,15,18,19 - AM Peak
Junction: Padbury	
1/1	337
1/2 (with short)	738(In) 369(Out)
1/3 (short)	369
2/1	623
2/2	623
3/1	529
3/2 (with short)	1133(In) 567(Out)
3/3 (short)	566
4/1	992
4/2	992
5/1	866
5/2	567
5/3	566

Lane Saturation Flows

Junction: Padbury								
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 (M40 SB offslip)	3.65	0.00	Y	Arm 5 Left	20.00	100.0 %	1842	1842
1/2 (M40 SB offslip)	3.65	0.00	Y	Arm 4 Right	20.00	100.0 %	1842	1842
1/3 (M40 SB offslip)	3.65	0.00	Y	Arm 4 Right	20.00	100.0 %	1842	1842
2/1 (A43 north)	3.65	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1980	1980
2/2 (A43 north)	3.65	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1980	1980
3/1 (A43 south)	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
3/2 (A43 south)	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
3/3 (A43 south)	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2031 do some 11,13,15,18,19 - PM Peak' (FG2: 'Padbury2_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	0	2475	2475
	B	609	0	318	927
	C	783	0	0	783
	Tot.	1392	0	2793	4185

Traffic Lane Flows

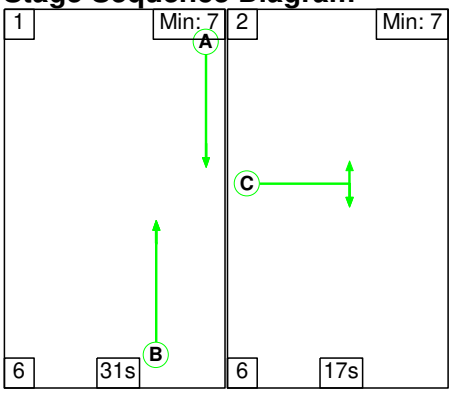
Lane	Scenario 2: 2031 do some 11,13,15,18,19 - PM Peak
Junction: Padbury	
1/1	318
1/2 (with short)	609(In) 304(Out)
1/3 (short)	305
2/1	391
2/2	392
3/1	897
3/2 (with short)	1578(In) 789(Out)
3/3 (short)	789
4/1	695
4/2	697
5/1	1215
5/2	789
5/3	789

Lane Saturation Flows

Junction: Padbury 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 (M40 SB offslip)	3.65	0.00	Y	Arm 5 Left	20.00	100.0 %	1842	1842
1/2 (M40 SB offslip)	3.65	0.00	Y	Arm 4 Right	20.00	100.0 %	1842	1842
1/3 (M40 SB offslip)	3.65	0.00	Y	Arm 4 Right	20.00	100.0 %	1842	1842
2/1 (A43 north)	3.65	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1980	1980
2/2 (A43 north)	3.65	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1980	1980
3/1 (A43 south)	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
3/2 (A43 south)	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
3/3 (A43 south)	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2031 do some 11,13,15,18,19 - AM Peak' (FG1: 'Padbury2_AM', Plan 1: 'Network Control Plan 1')

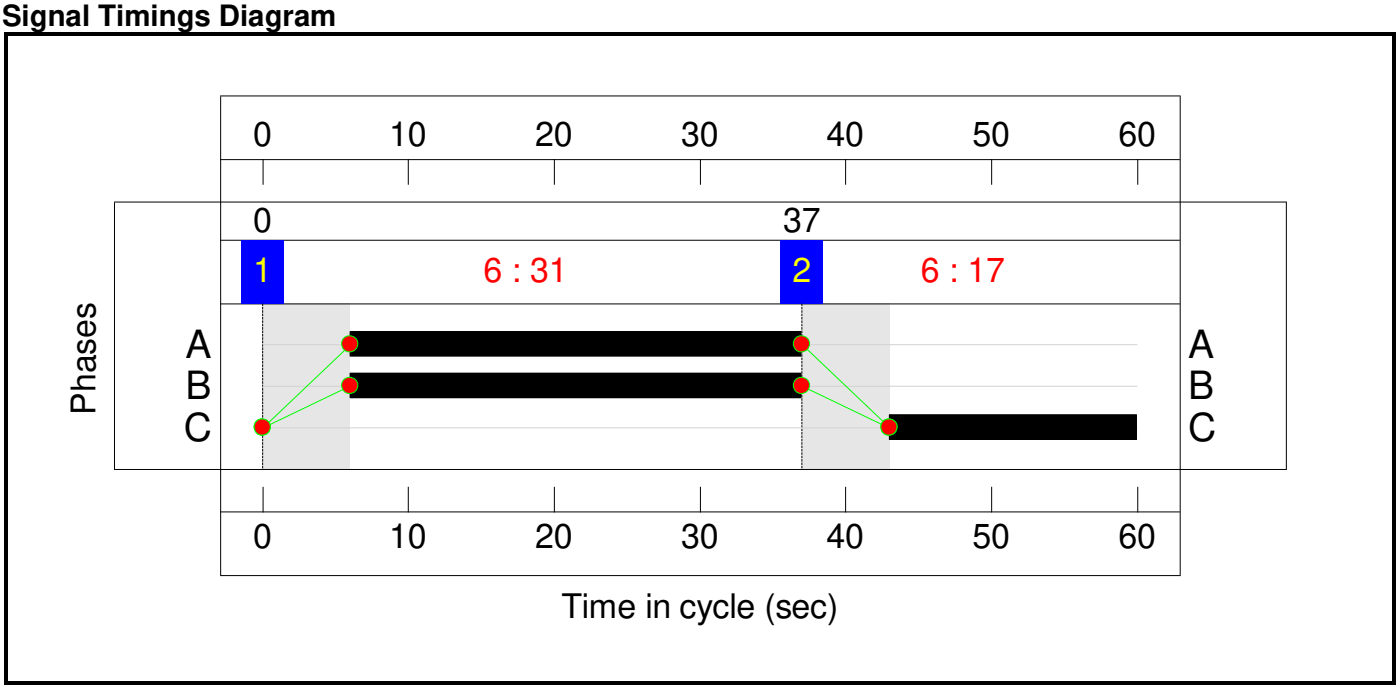
Stage Sequence Diagram



Stage Timings

Stage	1	2
Duration	31	17
Change Point	0	37

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: Padbury T-junction option	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**66.8%**
Padbury	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**66.8%**
1/1	M40 SB offslip Left	U	N/A	N/A	C		1	17	-	337	1842	553	61.0%
1/2+1/3	M40 SB offslip Right	U	N/A	N/A	C		1	17	-	738	1842:1842	553+553	66.8 : 66.8%
2/1	A43 north Ahead	U	N/A	N/A	A		1	31	-	623	1980	1056	59.0%
2/2	A43 north Ahead	U	N/A	N/A	A		1	31	-	623	1980	1056	59.0%
3/1	A43 south Ahead	U	N/A	N/A	B		1	31	-	529	1980	1056	50.1%
3/2+3/3	A43 south Ahead	U	N/A	N/A	B		1	31	-	1133	1980:1980	849+848	66.8 : 66.8%

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: Padbury T-junction option	**-**	**-**	**0**	**0**	**0**	**12.9**	**4.7**	**0.0**	**17.7**	**-**	**-**	**-**	**-**
Padbury	**-**	**-**	**0**	**0**	**0**	**12.9**	**4.7**	**0.0**	**17.7**	**-**	**-**	**-**	**-**
1/1	337	337	-	-	-	1.7	0.8	-	2.5	26.3	4.8	0.8	5.6
1/2+1/3	738	738	-	-	-	3.8	1.0	-	4.8	23.3	5.3	1.0	6.3
2/1	623	623	-	-	-	1.7	0.7	-	2.4	13.7	6.9	0.7	7.6
2/2	623	623	-	-	-	1.7	0.7	-	2.4	13.7	6.9	0.7	7.6
3/1	529	529	-	-	-	1.3	0.5	-	1.8	12.3	5.6	0.5	6.1
3/2+3/3	1133	1133	-	-	-	2.9	1.0	-	3.9	12.3	6.1	1.0	7.1

C1

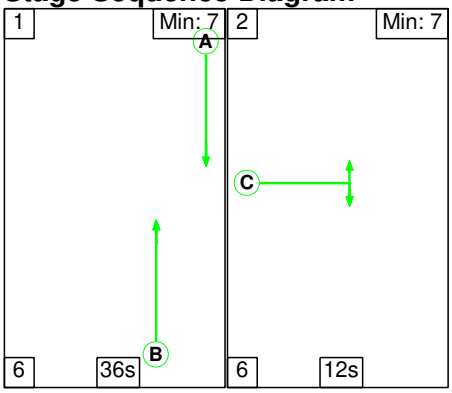
PRC for Signalled Lanes (%): 34.8
PRC Over All Lanes (%): 34.8

Total Delay for Signalled Lanes (pcuHr): 17.66
Total Delay Over All Lanes(pcuHr): 17.66

Cycle Time (s): 60

Scenario 2: '2031 do some 11,13,15,18,19 - PM Peak' (FG2: 'Padbury2_PM', Plan 1: 'Network Control Plan 1')

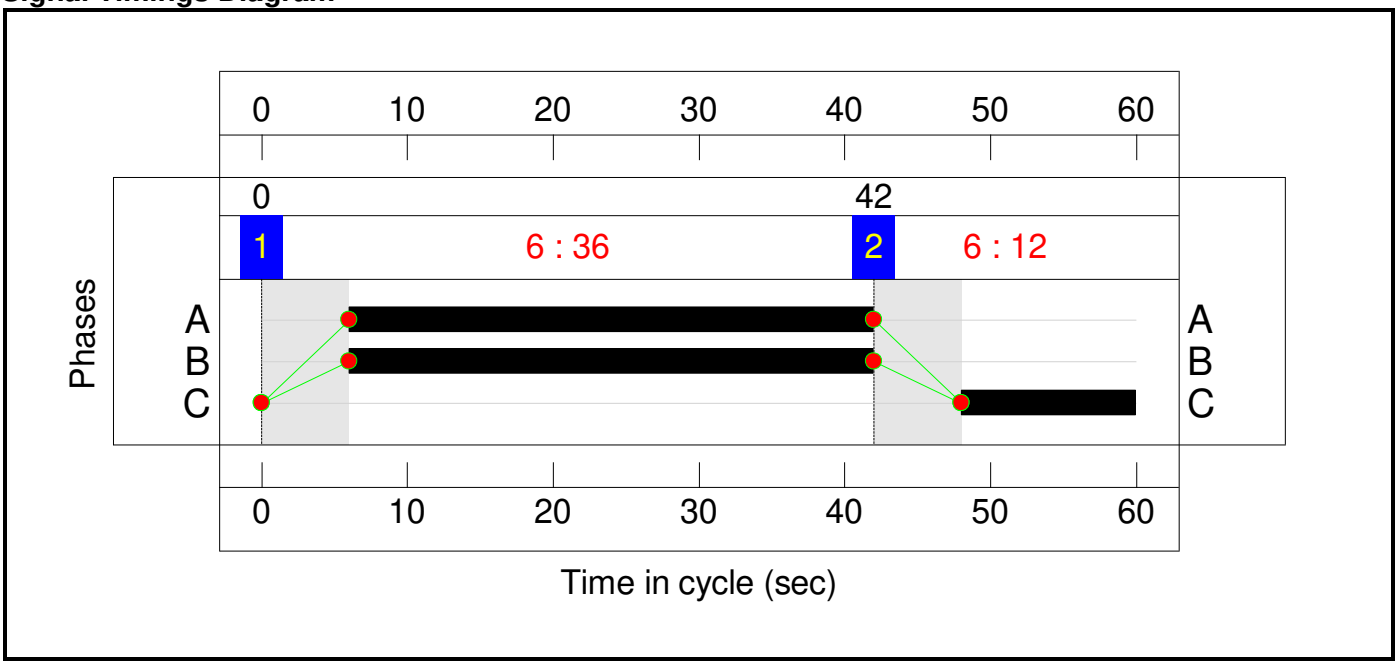
Stage Sequence Diagram



Stage Timings

Stage	1	2
Duration	36	12
Change Point	0	42

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: Padbury T-junction option	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.8%**
Padbury	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.8%**
1/1	M40 SB offslip Left	U	N/A	N/A	C		1	12	-	318	1842	399	79.7%
1/2+1/3	M40 SB offslip Right	U	N/A	N/A	C		1	12	-	609	1842:1842	399+399	76.2 : 76.4%
2/1	A43 north Ahead	U	N/A	N/A	A		1	36	-	391	1980	1221	32.0%
2/2	A43 north Ahead	U	N/A	N/A	A		1	36	-	392	1980	1221	32.1%
3/1	A43 south Ahead	U	N/A	N/A	B		1	36	-	897	1980	1221	73.5%
3/2+3/3	A43 south Ahead	U	N/A	N/A	B		1	36	-	1578	1980:1980	931+931	84.8 : 84.8%

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: Padbury T-junction option	**-**	**-**	**0**	**0**	**0**	**12.1**	**8.0**	**0.0**	**20.1**	**-**	**-**	**-**	**-**
Padbury	**-**	**-**	**0**	**0**	**0**	**12.1**	**8.0**	**0.0**	**20.1**	**-**	**-**	**-**	**-**
1/1	318	318	-	-	-	2.0	1.9	-	3.8	43.5	4.9	1.9	6.8
1/2+1/3	609	609	-	-	-	3.7	1.6	-	5.3	31.4	4.7	1.6	6.3
2/1	391	391	-	-	-	0.6	0.2	-	0.8	7.7	3.0	0.2	3.3
2/2	392	392	-	-	-	0.6	0.2	-	0.8	7.7	3.0	0.2	3.3
3/1	897	897	-	-	-	2.0	1.4	-	3.4	13.6	10.5	1.4	11.8
3/2+3/3	1578	1578	-	-	-	3.2	2.7	-	5.9	13.6	8.3	2.7	11.1

C1 PRC for Signalled Lanes (%): 6.2 Total Delay for Signalled Lanes (pcuHr): 20.15 Cycle Time (s): 60
PRC Over All Lanes (%): 6.2 Total Delay Over All Lanes(pcuHr): 20.15

APPENDIX 14

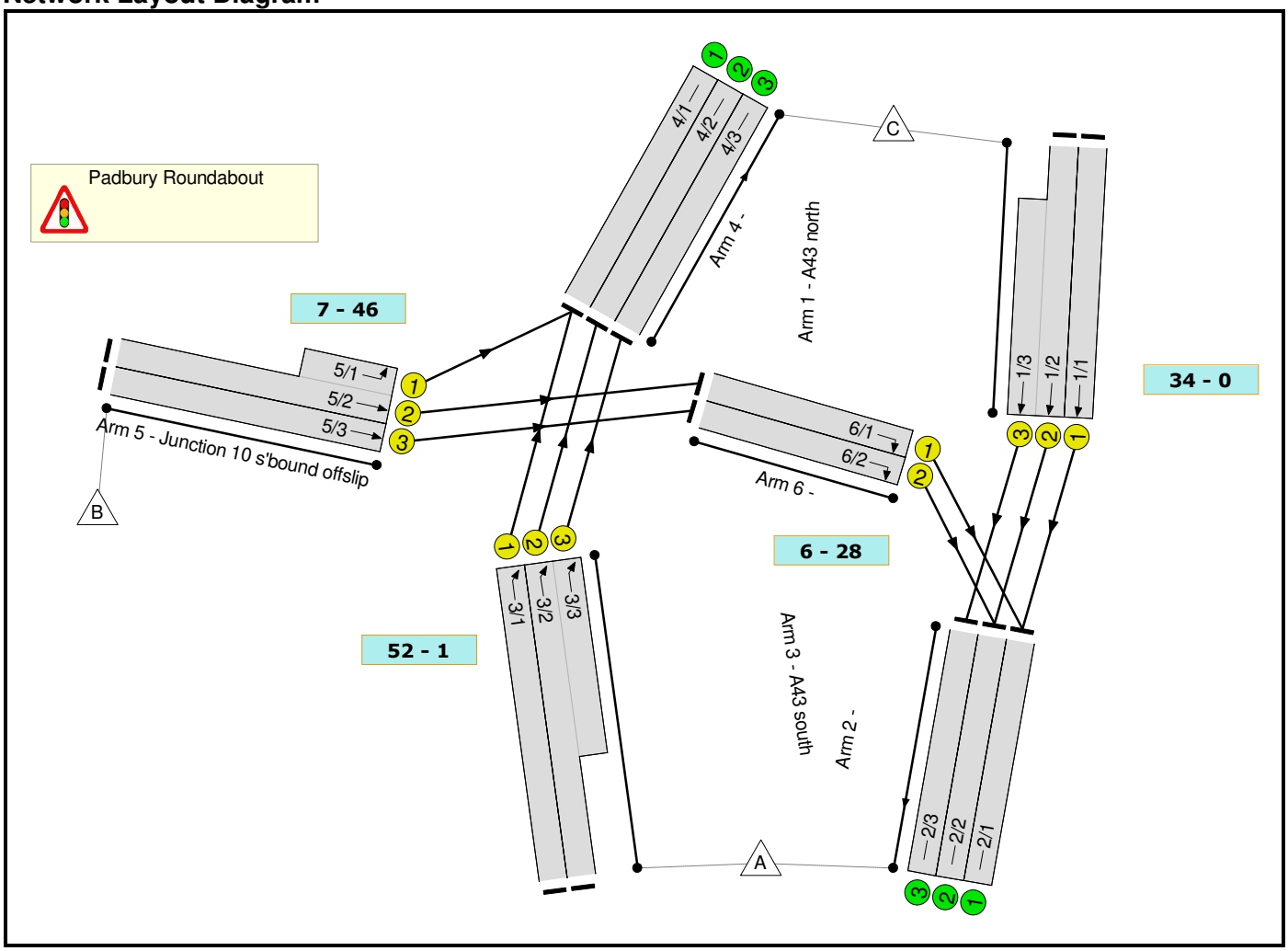
Padbury Roundabout junction option P-1 (alt) – LinSig results

Full Input Data And Results

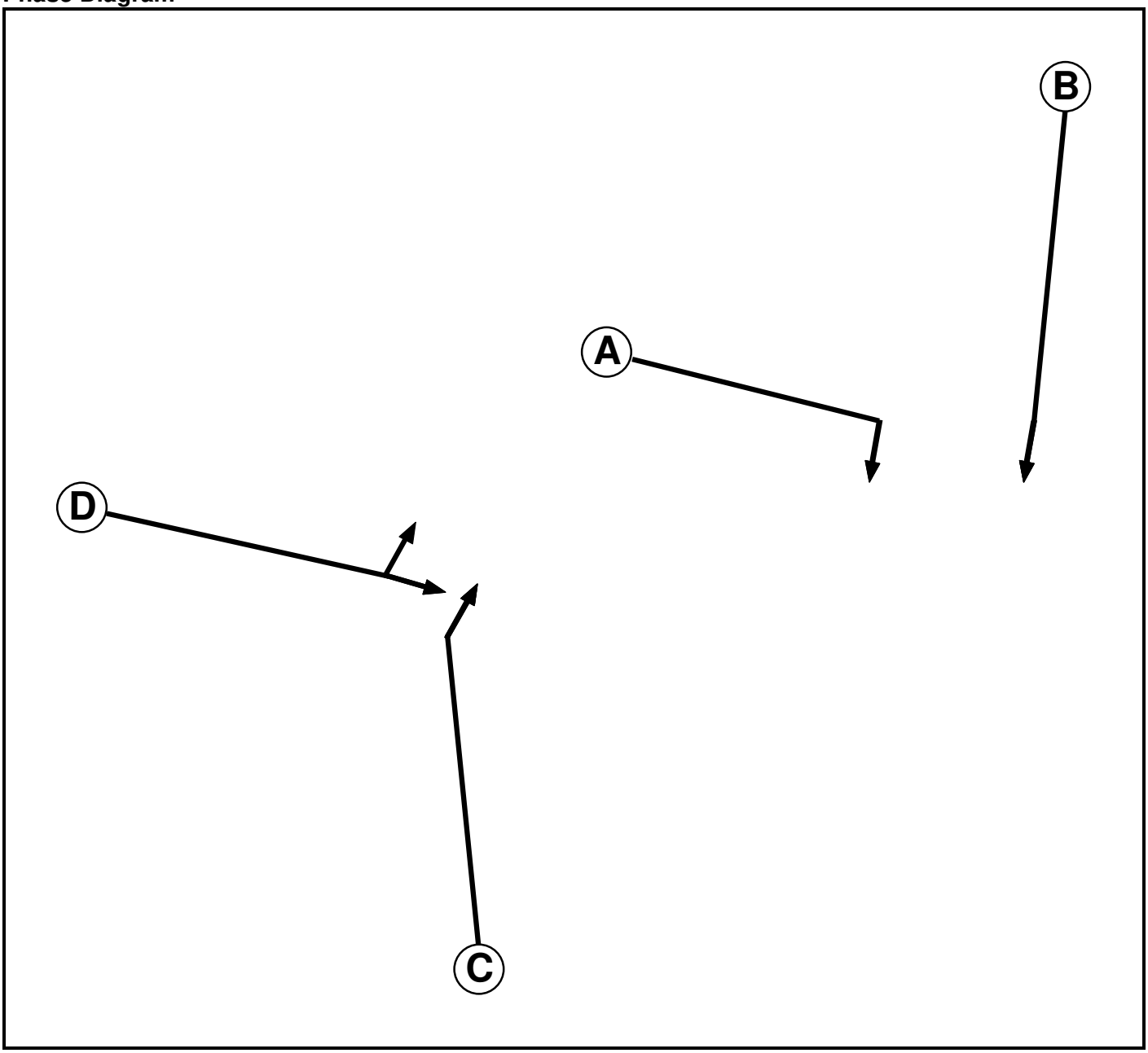
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Padbury improved committed scheme - P1 (alt)**
Location:	
Additional detail:	
File name:	210407 Padbury improved committed scheme – P1 (alt)
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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

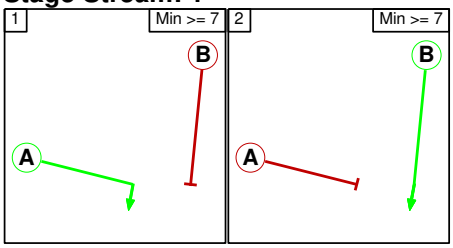
		Starting Phase			
		A	B	C	D
Terminating Phase	A		6	-	-
	B	6		-	-
	C	-	-		6
	D	-	-	6	

Phases in Stage

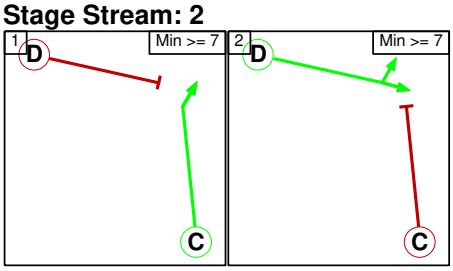
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Prohibited Stage Change

Stage Stream: 1

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

		To Stage	
		1	2
From Stage	1		6
	2	6	

Lane Input Data

Junction: Padbury Roundabout												
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 (A43 north)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 2 Ahead	50.00
1/2 (A43 north)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 2 Ahead	50.00
1/3 (A43 north)	U	B	2	3	17.4	Geom	-	3.65	0.00	Y	Arm 2 Ahead	50.00
2/1	U		2	3	60.0	Inf	-	-	-	-	-	-
2/2	U		2	3	60.0	Inf	-	-	-	-	-	-
2/3	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1 (A43 south)	U	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Ahead	40.00
3/2 (A43 south)	U	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Ahead	40.00
3/3 (A43 south)	U	C	2	3	10.4	Geom	-	3.65	0.00	Y	Arm 4 Ahead	40.00
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
4/2	U		2	3	60.0	Inf	-	-	-	-	-	-
4/3	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Junction 10 s'bound offslip)	U	D	2	3	5.0	Geom	-	3.65	0.00	Y	Arm 4 Left	40.00
5/2 (Junction 10 s'bound offslip)	U	D	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 6 Ahead	40.00
5/3 (Junction 10 s'bound offslip)	U	D	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 6 Ahead	40.00
6/1	U	A	2	3	8.7	User	1850	-	-	-	-	-
6/2	U	A	2	3	8.7	User	1850	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
5: 'Padbury1_AM'	07:45	08:45	01:00	
7: 'Padbury1_PM'	16:30	17:30	01:00	

Scenario 1: '2031 do some 1,4,5,6,7,8 - AM Peak' (FG5: 'Padbury1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	0	1662	1662
	B	738	0	337	1075
	C	2851	0	0	2851
	Tot.	3589	0	1999	5588

Traffic Lane Flows

Lane	Scenario 1: 2031 do some 1,4,5,6,7,8 - AM Peak
Junction: Padbury Roundabout	
1/1	1059
1/2 (with short)	1792(In) 896(Out)
1/3 (short)	896
2/1	1400
2/2	1293
2/3	896
3/1	604
3/2 (with short)	1058(In) 529(Out)
3/3 (short)	529
4/1	941
4/2	529
4/3	529
5/1 (short)	337
5/2 (with short)	678(In) 341(Out)
5/3	397
6/1	341
6/2	397

Lane Saturation Flows

Junction: Padbury Roundabout

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 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/2 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/3 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
2/3	Infinite Saturation Flow						Inf	Inf
3/1 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	40.00	100.0 %	1908	1908
3/2 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	40.00	100.0 %	1908	1908
3/3 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	40.00	100.0 %	1908	1908
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
4/3	Infinite Saturation Flow						Inf	Inf
5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 4 Left	40.00	100.0 %	1908	1908
5/2 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 6 Ahead	40.00	100.0 %	1908	1908
5/3 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 6 Ahead	40.00	100.0 %	1908	1908
6/1	This lane uses a directly entered Saturation Flow						1850	1850
6/2	This lane uses a directly entered Saturation Flow						1850	1850

Scenario 2: '2031 do some 1,4,5,6,7,8 - PM Peak' (FG7: 'Padbury1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	0	2475	2475
	B	609	0	318	927
	C	1722	0	0	1722
	Tot.	2331	0	2793	5124

Traffic Lane Flows

Lane	Scenario 2: 2031 do some 1,4,5,6,7,8 - PM Peak
Junction: Padbury Roundabout	
1/1	559
1/2 (with short)	1163(In) 581(Out)
1/3 (short)	582
2/1	892
2/2	857
2/3	582
3/1	903
3/2 (with short)	1572(In) 786(Out)
3/3 (short)	786
4/1	1221
4/2	786
4/3	786
5/1 (short)	318
5/2 (with short)	651(In) 333(Out)
5/3	276
6/1	333
6/2	276

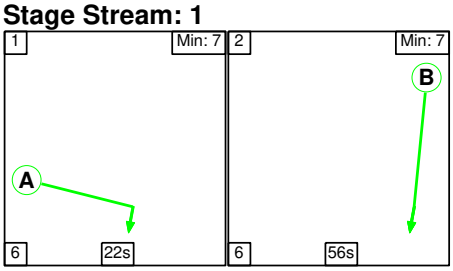
Lane Saturation Flows

Junction: Padbury Roundabout								
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 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/2 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/3 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
2/3	Infinite Saturation Flow						Inf	Inf
3/1 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	40.00	100.0 %	1908	1908
3/2 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	40.00	100.0 %	1908	1908
3/3 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	40.00	100.0 %	1908	1908
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
4/3	Infinite Saturation Flow						Inf	Inf
5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 4 Left	40.00	100.0 %	1908	1908
5/2 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 6 Ahead	40.00	100.0 %	1908	1908
5/3 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 6 Ahead	40.00	100.0 %	1908	1908
6/1	This lane uses a directly entered Saturation Flow						1850	1850
6/2	This lane uses a directly entered Saturation Flow						1850	1850

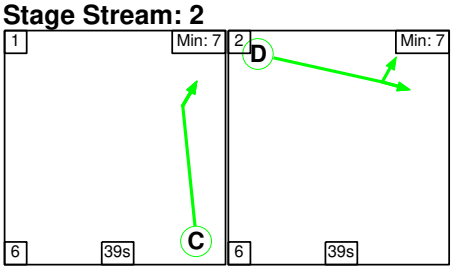
Scenario 1: '2031 do some 1,4,5,6,7,8 - AM Peak' (FG5: 'Padbury1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

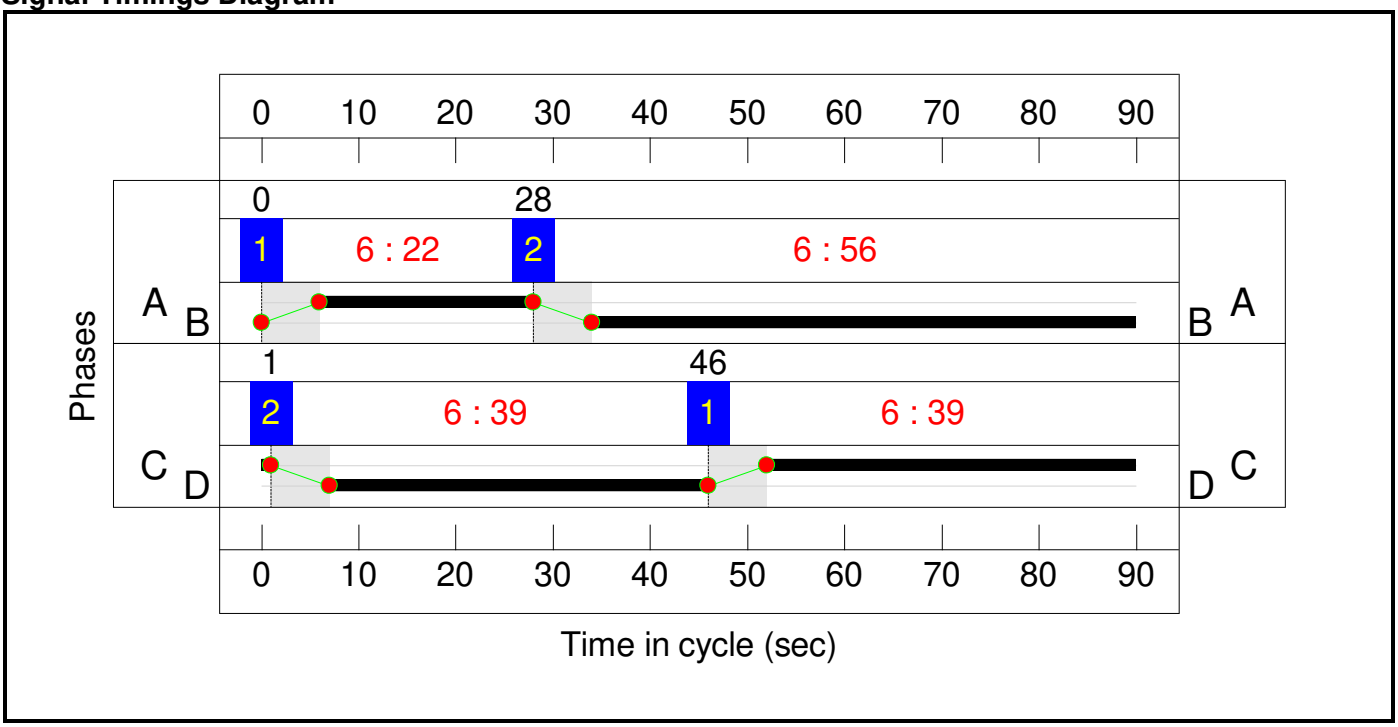
Stage Stream: 1

Stage	1	2
Duration	22	56
Change Point	0	28

Stage Stream: 2

Stage	1	2
Duration	39	39
Change Point	46	1

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: Padbury improved committed scheme - P1 (alt)	-	-	**N/A**	-	-		-	-	-	-	-	-	**93.7%**
Padbury Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**93.7%**
1/1	A43 north Ahead	U	1	N/A	B		1	56	-	1059	1922	1217	87.0%
1/2+1/3	A43 north Ahead	U	1	N/A	B		1	56	-	1792	1922:1922	957+957	93.7 : 93.7%
3/1	A43 south Ahead	U	2	N/A	C		1	39	-	604	1908	848	71.2%
3/2+3/3	A43 south Ahead	U	2	N/A	C		1	39	-	1058	1908:1908	634+634	83.4 : 83.4%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	2	N/A	D		1	39	-	678	1908:1908	531+524	64.3 : 64.3%
5/3	Junction 10 s'bound offslip Ahead	U	2	N/A	D		1	39	-	397	1908	848	46.8%
6/1	Right	U	1	N/A	A		1	22	-	341	1850	473	72.1%
6/2	Right	U	1	N/A	A		1	22	-	397	1850	473	84.0%

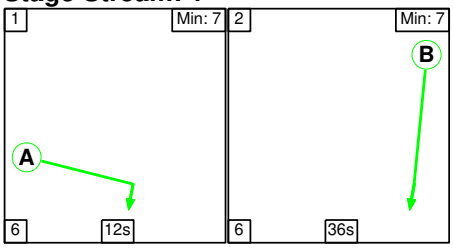
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Padbury improved committed scheme - P1 (alt)	**-**	**-**	**0**	**0**	**0**	**26.7**	**14.9**	**0.0**	**41.6**	**-**	**-**	**-**	**-**
Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**26.7**	**14.9**	**0.0**	**41.6**	**-**	**-**	**-**	**-**
1/1	1059	1059	-	-	-	4.0	3.2	-	7.2	24.4	21.5	3.2	24.7
1/2+1/3	1792	1792	-	-	-	5.6	6.7	-	12.3	24.7	15.2	6.7	21.8
3/1	604	604	-	-	-	3.4	1.2	-	4.6	27.6	12.2	1.2	13.5
3/2+3/3	1058	1058	-	-	-	5.6	2.5	-	8.1	27.6	10.1	2.5	12.6
5/2+5/1	678	678	-	-	-	3.2	0.9	-	4.1	21.7	6.7	0.9	7.6
5/3	397	397	-	-	-	1.9	0.4	-	2.4	21.5	6.9	0.4	7.4
6/1	341	341	-	-	-	1.3	0.0	-	1.3	14.2	2.6	0.0	2.6
6/2	397	397	-	-	-	1.6	0.0	-	1.6	14.4	4.2	0.0	4.2

C1 Stream: 1 PRC for Signalled Lanes (%): -4.1 Total Delay for Signalled Lanes (pcuHr): 22.42 Cycle Time (s): 90
C1 Stream: 2 PRC for Signalled Lanes (%): 7.9 Total Delay for Signalled Lanes (pcuHr): 19.20 Cycle Time (s): 90
PRC Over All Lanes (%): -4.1 Total Delay Over All Lanes(pcuHr): 41.61

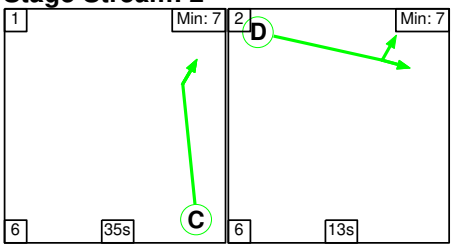
Scenario 2: '2031 do some 1,4,5,6,7,8 - PM Peak' (FG7: 'Padbury1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

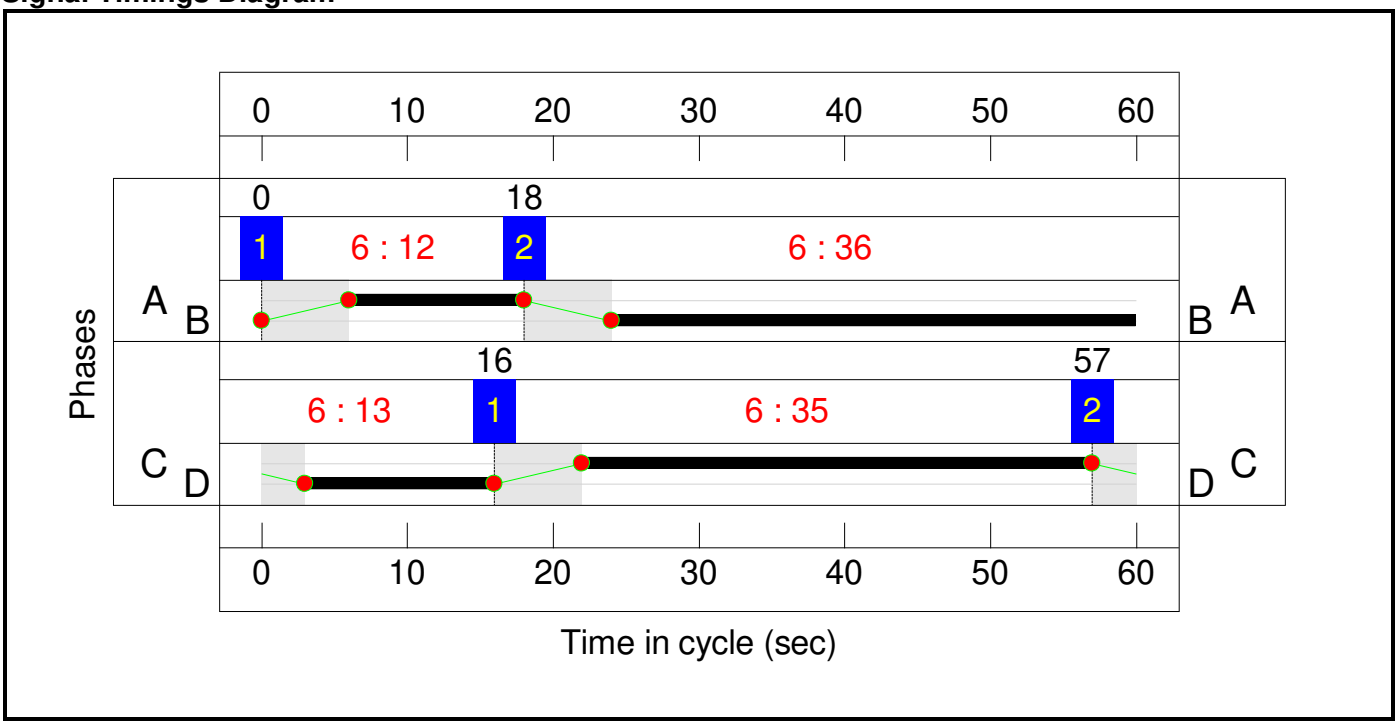
Stage Stream: 1

Stage	1	2
Duration	12	36
Change Point	0	18

Stage Stream: 2

Stage	1	2
Duration	35	13
Change Point	16	57

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: Padbury improved committed scheme - P1 (alt)	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.5%**
Padbury Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.5%**
1/1	A43 north Ahead	U	1	N/A	B		1	36	-	559	1922	1185	47.2%
1/2+1/3	A43 north Ahead	U	1	N/A	B		1	36	-	1163	1922:1922	960+962	60.5 : 60.5%
3/1	A43 south Ahead	U	2	N/A	C		1	35	-	903	1908	1145	78.9%
3/2+3/3	A43 south Ahead	U	2	N/A	C		1	35	-	1572	1908:1908	888+888	88.5 : 88.5%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	2	N/A	D		1	13	-	651	1908:1908	381+364	87.3 : 87.3%
5/3	Junction 10 s'bound offslip Ahead	U	2	N/A	D		1	13	-	276	1908	445	62.0%
6/1	Right	U	1	N/A	A		1	12	-	333	1850	401	83.1%
6/2	Right	U	1	N/A	A		1	12	-	276	1850	401	68.9%

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: Padbury improved committed scheme - P1 (alt)	**-**	**-**	**0**	**0**	**0**	**14.6**	**10.8**	**0.0**	**25.4**	**-**	**-**	**-**	**-**
Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**14.6**	**10.8**	**0.0**	**25.4**	**-**	**-**	**-**	**-**
1/1	559	559	-	-	-	1.0	0.4	-	1.4	9.1	5.0	0.4	5.4
1/2+1/3	1163	1163	-	-	-	2.0	0.8	-	2.8	8.7	5.2	0.8	5.9
3/1	903	903	-	-	-	2.3	1.8	-	4.1	16.4	11.3	1.8	13.1
3/2+3/3	1572	1572	-	-	-	3.6	3.7	-	7.3	16.7	8.7	3.7	12.5
5/2+5/1	651	651	-	-	-	3.8	3.2	-	7.1	39.1	5.4	3.2	8.6
5/3	276	276	-	-	-	1.6	0.8	-	2.4	31.2	4.1	0.8	4.9
6/1	333	333	-	-	-	0.2	0.0	-	0.2	2.0	2.6	0.0	2.6
6/2	276	276	-	-	-	0.1	0.0	-	0.1	1.7	1.0	0.0	1.0

C1 Stream: 1 PRC for Signalled Lanes (%): 8.3 Total Delay for Signalled Lanes (pcuHr): 4.54 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 1.7 Total Delay for Signalled Lanes (pcuHr): 20.88 Cycle Time (s): 60
PRC Over All Lanes (%): 1.7 Total Delay Over All Lanes(pcuHr): 25.41

APPENDIX 15

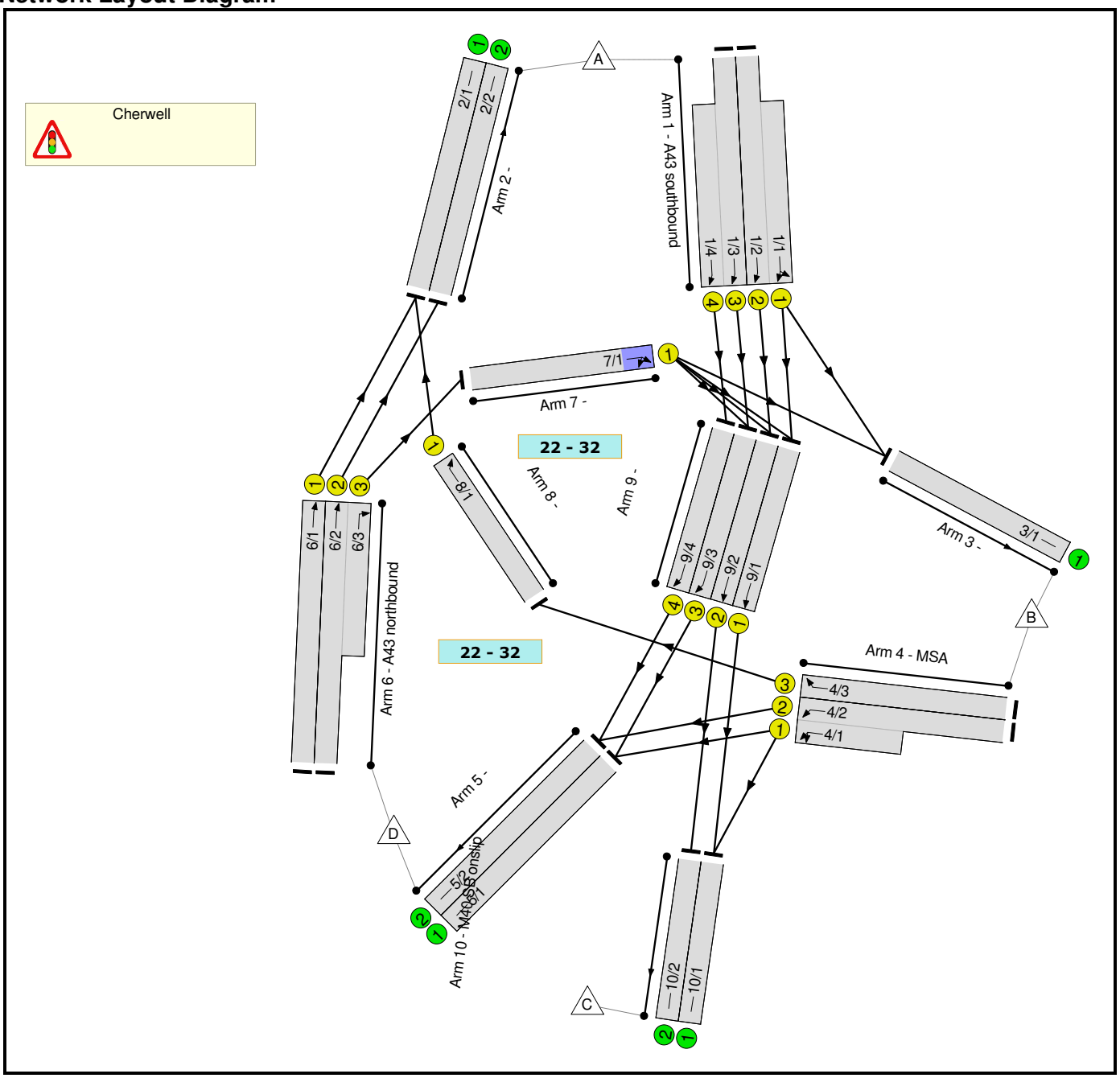
Cherwell Roundabout junction option C-1 – LinSig results

Full Input Data And Results

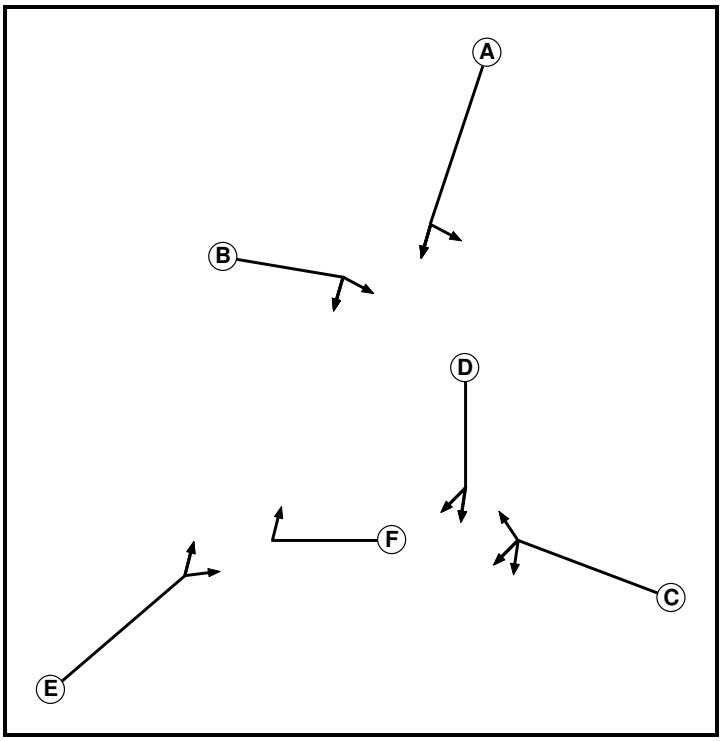
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Cherwell Hamburger Gyratory - Junction option C-1**
Location:	
Additional detail:	
File name:	2031_DS_M40J10_Cherwell - Junction option C-1.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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
E	Traffic	3		7	7
F	Traffic	3		7	7

Phase Intergreens Matrix

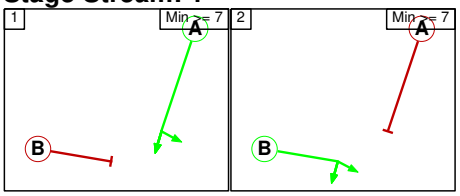
		Starting Phase					
		A	B	C	D	E	F
Terminating Phase	A		6	-	-	-	-
	B	6		-	-	-	-
	C	-	-		6	-	-
	D	-	-	6		-	-
	E	-	-	-	-		6
	F	-	-	-	-	6	

Phases in Stage

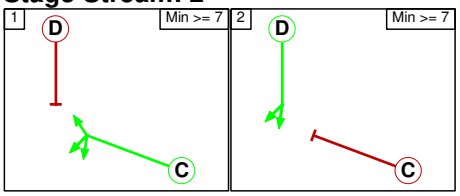
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F

Stage Diagram

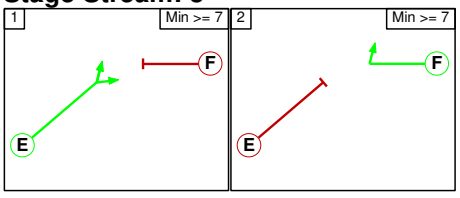
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Prohibited Stage Change

Stage Stream: 1

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		6
	2	6	

Stage Stream: 3

	To Stage		
From Stage		1	2
	1		6
	2	6	

Lane Input Data

Junction: Cherwell

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 (A43 southbound)	U	A	2	3	20.9	Geom	-	3.65	0.00	Y	Arm 3 Left	Inf
											Arm 9 Ahead	Inf
1/2 (A43 southbound)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 9 Ahead	Inf
1/3 (A43 southbound)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 9 Ahead	Inf
1/4 (A43 southbound)	U	A	2	3	20.9	Geom	-	3.65	0.00	Y	Arm 9 Ahead	Inf
2/1	U		2	3	60.0	Inf	-	-	-	-	-	-
2/2	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1 (MSA)	U	C	2	3	7.0	Geom	-	3.50	0.00	Y	Arm 5 Left	30.00
											Arm 10 Left	Inf
4/2 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Left	30.00
4/3 (MSA)	U	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 8 Right	Inf
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (A43 northbound)	U	E	2	3	62.6	Geom	-	3.65	0.00	Y	Arm 2 Ahead	40.00
6/2 (A43 northbound)	U	E	2	3	62.6	Geom	-	3.65	0.00	Y	Arm 2 Ahead	45.00
6/3 (A43 northbound)	U	E	2	3	10.1	Geom	-	3.65	0.00	Y	Arm 7 Right	30.00
7/1	U	B	2	3	6.1	User	1850	-	-	-	-	-
8/1	U	F	2	3	10.4	Geom	-	3.65	0.00	Y	Arm 2 Right	40.00
9/1	U	D	2	3	9.0	Geom	-	3.65	0.00	Y	Arm 10 Ahead	Inf
9/2	U	D	2	3	9.0	Geom	-	3.65	0.00	Y	Arm 10 Ahead	Inf
9/3	U	D	2	3	9.0	Geom	-	3.65	0.00	Y	Arm 5 Ahead	Inf
9/4	U	D	2	3	8.7	Geom	-	3.65	0.00	Y	Arm 5 Ahead	Inf

10/1 (M40 SB onslip)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/2 (M40 SB onslip)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Cherwell1_AM'	07:45	08:45	01:00	
2: 'Cherwell1_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Cherwell1 AM' (FG1: 'Cherwell1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	343	1605	1641	3589
	B	85	0	295	202	582
	C	0	0	0	0	0
	D	1577	239	282	0	2098
	Tot.	1662	582	2182	1843	6269

Traffic Lane Flows

Lane	Scenario 1: 2031 Cherwell1 AM
Junction: Cherwell	
1/1 (short)	1151
1/2 (with short)	1948(In) 797(Out)
1/3 (with short)	1641(In) 820(Out)
1/4 (short)	821
2/1	943
2/2	719
3/1	582
4/1 (short)	296
4/2 (with short)	497(In) 201(Out)
4/3	85
5/1	821
5/2	1022
6/1	858
6/2 (with short)	1240(In) 719(Out)
6/3 (short)	521
7/1	521
8/1	85
9/1	943
9/2	944
9/3	820
9/4	821
10/1	1238
10/2	944

Lane Saturation Flows

Junction: Cherwell

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 (A43 southbound)	3.65	0.00	Y	Arm 3 Left	Inf	29.8 %	1980	1980
				Arm 9 Ahead	Inf	70.2 %		
1/2 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/3 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/4 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
4/1 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	0.3 %	1965	1965
				Arm 10 Left	Inf	99.7 %		
4/2 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/3 (MSA)	3.65	0.00	Y	Arm 8 Right	Inf	100.0 %	1980	1980
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (A43 northbound)	3.65	0.00	Y	Arm 2 Ahead	40.00	100.0 %	1908	1908
6/2 (A43 northbound)	3.65	0.00	Y	Arm 2 Ahead	45.00	100.0 %	1916	1916
6/3 (A43 northbound)	3.65	0.00	Y	Arm 7 Right	30.00	100.0 %	1886	1886
7/1	This lane uses a directly entered Saturation Flow						1850	1850
8/1	3.65	0.00	Y	Arm 2 Right	40.00	100.0 %	1908	1908
9/1	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/2	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/3	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
9/4	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
10/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2031 Cherwell1 PM' (FG2: 'Cherwell1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	336	939	1056	2331
	B	129	0	258	213	600
	C	0	0	0	0	0
	D	2346	268	472	0	3086
	Tot.	2475	604	1669	1269	6017

Traffic Lane Flows

Lane	Scenario 2: 2031 Cherwell1 PM
Junction: Cherwell	
1/1 (short)	637
1/2 (with short)	1275(In) 638(Out)
1/3 (with short)	1056(In) 528(Out)
1/4 (short)	528
2/1	1507
2/2	968
3/1	604
4/1 (short)	258
4/2 (with short)	471(In) 213(Out)
4/3	129
5/1	528
5/2	741
6/1	1378
6/2 (with short)	1708(In) 968(Out)
6/3 (short)	740
7/1	740
8/1	129
9/1	537
9/2	874
9/3	528
9/4	528
10/1	795
10/2	874

Lane Saturation Flows

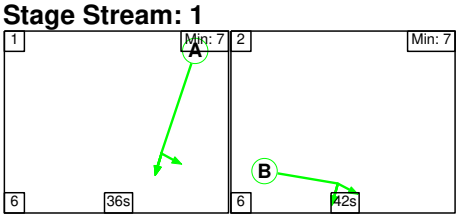
Junction: Cherwell

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 (A43 southbound)	3.65	0.00	Y	Arm 3 Left	Inf	52.7 %	1980	1980
				Arm 9 Ahead	Inf	47.3 %		
1/2 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/3 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/4 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
4/1 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	0.0 %	1965	1965
				Arm 10 Left	Inf	100.0 %		
4/2 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/3 (MSA)	3.65	0.00	Y	Arm 8 Right	Inf	100.0 %	1980	1980
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (A43 northbound)	3.65	0.00	Y	Arm 2 Ahead	40.00	100.0 %	1908	1908
6/2 (A43 northbound)	3.65	0.00	Y	Arm 2 Ahead	45.00	100.0 %	1916	1916
6/3 (A43 northbound)	3.65	0.00	Y	Arm 7 Right	30.00	100.0 %	1886	1886
7/1	This lane uses a directly entered Saturation Flow						1850	1850
8/1	3.65	0.00	Y	Arm 2 Right	40.00	100.0 %	1908	1908
9/1	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/2	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/3	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
9/4	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
10/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf

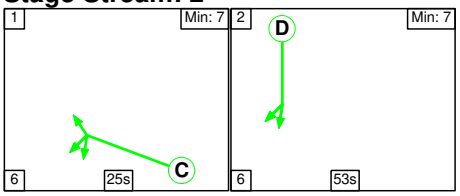
Scenario 1: '2031 Cherwell1 AM' (FG1: 'Cherwell1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

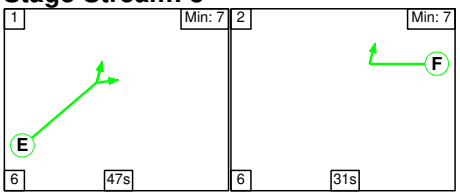
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	36	42
Change Point	0	42

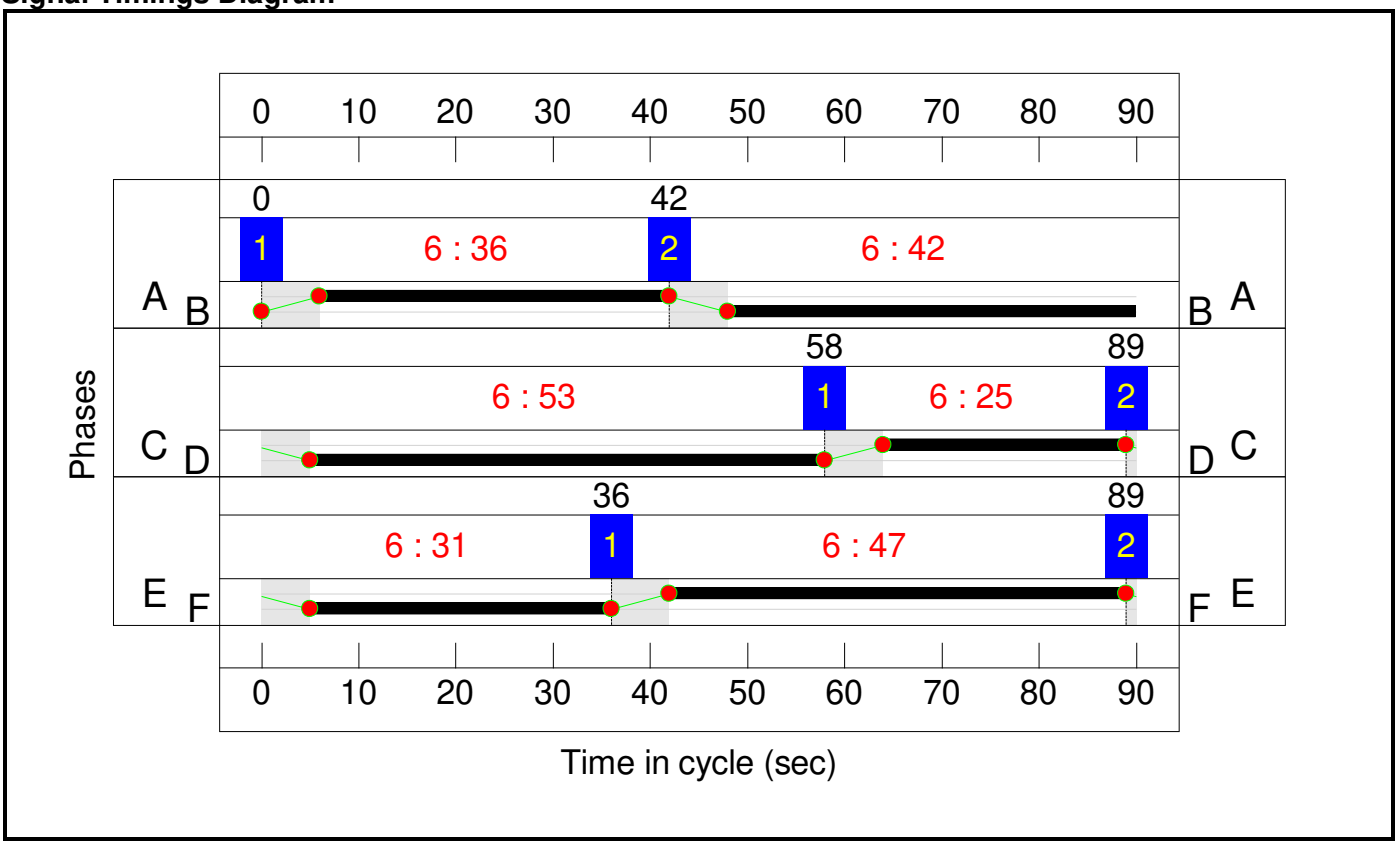
Stage Stream: 2

Stage	1	2
Duration	25	53
Change Point	58	89

Stage Stream: 3

Stage	1	2
Duration	47	31
Change Point	36	89

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: Cherwell Hamburger Gyratory - Junction option C-1	-	-	**N/A**	-	-		-	-	-	-	-	-	**141.4%**
Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**141.4%**
1/2+1/1	A43 southbound Left Ahead	U	1	N/A	A		1	36	-	1948	1980:1980	564+814	141.4 : 141.4%
1/3+1/4	A43 southbound Ahead	U	1	N/A	A		1	36	-	1641	1980:1980	814+814	100.7 : 100.9%
4/2+4/1	MSA Left Left2	U	2	N/A	C		1	25	-	497	1871:1965	303+446	66.4 : 66.4%
4/3	MSA Right	U	2	N/A	C		1	25	-	85	1980	572	14.9%
6/1	A43 northbound Ahead	U	3	N/A	E		1	47	-	858	1908	1018	84.3%
6/2+6/3	A43 northbound Ahead Right	U	3	N/A	E		1	47	-	1240	1916:1886	759+550	94.7 : 94.7%
7/1	Ahead Right	U	1	N/A	B		1	42	-	521	1850	884	58.9%
8/1	Right	U	3	N/A	F		1	31	-	85	1908	678	12.5%
9/1	Ahead	U	2	N/A	D		1	53	-	943	1980	1188	59.5%
9/2	Ahead	U	2	N/A	D		1	53	-	944	1980	1188	59.8%
9/3	Ahead	U	2	N/A	D		1	53	-	820	1980	1188	68.5%
9/4	Ahead	U	2	N/A	D		1	53	-	821	1980	1188	68.5%

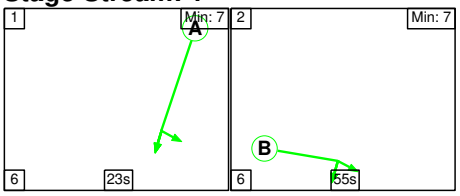
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Cherwell Hamburger Gyratory - Junction option C-1	**-**	**-**	**0**	**0**	**0**	**66.4**	**321.7**	**0.0**	**388.1**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**0**	**0**	**0**	**66.4**	**321.7**	**0.0**	**388.1**	**-**	**-**	**-**	**-**
1/2+1/1	1948	1378	-	-	-	37.4	286.9	-	324.3	599.3	57.1	286.9	344.0
1/3+1/4	1641	1628	-	-	-	12.6	23.8	-	36.4	79.9	20.7	23.8	44.5
4/2+4/1	497	497	-	-	-	3.6	1.0	-	4.6	33.4	6.2	1.0	7.1
4/3	85	85	-	-	-	0.6	0.1	-	0.6	27.5	1.6	0.1	1.6
6/1	858	858	-	-	-	4.2	2.6	-	6.8	28.7	18.1	2.6	20.7
6/2+6/3	1240	1240	-	-	-	5.5	7.4	-	12.9	37.4	20.3	7.4	27.7
7/1	521	521	-	-	-	0.5	0.0	-	0.5	3.1	7.6	0.0	7.6
8/1	85	85	-	-	-	0.5	0.0	-	0.5	23.2	2.1	0.0	2.1
9/1	706	706	-	-	-	0.7	0.0	-	0.7	3.4	2.4	0.0	2.4
9/2	711	711	-	-	-	0.7	0.0	-	0.7	3.7	2.7	0.0	2.7
9/3	814	814	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/4	814	814	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 Stream: 1 PRC for Signalled Lanes (%):	-57.1	Total Delay for Signalled Lanes (pcuHr):	361.16	Cycle Time (s): 90
C1 Stream: 2 PRC for Signalled Lanes (%):	31.4	Total Delay for Signalled Lanes (pcuHr):	6.64	Cycle Time (s): 90
C1 Stream: 3 PRC for Signalled Lanes (%):	-5.3	Total Delay for Signalled Lanes (pcuHr):	20.29	Cycle Time (s): 90
PRC Over All Lanes (%):	-57.1	Total Delay Over All Lanes(pcuHr):	388.08	

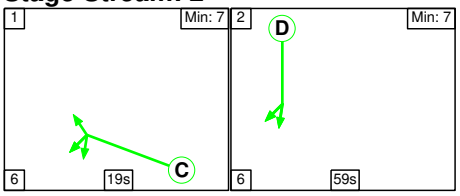
Scenario 2: '2031 Cherwell1 PM' (FG2: 'Cherwell1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

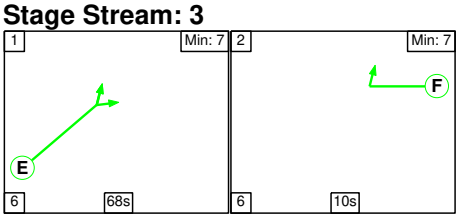
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	23	55
Change Point	0	29

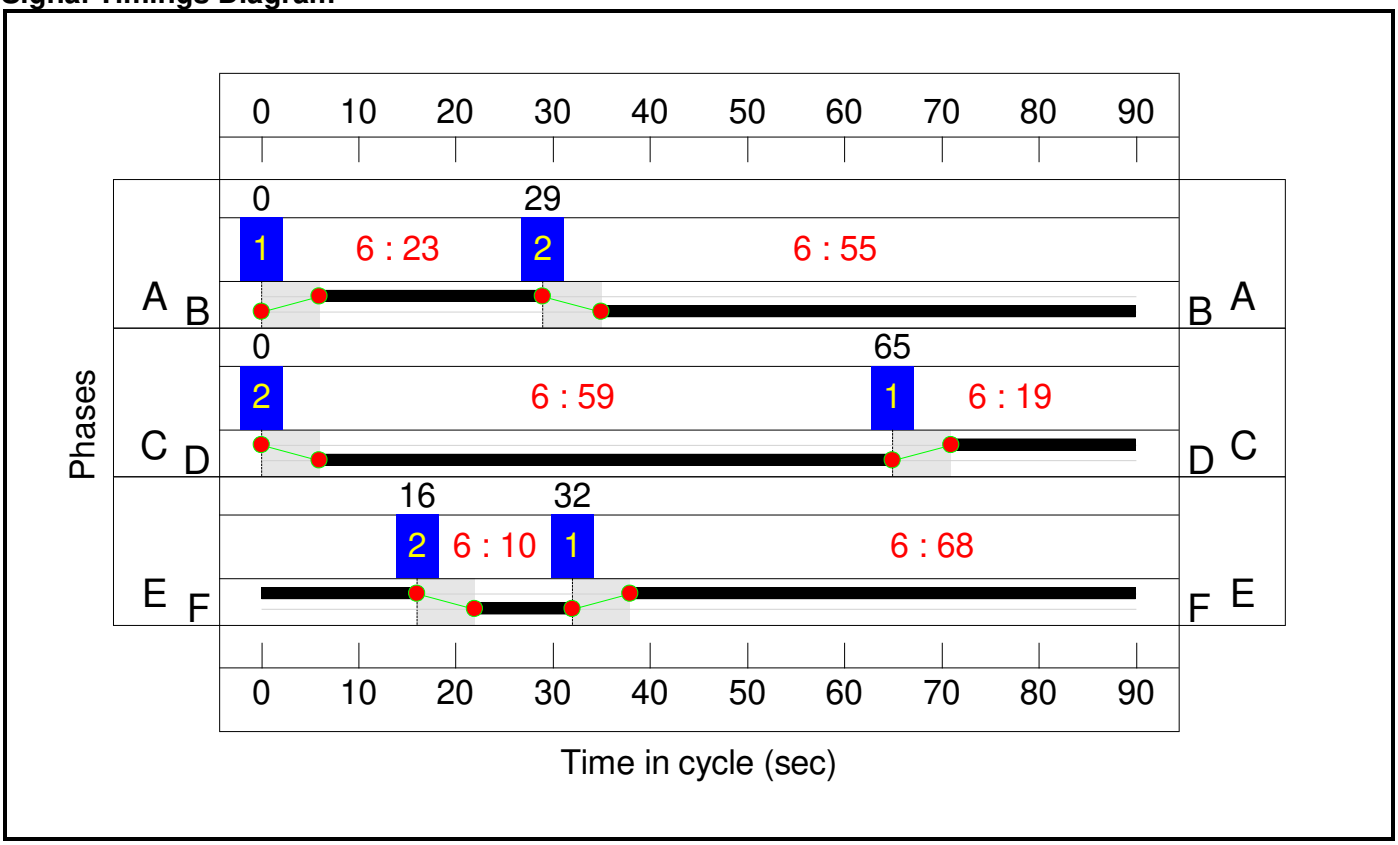
Stage Stream: 2

Stage	1	2
Duration	19	59
Change Point	65	0

Stage Stream: 3

Stage	1	2
Duration	68	10
Change Point	32	16

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: Cherwell Hamburger Gyratory - Junction option C-1	-	-	**N/A**	-	-		-	-	-	-	-	-	**120.8%**
Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**120.8%**
1/2+1/1	A43 southbound Left Ahead	U	1	N/A	A		1	23	-	1275	1980:1980	528+528	120.8 : 120.6%
1/3+1/4	A43 southbound Ahead	U	1	N/A	A		1	23	-	1056	1980:1980	528+528	100.0 : 100.0%
4/2+4/1	MSA Left Left2	U	2	N/A	C		1	19	-	471	1871:1965	299+362	71.3 : 71.3%
4/3	MSA Right	U	2	N/A	C		1	19	-	129	1980	440	29.3%
6/1	A43 northbound Ahead	U	3	N/A	E		1	68	-	1378	1908	1463	94.2%
6/2+6/3	A43 northbound Ahead Right	U	3	N/A	E		1	68	-	1708	1916:1886	1002+766	96.6 : 96.6%
7/1	Ahead Right	U	1	N/A	B		1	55	-	740	1850	1151	64.3%
8/1	Right	U	3	N/A	F		1	10	-	129	1908	233	55.3%
9/1	Ahead	U	2	N/A	D		1	59	-	537	1980	1320	36.8%
9/2	Ahead	U	2	N/A	D		1	59	-	874	1980	1320	57.9%
9/3	Ahead	U	2	N/A	D		1	59	-	528	1980	1320	40.0%
9/4	Ahead	U	2	N/A	D		1	59	-	528	1980	1320	40.0%

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: Cherwell Hamburger Gyratory - Junction option C-1	**-**	**-**	**0**	**0**	**0**	**45.3**	**147.5**	**0.0**	**192.8**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**0**	**0**	**0**	**45.3**	**147.5**	**0.0**	**192.8**	**-**	**-**	**-**	**-**
1/2+1/1	1275	1056	-	-	-	21.5	112.3	-	133.8	377.8	21.6	112.3	133.9
1/3+1/4	1056	1056	-	-	-	9.7	16.2	-	25.9	88.4	13.2	16.2	29.4
4/2+4/1	471	471	-	-	-	4.1	1.2	-	5.3	40.4	5.7	1.2	7.0
4/3	129	129	-	-	-	1.0	0.2	-	1.3	34.9	2.7	0.2	2.9
6/1	1378	1378	-	-	-	3.4	7.0	-	10.4	27.0	28.7	7.0	35.7
6/2+6/3	1708	1708	-	-	-	2.3	10.5	-	12.8	26.9	22.0	10.5	32.4
7/1	740	740	-	-	-	1.4	0.0	-	1.4	6.7	4.4	0.0	4.4
8/1	129	129	-	-	-	1.3	0.0	-	1.3	34.9	3.2	0.0	3.2
9/1	485	485	-	-	-	0.4	0.0	-	0.4	3.0	2.1	0.0	2.1
9/2	764	764	-	-	-	0.4	0.0	-	0.4	1.9	2.1	0.0	2.1
9/3	528	528	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/4	528	528	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 Stream: 1 PRC for Signalled Lanes (%): -34.3 Total Delay for Signalled Lanes (pcuHr): 161.09 Cycle Time (s): 90
C1 Stream: 2 PRC for Signalled Lanes (%): 26.2 Total Delay for Signalled Lanes (pcuHr): 7.35 Cycle Time (s): 90
C1 Stream: 3 PRC for Signalled Lanes (%): -7.3 Total Delay for Signalled Lanes (pcuHr): 24.37 Cycle Time (s): 90
PRC Over All Lanes (%): -34.3 Total Delay Over All Lanes(pcuHr): 192.80

APPENDIX 16

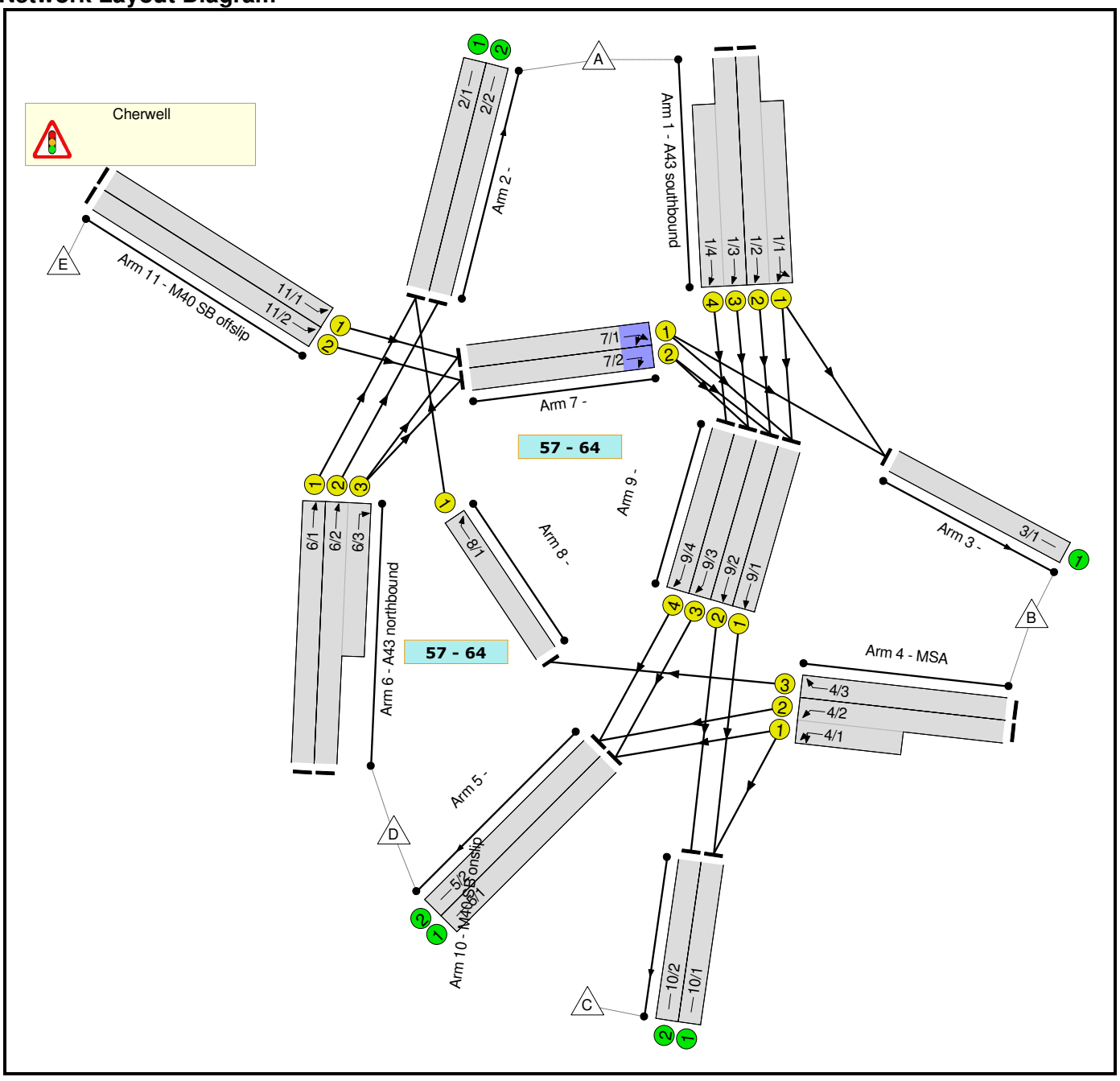
Cherwell Roundabout junction option C-2 and C-4 – LinSig results

Full Input Data And Results

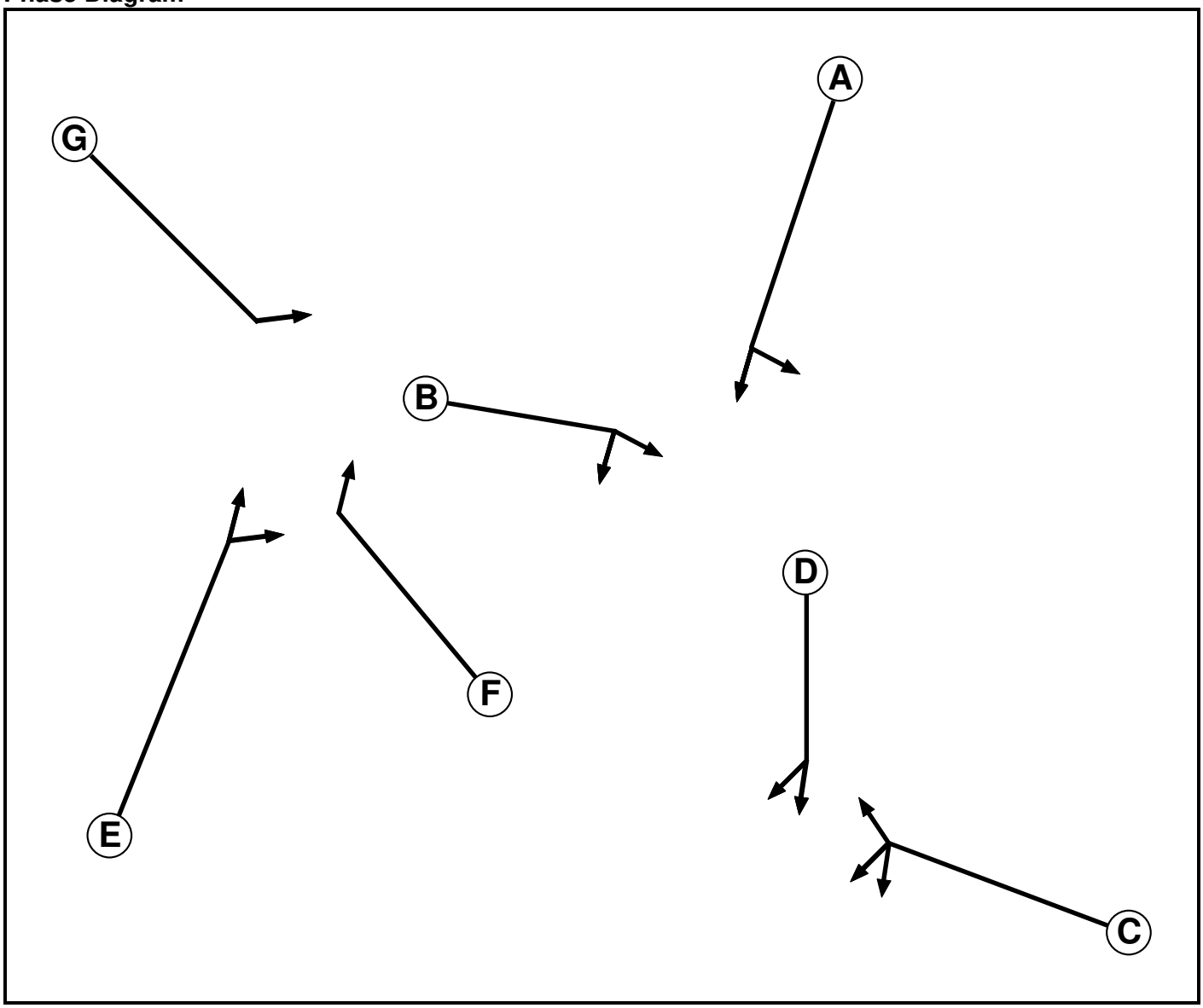
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Cherwell Hamburger Gyratory - Junction option C-2, C4**
Location:	
Additional detail:	
File name:	2031_DS_M40J10_Cherwell - Junction option C-2, C4.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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
E	Traffic	3		7	7
F	Traffic	3		7	7
G	Traffic	3		7	7

Phase Intergreens Matrix

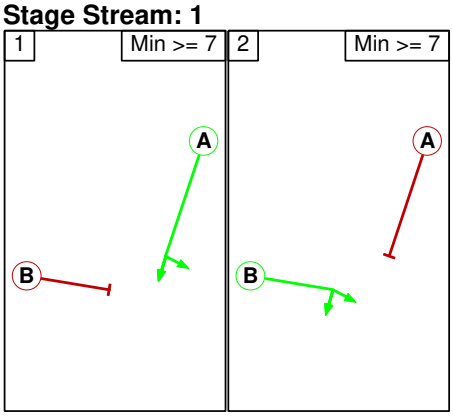
		Starting Phase						
		A	B	C	D	E	F	G
Terminating Phase	A		6	-	-	-	-	-
	B	6		-	-	-	-	-
	C	-	-		6	-	-	-
	D	-	-	6		-	-	-
	E	-	-	-	-		6	6
	F	-	-	-	-	6		6
	G	-	-	-	-	6	6	

Phases in Stage

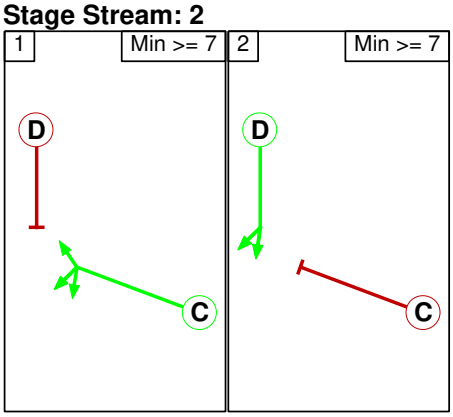
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F
3	3	G

Stage Diagram

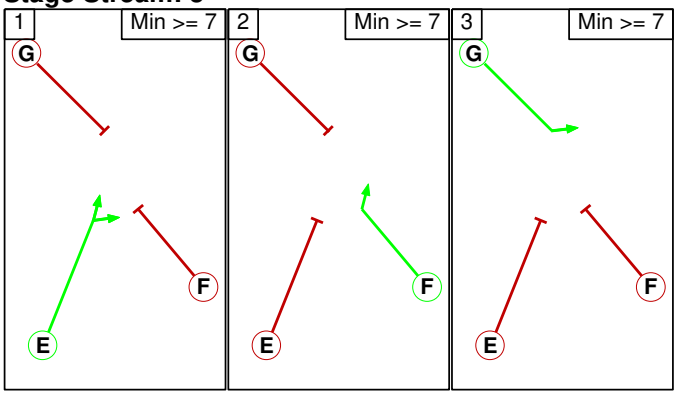
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Prohibited Stage Change

Stage Stream: 1

From Stage \ To Stage	1	2
1		6
2	6	

Stage Stream: 2

From Stage \ To Stage	1	2
1		6
2	6	

Stage Stream: 3

From Stage \ To Stage	1	2	3
1		6	6
2	6		6
3	6	6	

Lane Input Data

Junction: Cherwell

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 (A43 southbound)	U	A	2	3	20.9	Geom	-	3.65	0.00	Y	Arm 3 Left	Inf
											Arm 9 Ahead	Inf
1/2 (A43 southbound)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 9 Ahead	Inf
1/3 (A43 southbound)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 9 Ahead	Inf
1/4 (A43 southbound)	U	A	2	3	20.9	Geom	-	3.65	0.00	Y	Arm 9 Ahead	Inf
2/1	U		2	3	60.0	Inf	-	-	-	-	-	-
2/2	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1 (MSA)	U	C	2	3	7.0	Geom	-	3.50	0.00	Y	Arm 5 Left	30.00
											Arm 10 Left	Inf
4/2 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Left	30.00
4/3 (MSA)	U	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 8 Right	Inf
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (A43 northbound)	U	E	2	3	62.6	Geom	-	3.65	0.00	Y	Arm 2 Ahead	40.00
6/2 (A43 northbound)	U	E	2	3	62.6	Geom	-	3.65	0.00	Y	Arm 2 Ahead	45.00
6/3 (A43 northbound)	U	E	2	3	10.1	Geom	-	3.65	0.00	Y	Arm 7 Right	30.00
7/1	U	B	2	3	6.1	User	1850	-	-	-	-	-
7/2	U	B	2	3	6.1	User	1850	-	-	-	-	-
8/1	U	F	2	3	10.4	Geom	-	3.65	0.00	Y	Arm 2 Right	40.00
9/1	U	D	2	3	9.0	Geom	-	3.65	0.00	Y	Arm 10 Ahead	Inf
9/2	U	D	2	3	9.0	Geom	-	3.65	0.00	Y	Arm 10 Ahead	Inf
9/3	U	D	2	3	9.0	Geom	-	3.65	0.00	Y	Arm 5 Ahead	Inf
9/4	U	D	2	3	8.7	Geom	-	3.65	0.00	Y	Arm 5 Ahead	Inf

10/1 (M40 SB onslip)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/2 (M40 SB onslip)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1 (M40 SB offslip)	U	G	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 7 Ahead	Inf
11/2 (M40 SB offslip)	U	G	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 7 Ahead	Inf

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Cherwell2_AM'	07:45	08:45	01:00	
2: 'Cherwell2_PM'	16:30	17:30	01:00	
3: 'Cherwell5_AM'	07:45	08:45	01:00	
4: 'Cherwell5_PM'	16:30	17:30	01:00	
5: 'Cherwell9_AM'	07:45	08:45	01:00	
6: 'Cherwell9_PM'	16:30	17:30	01:00	
7: 'Cherwell10_AM'	07:45	08:45	01:00	
8: 'Cherwell10_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Cherwell2 AM' (FG1: 'Cherwell2_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	124	1605	1122	0	2851
	B	85	0	295	202	0	582
	C	0	0	0	0	0	0
	D	1577	239	282	0	0	2098
	E	0	219	0	519	0	738
	Tot.	1662	582	2182	1843	0	6269

Traffic Lane Flows

Lane	Scenario 1: 2031 Cherwell2 AM
Junction: Cherwell	
1/1 (short)	865
1/2 (with short)	1729(In) 864(Out)
1/3 (with short)	1122(In) 561(Out)
1/4 (short)	561
2/1	906
2/2	756
3/1	582
4/1 (short)	295
4/2 (with short)	497(In) 202(Out)
4/3	85
5/1	1080
5/2	763
6/1	821
6/2 (with short)	1277(In) 756(Out)
6/3 (short)	521
7/1	648
7/2	611
8/1	85
9/1	931
9/2	956
9/3	1080
9/4	561
10/1	1226
10/2	956
11/1	219
11/2	519

Lane Saturation Flows

Junction: Cherwell

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 (A43 southbound)	3.65	0.00	Y	Arm 3 Left	Inf	14.3 %	1980	1980
				Arm 9 Ahead	Inf	85.7 %		
1/2 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/3 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/4 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
4/1 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	0.0 %	1965	1965
				Arm 10 Left	Inf	100.0 %		
4/2 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/3 (MSA)	3.65	0.00	Y	Arm 8 Right	Inf	100.0 %	1980	1980
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (A43 northbound)	3.65	0.00	Y	Arm 2 Ahead	40.00	100.0 %	1908	1908
6/2 (A43 northbound)	3.65	0.00	Y	Arm 2 Ahead	45.00	100.0 %	1916	1916
6/3 (A43 northbound)	3.65	0.00	Y	Arm 7 Right	30.00	100.0 %	1886	1886
7/1	This lane uses a directly entered Saturation Flow						1850	1850
7/2	This lane uses a directly entered Saturation Flow						1850	1850
8/1	3.65	0.00	Y	Arm 2 Right	40.00	100.0 %	1908	1908
9/1	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/2	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/3	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
9/4	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
10/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1 (M40 SB offslip)	3.50	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1965	1965
11/2 (M40 SB offslip)	3.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1980	1980

Scenario 2: '2031 Cherwell2 PM' (FG2: 'Cherwell2_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	107	939	676	0	1722
	B	129	0	258	213	0	600
	C	0	0	0	0	0	0
	D	2346	268	472	0	0	3086
	E	0	229	0	380	0	609
	Tot.	2475	604	1669	1269	0	6017

Traffic Lane Flows

Lane	Scenario 2: 2031 Cherwell2 PM
Junction: Cherwell	
1/1 (short)	523
1/2 (with short)	1046(In) 523(Out)
1/3 (with short)	676(In) 338(Out)
1/4 (short)	338
2/1	1482
2/2	993
3/1	604
4/1 (short)	262
4/2 (with short)	471(In) 209(Out)
4/3	129
5/1	722
5/2	547
6/1	1353
6/2 (with short)	1733(In) 993(Out)
6/3 (short)	740
7/1	665
7/2	684
8/1	129
9/1	584
9/2	827
9/3	718
9/4	338
10/1	842
10/2	827
11/1	229
11/2	380

Lane Saturation Flows

Junction: Cherwell

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 (A43 southbound)	3.65	0.00	Y	Arm 3 Left	Inf	20.5 %	1980	1980
				Arm 9 Ahead	Inf	79.5 %		
1/2 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/3 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/4 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
4/1 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	1.5 %	1964	1964
				Arm 10 Left	Inf	98.5 %		
4/2 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/3 (MSA)	3.65	0.00	Y	Arm 8 Right	Inf	100.0 %	1980	1980
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (A43 northbound)	3.65	0.00	Y	Arm 2 Ahead	40.00	100.0 %	1908	1908
6/2 (A43 northbound)	3.65	0.00	Y	Arm 2 Ahead	45.00	100.0 %	1916	1916
6/3 (A43 northbound)	3.65	0.00	Y	Arm 7 Right	30.00	100.0 %	1886	1886
7/1	This lane uses a directly entered Saturation Flow						1850	1850
7/2	This lane uses a directly entered Saturation Flow						1850	1850
8/1	3.65	0.00	Y	Arm 2 Right	40.00	100.0 %	1908	1908
9/1	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/2	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/3	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
9/4	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
10/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1 (M40 SB offslip)	3.50	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1965	1965
11/2 (M40 SB offslip)	3.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1980	1980

Scenario 3: '2031 Cherwell9 AM' (FG3: 'Cherwell5_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	124	1605	1122	0	2851
	B	85	0	295	202	0	582
	C	0	0	0	0	0	0
	D	1577	239	0	0	0	1816
	E	337	219	0	519	0	1075
	Tot.	1999	582	1900	1843	0	6324

Traffic Lane Flows

Lane	Scenario 3: 2031 Cherwell9 AM
Junction: Cherwell	
1/1 (short)	864
1/2 (with short)	1729(In) 865(Out)
1/3 (with short)	1122(In) 561(Out)
1/4 (short)	561
2/1	925
2/2	737
3/1	582
4/1 (short)	295
4/2 (with short)	497(In) 202(Out)
4/3	85
5/1	1080
5/2	763
6/1	840
6/2 (with short)	976(In) 737(Out)
6/3 (short)	239
7/1	458
7/2	519
8/1	85
9/1	740
9/2	865
9/3	1080
9/4	561
10/1	1035
10/2	865
11/1	219
11/2	519

Lane Saturation Flows

Junction: Cherwell

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 (A43 southbound)	3.65	0.00	Y	Arm 3 Left	Inf	14.4 %	1980	1980
				Arm 9 Ahead	Inf	85.6 %		
1/2 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/3 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/4 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
4/1 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	0.0 %	1965	1965
				Arm 10 Left	Inf	100.0 %		
4/2 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/3 (MSA)	3.65	0.00	Y	Arm 8 Right	Inf	100.0 %	1980	1980
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (A43 northbound)	3.65	0.00	Y	Arm 2 Ahead	40.00	100.0 %	1908	1908
6/2 (A43 northbound)	3.65	0.00	Y	Arm 2 Ahead	45.00	100.0 %	1916	1916
6/3 (A43 northbound)	3.65	0.00	Y	Arm 7 Right	30.00	100.0 %	1886	1886
7/1	This lane uses a directly entered Saturation Flow						1850	1850
7/2	This lane uses a directly entered Saturation Flow						1850	1850
8/1	3.65	0.00	Y	Arm 2 Right	40.00	100.0 %	1908	1908
9/1	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/2	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/3	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
9/4	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
10/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1 (M40 SB offslip)	3.50	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1965	1965
11/2 (M40 SB offslip)	3.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1980	1980

Scenario 4: '2031 Cherwell9 PM' (FG4: 'Cherwell5_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	107	939	676	0	1722
	B	129	0	258	213	0	600
	C	0	0	0	0	0	0
	D	2346	268	0	0	0	2614
	E	318	229	0	380	0	927
	Tot.	2793	604	1197	1269	0	5863

Traffic Lane Flows

Lane	Scenario 4: 2031 Cherwell9 PM
Junction: Cherwell	
1/1 (short)	523
1/2 (with short)	1046(In) 523(Out)
1/3 (with short)	676(In) 338(Out)
1/4 (short)	338
2/1	1367
2/2	1108
3/1	604
4/1 (short)	260
4/2 (with short)	471(In) 211(Out)
4/3	129
5/1	720
5/2	549
6/1	1238
6/2 (with short)	1376(In) 1108(Out)
6/3 (short)	268
7/1	497
7/2	380
8/1	129
9/1	416
9/2	523
9/3	718
9/4	338
10/1	674
10/2	523
11/1	229
11/2	380

Lane Saturation Flows

Junction: Cherwell

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 (A43 southbound)	3.65	0.00	Y	Arm 3 Left	Inf	20.5 %	1980	1980
				Arm 9 Ahead	Inf	79.5 %		
1/2 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/3 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/4 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
4/1 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	0.8 %	1964	1964
				Arm 10 Left	Inf	99.2 %		
4/2 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/3 (MSA)	3.65	0.00	Y	Arm 8 Right	Inf	100.0 %	1980	1980
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (A43 northbound)	3.65	0.00	Y	Arm 2 Ahead	40.00	100.0 %	1908	1908
6/2 (A43 northbound)	3.65	0.00	Y	Arm 2 Ahead	45.00	100.0 %	1916	1916
6/3 (A43 northbound)	3.65	0.00	Y	Arm 7 Right	30.00	100.0 %	1886	1886
7/1	This lane uses a directly entered Saturation Flow						1850	1850
7/2	This lane uses a directly entered Saturation Flow						1850	1850
8/1	3.65	0.00	Y	Arm 2 Right	40.00	100.0 %	1908	1908
9/1	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/2	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/3	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
9/4	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
10/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1 (M40 SB offslip)	3.50	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1965	1965
11/2 (M40 SB offslip)	3.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1980	1980

Scenario 5: '2031 Cherwell16 AM' (FG5: 'Cherwell9_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	124	1605	1122	0	2851
	B	85	0	295	202	0	582
	C	0	0	0	0	0	0
	D	408	239	282	0	0	929
	E	0	219	0	519	0	738
	Tot.	493	582	2182	1843	0	5100

Traffic Lane Flows

Lane	Scenario 5: 2031 Cherwell16 AM
Junction: Cherwell	
1/1 (short)	864
1/2 (with short)	1729(In) 865(Out)
1/3 (with short)	1122(In) 561(Out)
1/4 (short)	561
2/1	493
2/2	0
3/1	582
4/1 (short)	304
4/2 (with short)	497(In) 193(Out)
4/3	85
5/1	1089
5/2	754
6/1	408
6/2 (with short)	521(In) 0(Out)
6/3 (short)	521
7/1	603
7/2	656
8/1	85
9/1	885
9/2	1002
9/3	1080
9/4	561
10/1	1180
10/2	1002
11/1	219
11/2	519

Lane Saturation Flows

Junction: Cherwell

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 (A43 southbound)	3.65	0.00	Y	Arm 3 Left	Inf	14.4 %	1980	1980
				Arm 9 Ahead	Inf	85.6 %		
1/2 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/3 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/4 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
4/1 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	3.0 %	1962	1962
				Arm 10 Left	Inf	97.0 %		
4/2 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/3 (MSA)	3.65	0.00	Y	Arm 8 Right	Inf	100.0 %	1980	1980
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (A43 northbound)	3.65	0.00	Y	Arm 2 Ahead	40.00	100.0 %	1908	1908
6/2 (A43 northbound)	3.65	0.00	Y	Arm 2 Ahead	45.00	0.0 %	1980	1980
6/3 (A43 northbound)	3.65	0.00	Y	Arm 7 Right	30.00	100.0 %	1886	1886
7/1	This lane uses a directly entered Saturation Flow						1850	1850
7/2	This lane uses a directly entered Saturation Flow						1850	1850
8/1	3.65	0.00	Y	Arm 2 Right	40.00	100.0 %	1908	1908
9/1	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/2	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/3	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
9/4	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
10/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1 (M40 SB offslip)	3.50	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1965	1965
11/2 (M40 SB offslip)	3.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1980	1980

Scenario 6: '2031 Cherwell16 PM' (FG6: 'Cherwell9_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	107	939	676	0	1722
	B	129	0	258	213	0	600
	C	0	0	0	0	0	0
	D	689	268	472	0	0	1429
	E	0	229	0	380	0	609
	Tot.	818	604	1669	1269	0	4360

Traffic Lane Flows

Lane	Scenario 6: 2031 Cherwell16 PM
Junction: Cherwell	
1/1 (short)	524
1/2 (with short)	1046(In) 522(Out)
1/3 (with short)	676(In) 338(Out)
1/4 (short)	338
2/1	749
2/2	69
3/1	604
4/1 (short)	280
4/2 (with short)	471(In) 191(Out)
4/3	129
5/1	740
5/2	529
6/1	620
6/2 (with short)	809(In) 69(Out)
6/3 (short)	740
7/1	716
7/2	633
8/1	129
9/1	636
9/2	775
9/3	718
9/4	338
10/1	894
10/2	775
11/1	229
11/2	380

Lane Saturation Flows

Junction: Cherwell

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 (A43 southbound)	3.65	0.00	Y	Arm 3 Left	Inf	20.4 %	1980	1980
				Arm 9 Ahead	Inf	79.6 %		
1/2 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/3 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/4 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
4/1 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	7.9 %	1957	1957
				Arm 10 Left	Inf	92.1 %		
4/2 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/3 (MSA)	3.65	0.00	Y	Arm 8 Right	Inf	100.0 %	1980	1980
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (A43 northbound)	3.65	0.00	Y	Arm 2 Ahead	40.00	100.0 %	1908	1908
6/2 (A43 northbound)	3.65	0.00	Y	Arm 2 Ahead	45.00	100.0 %	1916	1916
6/3 (A43 northbound)	3.65	0.00	Y	Arm 7 Right	30.00	100.0 %	1886	1886
7/1	This lane uses a directly entered Saturation Flow						1850	1850
7/2	This lane uses a directly entered Saturation Flow						1850	1850
8/1	3.65	0.00	Y	Arm 2 Right	40.00	100.0 %	1908	1908
9/1	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/2	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/3	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
9/4	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
10/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1 (M40 SB offslip)	3.50	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1965	1965
11/2 (M40 SB offslip)	3.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1980	1980

Scenario 7: '2031 Cherwell17 AM' (FG7: 'Cherwell10_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	124	1605	1122	0	2851
	B	85	0	295	202	0	582
	C	0	0	0	0	0	0
	D	408	239	0	0	0	647
	E	0	219	0	519	0	738
	Tot.	493	582	1900	1843	0	4818

Traffic Lane Flows

Lane	Scenario 7: 2031 Cherwell17 AM
Junction: Cherwell	
1/1 (short)	865
1/2 (with short)	1729(In) 864(Out)
1/3 (with short)	1122(In) 561(Out)
1/4 (short)	561
2/1	253
2/2	240
3/1	582
4/1 (short)	295
4/2 (with short)	497(In) 202(Out)
4/3	85
5/1	1080
5/2	763
6/1	168
6/2 (with short)	479(In) 240(Out)
6/3 (short)	239
7/1	458
7/2	519
8/1	85
9/1	741
9/2	864
9/3	1080
9/4	561
10/1	1036
10/2	864
11/1	219
11/2	519

Lane Saturation Flows

Junction: Cherwell

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 (A43 southbound)	3.65	0.00	Y	Arm 3 Left	Inf	14.3 %	1980	1980
				Arm 9 Ahead	Inf	85.7 %		
1/2 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/3 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/4 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
4/1 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	0.0 %	1965	1965
				Arm 10 Left	Inf	100.0 %		
4/2 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/3 (MSA)	3.65	0.00	Y	Arm 8 Right	Inf	100.0 %	1980	1980
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (A43 northbound)	3.65	0.00	Y	Arm 2 Ahead	40.00	100.0 %	1908	1908
6/2 (A43 northbound)	3.65	0.00	Y	Arm 2 Ahead	45.00	100.0 %	1916	1916
6/3 (A43 northbound)	3.65	0.00	Y	Arm 7 Right	30.00	100.0 %	1886	1886
7/1	This lane uses a directly entered Saturation Flow						1850	1850
7/2	This lane uses a directly entered Saturation Flow						1850	1850
8/1	3.65	0.00	Y	Arm 2 Right	40.00	100.0 %	1908	1908
9/1	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/2	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/3	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
9/4	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
10/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1 (M40 SB offslip)	3.50	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1965	1965
11/2 (M40 SB offslip)	3.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1980	1980

Scenario 8: '2031 Cherwell17 PM' (FG8: 'Cherwell10_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	107	939	676	0	1722
	B	129	0	258	213	0	600
	C	0	0	0	0	0	0
	D	689	268	0	0	0	957
	E	0	229	0	380	0	609
	Tot.	818	604	1197	1269	0	3888

Traffic Lane Flows

Lane	Scenario 8: 2031 Cherwell17 PM
Junction: Cherwell	
1/1 (short)	523
1/2 (with short)	1046(In) 523(Out)
1/3 (with short)	676(In) 338(Out)
1/4 (short)	338
2/1	461
2/2	357
3/1	604
4/1 (short)	262
4/2 (with short)	471(In) 209(Out)
4/3	129
5/1	722
5/2	547
6/1	332
6/2 (with short)	625(In) 357(Out)
6/3 (short)	268
7/1	497
7/2	380
8/1	129
9/1	416
9/2	523
9/3	718
9/4	338
10/1	674
10/2	523
11/1	229
11/2	380

Lane Saturation Flows

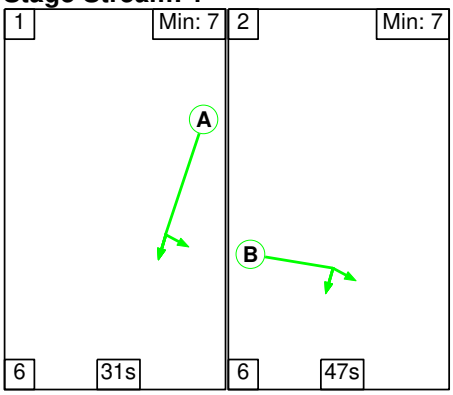
Junction: Cherwell

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 (A43 southbound)	3.65	0.00	Y	Arm 3 Left	Inf	20.5 %	1980	1980
				Arm 9 Ahead	Inf	79.5 %		
1/2 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/3 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/4 (A43 southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
4/1 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	1.5 %	1964	1964
				Arm 10 Left	Inf	98.5 %		
4/2 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/3 (MSA)	3.65	0.00	Y	Arm 8 Right	Inf	100.0 %	1980	1980
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (A43 northbound)	3.65	0.00	Y	Arm 2 Ahead	40.00	100.0 %	1908	1908
6/2 (A43 northbound)	3.65	0.00	Y	Arm 2 Ahead	45.00	100.0 %	1916	1916
6/3 (A43 northbound)	3.65	0.00	Y	Arm 7 Right	30.00	100.0 %	1886	1886
7/1	This lane uses a directly entered Saturation Flow						1850	1850
7/2	This lane uses a directly entered Saturation Flow						1850	1850
8/1	3.65	0.00	Y	Arm 2 Right	40.00	100.0 %	1908	1908
9/1	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/2	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/3	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
9/4	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
10/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
11/1 (M40 SB offslip)	3.50	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1965	1965
11/2 (M40 SB offslip)	3.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1980	1980

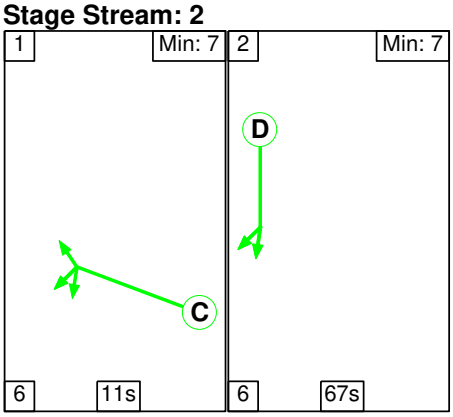
Scenario 1: '2031 Cherwell2 AM' (FG1: 'Cherwell2_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

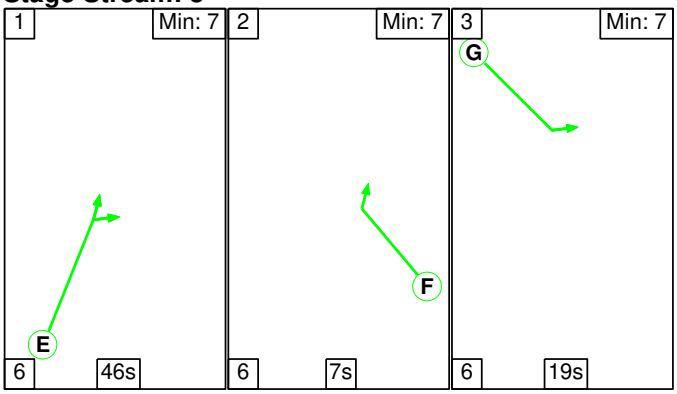
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	31	47
Change Point	0	37

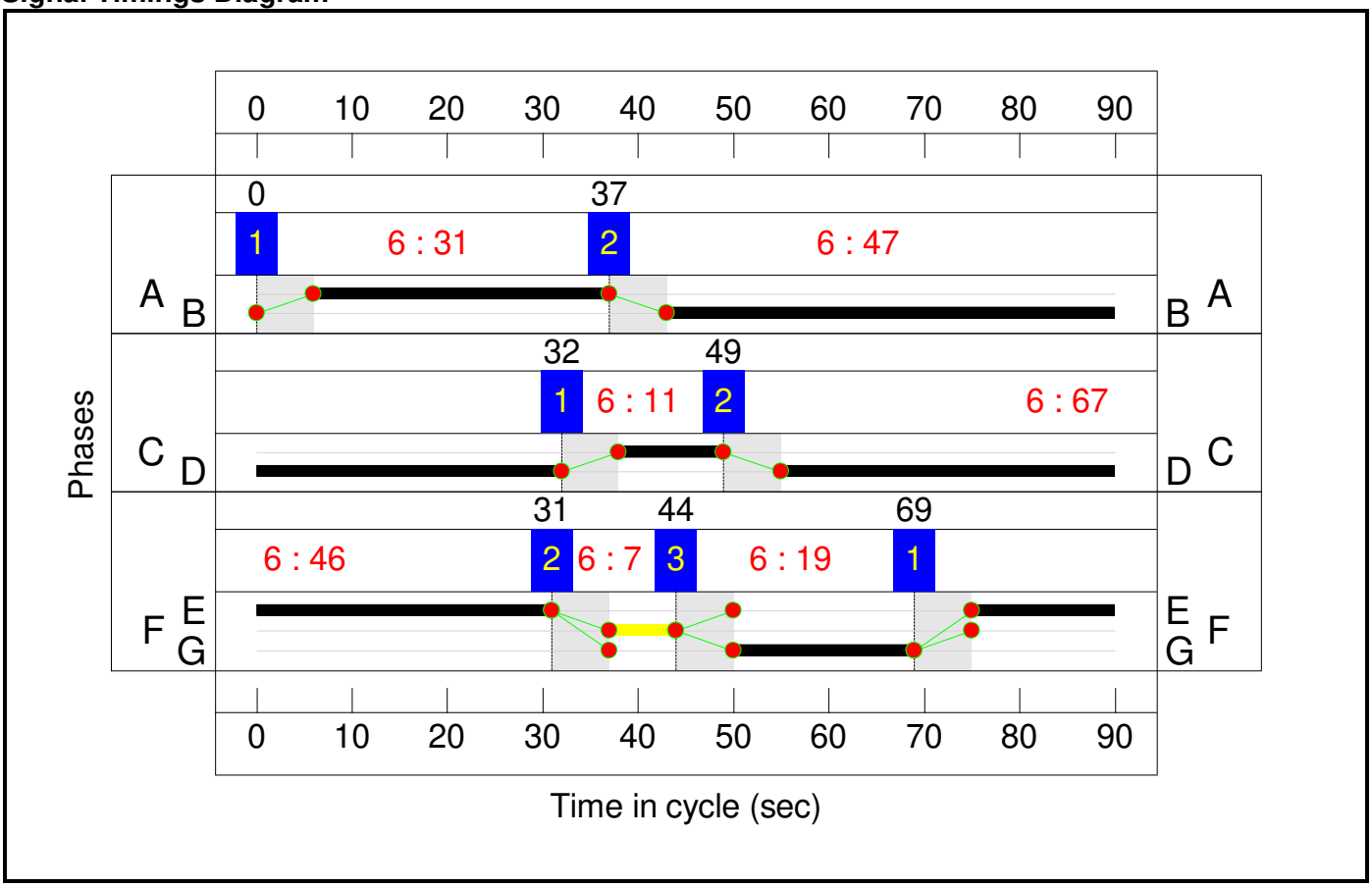
Stage Stream: 2

Stage	1	2
Duration	11	67
Change Point	32	49

Stage Stream: 3

Stage	1	2	3
Duration	46	7	19
Change Point	69	31	44

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: Cherwell Hamburger Gyratory - Junction option C-2, C4	-	-	**N/A**	-	-		-	-	-	-	-	-	**122.9%**
Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**122.9%**
1/2+1/1	A43 southbound Left Ahead	U	1	N/A	A		1	31	-	1729	1980:1980	704+704	122.7 : 122.9%
1/3+1/4	A43 southbound Ahead	U	1	N/A	A		1	31	-	1122	1980:1980	704+704	79.7 : 79.7%
4/2+4/1	MSA Left Left2	U	2	N/A	C		1	11	-	497	1871:1965	179+262	112.6 : 112.6%
4/3	MSA Right	U	2	N/A	C		1	11	-	85	1980	264	32.2%
6/1	A43 northbound Ahead	U	3	N/A	E		1	46	-	821	1908	996	82.4%
6/2+6/3	A43 northbound Ahead Right	U	3	N/A	E		1	46	-	1277	1916:1886	754+520	100.3 : 100.3%
7/1	Ahead Right	U	1	N/A	B		1	47	-	648	1850	987	65.6%
7/2	Right	U	1	N/A	B		1	47	-	611	1850	987	53.9%
8/1	Right	U	3	N/A	F		1	7	-	85	1908	170	50.1%
9/1	Ahead	U	2	N/A	D		1	67	-	931	1980	1496	53.0%
9/2	Ahead	U	2	N/A	D		1	67	-	956	1980	1496	53.2%
9/3	Ahead	U	2	N/A	D		1	67	-	1080	1980	1496	66.9%
9/4	Ahead	U	2	N/A	D		1	67	-	561	1980	1496	37.5%
11/1	M40 SB offslip Ahead	U	3	N/A	G		1	19	-	219	1965	437	50.2%
11/2	M40 SB offslip Ahead	U	3	N/A	G		1	19	-	519	1980	440	118.0%

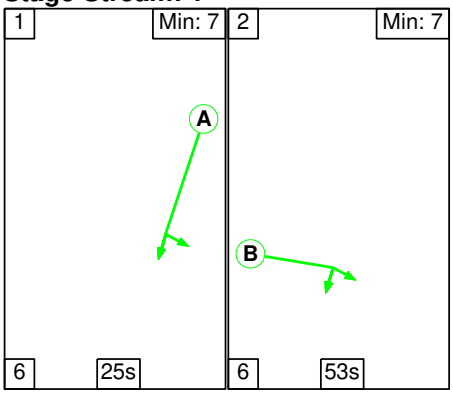
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Cherwell Hamburger Gyratory - Junction option C-2, C4	**-**	**-**	**0**	**0**	**0**	**70.3**	**261.2**	**0.0**	**331.4**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**0**	**0**	**0**	**70.3**	**261.2**	**0.0**	**331.4**	**-**	**-**	**-**	**-**
1/2+1/1	1729	1408	-	-	-	27.9	163.1	-	191.0	397.8	38.1	163.1	201.2
1/3+1/4	1122	1122	-	-	-	8.1	1.9	-	10.1	32.3	12.5	1.9	14.4
4/2+4/1	497	441	-	-	-	7.1	31.7	-	38.8	280.9	9.9	31.7	41.6
4/3	85	85	-	-	-	0.8	0.2	-	1.1	45.4	1.9	0.2	2.1
6/1	821	821	-	-	-	4.1	2.3	-	6.4	28.0	17.1	2.3	19.4
6/2+6/3	1277	1273	-	-	-	6.5	18.8	-	25.3	71.3	25.4	18.8	44.2
7/1	647	647	-	-	-	1.6	0.0	-	1.6	8.7	5.1	0.0	5.1
7/2	532	532	-	-	-	0.4	0.0	-	0.4	2.5	4.3	0.0	4.3
8/1	85	85	-	-	-	1.0	0.0	-	1.0	40.8	1.1	0.0	1.1
9/1	793	793	-	-	-	1.3	0.0	-	1.3	6.0	6.5	0.0	6.5
9/2	796	796	-	-	-	1.4	0.0	-	1.4	6.4	6.0	0.0	6.0
9/3	1001	1001	-	-	-	0.3	0.0	-	0.3	1.1	5.5	0.0	5.5
9/4	561	561	-	-	-	0.3	0.0	-	0.3	1.9	1.4	0.0	1.4
11/1	219	219	-	-	-	1.9	0.5	-	2.4	38.9	4.7	0.5	5.2
11/2	519	440	-	-	-	7.6	42.5	-	50.2	348.2	15.0	42.5	57.5

C1	Stream: 1 PRC for Signalled Lanes (%):	-36.5	Total Delay for Signalled Lanes (pcuHr):	203.03	Cycle Time (s): 90
C1	Stream: 2 PRC for Signalled Lanes (%):	-25.1	Total Delay for Signalled Lanes (pcuHr):	43.20	Cycle Time (s): 90
C1	Stream: 3 PRC for Signalled Lanes (%):	-31.1	Total Delay for Signalled Lanes (pcuHr):	85.20	Cycle Time (s): 90
	PRC Over All Lanes (%):	-36.5	Total Delay Over All Lanes(pcuHr):	331.43	

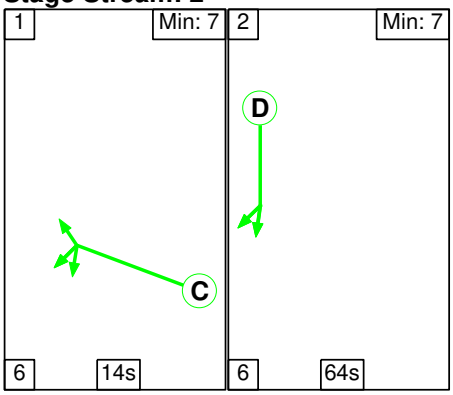
Scenario 2: '2031 Cherwell2 PM' (FG2: 'Cherwell2_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

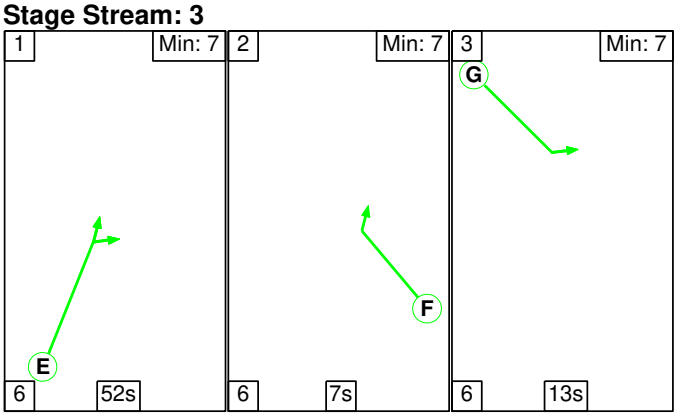
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	25	53
Change Point	0	31

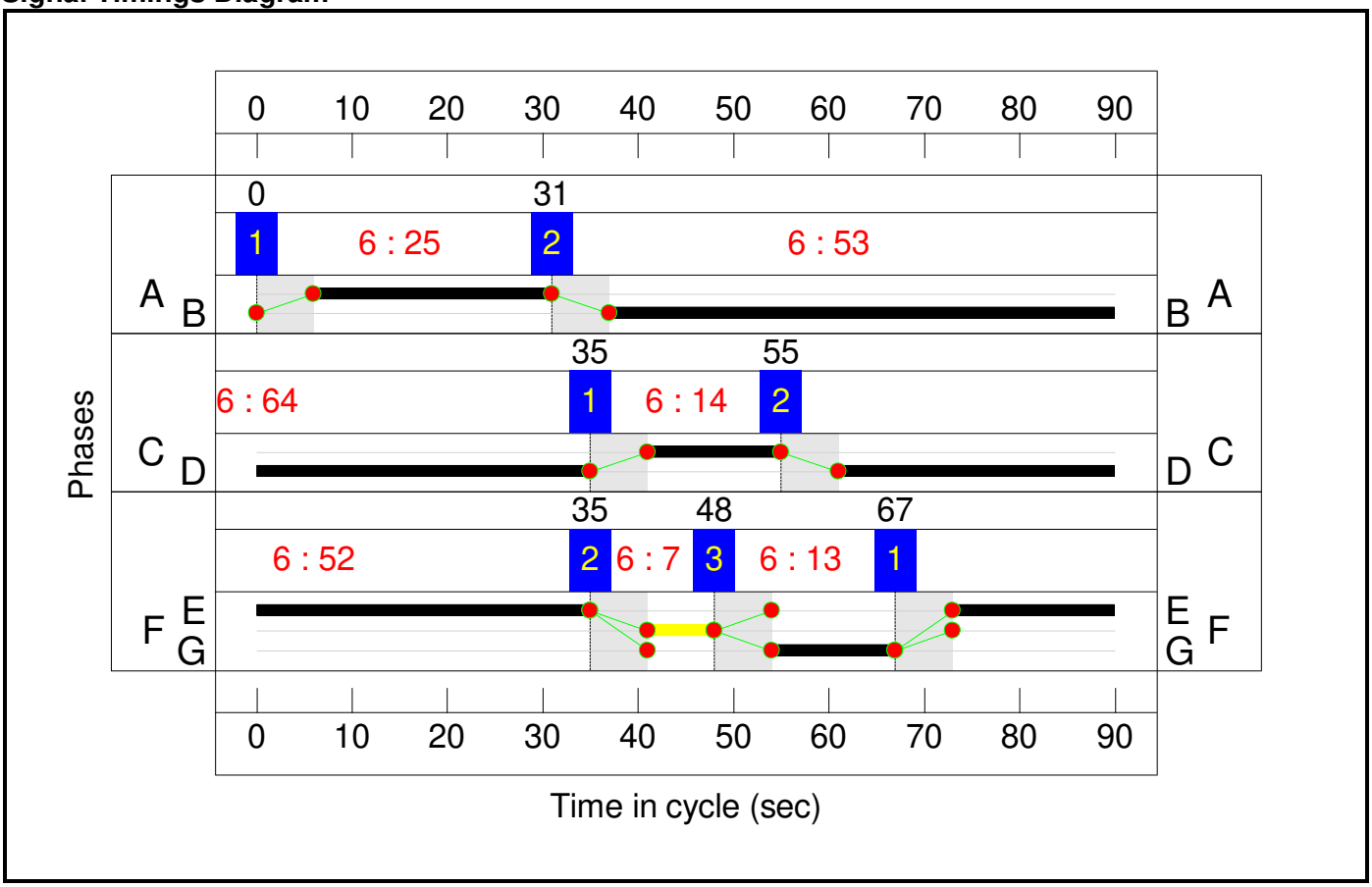
Stage Stream: 2

Stage	1	2
Duration	14	64
Change Point	35	55

Stage Stream: 3

Stage	1	2	3
Duration	52	7	13
Change Point	67	35	48

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: Cherwell Hamburger Gyratory - Junction option C-2, C4	-	-	**N/A**	-	-		-	-	-	-	-	-	**123.4%**
Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**123.4%**
1/2+1/1	A43 southbound Left Ahead	U	1	N/A	A		1	25	-	1046	1980:1980	572+572	91.4 : 91.4%
1/3+1/4	A43 southbound Ahead	U	1	N/A	A		1	25	-	676	1980:1980	572+572	59.1 : 59.1%
4/2+4/1	MSA Left Left2	U	2	N/A	C		1	14	-	471	1871:1964	242+304	86.3 : 86.3%
4/3	MSA Right	U	2	N/A	C		1	14	-	129	1980	330	39.1%
6/1	A43 northbound Ahead	U	3	N/A	E		1	52	-	1353	1908	1124	120.4%
6/2+6/3	A43 northbound Ahead Right	U	3	N/A	E		1	52	-	1733	1916:1886	815+608	121.8 : 121.8%
7/1	Ahead Right	U	1	N/A	B		1	53	-	665	1850	1110	52.9%
7/2	Right	U	1	N/A	B		1	53	-	684	1850	1110	50.2%
8/1	Right	U	3	N/A	F		1	7	-	129	1908	170	76.1%
9/1	Ahead	U	2	N/A	D		1	64	-	584	1980	1430	38.7%
9/2	Ahead	U	2	N/A	D		1	64	-	827	1980	1430	54.0%
9/3	Ahead	U	2	N/A	D		1	64	-	718	1980	1430	45.2%
9/4	Ahead	U	2	N/A	D		1	64	-	338	1980	1430	23.6%
11/1	M40 SB offslip Ahead	U	3	N/A	G		1	13	-	229	1965	306	74.9%
11/2	M40 SB offslip Ahead	U	3	N/A	G		1	13	-	380	1980	308	123.4%

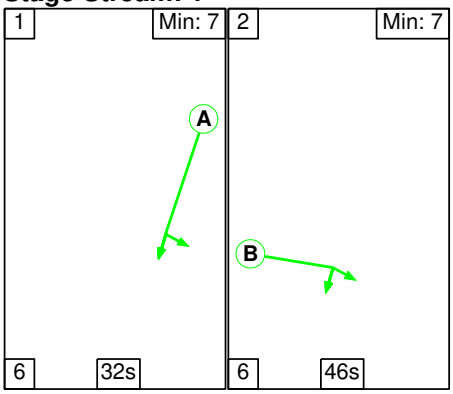
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Cherwell Hamburger Gyratory - Junction option C-2, C4	**-**	**-**	**0**	**0**	**0**	**72.4**	**324.2**	**0.0**	**396.6**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**0**	**0**	**0**	**72.4**	**324.2**	**0.0**	**396.6**	**-**	**-**	**-**	**-**
1/2+1/1	1046	1046	-	-	-	9.0	4.9	-	13.8	47.6	12.5	4.9	17.3
1/3+1/4	676	676	-	-	-	5.2	0.7	-	5.9	31.3	7.2	0.7	7.9
4/2+4/1	471	471	-	-	-	4.7	2.9	-	7.6	57.9	6.3	2.9	9.2
4/3	129	129	-	-	-	1.2	0.3	-	1.5	42.4	2.9	0.3	3.2
6/1	1353	1124	-	-	-	17.7	117.6	-	135.3	360.0	39.6	117.6	157.1
6/2+6/3	1733	1423	-	-	-	21.8	157.9	-	179.7	373.3	47.9	157.9	205.8
7/1	587	587	-	-	-	1.0	0.0	-	1.0	6.1	4.5	0.0	4.5
7/2	558	558	-	-	-	0.7	0.0	-	0.7	4.3	3.1	0.0	3.1
8/1	129	129	-	-	-	1.5	0.0	-	1.5	41.2	1.6	0.0	1.6
9/1	554	554	-	-	-	0.3	0.0	-	0.3	2.2	1.7	0.0	1.7
9/2	773	773	-	-	-	0.7	0.0	-	0.7	3.2	3.1	0.0	3.1
9/3	646	646	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/4	338	338	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	229	229	-	-	-	2.3	1.4	-	3.7	59.0	5.5	1.4	6.9
11/2	380	308	-	-	-	6.4	38.5	-	44.8	424.7	11.3	38.5	49.8

C1	Stream: 1 PRC for Signalled Lanes (%):	-1.6	Total Delay for Signalled Lanes (pcuHr):	21.38	Cycle Time (s): 90
C1	Stream: 2 PRC for Signalled Lanes (%):	4.3	Total Delay for Signalled Lanes (pcuHr):	10.12	Cycle Time (s): 90
C1	Stream: 3 PRC for Signalled Lanes (%):	-37.1	Total Delay for Signalled Lanes (pcuHr):	365.07	Cycle Time (s): 90
	PRC Over All Lanes (%):	-37.1	Total Delay Over All Lanes(pcuHr):	396.57	

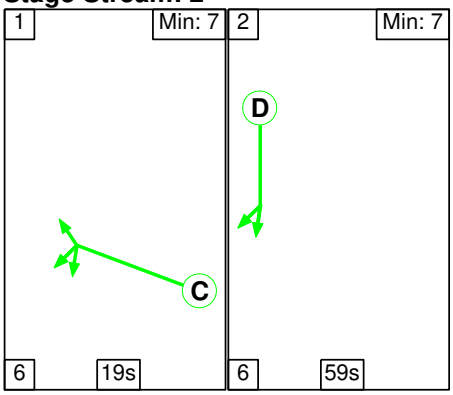
Scenario 3: '2031 Cherwell9 AM' (FG3: 'Cherwell5_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

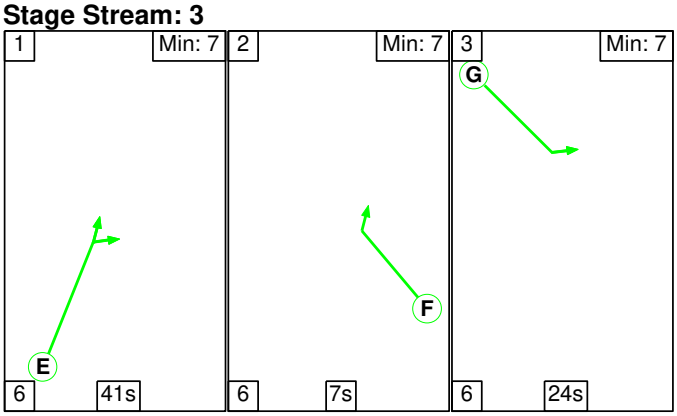
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	32	46
Change Point	0	38

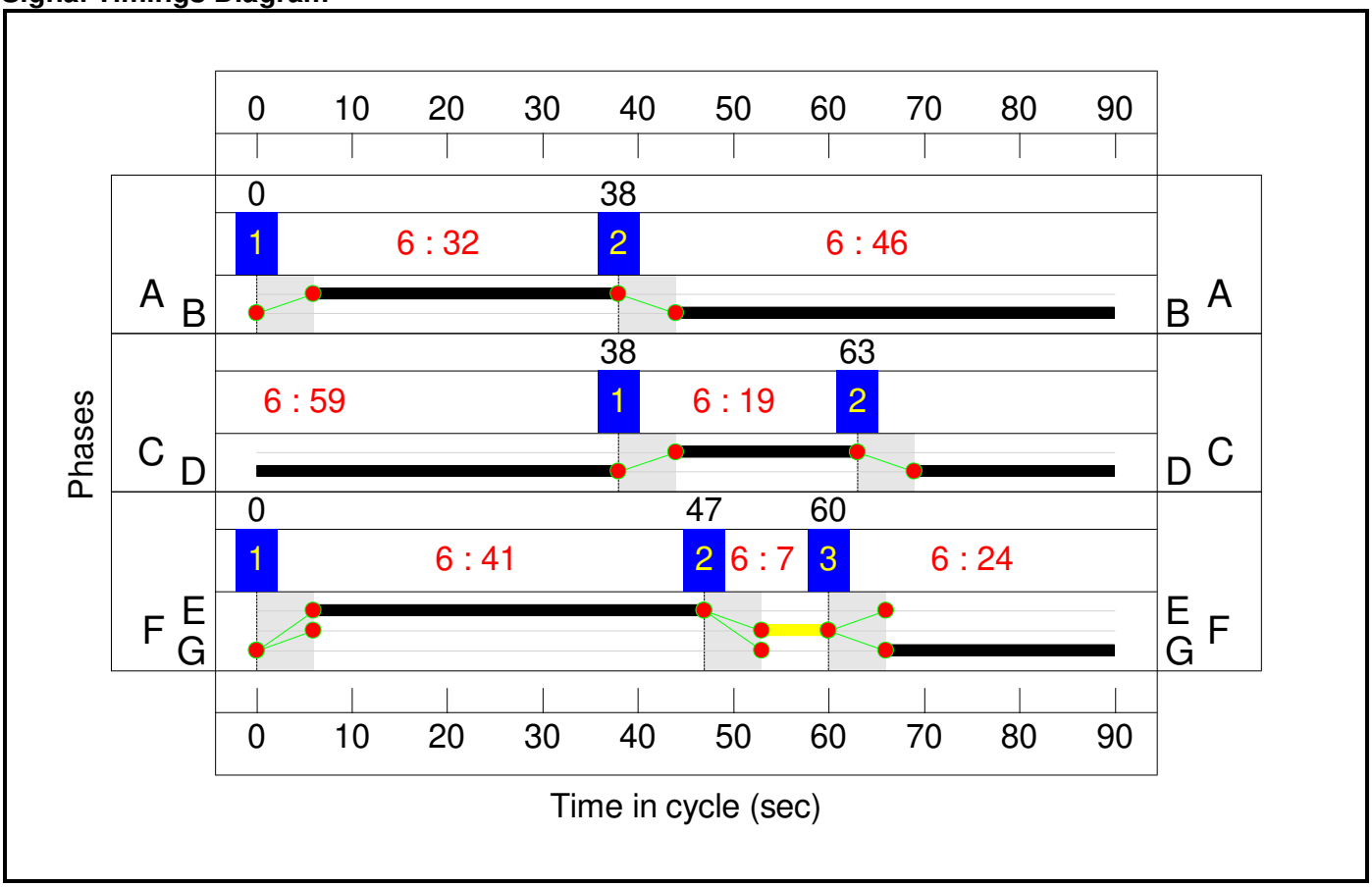
Stage Stream: 2

Stage	1	2
Duration	19	59
Change Point	38	63

Stage Stream: 3

Stage	1	2	3
Duration	41	7	24
Change Point	0	47	60

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: Cherwell Hamburger Gyratory - Junction option C-2, C4	-	-	**N/A**	-	-		-	-	-	-	-	-	**119.1%**
Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**119.1%**
1/2+1/1	A43 southbound Left Ahead	U	1	N/A	A		1	32	-	1729	1980:1980	726+726	119.1 : 119.0%
1/3+1/4	A43 southbound Ahead	U	1	N/A	A		1	32	-	1122	1980:1980	726+726	77.3 : 77.3%
4/2+4/1	MSA Left Left2	U	2	N/A	C		1	19	-	497	1871:1965	253+369	80.0 : 80.0%
4/3	MSA Right	U	2	N/A	C		1	19	-	85	1980	440	19.3%
6/1	A43 northbound Ahead	U	3	N/A	E		1	41	-	840	1908	890	94.3%
6/2+6/3	A43 northbound Ahead Right	U	3	N/A	E		1	41	-	976	1916:1886	771+250	95.6 : 95.6%
7/1	Ahead Right	U	1	N/A	B		1	46	-	458	1850	966	47.4%
7/2	Right	U	1	N/A	B		1	46	-	519	1850	966	53.7%
8/1	Right	U	3	N/A	F		1	7	-	85	1908	170	50.1%
9/1	Ahead	U	2	N/A	D		1	59	-	740	1980	1320	47.1%
9/2	Ahead	U	2	N/A	D		1	59	-	865	1980	1320	55.0%
9/3	Ahead	U	2	N/A	D		1	59	-	1080	1980	1320	81.8%
9/4	Ahead	U	2	N/A	D		1	59	-	561	1980	1320	42.5%
11/1	M40 SB offslip Ahead	U	3	N/A	G		1	24	-	219	1965	546	40.1%
11/2	M40 SB offslip Ahead	U	3	N/A	G		1	24	-	519	1980	550	94.4%

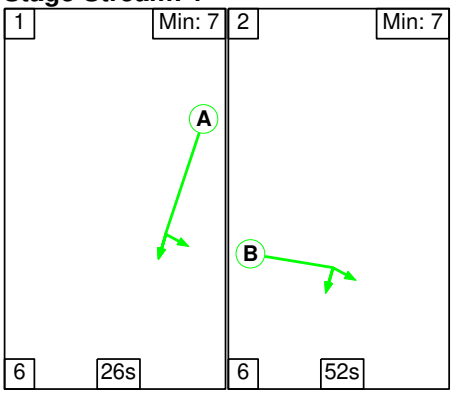
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Cherwell Hamburger Gyratory - Junction option C-2, C4	**-**	**-**	**0**	**0**	**0**	**60.9**	**166.2**	**0.0**	**227.1**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**0**	**0**	**0**	**60.9**	**166.2**	**0.0**	**227.1**	**-**	**-**	**-**	**-**
1/2+1/1	1729	1452	-	-	-	25.7	141.6	-	167.2	348.2	37.1	141.6	178.7
1/3+1/4	1122	1122	-	-	-	7.9	1.7	-	9.5	30.6	12.3	1.7	14.0
4/2+4/1	497	497	-	-	-	4.3	1.9	-	6.3	45.4	6.7	1.9	8.7
4/3	85	85	-	-	-	0.7	0.1	-	0.8	33.5	1.7	0.1	1.8
6/1	840	840	-	-	-	5.3	6.6	-	11.9	51.2	19.8	6.6	26.4
6/2+6/3	976	976	-	-	-	5.6	8.0	-	13.6	50.2	19.8	8.0	27.8
7/1	458	458	-	-	-	1.8	0.0	-	1.8	14.4	6.2	0.0	6.2
7/2	519	519	-	-	-	0.9	0.0	-	0.9	6.3	5.4	0.0	5.4
8/1	85	85	-	-	-	0.3	0.0	-	0.3	10.7	2.0	0.0	2.0
9/1	622	622	-	-	-	0.6	0.0	-	0.6	3.6	1.9	0.0	1.9
9/2	726	726	-	-	-	0.7	0.0	-	0.7	3.6	2.2	0.0	2.2
9/3	1080	1080	-	-	-	0.6	0.0	-	0.6	2.0	3.3	0.0	3.3
9/4	561	561	-	-	-	0.2	0.0	-	0.2	1.3	0.6	0.0	0.6
11/1	219	219	-	-	-	1.6	0.3	-	1.9	31.9	4.4	0.3	4.8
11/2	519	519	-	-	-	4.6	6.0	-	10.6	73.6	12.7	6.0	18.7

C1	Stream: 1 PRC for Signalled Lanes (%):	-32.4	Total Delay for Signalled Lanes (pcuHr):	179.52	Cycle Time (s): 90
C1	Stream: 2 PRC for Signalled Lanes (%):	10.0	Total Delay for Signalled Lanes (pcuHr):	9.23	Cycle Time (s): 90
C1	Stream: 3 PRC for Signalled Lanes (%):	-6.2	Total Delay for Signalled Lanes (pcuHr):	38.35	Cycle Time (s): 90
	PRC Over All Lanes (%):	-32.4	Total Delay Over All Lanes(pcuHr):	227.10	

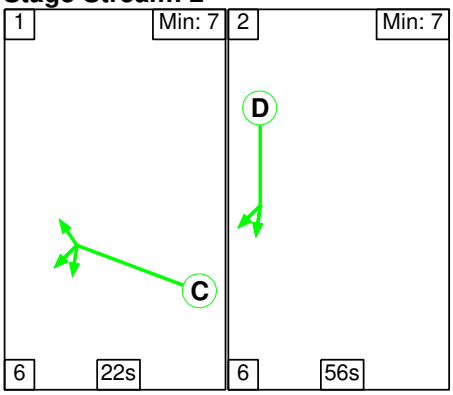
Scenario 4: '2031 Cherwell9 PM' (FG4: 'Cherwell5_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

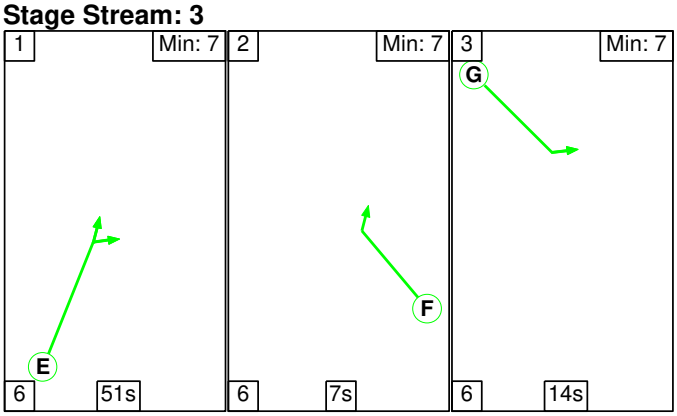
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	26	52
Change Point	0	32

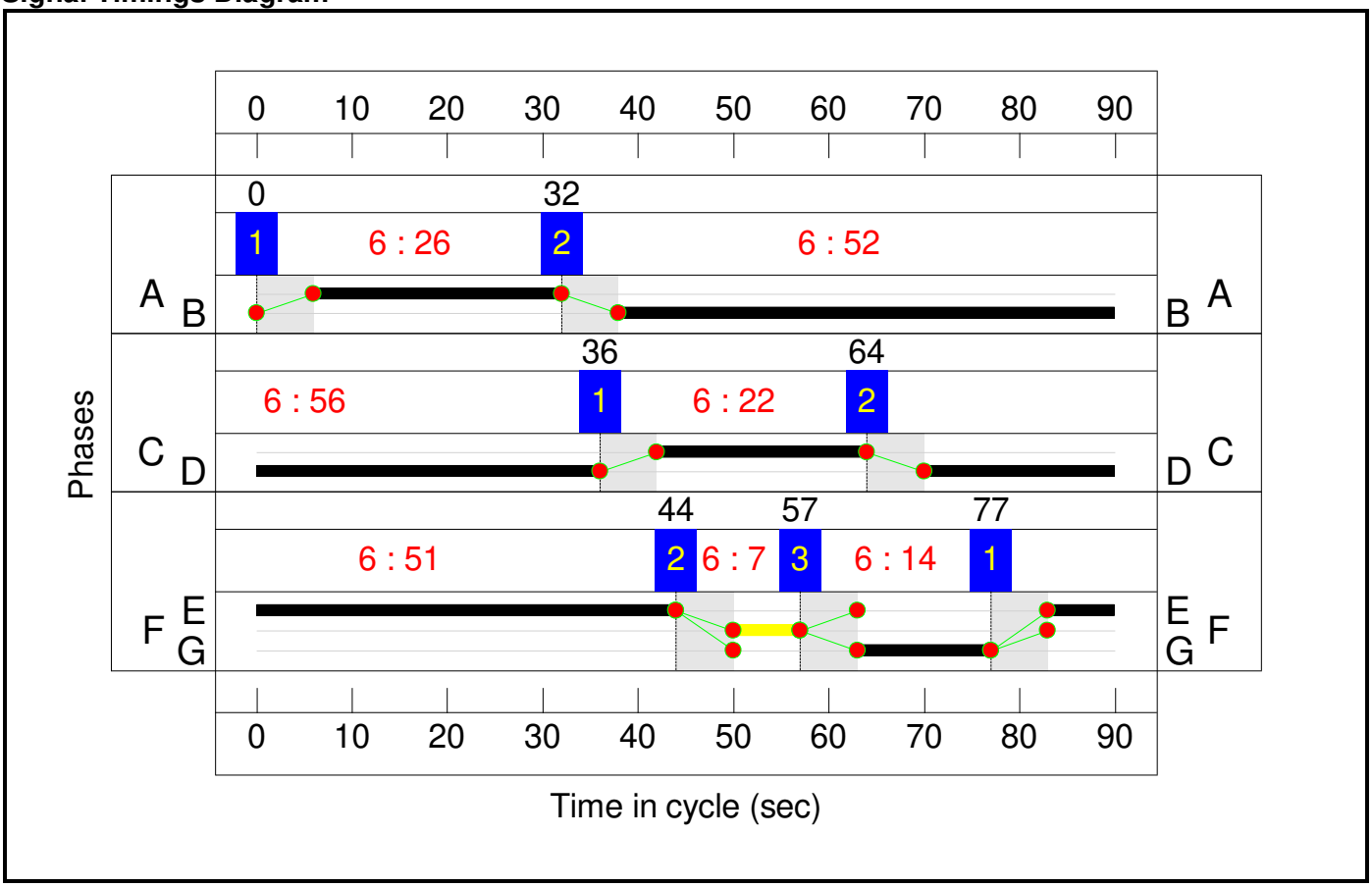
Stage Stream: 2

Stage	1	2
Duration	22	56
Change Point	36	64

Stage Stream: 3

Stage	1	2	3
Duration	51	7	14
Change Point	77	44	57

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: Cherwell Hamburger Gyratory - Junction option C-2, C4	-	-	**N/A**	-	-		-	-	-	-	-	-	**115.2%**
Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**115.2%**
1/2+1/1	A43 southbound Left Ahead	U	1	N/A	A		1	26	-	1046	1980:1980	594+594	88.0 : 88.0%
1/3+1/4	A43 southbound Ahead	U	1	N/A	A		1	26	-	676	1980:1980	594+594	56.9 : 56.9%
4/2+4/1	MSA Left Left2	U	2	N/A	C		1	22	-	471	1871:1964	323+398	65.4 : 65.4%
4/3	MSA Right	U	2	N/A	C		1	22	-	129	1980	506	25.5%
6/1	A43 northbound Ahead	U	3	N/A	E		1	51	-	1238	1908	1102	112.3%
6/2+6/3	A43 northbound Ahead Right	U	3	N/A	E		1	51	-	1376	1916:1886	967+234	114.6 : 114.6%
7/1	Ahead Right	U	1	N/A	B		1	52	-	497	1850	1089	42.5%
7/2	Right	U	1	N/A	B		1	52	-	380	1850	1089	30.3%
8/1	Right	U	3	N/A	F		1	7	-	129	1908	170	76.1%
9/1	Ahead	U	2	N/A	D		1	56	-	416	1980	1254	33.2%
9/2	Ahead	U	2	N/A	D		1	56	-	523	1980	1254	41.7%
9/3	Ahead	U	2	N/A	D		1	56	-	718	1980	1254	53.3%
9/4	Ahead	U	2	N/A	D		1	56	-	338	1980	1254	27.0%
11/1	M40 SB offslip Ahead	U	3	N/A	G		1	14	-	229	1965	327	69.9%
11/2	M40 SB offslip Ahead	U	3	N/A	G		1	14	-	380	1980	330	115.2%

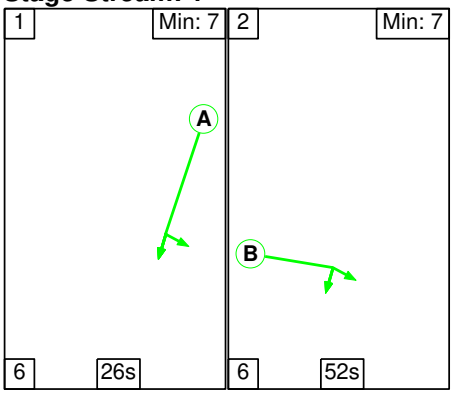
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Cherwell Hamburger Gyratory - Junction option C-2, C4	**-**	**-**	**0**	**0**	**0**	**54.2**	**198.4**	**0.0**	**252.6**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**0**	**0**	**0**	**54.2**	**198.4**	**0.0**	**252.6**	**-**	**-**	**-**	**-**
1/2+1/1	1046	1046	-	-	-	8.7	3.5	-	12.2	42.0	12.3	3.5	15.9
1/3+1/4	676	676	-	-	-	5.0	0.7	-	5.7	30.1	7.0	0.7	7.7
4/2+4/1	471	471	-	-	-	3.7	0.9	-	4.7	35.6	5.6	0.9	6.5
4/3	129	129	-	-	-	1.0	0.2	-	1.1	31.5	2.5	0.2	2.7
6/1	1238	1102	-	-	-	12.5	72.1	-	84.6	246.1	34.3	72.1	106.4
6/2+6/3	1376	1200	-	-	-	14.4	91.6	-	106.0	277.3	39.8	91.6	131.4
7/1	463	463	-	-	-	0.4	0.0	-	0.4	3.1	2.9	0.0	2.9
7/2	330	330	-	-	-	0.0	0.0	-	0.0	0.5	1.6	0.0	1.6
8/1	129	129	-	-	-	0.5	0.0	-	0.5	13.4	3.1	0.0	3.1
9/1	416	416	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	523	523	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/3	668	668	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/4	338	338	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	229	229	-	-	-	2.3	1.1	-	3.4	53.2	5.3	1.1	6.5
11/2	380	330	-	-	-	5.7	28.4	-	34.0	322.1	10.9	28.4	39.3

C1	Stream: 1 PRC for Signalled Lanes (%):	2.2	Total Delay for Signalled Lanes (pcuHr):	18.32	Cycle Time (s): 90
C1	Stream: 2 PRC for Signalled Lanes (%):	37.7	Total Delay for Signalled Lanes (pcuHr):	5.79	Cycle Time (s): 90
C1	Stream: 3 PRC for Signalled Lanes (%):	-27.9	Total Delay for Signalled Lanes (pcuHr):	228.49	Cycle Time (s): 90
	PRC Over All Lanes (%):	-27.9	Total Delay Over All Lanes(pcuHr):	252.59	

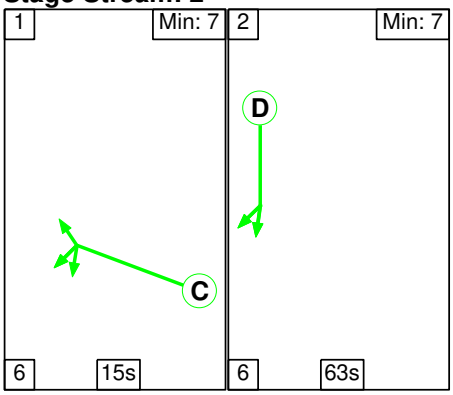
Scenario 5: '2031 Cherwell16 AM' (FG5: 'Cherwell9_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

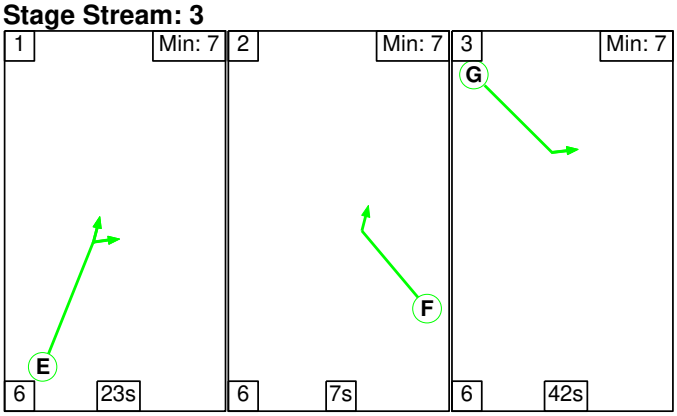
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	26	52
Change Point	0	32

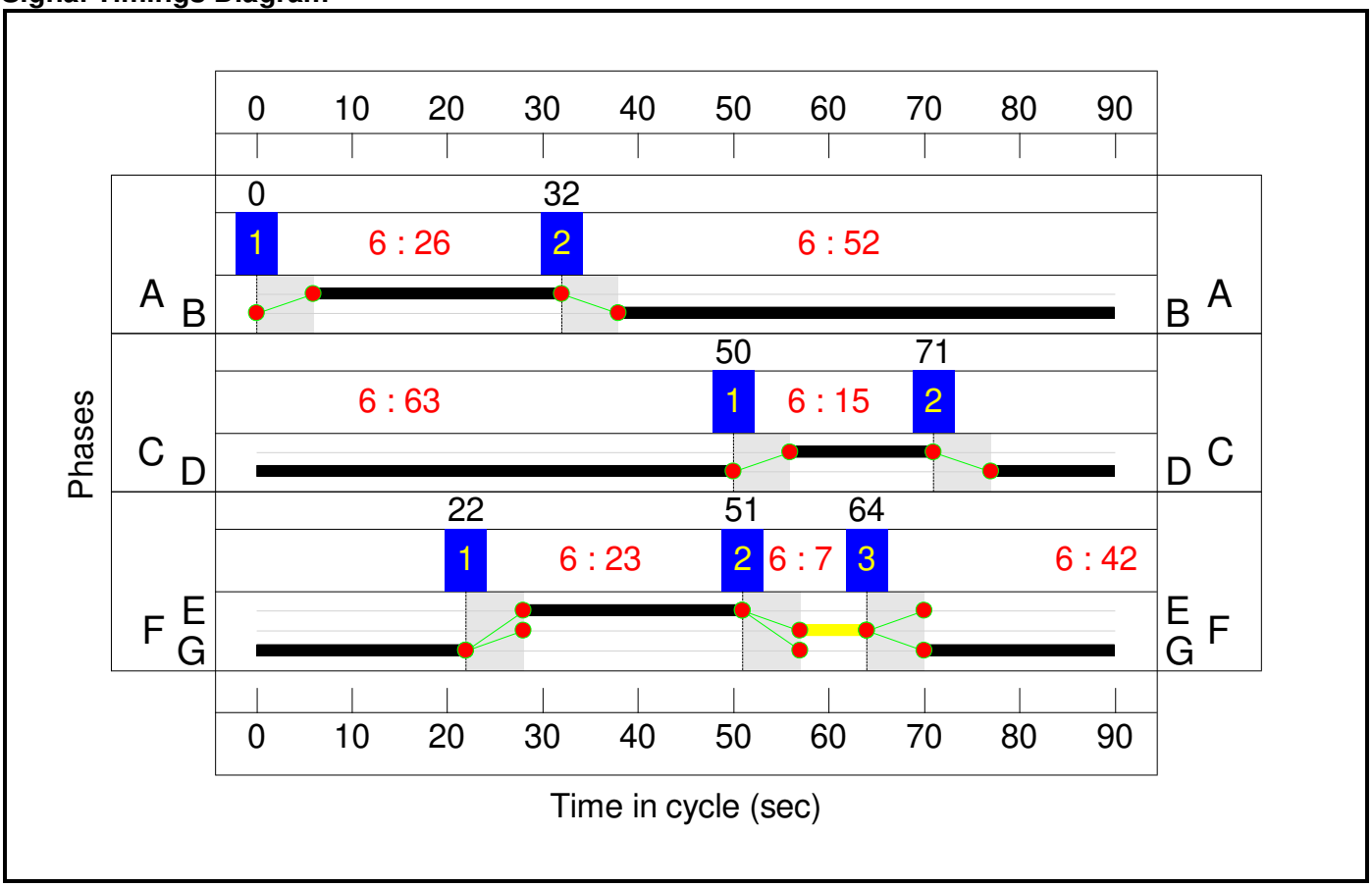
Stage Stream: 2

Stage	1	2
Duration	15	63
Change Point	50	71

Stage Stream: 3

Stage	1	2	3
Duration	23	7	42
Change Point	22	51	64

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: Cherwell Hamburger Gyratory - Junction option C-2, C4	-	-	**N/A**	-	-		-	-	-	-	-	-	**145.6%**
Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**145.6%**
1/2+1/1	A43 southbound Left Ahead	U	1	N/A	A		1	26	-	1729	1980:1980	594+594	145.6 : 145.5%
1/3+1/4	A43 southbound Ahead	U	1	N/A	A		1	26	-	1122	1980:1980	594+594	94.4 : 94.4%
4/2+4/1	MSA Left Left2	U	2	N/A	C		1	15	-	497	1871:1962	203+319	95.2 : 95.2%
4/3	MSA Right	U	2	N/A	C		1	15	-	85	1980	352	24.1%
6/1	A43 northbound Ahead	U	3	N/A	E		1	23	-	408	1908	509	80.2%
6/2+6/3	A43 northbound Ahead Right	U	3	N/A	E		1	23	-	521	1980:1886	0+503	0.0 : 103.6%
7/1	Ahead Right	U	1	N/A	B		1	52	-	603	1850	1089	54.1%
7/2	Right	U	1	N/A	B		1	52	-	656	1850	1089	59.8%
8/1	Right	U	3	N/A	F		1	7	-	85	1908	170	50.1%
9/1	Ahead	U	2	N/A	D		1	63	-	885	1980	1408	46.1%
9/2	Ahead	U	2	N/A	D		1	63	-	1002	1980	1408	51.6%
9/3	Ahead	U	2	N/A	D		1	63	-	1080	1980	1408	76.7%
9/4	Ahead	U	2	N/A	D		1	63	-	561	1980	1408	39.8%
11/1	M40 SB offslip Ahead	U	3	N/A	G		1	42	-	219	1965	939	23.3%
11/2	M40 SB offslip Ahead	U	3	N/A	G		1	42	-	519	1980	946	54.9%

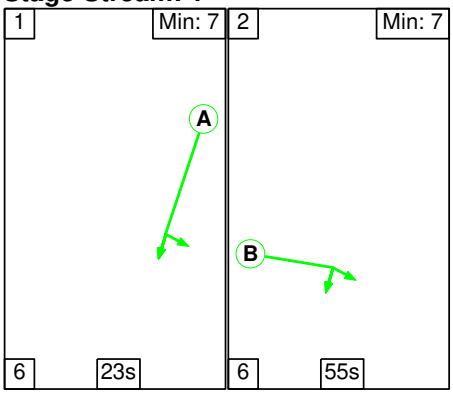
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Cherwell Hamburger Gyratory - Junction option C-2, C4	**-**	**-**	**0**	**0**	**0**	**70.5**	**305.3**	**0.0**	**375.8**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**0**	**0**	**0**	**70.5**	**305.3**	**0.0**	**375.8**	**-**	**-**	**-**	**-**
1/2+1/1	1729	1188	-	-	-	39.0	272.1	-	311.1	647.8	43.6	272.1	315.7
1/3+1/4	1122	1122	-	-	-	9.6	7.0	-	16.6	53.3	13.6	7.0	20.6
4/2+4/1	497	497	-	-	-	4.9	6.5	-	11.4	82.6	7.8	6.5	14.4
4/3	85	85	-	-	-	0.8	0.2	-	0.9	38.5	1.8	0.2	2.0
6/1	408	408	-	-	-	3.5	1.9	-	5.4	48.0	9.4	1.9	11.4
6/2+6/3	521	503	-	-	-	5.5	16.8	-	22.3	153.8	13.8	16.8	30.6
7/1	590	590	-	-	-	1.2	0.0	-	1.2	7.1	10.8	0.0	10.8
7/2	651	651	-	-	-	1.5	0.0	-	1.5	8.0	6.3	0.0	6.3
8/1	85	85	-	-	-	0.2	0.0	-	0.2	10.3	1.6	0.0	1.6
9/1	649	649	-	-	-	0.6	0.0	-	0.6	3.2	2.3	0.0	2.3
9/2	726	726	-	-	-	0.7	0.0	-	0.7	3.4	2.4	0.0	2.4
9/3	1080	1080	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/4	561	561	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	219	219	-	-	-	0.8	0.2	-	1.0	16.3	3.2	0.2	3.3
11/2	519	519	-	-	-	2.4	0.6	-	3.0	20.8	9.1	0.6	9.7

C1	Stream: 1 PRC for Signalled Lanes (%):	-61.8	Total Delay for Signalled Lanes (pcuHr):	330.33	Cycle Time (s): 90
C1	Stream: 2 PRC for Signalled Lanes (%):	-5.8	Total Delay for Signalled Lanes (pcuHr):	13.57	Cycle Time (s): 90
C1	Stream: 3 PRC for Signalled Lanes (%):	-15.1	Total Delay for Signalled Lanes (pcuHr):	31.94	Cycle Time (s): 90
	PRC Over All Lanes (%):	-61.8	Total Delay Over All Lanes(pcuHr):	375.84	

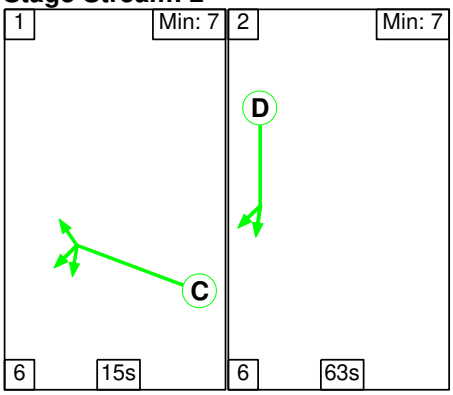
Scenario 6: '2031 Cherwell16 PM' (FG6: 'Cherwell9_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

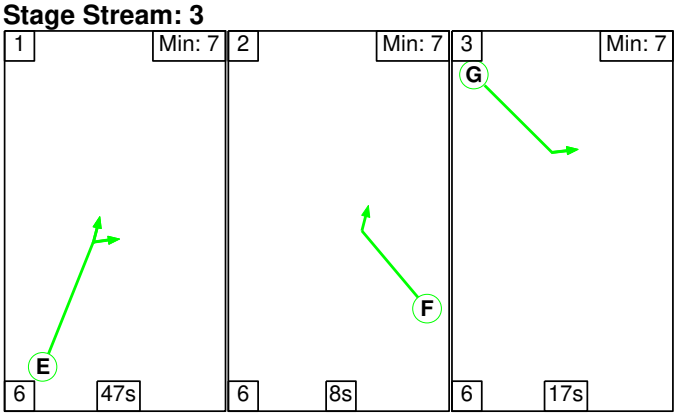
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	23	55
Change Point	0	29

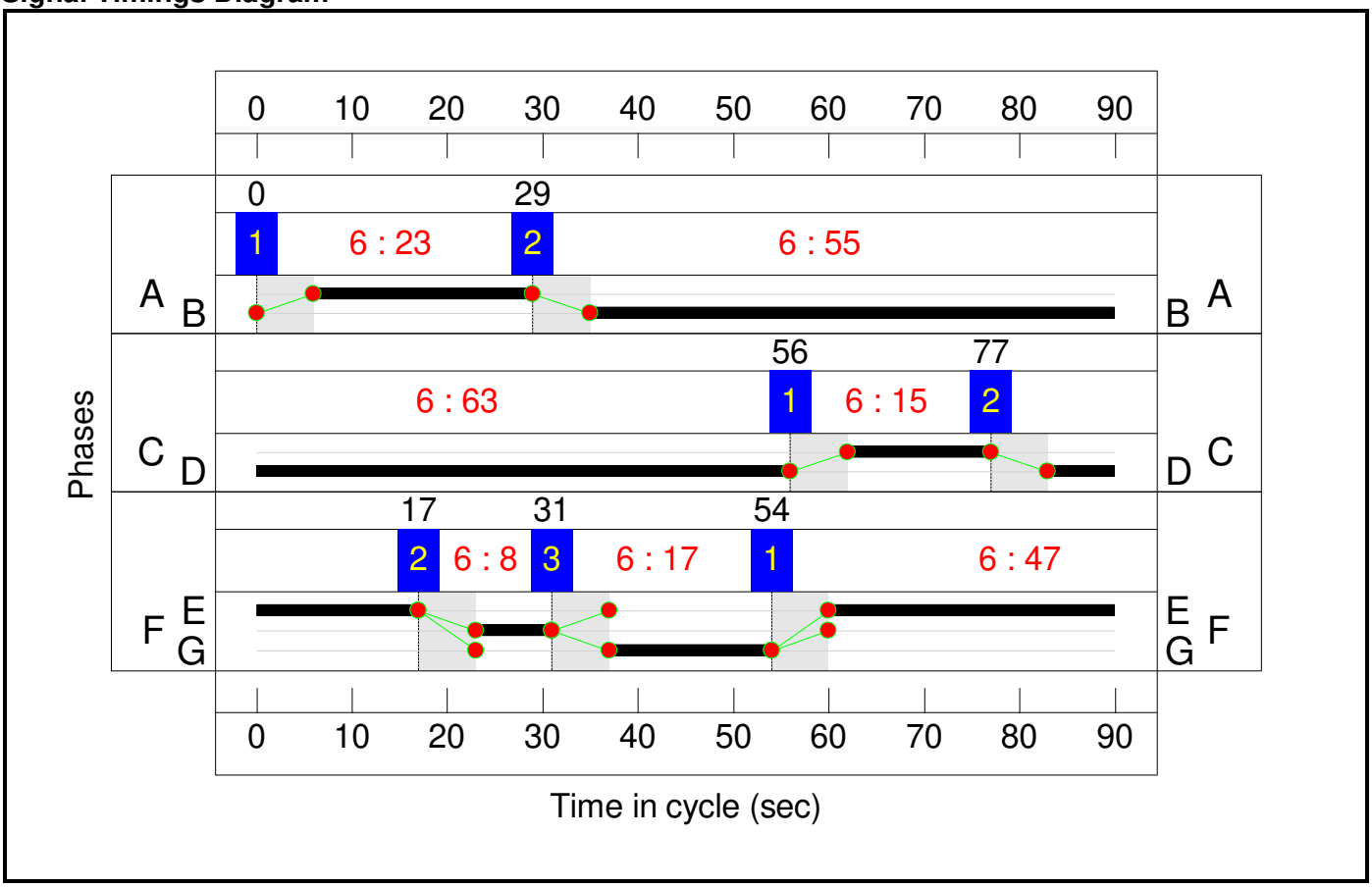
Stage Stream: 2

Stage	1	2
Duration	15	63
Change Point	56	77

Stage Stream: 3

Stage	1	2	3
Duration	47	8	17
Change Point	54	17	31

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: Cherwell Hamburger Gyratory - Junction option C-2, C4	-	-	**N/A**	-	-		-	-	-	-	-	-	**99.2%**
Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**99.2%**
1/2+1/1	A43 southbound Left Ahead	U	1	N/A	A		1	23	-	1046	1980:1980	528+528	98.9 : 99.2%
1/3+1/4	A43 southbound Ahead	U	1	N/A	A		1	23	-	676	1980:1980	528+528	64.0 : 64.0%
4/2+4/1	MSA Left Left2	U	2	N/A	C		1	15	-	471	1871:1957	217+318	88.0 : 88.0%
4/3	MSA Right	U	2	N/A	C		1	15	-	129	1980	352	36.6%
6/1	A43 northbound Ahead	U	3	N/A	E		1	47	-	620	1908	1018	60.9%
6/2+6/3	A43 northbound Ahead Right	U	3	N/A	E		1	47	-	809	1916:1886	89+959	77.2 : 77.2%
7/1	Ahead Right	U	1	N/A	B		1	55	-	716	1850	1151	62.2%
7/2	Right	U	1	N/A	B		1	55	-	633	1850	1151	55.0%
8/1	Right	U	3	N/A	F		1	8	-	129	1908	191	67.6%
9/1	Ahead	U	2	N/A	D		1	63	-	636	1980	1408	45.2%
9/2	Ahead	U	2	N/A	D		1	63	-	775	1980	1408	55.0%
9/3	Ahead	U	2	N/A	D		1	63	-	718	1980	1408	51.0%
9/4	Ahead	U	2	N/A	D		1	63	-	338	1980	1408	24.0%
11/1	M40 SB offslip Ahead	U	3	N/A	G		1	17	-	229	1965	393	58.3%
11/2	M40 SB offslip Ahead	U	3	N/A	G		1	17	-	380	1980	396	96.0%

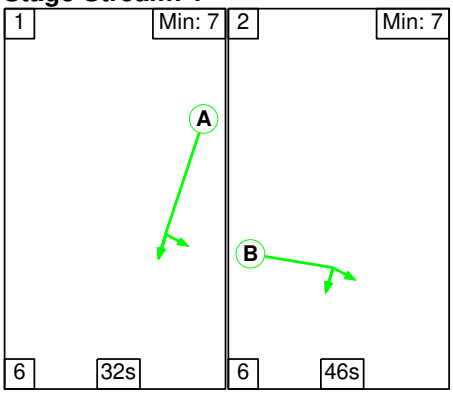
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Cherwell Hamburger Gyratory - Junction option C-2, C4	**-**	**-**	**0**	**0**	**0**	**37.1**	**28.0**	**0.0**	**65.1**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**0**	**0**	**0**	**37.1**	**28.0**	**0.0**	**65.1**	**-**	**-**	**-**	**-**
1/2+1/1	1046	1046	-	-	-	9.6	13.9	-	23.4	80.6	13.0	13.9	26.8
1/3+1/4	676	676	-	-	-	5.5	0.9	-	6.4	33.9	7.4	0.9	8.3
4/2+4/1	471	471	-	-	-	4.6	3.3	-	7.9	60.3	6.7	3.3	10.0
4/3	129	129	-	-	-	1.2	0.3	-	1.5	40.6	2.8	0.3	3.1
6/1	620	620	-	-	-	2.5	0.8	-	3.3	19.0	10.7	0.8	11.5
6/2+6/3	809	809	-	-	-	3.5	1.7	-	5.2	23.2	14.8	1.7	16.5
7/1	716	716	-	-	-	0.8	0.0	-	0.8	4.2	3.3	0.0	3.3
7/2	633	633	-	-	-	0.5	0.0	-	0.5	2.6	2.8	0.0	2.8
8/1	129	129	-	-	-	1.6	0.0	-	1.6	45.5	3.2	0.0	3.2
9/1	636	636	-	-	-	0.3	0.0	-	0.3	1.7	3.4	0.0	3.4
9/2	775	775	-	-	-	0.4	0.0	-	0.4	1.8	4.1	0.0	4.1
9/3	718	718	-	-	-	0.8	0.0	-	0.8	4.1	2.8	0.0	2.8
9/4	338	338	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	229	229	-	-	-	2.1	0.7	-	2.8	43.5	5.2	0.7	5.8
11/2	380	380	-	-	-	3.8	6.5	-	10.3	97.6	9.4	6.5	15.9

C1 Stream: 1 PRC for Signalled Lanes (%): -10.3 Total Delay for Signalled Lanes (pcuHr): 31.09 Cycle Time (s): 90
C1 Stream: 2 PRC for Signalled Lanes (%): 2.2 Total Delay for Signalled Lanes (pcuHr): 10.84 Cycle Time (s): 90
C1 Stream: 3 PRC for Signalled Lanes (%): -6.6 Total Delay for Signalled Lanes (pcuHr): 23.19 Cycle Time (s): 90
PRC Over All Lanes (%): -10.3 Total Delay Over All Lanes(pcuHr): 65.11

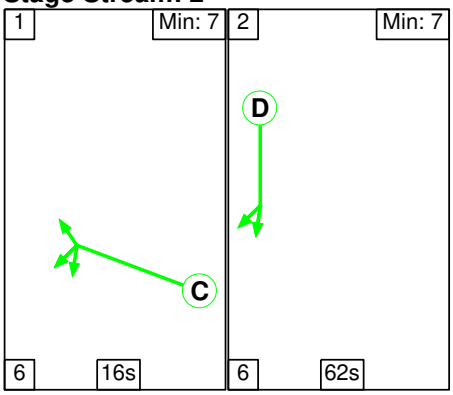
Scenario 7: '2031 Cherwell17 AM' (FG7: 'Cherwell10_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

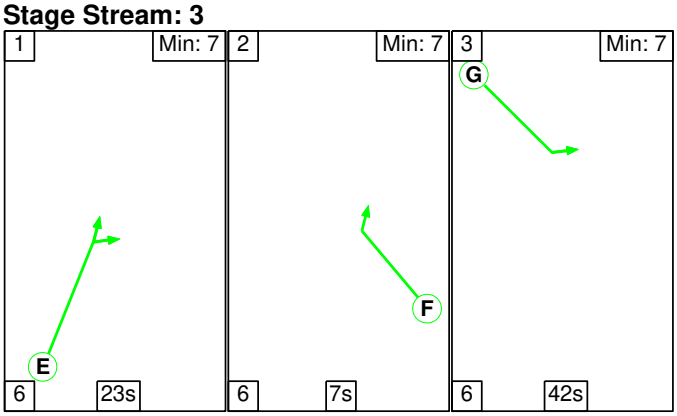
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	32	46
Change Point	0	38

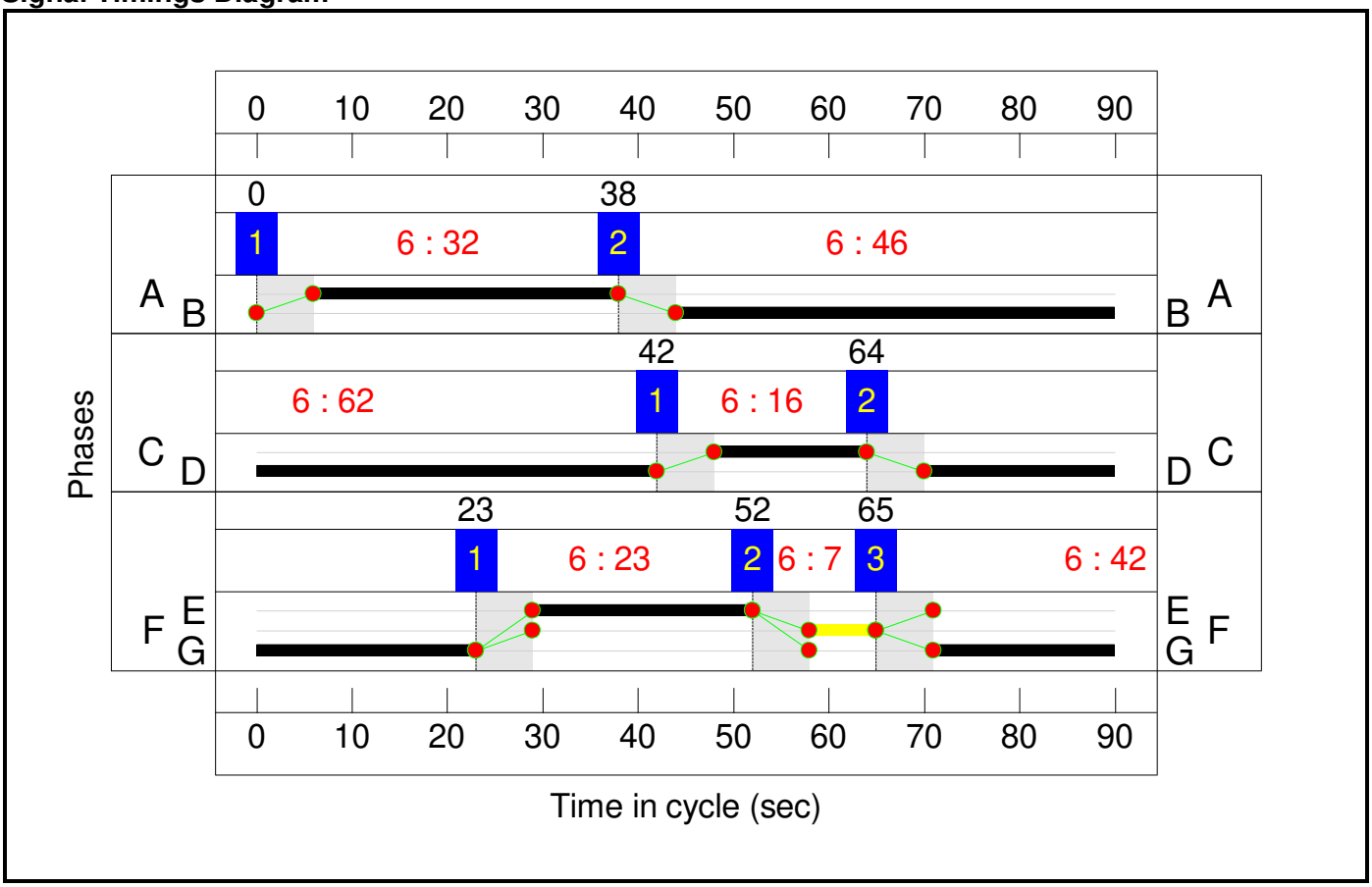
Stage Stream: 2

Stage	1	2
Duration	16	62
Change Point	42	64

Stage Stream: 3

Stage	1	2	3
Duration	23	7	42
Change Point	23	52	65

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: Cherwell Hamburger Gyratory - Junction option C-2, C4	-	-	**N/A**	-	-		-	-	-	-	-	-	**119.1%**
Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**119.1%**
1/2+1/1	A43 southbound Left Ahead	U	1	N/A	A		1	32	-	1729	1980:1980	726+726	119.0 : 119.1%
1/3+1/4	A43 southbound Ahead	U	1	N/A	A		1	32	-	1122	1980:1980	726+726	77.3 : 77.3%
4/2+4/1	MSA Left Left2	U	2	N/A	C		1	16	-	497	1871:1965	227+331	89.2 : 89.2%
4/3	MSA Right	U	2	N/A	C		1	16	-	85	1980	374	22.7%
6/1	A43 northbound Ahead	U	3	N/A	E		1	23	-	168	1908	509	33.0%
6/2+6/3	A43 northbound Ahead Right	U	3	N/A	E		1	23	-	479	1916:1886	456+454	52.6 : 52.6%
7/1	Ahead Right	U	1	N/A	B		1	46	-	458	1850	966	47.4%
7/2	Right	U	1	N/A	B		1	46	-	519	1850	966	53.7%
8/1	Right	U	3	N/A	F		1	7	-	85	1908	170	50.1%
9/1	Ahead	U	2	N/A	D		1	62	-	741	1980	1386	44.9%
9/2	Ahead	U	2	N/A	D		1	62	-	864	1980	1386	52.4%
9/3	Ahead	U	2	N/A	D		1	62	-	1080	1980	1386	77.9%
9/4	Ahead	U	2	N/A	D		1	62	-	561	1980	1386	40.5%
11/1	M40 SB offslip Ahead	U	3	N/A	G		1	42	-	219	1965	939	23.3%
11/2	M40 SB offslip Ahead	U	3	N/A	G		1	42	-	519	1980	946	54.9%

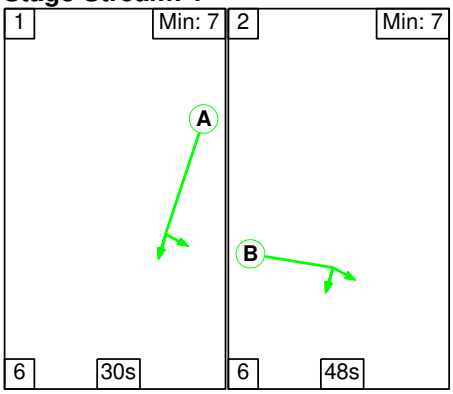
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Cherwell Hamburger Gyratory - Junction option C-2, C4	**-**	**-**	**0**	**0**	**0**	**51.6**	**148.6**	**0.0**	**200.2**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**0**	**0**	**0**	**51.6**	**148.6**	**0.0**	**200.2**	**-**	**-**	**-**	**-**
1/2+1/1	1729	1452	-	-	-	25.7	141.6	-	167.2	348.2	37.1	141.6	178.7
1/3+1/4	1122	1122	-	-	-	7.9	1.7	-	9.5	30.6	12.3	1.7	14.0
4/2+4/1	497	497	-	-	-	4.7	3.7	-	8.4	60.8	7.1	3.7	10.8
4/3	85	85	-	-	-	0.7	0.1	-	0.9	37.2	1.8	0.1	1.9
6/1	168	168	-	-	-	1.2	0.2	-	1.5	31.8	3.4	0.2	3.6
6/2+6/3	479	479	-	-	-	3.7	0.6	-	4.2	31.9	5.0	0.6	5.6
7/1	458	458	-	-	-	1.5	0.0	-	1.5	11.8	7.6	0.0	7.6
7/2	519	519	-	-	-	1.7	0.0	-	1.7	12.0	4.2	0.0	4.2
8/1	85	85	-	-	-	0.2	0.0	-	0.2	8.2	2.0	0.0	2.0
9/1	622	622	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	726	726	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/3	1080	1080	-	-	-	1.0	0.0	-	1.0	3.4	4.2	0.0	4.2
9/4	561	561	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	219	219	-	-	-	0.8	0.2	-	1.0	16.3	3.2	0.2	3.3
11/2	519	519	-	-	-	2.4	0.6	-	3.0	20.8	9.1	0.6	9.7

C1	Stream: 1 PRC for Signalled Lanes (%):	-32.4	Total Delay for Signalled Lanes (pcuHr):	180.02	Cycle Time (s): 90
C1	Stream: 2 PRC for Signalled Lanes (%):	0.9	Total Delay for Signalled Lanes (pcuHr):	10.29	Cycle Time (s): 90
C1	Stream: 3 PRC for Signalled Lanes (%):	64.0	Total Delay for Signalled Lanes (pcuHr):	9.91	Cycle Time (s): 90
	PRC Over All Lanes (%):	-32.4	Total Delay Over All Lanes(pcuHr):	200.22	

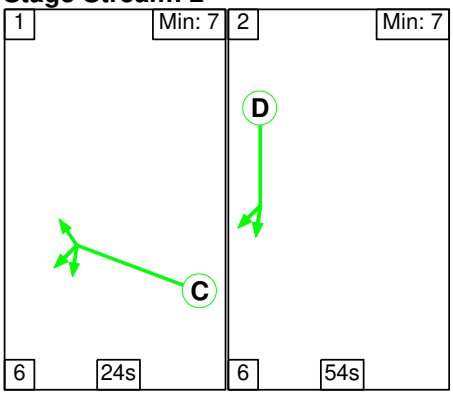
Scenario 8: '2031 Cherwell17 PM' (FG8: 'Cherwell10_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

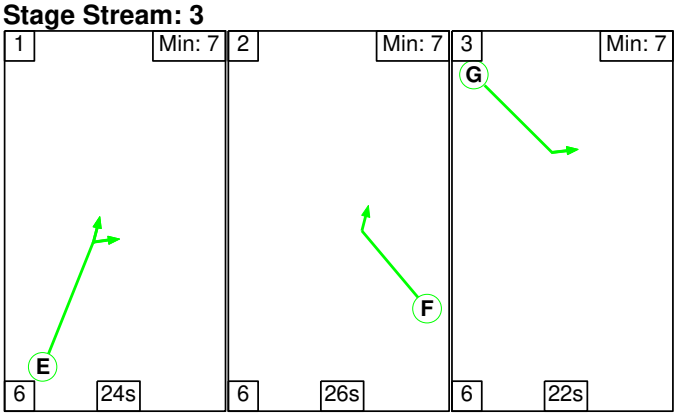
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	30	48
Change Point	0	36

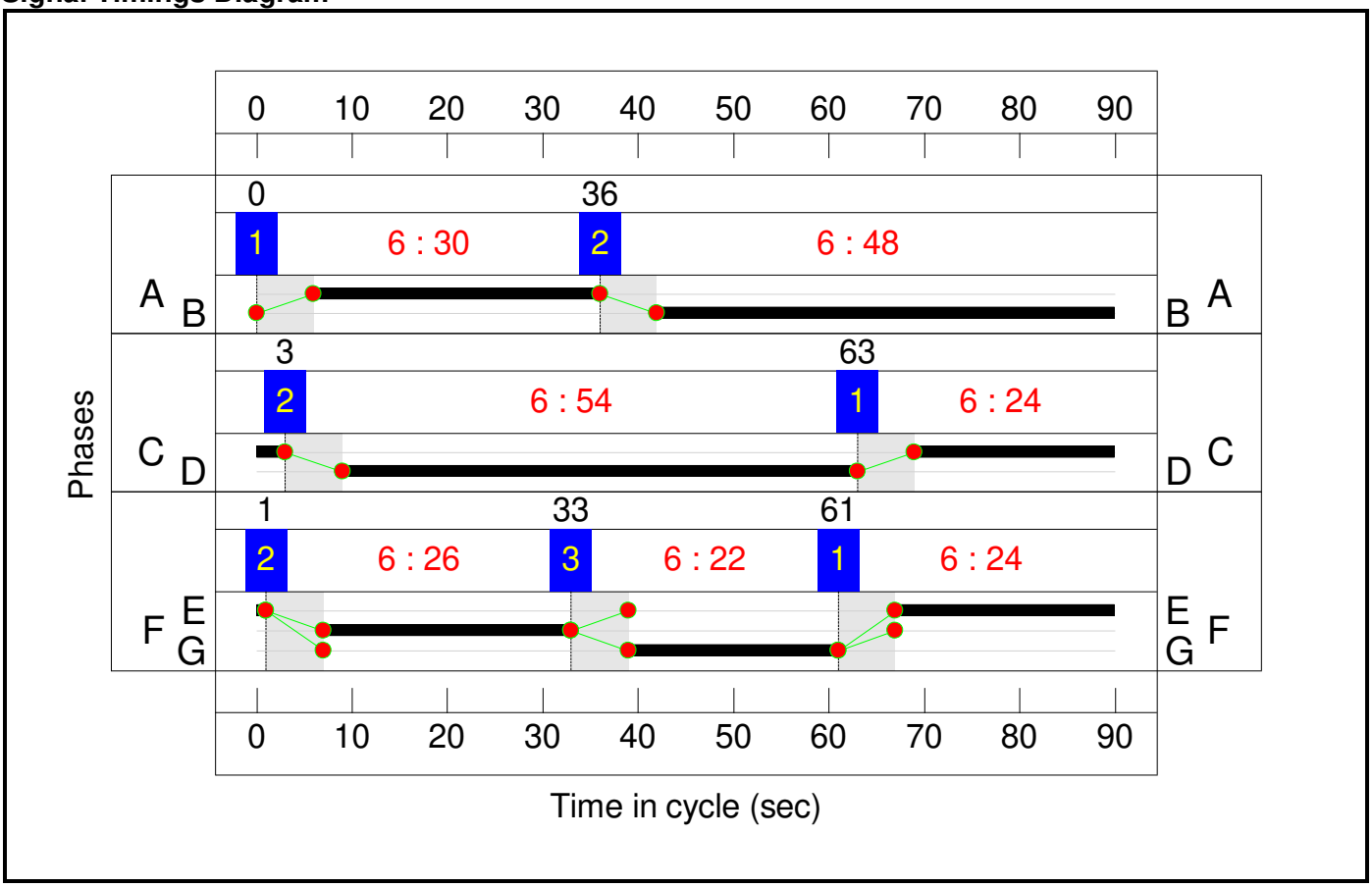
Stage Stream: 2

Stage	1	2
Duration	24	54
Change Point	63	3

Stage Stream: 3

Stage	1	2	3
Duration	24	26	22
Change Point	61	1	33

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: Cherwell Hamburger Gyratory - Junction option C-2, C4	-	-	**N/A**	-	-		-	-	-	-	-	-	**76.7%**
Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**76.7%**
1/2+1/1	A43 southbound Left Ahead	U	1	N/A	A		1	30	-	1046	1980:1980	682+682	76.7 : 76.7%
1/3+1/4	A43 southbound Ahead	U	1	N/A	A		1	30	-	676	1980:1980	682+682	49.6 : 49.6%
4/2+4/1	MSA Left Left2	U	2	N/A	C		1	24	-	471	1871:1964	337+423	62.0 : 62.0%
4/3	MSA Right	U	2	N/A	C		1	24	-	129	1980	550	23.5%
6/1	A43 northbound Ahead	U	3	N/A	E		1	24	-	332	1908	530	62.6%
6/2+6/3	A43 northbound Ahead Right	U	3	N/A	E		1	24	-	625	1916:1886	476+357	75.0 : 75.0%
7/1	Ahead Right	U	1	N/A	B		1	48	-	497	1850	1007	49.3%
7/2	Right	U	1	N/A	B		1	48	-	380	1850	1007	37.7%
8/1	Right	U	3	N/A	F		1	26	-	129	1908	572	22.5%
9/1	Ahead	U	2	N/A	D		1	54	-	416	1980	1210	34.4%
9/2	Ahead	U	2	N/A	D		1	54	-	523	1980	1210	43.2%
9/3	Ahead	U	2	N/A	D		1	54	-	718	1980	1210	59.3%
9/4	Ahead	U	2	N/A	D		1	54	-	338	1980	1210	27.9%
11/1	M40 SB offslip Ahead	U	3	N/A	G		1	22	-	229	1965	502	45.6%
11/2	M40 SB offslip Ahead	U	3	N/A	G		1	22	-	380	1980	506	75.1%

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: Cherwell Hamburger Gyratory - Junction option C-2, C4	**-**	**-**	**0**	**0**	**0**	**30.2**	**7.3**	**0.0**	**37.5**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**0**	**0**	**0**	**30.2**	**7.3**	**0.0**	**37.5**	**-**	**-**	**-**	**-**
1/2+1/1	1046	1046	-	-	-	7.6	1.6	-	9.3	31.9	11.6	1.6	13.3
1/3+1/4	676	676	-	-	-	4.4	0.5	-	4.9	25.9	6.7	0.5	7.2
4/2+4/1	471	471	-	-	-	3.5	0.8	-	4.3	33.0	5.5	0.8	6.3
4/3	129	129	-	-	-	0.9	0.2	-	1.1	29.4	2.5	0.2	2.6
6/1	332	332	-	-	-	2.6	0.8	-	3.5	37.4	7.2	0.8	8.0
6/2+6/3	625	625	-	-	-	4.9	1.5	-	6.4	36.7	7.8	1.5	9.3
7/1	497	497	-	-	-	0.2	0.0	-	0.2	1.3	2.1	0.0	2.1
7/2	380	380	-	-	-	0.1	0.0	-	0.1	0.5	2.2	0.0	2.2
8/1	129	129	-	-	-	0.7	0.0	-	0.7	20.9	3.2	0.0	3.2
9/1	416	416	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	523	523	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/3	718	718	-	-	-	0.2	0.0	-	0.2	1.0	0.5	0.0	0.5
9/4	338	338	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	229	229	-	-	-	1.8	0.4	-	2.2	34.8	4.8	0.4	5.2
11/2	380	380	-	-	-	3.3	1.5	-	4.7	44.8	8.7	1.5	10.1

C1	Stream: 1 PRC for Signalled Lanes (%):	17.4	Total Delay for Signalled Lanes (pcuHr):	14.37	Cycle Time (s): 90
C1	Stream: 2 PRC for Signalled Lanes (%):	45.1	Total Delay for Signalled Lanes (pcuHr):	5.56	Cycle Time (s): 90
C1	Stream: 3 PRC for Signalled Lanes (%):	19.8	Total Delay for Signalled Lanes (pcuHr):	17.53	Cycle Time (s): 90
	PRC Over All Lanes (%):	17.4	Total Delay Over All Lanes(pcuHr):	37.46	

APPENDIX 17

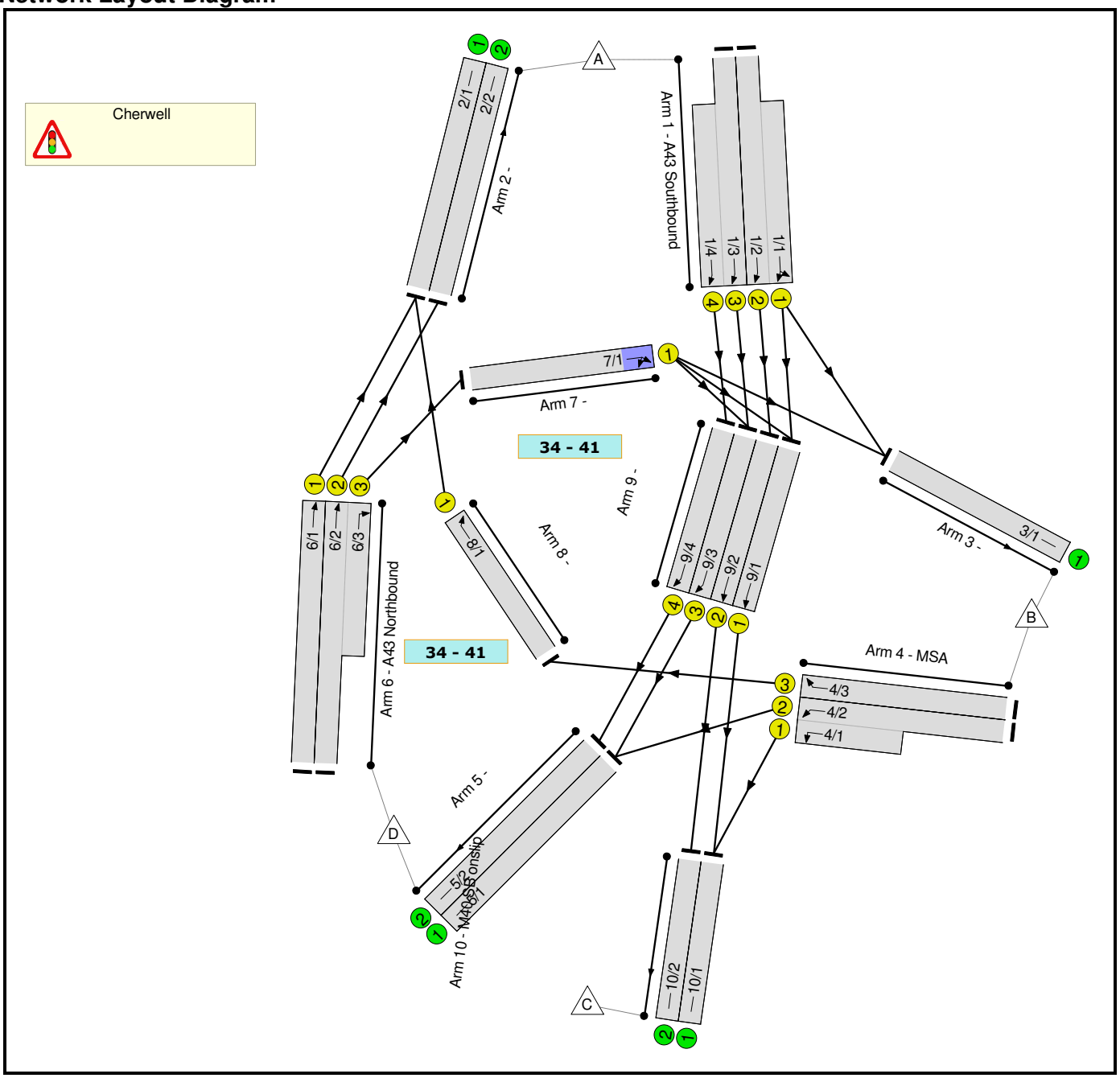
Cherwell Roundabout junction option C-3 – LinSig results

Full Input Data And Results

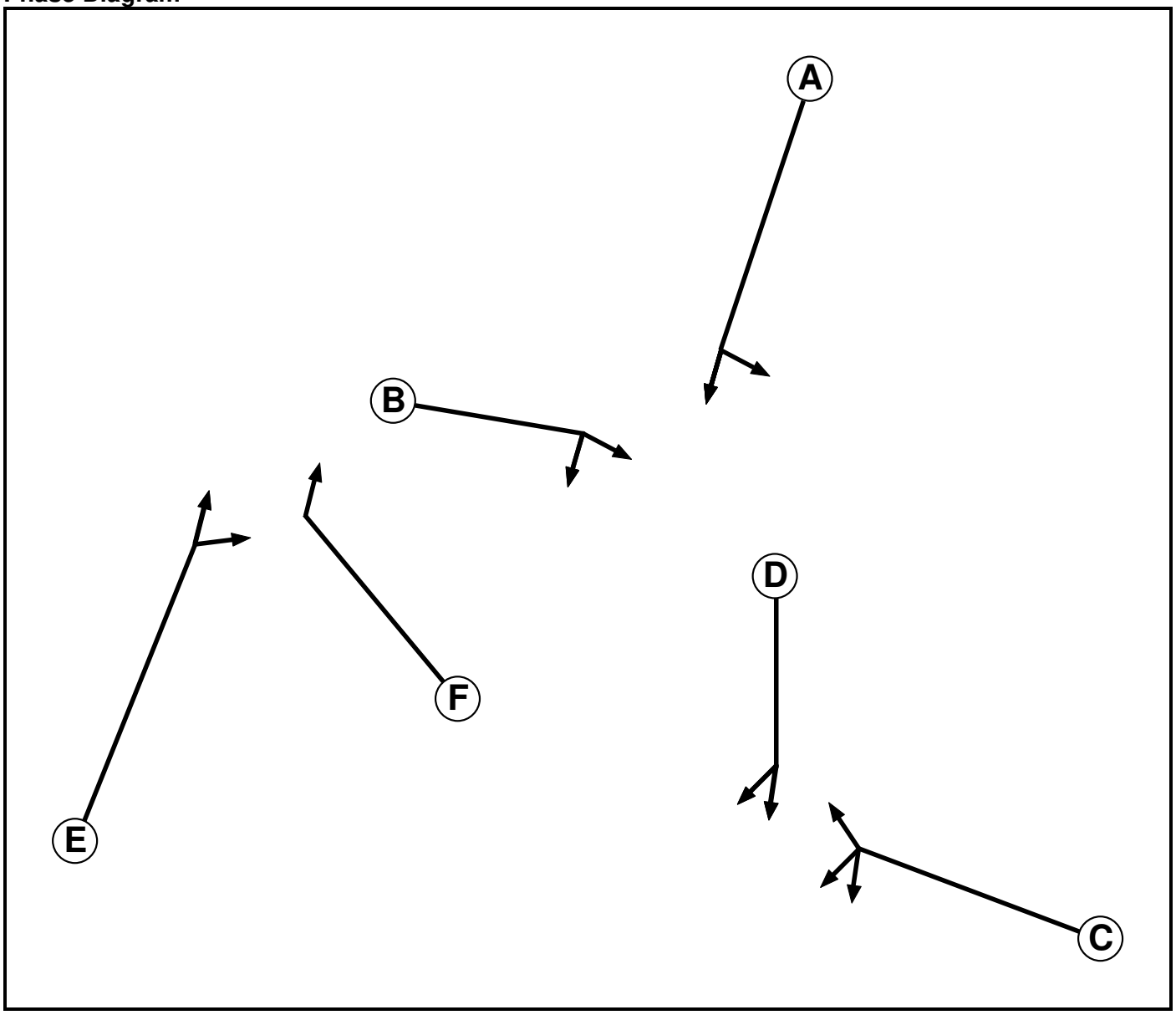
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Cherwell hamburger gyratory - Junction option C-3**
Location:	
Additional detail:	
File name:	2031_DS_M40J10_Cherwell - Junction option C3.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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
E	Traffic	3		7	7
F	Traffic	3		7	7

Phase Intergreens Matrix

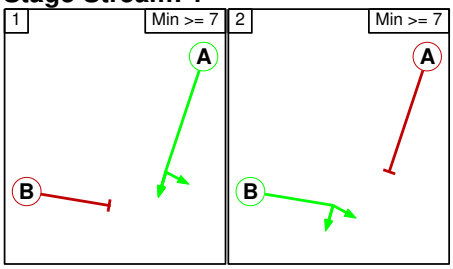
		Starting Phase					
		A	B	C	D	E	F
Terminating Phase	A		6	-	-	-	-
	B	6		-	-	-	-
	C	-	-		6	-	-
	D	-	-	6		-	-
	E	-	-	-	-		6
	F	-	-	-	-	6	

Phases in Stage

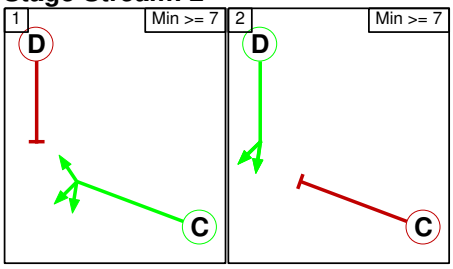
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F

Stage Diagram

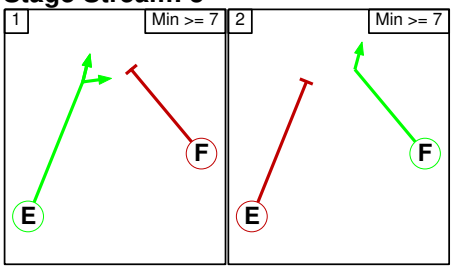
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Prohibited Stage Change

Stage Stream: 1

From Stage \ To Stage		1	2
	1		6
	2	6	

Stage Stream: 2

From Stage \ To Stage		1	2
	1		6
	2	6	

Stage Stream: 3

From Stage \ To Stage		1	2
	1		6
	2	6	

Lane Input Data

Junction: Cherwell

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 (A43 Southbound)	U	A	2	3	20.9	Geom	-	3.65	0.00	Y	Arm 3 Left	Inf
											Arm 9 Ahead	Inf
1/2 (A43 Southbound)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 9 Ahead	Inf
1/3 (A43 Southbound)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 9 Ahead	Inf
1/4 (A43 Southbound)	U	A	2	3	20.9	Geom	-	3.65	0.00	Y	Arm 9 Ahead	Inf
2/1	U		2	3	60.0	Inf	-	-	-	-	-	-
2/2	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1 (MSA)	U	C	2	3	7.0	Geom	-	3.50	0.00	Y	Arm 10 Left	Inf
4/2 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Left	30.00
4/3 (MSA)	U	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 8 Right	Inf
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (A43 Northbound)	U	E	2	3	62.6	Geom	-	3.65	0.00	Y	Arm 2 Ahead	40.00
6/2 (A43 Northbound)	U	E	2	3	62.6	Geom	-	3.65	0.00	Y	Arm 2 Ahead	45.00
6/3 (A43 Northbound)	U	E	2	3	10.1	Geom	-	3.65	0.00	Y	Arm 7 Right	30.00
7/1	U	B	2	3	6.1	User	1850	-	-	-	-	-
8/1	U	F	2	3	10.4	Geom	-	3.65	0.00	Y	Arm 2 Right	40.00
9/1	U	D	2	3	9.0	Geom	-	3.65	0.00	Y	Arm 10 Ahead	Inf
9/2	U	D	2	3	9.0	Geom	-	3.65	0.00	Y	Arm 10 Ahead	Inf
9/3	U	D	2	3	9.0	Geom	-	3.65	0.00	Y	Arm 5 Ahead	Inf
9/4	U	D	2	3	8.7	Geom	-	3.65	0.00	Y	Arm 5 Ahead	Inf
10/1 (M40 SB onslip)	U		2	3	60.0	Inf	-	-	-	-	-	-

10/2 (M40 SB onslip)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Cherwell3_AM'	07:45	08:45	01:00	
2: 'Cherwell3_PM'	16:30	17:30	01:00	
3: 'Cherwell4_AM'	07:45	08:45	01:00	
4: 'Cherwell4_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Cherwell4+5 AM' (FG1: 'Cherwell3_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	343	1605	1641	3589
	B	85	0	295	202	582
	C	0	0	0	0	0
	D	1577	239	40	0	1856
	Tot.	1662	582	1940	1843	6027

Traffic Lane Flows

Lane	Scenario 1: 2031 Cherwell4+5 AM
Junction: Cherwell	
1/1 (short)	974
1/2 (with short)	1948(In) 974(Out)
1/3 (with short)	1641(In) 820(Out)
1/4 (short)	821
2/1	891
2/2	771
3/1	582
4/1 (short)	295
4/2 (with short)	497(In) 202(Out)
4/3	85
5/1	1022
5/2	821
6/1	806
6/2 (with short)	1050(In) 771(Out)
6/3 (short)	279
7/1	279
8/1	85
9/1	671
9/2	974
9/3	820
9/4	821
10/1	966
10/2	974

Lane Saturation Flows

Junction: Cherwell

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 (A43 Southbound)	3.65	0.00	Y	Arm 3 Left	Inf	35.2 %	1980	1980
				Arm 9 Ahead	Inf	64.8 %		
1/2 (A43 Southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/3 (A43 Southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/4 (A43 Southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
4/1 (MSA)	3.50	0.00	Y	Arm 10 Left	Inf	100.0 %	1965	1965
4/2 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/3 (MSA)	3.65	0.00	Y	Arm 8 Right	Inf	100.0 %	1980	1980
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (A43 Northbound)	3.65	0.00	Y	Arm 2 Ahead	40.00	100.0 %	1908	1908
6/2 (A43 Northbound)	3.65	0.00	Y	Arm 2 Ahead	45.00	100.0 %	1916	1916
6/3 (A43 Northbound)	3.65	0.00	Y	Arm 7 Right	30.00	100.0 %	1886	1886
7/1	This lane uses a directly entered Saturation Flow						1850	1850
8/1	3.65	0.00	Y	Arm 2 Right	40.00	100.0 %	1908	1908
9/1	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/2	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/3	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
9/4	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
10/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2031 Cherwell4+5 PM' (FG2: 'Cherwell3_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	336	939	1056	2331
	B	129	0	258	213	600
	C	0	0	0	0	0
	D	2346	268	67	0	2681
	Tot.	2475	604	1264	1269	5612

Traffic Lane Flows

Lane	Scenario 2: 2031 Cherwell4+5 PM
Junction: Cherwell	
1/1 (short)	632
1/2 (with short)	1275(In) 643(Out)
1/3 (with short)	1056(In) 528(Out)
1/4 (short)	528
2/1	1373
2/2	1102
3/1	604
4/1 (short)	258
4/2 (with short)	471(In) 213(Out)
4/3	129
5/1	741
5/2	528
6/1	1244
6/2 (with short)	1437(In) 1102(Out)
6/3 (short)	335
7/1	335
8/1	129
9/1	363
9/2	643
9/3	528
9/4	528
10/1	621
10/2	643

Lane Saturation Flows

Junction: Cherwell

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 (A43 Southbound)	3.65	0.00	Y	Arm 3 Left	Inf	53.2 %	1980	1980
				Arm 9 Ahead	Inf	46.8 %		
1/2 (A43 Southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/3 (A43 Southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/4 (A43 Southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
4/1 (MSA)	3.50	0.00	Y	Arm 10 Left	Inf	100.0 %	1965	1965
4/2 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/3 (MSA)	3.65	0.00	Y	Arm 8 Right	Inf	100.0 %	1980	1980
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (A43 Northbound)	3.65	0.00	Y	Arm 2 Ahead	40.00	100.0 %	1908	1908
6/2 (A43 Northbound)	3.65	0.00	Y	Arm 2 Ahead	45.00	100.0 %	1916	1916
6/3 (A43 Northbound)	3.65	0.00	Y	Arm 7 Right	30.00	100.0 %	1886	1886
7/1	This lane uses a directly entered Saturation Flow						1850	1850
8/1	3.65	0.00	Y	Arm 2 Right	40.00	100.0 %	1908	1908
9/1	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/2	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/3	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
9/4	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
10/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2031 Cherwell6,7+8 AM' (FG3: 'Cherwell4_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	343	1605	1641	3589
	B	85	0	295	202	582
	C	0	0	0	0	0
	D	1577	239	0	0	1816
	Tot.	1662	582	1900	1843	5987

Traffic Lane Flows

Lane	Scenario 3: 2031 Cherwell6,7+8 AM
Junction: Cherwell	
1/1 (short)	974
1/2 (with short)	1948(In) 974(Out)
1/3 (with short)	1641(In) 820(Out)
1/4 (short)	821
2/1	905
2/2	757
3/1	582
4/1 (short)	295
4/2 (with short)	497(In) 202(Out)
4/3	85
5/1	1022
5/2	821
6/1	820
6/2 (with short)	996(In) 757(Out)
6/3 (short)	239
7/1	239
8/1	85
9/1	631
9/2	974
9/3	820
9/4	821
10/1	926
10/2	974

Lane Saturation Flows

Junction: Cherwell

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 (A43 Southbound)	3.65	0.00	Y	Arm 3 Left	Inf	35.2 %	1980	1980
				Arm 9 Ahead	Inf	64.8 %		
1/2 (A43 Southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/3 (A43 Southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/4 (A43 Southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
4/1 (MSA)	3.50	0.00	Y	Arm 10 Left	Inf	100.0 %	1965	1965
4/2 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/3 (MSA)	3.65	0.00	Y	Arm 8 Right	Inf	100.0 %	1980	1980
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (A43 Northbound)	3.65	0.00	Y	Arm 2 Ahead	40.00	100.0 %	1908	1908
6/2 (A43 Northbound)	3.65	0.00	Y	Arm 2 Ahead	45.00	100.0 %	1916	1916
6/3 (A43 Northbound)	3.65	0.00	Y	Arm 7 Right	30.00	100.0 %	1886	1886
7/1	This lane uses a directly entered Saturation Flow						1850	1850
8/1	3.65	0.00	Y	Arm 2 Right	40.00	100.0 %	1908	1908
9/1	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/2	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/3	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
9/4	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
10/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2031 Cherwell6,7+8 PM' (FG4: 'Cherwell4_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	336	939	1056	2331
	B	129	0	258	213	600
	C	0	0	0	0	0
	D	2346	268	0	0	2614
	Tot.	2475	604	1197	1269	5545

Traffic Lane Flows

Lane	Scenario 4: 2031 Cherwell6,7+8 PM
Junction: Cherwell	
1/1 (short)	638
1/2 (with short)	1275(In) 637(Out)
1/3 (with short)	1056(In) 528(Out)
1/4 (short)	528
2/1	1370
2/2	1105
3/1	604
4/1 (short)	258
4/2 (with short)	471(In) 213(Out)
4/3	129
5/1	741
5/2	528
6/1	1241
6/2 (with short)	1373(In) 1105(Out)
6/3 (short)	268
7/1	268
8/1	129
9/1	302
9/2	637
9/3	528
9/4	528
10/1	560
10/2	637

Lane Saturation Flows

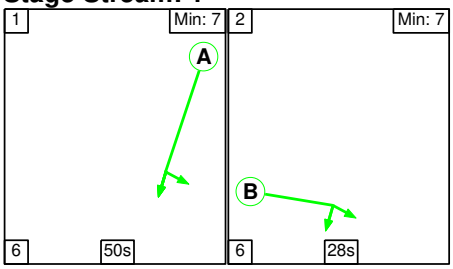
Junction: Cherwell

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 (A43 Southbound)	3.65	0.00	Y	Arm 3 Left	Inf	52.7 %	1980	1980
				Arm 9 Ahead	Inf	47.3 %		
1/2 (A43 Southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/3 (A43 Southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/4 (A43 Southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
4/1 (MSA)	3.50	0.00	Y	Arm 10 Left	Inf	100.0 %	1965	1965
4/2 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/3 (MSA)	3.65	0.00	Y	Arm 8 Right	Inf	100.0 %	1980	1980
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (A43 Northbound)	3.65	0.00	Y	Arm 2 Ahead	40.00	100.0 %	1908	1908
6/2 (A43 Northbound)	3.65	0.00	Y	Arm 2 Ahead	45.00	100.0 %	1916	1916
6/3 (A43 Northbound)	3.65	0.00	Y	Arm 7 Right	30.00	100.0 %	1886	1886
7/1	This lane uses a directly entered Saturation Flow						1850	1850
8/1	3.65	0.00	Y	Arm 2 Right	40.00	100.0 %	1908	1908
9/1	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/2	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/3	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
9/4	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
10/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf

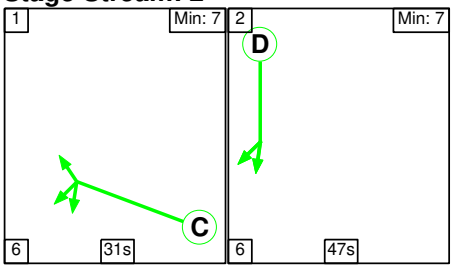
Scenario 1: '2031 Cherwell4+5 AM' (FG1: 'Cherwell3_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

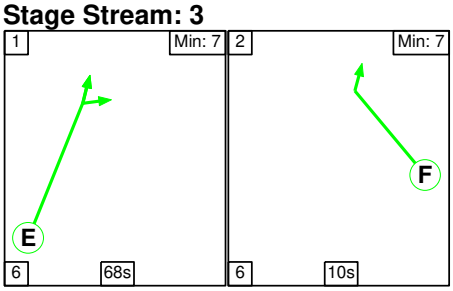
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	50	28
Change Point	0	56

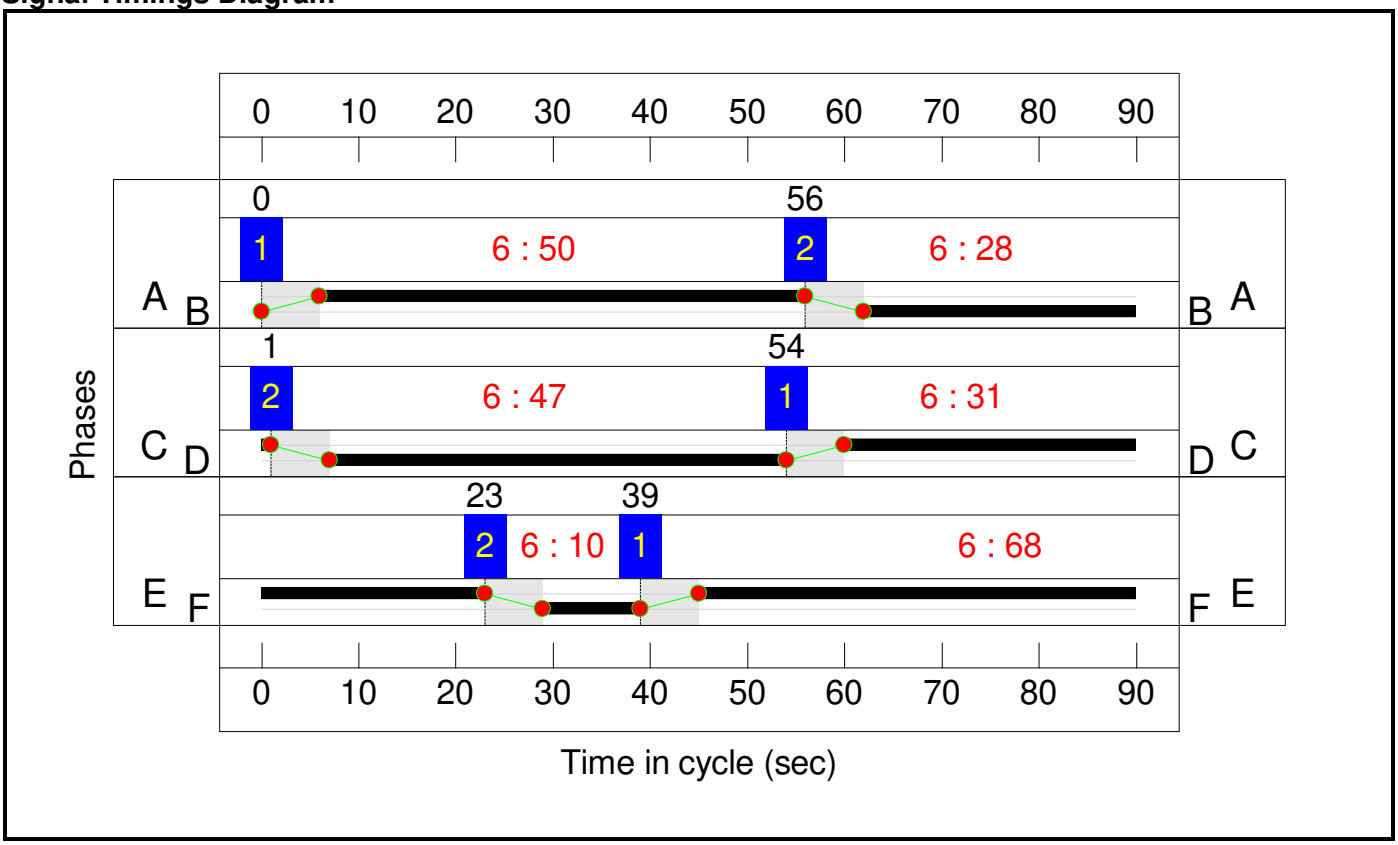
Stage Stream: 2

Stage	1	2
Duration	31	47
Change Point	54	1

Stage Stream: 3

Stage	1	2
Duration	68	10
Change Point	39	23

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: Cherwell hamburger gyratory - Junction option C-3	-	-	**N/A**	-	-		-	-	-	-	-	-	**98.5%**
Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**98.5%**
1/2+1/1	A43 Southbound Left Ahead	U	1	N/A	A		1	50	-	1948	1980:1980	989+989	98.5 : 98.5%
1/3+1/4	A43 Southbound Ahead	U	1	N/A	A		1	50	-	1641	1980:1980	988+989	83.0 : 83.0%
4/2+4/1	MSA Left Left2	U	2	N/A	C		1	31	-	497	1871:1965	357+521	56.6 : 56.6%
4/3	MSA Right	U	2	N/A	C		1	31	-	85	1980	704	12.1%
6/1	A43 Northbound Ahead	U	3	N/A	E		1	68	-	806	1908	1463	55.1%
6/2+6/3	A43 Northbound Ahead Right	U	3	N/A	E		1	68	-	1050	1916:1886	1181+427	65.3 : 65.3%
7/1	Ahead Right	U	1	N/A	B		1	28	-	279	1850	596	46.8%
8/1	Right	U	3	N/A	F		1	10	-	85	1908	233	36.4%
9/1	Ahead	U	2	N/A	D		1	47	-	671	1980	1056	63.5%
9/2	Ahead	U	2	N/A	D		1	47	-	974	1980	1056	92.2%
9/3	Ahead	U	2	N/A	D		1	47	-	820	1980	1056	77.7%
9/4	Ahead	U	2	N/A	D		1	47	-	821	1980	1056	77.7%

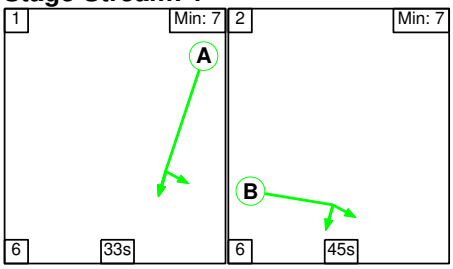
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Cherwell hamburger gyratory - Junction option C-3	**-**	**-**	**0**	**0**	**0**	**26.6**	**20.6**	**0.0**	**47.2**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**0**	**0**	**0**	**26.6**	**20.6**	**0.0**	**47.2**	**-**	**-**	**-**	**-**
1/2+1/1	1948	1948	-	-	-	9.0	15.9	-	24.9	46.1	20.6	15.9	36.5
1/3+1/4	1641	1641	-	-	-	6.6	2.4	-	9.0	19.7	15.1	2.4	17.5
4/2+4/1	497	497	-	-	-	3.0	0.6	-	3.6	26.3	5.6	0.6	6.2
4/3	85	85	-	-	-	0.5	0.1	-	0.5	22.5	1.4	0.1	1.5
6/1	806	806	-	-	-	1.0	0.6	-	1.6	7.0	8.1	0.6	8.7
6/2+6/3	1050	1050	-	-	-	1.1	0.9	-	2.0	7.0	7.5	0.9	8.4
7/1	279	279	-	-	-	1.7	0.0	-	1.7	21.5	5.5	0.0	5.5
8/1	85	85	-	-	-	1.2	0.0	-	1.2	49.4	2.1	0.0	2.1
9/1	671	671	-	-	-	0.8	0.0	-	0.8	4.0	2.8	0.0	2.8
9/2	974	974	-	-	-	0.7	0.0	-	0.7	2.7	1.6	0.0	1.6
9/3	820	820	-	-	-	0.6	0.0	-	0.6	2.7	1.4	0.0	1.4
9/4	821	821	-	-	-	0.6	0.0	-	0.6	2.7	1.4	0.0	1.4

C1	Stream: 1 PRC for Signalled Lanes (%):	-9.5	Total Delay for Signalled Lanes (pcuHr):	35.58	Cycle Time (s): 90
C1	Stream: 2 PRC for Signalled Lanes (%):	-2.5	Total Delay for Signalled Lanes (pcuHr):	6.87	Cycle Time (s): 90
C1	Stream: 3 PRC for Signalled Lanes (%):	37.9	Total Delay for Signalled Lanes (pcuHr):	4.77	Cycle Time (s): 90
	PRC Over All Lanes (%):	-9.5	Total Delay Over All Lanes(pcuHr):	47.22	

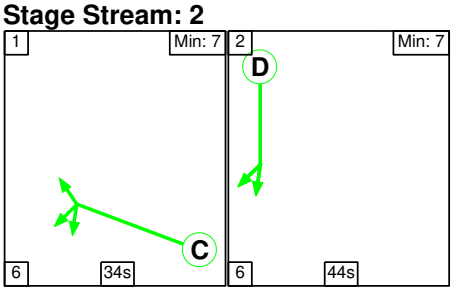
Scenario 2: '2031 Cherwell4+5 PM' (FG2: 'Cherwell3_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

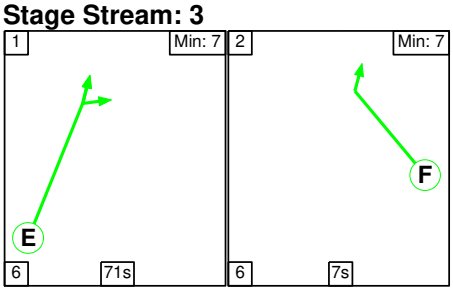
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	33	45
Change Point	0	39

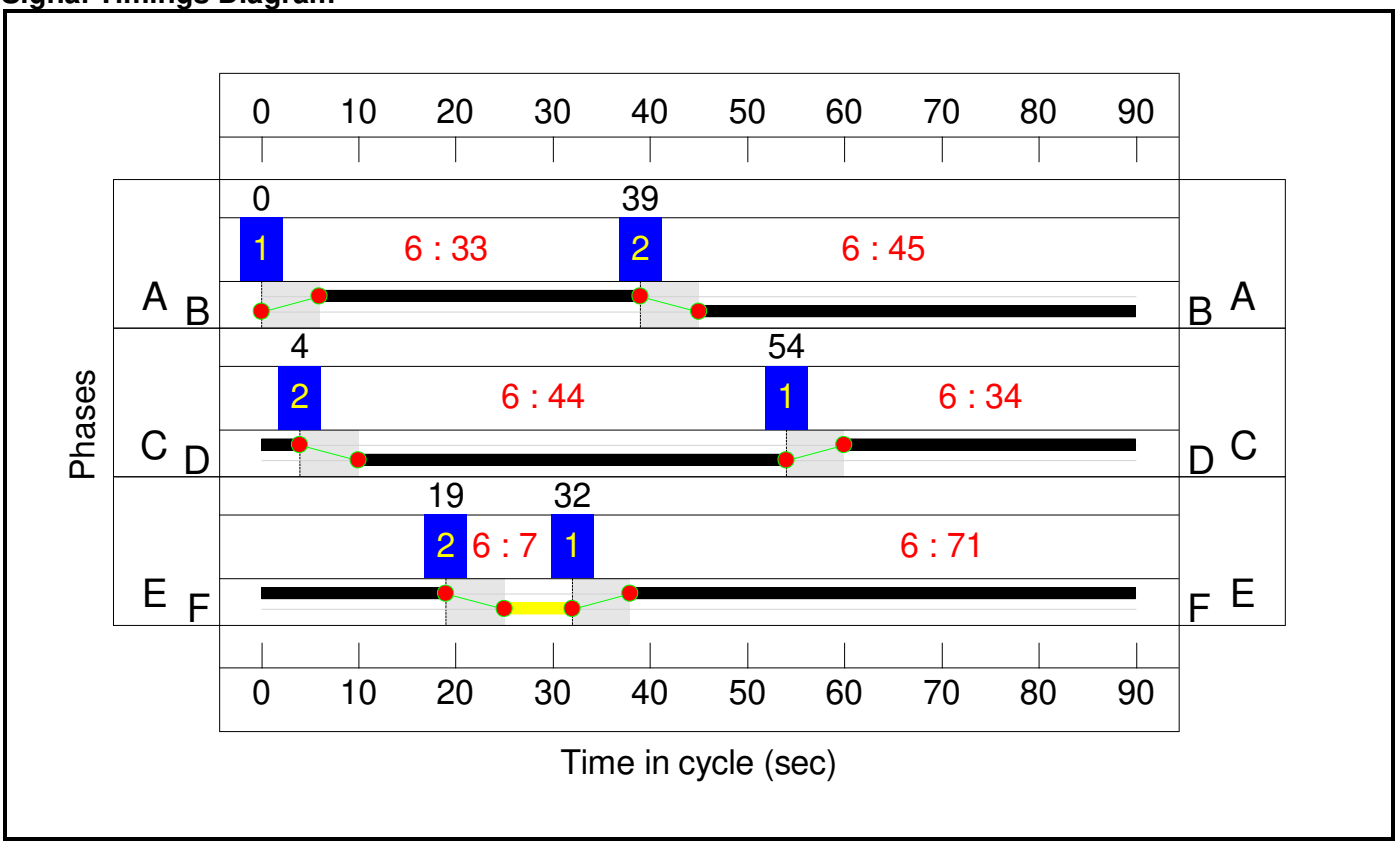
Stage Stream: 2

Stage	1	2
Duration	34	44
Change Point	54	4

Stage Stream: 3

Stage	1	2
Duration	71	7
Change Point	32	19

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: Cherwell hamburger gyratory - Junction option C-3	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.1%**
Cherwell	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.1%**
1/2+1/1	A43 Southbound Left Ahead	U	1	N/A	A		1	33	-	1275	1980:1980	748+748	86.0 : 84.5%
1/3+1/4	A43 Southbound Ahead	U	1	N/A	A		1	33	-	1056	1980:1980	748+748	70.6 : 70.6%
4/2+4/1	MSA Left Left2	U	2	N/A	C		1	34	-	471	1871:1965	444+537	48.0 : 48.0%
4/3	MSA Right	U	2	N/A	C		1	34	-	129	1980	770	16.8%
6/1	A43 Northbound Ahead	U	3	N/A	E		1	71	-	1244	1908	1526	81.5%
6/2+6/3	A43 Northbound Ahead Right	U	3	N/A	E		1	71	-	1437	1916:1886	1265+384	87.1 : 87.1%
7/1	Ahead Right	U	1	N/A	B		1	45	-	335	1850	946	35.4%
8/1	Right	U	3	N/A	F		1	7	-	129	1908	170	76.1%
9/1	Ahead	U	2	N/A	D		1	44	-	363	1980	990	36.7%
9/2	Ahead	U	2	N/A	D		1	44	-	643	1980	990	64.9%
9/3	Ahead	U	2	N/A	D		1	44	-	528	1980	990	53.3%
9/4	Ahead	U	2	N/A	D		1	44	-	528	1980	990	53.3%

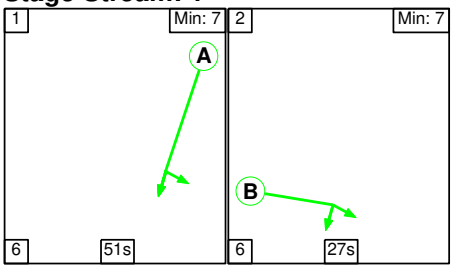
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Cherwell hamburger gyratory - Junction option C-3	**-**	**-**	**0**	**0**	**0**	**25.6**	**10.0**	**0.0**	**35.6**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**0**	**0**	**0**	**25.6**	**10.0**	**0.0**	**35.6**	**-**	**-**	**-**	**-**
1/2+1/1	1275	1275	-	-	-	9.1	2.8	-	11.9	33.6	14.6	2.8	17.5
1/3+1/4	1056	1056	-	-	-	7.0	1.2	-	8.2	27.8	11.1	1.2	12.3
4/2+4/1	471	471	-	-	-	2.5	0.5	-	3.0	22.7	4.5	0.5	5.0
4/3	129	129	-	-	-	0.6	0.1	-	0.7	20.8	2.1	0.1	2.2
6/1	1244	1244	-	-	-	1.8	2.2	-	4.0	11.5	17.6	2.2	19.8
6/2+6/3	1437	1437	-	-	-	1.6	3.3	-	4.9	12.2	16.9	3.3	20.2
7/1	335	335	-	-	-	1.0	0.0	-	1.0	10.9	4.9	0.0	4.9
8/1	129	129	-	-	-	1.6	0.0	-	1.6	45.1	3.2	0.0	3.2
9/1	363	363	-	-	-	0.4	0.0	-	0.4	3.7	1.8	0.0	1.8
9/2	643	643	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/3	528	528	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/4	528	528	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1	Stream: 1 PRC for Signalled Lanes (%):	4.7	Total Delay for Signalled Lanes (pcuHr):	21.10	Cycle Time (s): 90
C1	Stream: 2 PRC for Signalled Lanes (%):	38.6	Total Delay for Signalled Lanes (pcuHr):	4.09	Cycle Time (s): 90
C1	Stream: 3 PRC for Signalled Lanes (%):	3.3	Total Delay for Signalled Lanes (pcuHr):	10.44	Cycle Time (s): 90
	PRC Over All Lanes (%):	3.3	Total Delay Over All Lanes(pcuHr):	35.63	

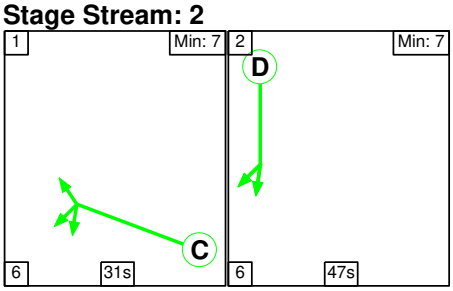
Scenario 3: '2031 Cherwell6,7+8 AM' (FG3: 'Cherwell4_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

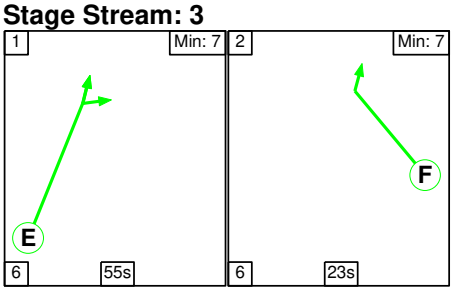
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	51	27
Change Point	0	57

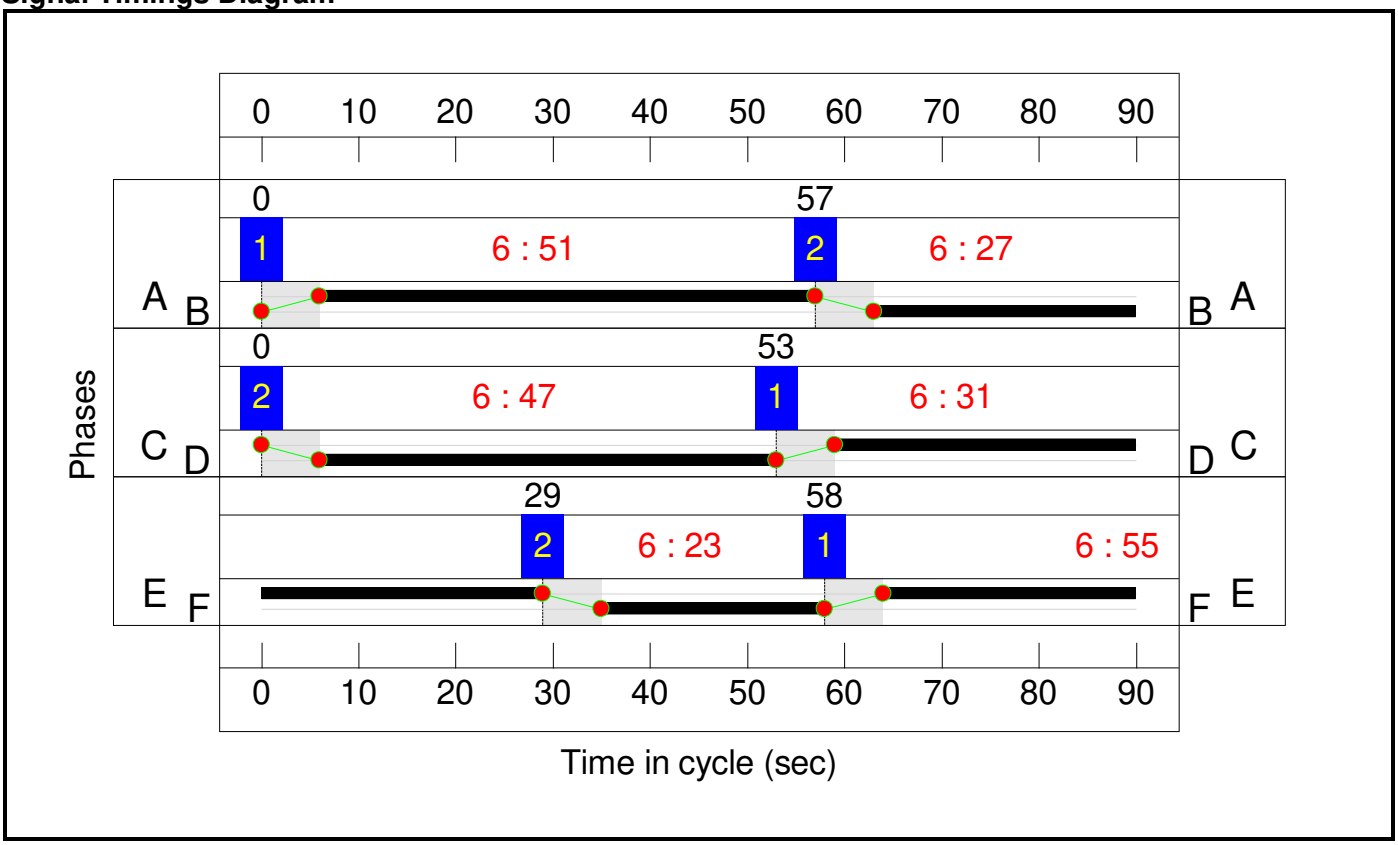
Stage Stream: 2

Stage	1	2
Duration	31	47
Change Point	53	0

Stage Stream: 3

Stage	1	2
Duration	55	23
Change Point	58	29

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: Cherwell hamburger gyratory - Junction option C-3	-	-	**N/A**	-	-		-	-	-	-	-	-	**98.4%**
Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**98.4%**
1/2+1/1	A43 Southbound Left Ahead	U	1	N/A	A		1	51	-	1948	1980:1980	990+990	98.4 : 98.4%
1/3+1/4	A43 Southbound Ahead	U	1	N/A	A		1	51	-	1641	1980:1980	989+991	82.9 : 82.9%
4/2+4/1	MSA Left Left2	U	2	N/A	C		1	31	-	497	1871:1965	357+521	56.6 : 56.6%
4/3	MSA Right	U	2	N/A	C		1	31	-	85	1980	704	12.1%
6/1	A43 Northbound Ahead	U	3	N/A	E		1	55	-	820	1908	1187	69.1%
6/2+6/3	A43 Northbound Ahead Right	U	3	N/A	E		1	55	-	996	1916:1886	999+315	75.8 : 75.8%
7/1	Ahead Right	U	1	N/A	B		1	27	-	239	1850	576	41.5%
8/1	Right	U	3	N/A	F		1	23	-	85	1908	509	16.7%
9/1	Ahead	U	2	N/A	D		1	47	-	631	1980	1056	59.8%
9/2	Ahead	U	2	N/A	D		1	47	-	974	1980	1056	92.2%
9/3	Ahead	U	2	N/A	D		1	47	-	820	1980	1056	77.7%
9/4	Ahead	U	2	N/A	D		1	47	-	821	1980	1056	77.7%

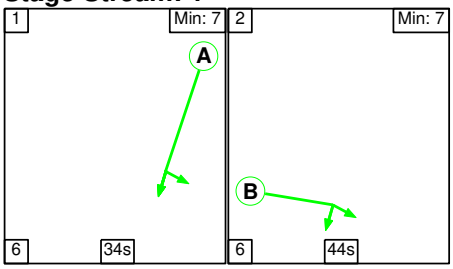
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Cherwell hamburger gyratory - Junction option C-3	**-**	**-**	**0**	**0**	**0**	**29.2**	**21.2**	**0.0**	**50.5**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**0**	**0**	**0**	**29.2**	**21.2**	**0.0**	**50.5**	**-**	**-**	**-**	**-**
1/2+1/1	1948	1948	-	-	-	8.5	15.5	-	24.0	44.4	20.0	15.5	35.5
1/3+1/4	1641	1641	-	-	-	6.2	2.4	-	8.6	18.9	14.6	2.4	17.0
4/2+4/1	497	497	-	-	-	3.0	0.6	-	3.6	26.3	5.6	0.6	6.2
4/3	85	85	-	-	-	0.5	0.1	-	0.5	22.5	1.4	0.1	1.5
6/1	820	820	-	-	-	2.6	1.1	-	3.7	16.1	13.4	1.1	14.5
6/2+6/3	996	996	-	-	-	2.8	1.5	-	4.3	15.6	13.1	1.5	14.7
7/1	239	239	-	-	-	1.2	0.0	-	1.2	17.6	2.7	0.0	2.7
8/1	85	85	-	-	-	1.3	0.0	-	1.3	56.4	2.1	0.0	2.1
9/1	631	631	-	-	-	0.6	0.0	-	0.6	3.5	1.4	0.0	1.4
9/2	974	974	-	-	-	1.0	0.0	-	1.0	3.6	2.2	0.0	2.2
9/3	820	820	-	-	-	0.8	0.0	-	0.8	3.5	1.8	0.0	1.8
9/4	821	821	-	-	-	0.8	0.0	-	0.8	3.5	1.8	0.0	1.8

C1 Stream: 1 PRC for Signalled Lanes (%): -9.3 Total Delay for Signalled Lanes (pcuHr): 33.81 Cycle Time (s): 90
C1 Stream: 2 PRC for Signalled Lanes (%): -2.5 Total Delay for Signalled Lanes (pcuHr): 7.34 Cycle Time (s): 90
C1 Stream: 3 PRC for Signalled Lanes (%): 18.8 Total Delay for Signalled Lanes (pcuHr): 9.31 Cycle Time (s): 90
PRC Over All Lanes (%): -9.3 Total Delay Over All Lanes(pcuHr): 50.47

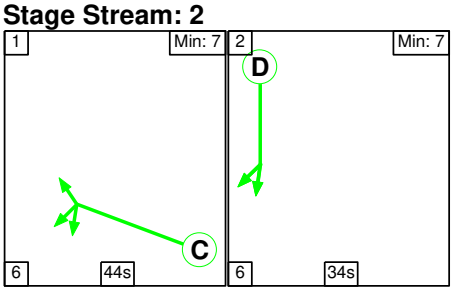
Scenario 4: '2031 Cherwell6,7+8 PM' (FG4: 'Cherwell4_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

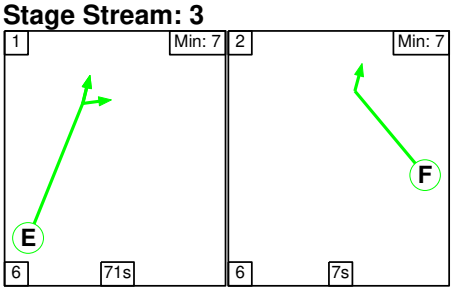
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	34	44
Change Point	0	40

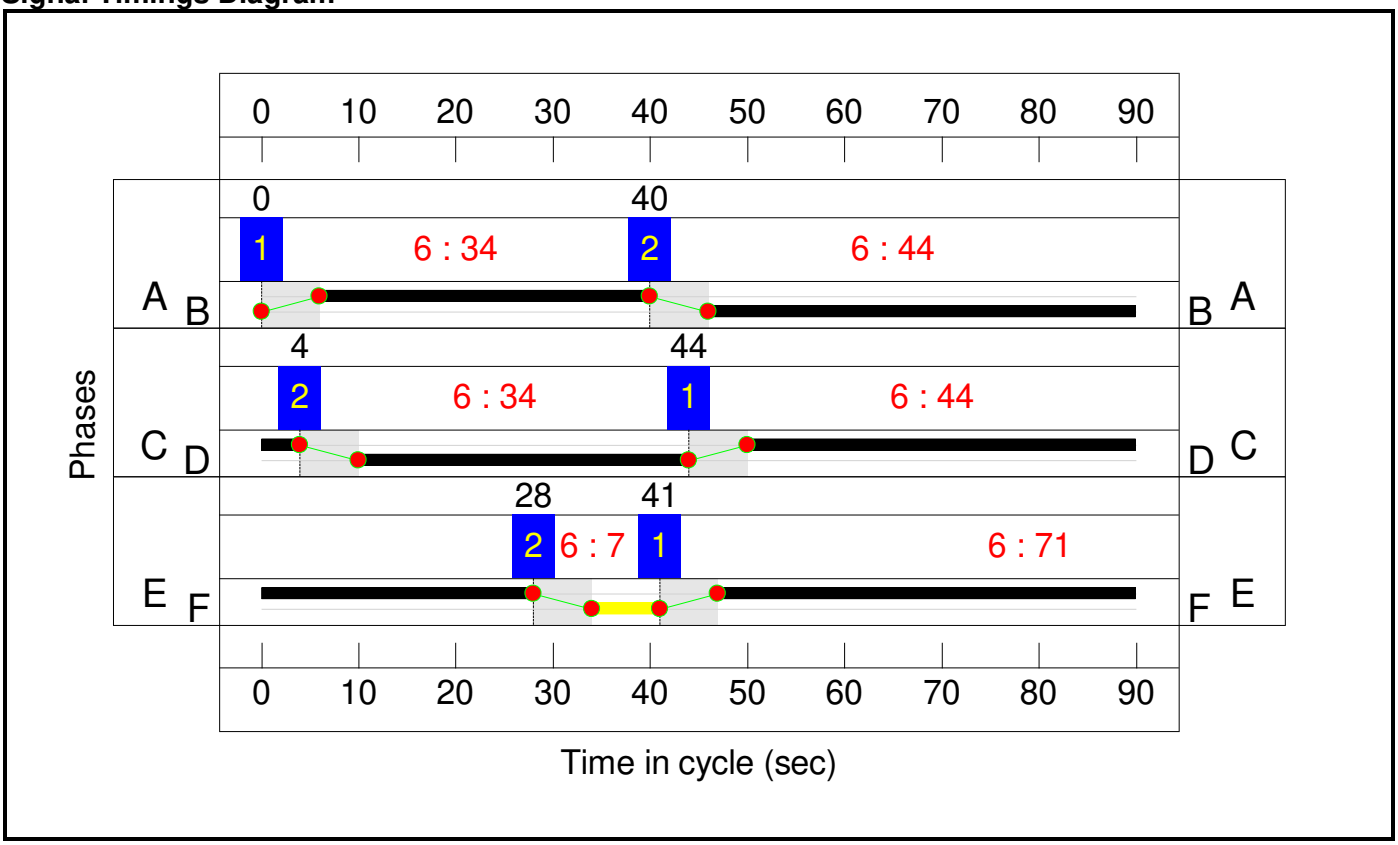
Stage Stream: 2

Stage	1	2
Duration	44	34
Change Point	44	4

Stage Stream: 3

Stage	1	2
Duration	71	7
Change Point	41	28

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: Cherwell hamburger gyratory - Junction option C-3	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.5%**
Cherwell	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.5%**
1/2+1/1	A43 Southbound Left Ahead	U	1	N/A	A		1	34	-	1275	1980:1980	770+770	82.7 : 82.9%
1/3+1/4	A43 Southbound Ahead	U	1	N/A	A		1	34	-	1056	1980:1980	770+770	68.6 : 68.6%
4/2+4/1	MSA Left Left2	U	2	N/A	C		1	44	-	471	1871:1965	540+654	39.4 : 39.4%
4/3	MSA Right	U	2	N/A	C		1	44	-	129	1980	990	13.0%
6/1	A43 Northbound Ahead	U	3	N/A	E		1	71	-	1241	1908	1526	81.3%
6/2+6/3	A43 Northbound Ahead Right	U	3	N/A	E		1	71	-	1373	1916:1886	1308+317	84.5 : 84.5%
7/1	Ahead Right	U	1	N/A	B		1	44	-	268	1850	925	29.0%
8/1	Right	U	3	N/A	F		1	7	-	129	1908	170	76.1%
9/1	Ahead	U	2	N/A	D		1	34	-	302	1980	770	39.2%
9/2	Ahead	U	2	N/A	D		1	34	-	637	1980	770	82.7%
9/3	Ahead	U	2	N/A	D		1	34	-	528	1980	770	68.6%
9/4	Ahead	U	2	N/A	D		1	34	-	528	1980	770	68.6%

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: Cherwell hamburger gyratory - Junction option C-3	**-**	**-**	**0**	**0**	**0**	**23.9**	**8.7**	**0.0**	**32.5**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**0**	**0**	**0**	**23.9**	**8.7**	**0.0**	**32.5**	**-**	**-**	**-**	**-**
1/2+1/1	1275	1275	-	-	-	8.8	2.4	-	11.1	31.5	14.4	2.4	16.7
1/3+1/4	1056	1056	-	-	-	6.7	1.1	-	7.8	26.6	11.0	1.1	12.1
4/2+4/1	471	471	-	-	-	1.7	0.3	-	2.0	15.3	3.7	0.3	4.0
4/3	129	129	-	-	-	0.4	0.1	-	0.5	14.1	1.7	0.1	1.8
6/1	1241	1241	-	-	-	1.8	2.1	-	3.9	11.4	17.6	2.1	19.7
6/2+6/3	1373	1373	-	-	-	1.5	2.7	-	4.2	11.0	15.8	2.7	18.5
7/1	268	268	-	-	-	0.8	0.0	-	0.8	11.1	2.8	0.0	2.8
8/1	129	129	-	-	-	2.2	0.0	-	2.2	60.0	3.2	0.0	3.2
9/1	302	302	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	637	637	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/3	528	528	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/4	528	528	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 Stream: 1 PRC for Signalled Lanes (%): 8.6 Total Delay for Signalled Lanes (pcuHr): 19.77 Cycle Time (s): 90
C1 Stream: 2 PRC for Signalled Lanes (%): 8.8 Total Delay for Signalled Lanes (pcuHr): 2.51 Cycle Time (s): 90
C1 Stream: 3 PRC for Signalled Lanes (%): 6.5 Total Delay for Signalled Lanes (pcuHr): 10.26 Cycle Time (s): 90
PRC Over All Lanes (%): 6.5 Total Delay Over All Lanes(pcuHr): 32.55

APPENDIX 18

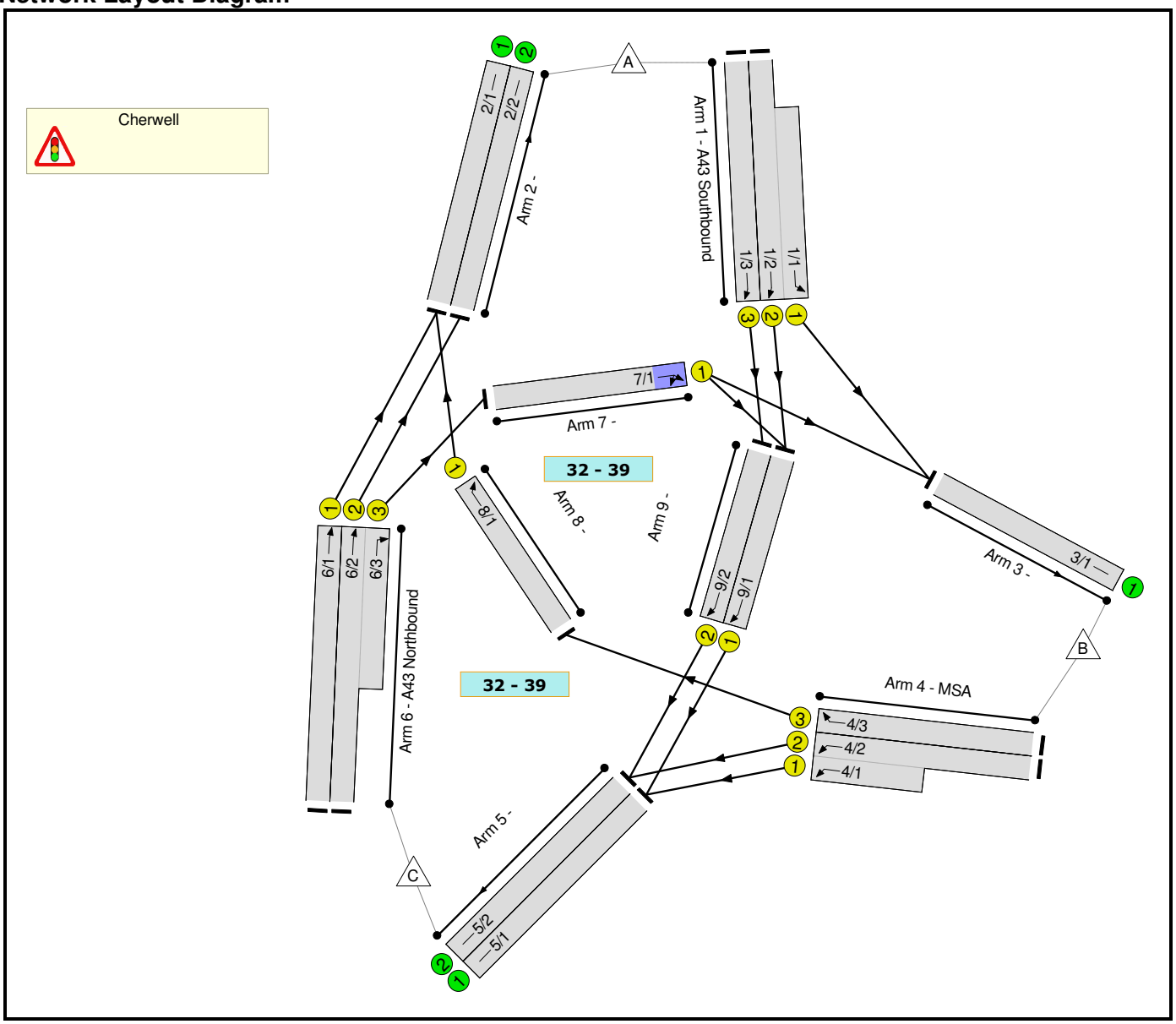
Cherwell Roundabout junction option C-5 – LinSig results

Full Input Data And Results

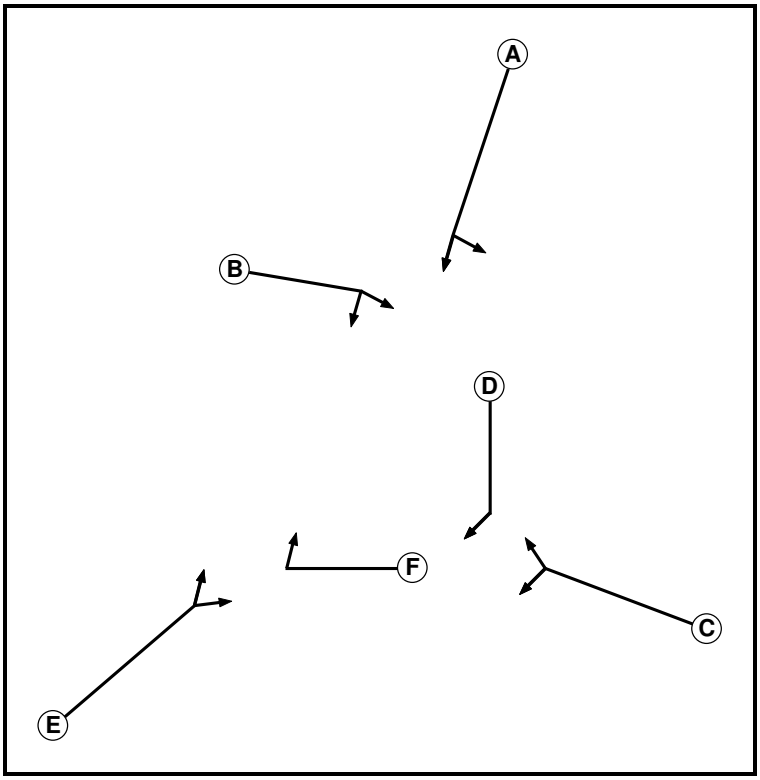
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Cherwell hamburger gyratory - Junction options C-5**
Location:	
Additional detail:	
File name:	2031_DS_M40J10_Cherwell - Junction option C-5.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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
E	Traffic	3		7	7
F	Traffic	3		7	7

Phase Intergreens Matrix

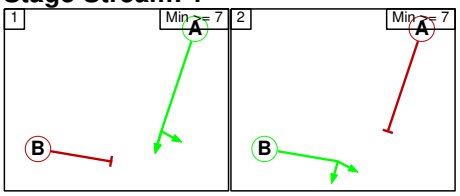
		Starting Phase					
		A	B	C	D	E	F
Terminating Phase	A		6	-	-	-	-
	B	6		-	-	-	-
	C	-	-		6	-	-
	D	-	-	6		-	-
	E	-	-	-	-		6
	F	-	-	-	-	6	

Phases in Stage

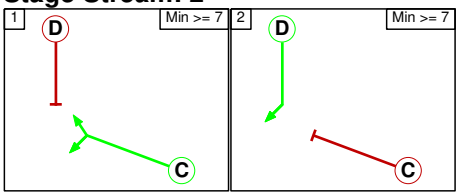
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F

Stage Diagram

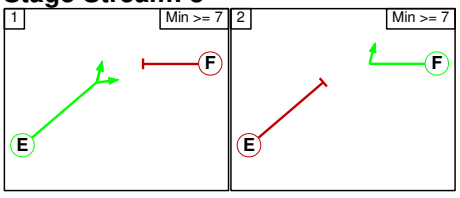
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Prohibited Stage Change

Stage Stream: 1

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		6
	2	6	

Stage Stream: 3

	To Stage		
From Stage		1	2
	1		6
	2	6	

Lane Input Data

Junction: Cherwell												
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 (A43 Southbound)	U	A	2	3	13.9	Geom	-	3.65	0.00	Y	Arm 3 Left	Inf
1/2 (A43 Southbound)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 9 Ahead	Inf
1/3 (A43 Southbound)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 9 Ahead	Inf
2/1	U		2	3	60.0	Inf	-	-	-	-	-	-
2/2	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1 (MSA)	U	C	2	3	7.0	Geom	-	3.50	0.00	Y	Arm 5 Left	30.00
4/2 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Left	30.00
4/3 (MSA)	U	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 8 Right	Inf
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (A43 Northbound)	U	E	2	3	62.6	Geom	-	3.65	0.00	Y	Arm 2 Ahead	40.00
6/2 (A43 Northbound)	U	E	2	3	62.6	Geom	-	3.65	0.00	Y	Arm 2 Ahead	45.00
6/3 (A43 Northbound)	U	E	2	3	10.1	Geom	-	3.65	0.00	Y	Arm 7 Right	30.00
7/1	U	B	2	3	6.1	User	1850	-	-	-	-	-
8/1	U	F	2	3	10.4	Geom	-	3.65	0.00	Y	Arm 2 Right	40.00
9/1	U	D	2	3	9.0	Geom	-	3.65	0.00	Y	Arm 5 Ahead	Inf
9/2	U	D	2	3	8.7	Geom	-	3.65	0.00	Y	Arm 5 Ahead	Inf

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Cherwell6_AM'	07:45	08:45	01:00	
2: 'Cherwell6_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Cherwell10, 11, 13, 18, 19 AM' (FG1: 'Cherwell6_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	343	1641	1984
	B	85	0	497	582
	C	1577	239	0	1816
	Tot.	1662	582	2138	4382

Traffic Lane Flows

Lane	Scenario 1: 2031 Cherwell10, 11, 13, 18, 19 AM
Junction: Cherwell	
1/1 (short)	343
1/2 (with short)	1169(In) 826(Out)
1/3	815
2/1	890
2/2	772
3/1	582
4/1 (short)	249
4/2 (with short)	497(In) 248(Out)
4/3	85
5/1	1075
5/2	1063
6/1	805
6/2 (with short)	1011(In) 772(Out)
6/3 (short)	239
7/1	239
8/1	85
9/1	826
9/2	815

Lane Saturation Flows

Junction: Cherwell

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 (A43 Southbound)	3.65	0.00	Y	Arm 3 Left	Inf	100.0 %	1980	1980
1/2 (A43 Southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/3 (A43 Southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
4/1 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/2 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/3 (MSA)	3.65	0.00	Y	Arm 8 Right	Inf	100.0 %	1980	1980
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (A43 Northbound)	3.65	0.00	Y	Arm 2 Ahead	40.00	100.0 %	1908	1908
6/2 (A43 Northbound)	3.65	0.00	Y	Arm 2 Ahead	45.00	100.0 %	1916	1916
6/3 (A43 Northbound)	3.65	0.00	Y	Arm 7 Right	30.00	100.0 %	1886	1886
7/1	This lane uses a directly entered Saturation Flow						1850	1850
8/1	3.65	0.00	Y	Arm 2 Right	40.00	100.0 %	1908	1908
9/1	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
9/2	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980

Scenario 2: '2031 Cherwell10, 11, 13, 18, 19 PM' (FG2: 'Cherwell6_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	336	1056	1392
	B	129	0	471	600
	C	2346	268	0	2614
	Tot.	2475	604	1527	4606

Traffic Lane Flows

Lane	Scenario 2: 2031 Cherwell10, 11, 13, 18, 19 PM
Junction: Cherwell	
1/1 (short)	336
1/2 (with short)	903(In) 567(Out)
1/3	489
2/1	1359
2/2	1116
3/1	604
4/1 (short)	236
4/2 (with short)	471(In) 235(Out)
4/3	129
5/1	803
5/2	724
6/1	1230
6/2 (with short)	1384(In) 1116(Out)
6/3 (short)	268
7/1	268
8/1	129
9/1	567
9/2	489

Lane Saturation Flows

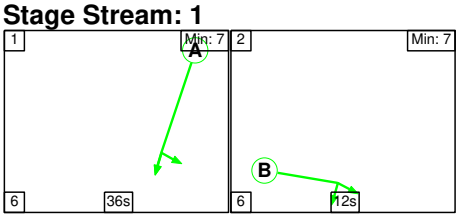
Junction: Cherwell

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 (A43 Southbound)	3.65	0.00	Y	Arm 3 Left	Inf	100.0 %	1980	1980
1/2 (A43 Southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/3 (A43 Southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
4/1 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/2 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/3 (MSA)	3.65	0.00	Y	Arm 8 Right	Inf	100.0 %	1980	1980
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (A43 Northbound)	3.65	0.00	Y	Arm 2 Ahead	40.00	100.0 %	1908	1908
6/2 (A43 Northbound)	3.65	0.00	Y	Arm 2 Ahead	45.00	100.0 %	1916	1916
6/3 (A43 Northbound)	3.65	0.00	Y	Arm 7 Right	30.00	100.0 %	1886	1886
7/1	This lane uses a directly entered Saturation Flow						1850	1850
8/1	3.65	0.00	Y	Arm 2 Right	40.00	100.0 %	1908	1908
9/1	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
9/2	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980

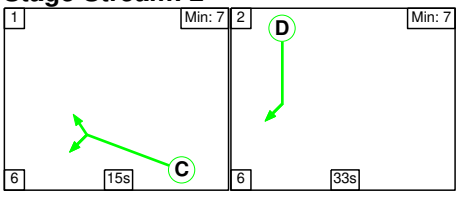
Scenario 1: '2031 Cherwell10, 11, 13, 18, 19 AM' (FG1: 'Cherwell6_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

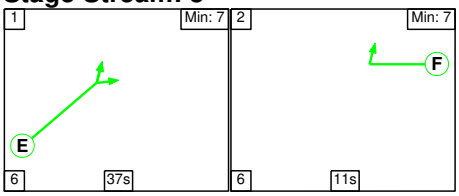
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	36	12
Change Point	0	42

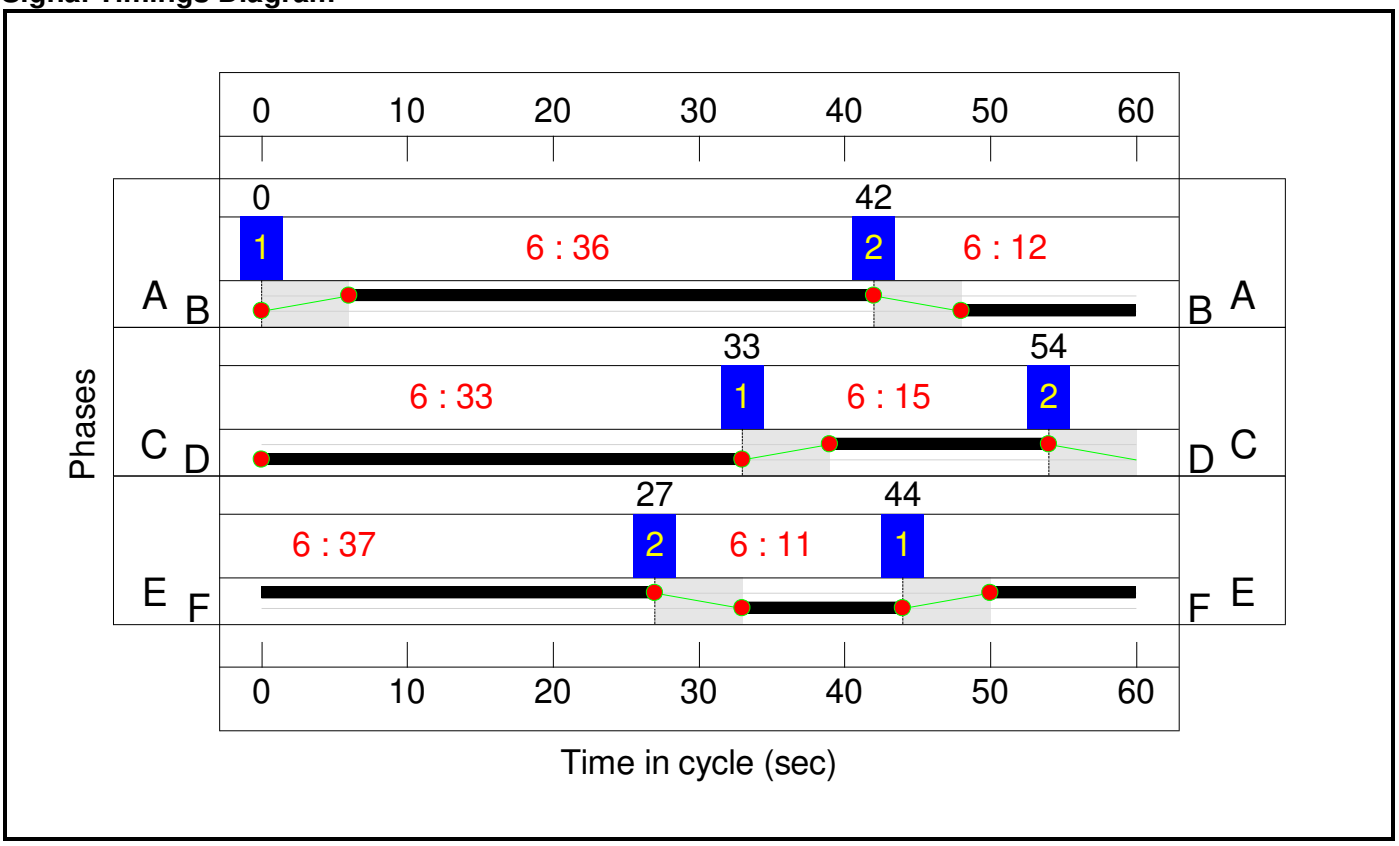
Stage Stream: 2

Stage	1	2
Duration	15	33
Change Point	33	54

Stage Stream: 3

Stage	1	2
Duration	37	11
Change Point	44	27

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: Cherwell hamburger gyratory - Junction options C-5	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**73.9%**
Cherwell	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**73.9%**
1/2+1/1	A43 Southbound Left Ahead	U	1	N/A	A		1	36	-	1169	1980:1980	1117+464	73.9 : 73.9%
1/3	A43 Southbound Ahead	U	1	N/A	A		1	36	-	815	1980	1221	66.7%
4/2+4/1	MSA Left	U	2	N/A	C		1	15	-	497	1871:1871	465+467	53.3 : 53.3%
4/3	MSA Right	U	2	N/A	C		1	15	-	85	1980	528	16.1%
6/1	A43 Northbound Ahead	U	3	N/A	E		1	37	-	805	1908	1208	66.6%
6/2+6/3	A43 Northbound Ahead Right	U	3	N/A	E		1	37	-	1011	1916:1886	1066+330	72.4 : 72.4%
7/1	Ahead Right	U	1	N/A	B		1	12	-	239	1850	401	59.6%
8/1	Right	U	3	N/A	F		1	11	-	85	1908	382	22.3%
9/1	Ahead	U	2	N/A	D		1	33	-	826	1980	1122	73.6%
9/2	Ahead	U	2	N/A	D		1	33	-	815	1980	1122	72.6%

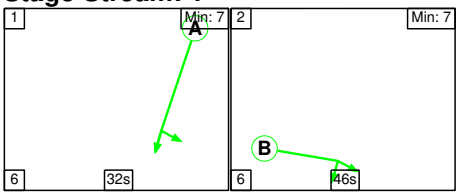
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Cherwell hamburger gyratory - Junction options C-5	**-**	**-**	**0**	**0**	**0**	**14.2**	**5.4**	**0.0**	**19.6**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**0**	**0**	**0**	**14.2**	**5.4**	**0.0**	**19.6**	**-**	**-**	**-**	**-**
1/2+1/1	1169	1169	-	-	-	2.2	1.4	-	3.7	11.3	8.9	1.4	10.4
1/3	815	815	-	-	-	1.7	1.0	-	2.7	11.9	8.8	1.0	9.8
4/2+4/1	497	497	-	-	-	2.6	0.6	-	3.1	22.7	3.5	0.6	4.0
4/3	85	85	-	-	-	0.4	0.1	-	0.5	20.9	1.1	0.1	1.2
6/1	805	805	-	-	-	1.6	1.0	-	2.6	11.4	8.5	1.0	9.5
6/2+6/3	1011	1011	-	-	-	1.8	1.3	-	3.1	10.9	7.7	1.3	9.0
7/1	239	239	-	-	-	1.1	0.0	-	1.1	17.0	2.0	0.0	2.0
8/1	85	85	-	-	-	0.7	0.0	-	0.7	28.6	0.9	0.0	0.9
9/1	826	826	-	-	-	1.1	0.0	-	1.1	4.8	3.0	0.0	3.0
9/2	815	815	-	-	-	1.1	0.0	-	1.1	4.8	2.9	0.0	2.9

C1 Stream: 1 PRC for Signalled Lanes (%): 21.7 Total Delay for Signalled Lanes (pcuHr): 7.48 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 22.3 Total Delay for Signalled Lanes (pcuHr): 5.83 Cycle Time (s): 60
C1 Stream: 3 PRC for Signalled Lanes (%): 24.2 Total Delay for Signalled Lanes (pcuHr): 6.29 Cycle Time (s): 60
PRC Over All Lanes (%): 21.7 Total Delay Over All Lanes(pcuHr): 19.59

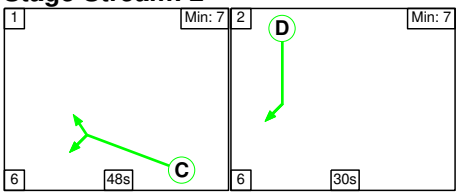
Scenario 2: '2031 Cherwell10, 11, 13, 18, 19 PM' (FG2: 'Cherwell6_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

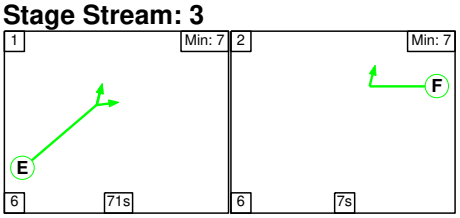
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	32	46
Change Point	0	38

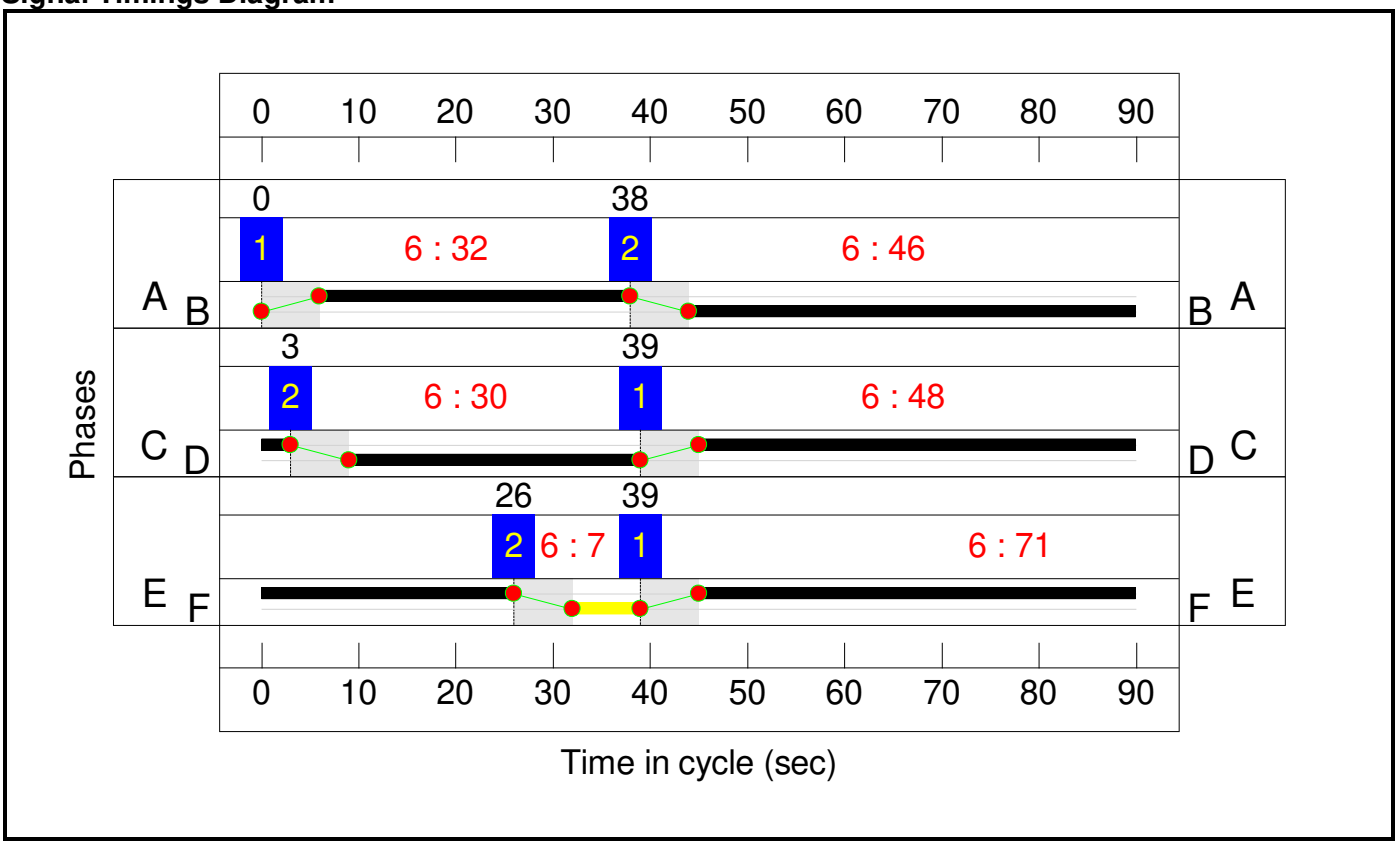
Stage Stream: 2

Stage	1	2
Duration	48	30
Change Point	39	3

Stage Stream: 3

Stage	1	2
Duration	71	7
Change Point	39	26

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: Cherwell hamburger gyratory - Junction options C-5	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**85.2%**
Cherwell	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**85.2%**
1/2+1/1	A43 Southbound Left Ahead	U	1	N/A	A		1	32	-	903	1980:1980	669+396	84.8 : 84.8%
1/3	A43 Southbound Ahead	U	1	N/A	A		1	32	-	489	1980	726	67.4%
4/2+4/1	MSA Left	U	2	N/A	C		1	48	-	471	1871:1871	652+655	36.0 : 36.0%
4/3	MSA Right	U	2	N/A	C		1	48	-	129	1980	1078	12.0%
6/1	A43 Northbound Ahead	U	3	N/A	E		1	71	-	1230	1908	1526	80.6%
6/2+6/3	A43 Northbound Ahead Right	U	3	N/A	E		1	71	-	1384	1916:1886	1310+314	85.2 : 85.2%
7/1	Ahead Right	U	1	N/A	B		1	46	-	268	1850	966	27.7%
8/1	Right	U	3	N/A	F		1	7	-	129	1908	170	76.1%
9/1	Ahead	U	2	N/A	D		1	30	-	567	1980	682	83.1%
9/2	Ahead	U	2	N/A	D		1	30	-	489	1980	682	71.7%

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: Cherwell hamburger gyratory - Junction options C-5	**-**	**-**	**0**	**0**	**0**	**17.8**	**8.9**	**0.0**	**26.8**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**0**	**0**	**0**	**17.8**	**8.9**	**0.0**	**26.8**	**-**	**-**	**-**	**-**
1/2+1/1	903	903	-	-	-	6.0	2.7	-	8.7	34.7	12.4	2.7	15.1
1/3	489	489	-	-	-	3.3	1.0	-	4.3	31.5	10.2	1.0	11.2
4/2+4/1	471	471	-	-	-	1.4	0.3	-	1.7	12.8	3.0	0.3	3.3
4/3	129	129	-	-	-	0.4	0.1	-	0.4	11.9	1.5	0.1	1.6
6/1	1230	1230	-	-	-	1.7	2.0	-	3.8	11.1	17.1	2.0	19.1
6/2+6/3	1384	1384	-	-	-	1.6	2.8	-	4.4	11.4	16.3	2.8	19.1
7/1	268	268	-	-	-	0.7	0.0	-	0.7	9.9	2.7	0.0	2.7
8/1	129	129	-	-	-	2.2	0.0	-	2.2	61.0	3.2	0.0	3.2
9/1	567	567	-	-	-	0.3	0.0	-	0.3	1.9	0.5	0.0	0.5
9/2	489	489	-	-	-	0.3	0.0	-	0.3	1.9	0.4	0.0	0.4

C1 Stream: 1 PRC for Signalled Lanes (%):	6.1	Total Delay for Signalled Lanes (pcuHr):	13.73	Cycle Time (s):	90
C1 Stream: 2 PRC for Signalled Lanes (%):	8.3	Total Delay for Signalled Lanes (pcuHr):	2.67	Cycle Time (s):	90
C1 Stream: 3 PRC for Signalled Lanes (%):	5.6	Total Delay for Signalled Lanes (pcuHr):	10.35	Cycle Time (s):	90
PRC Over All Lanes (%):	5.6	Total Delay Over All Lanes(pcuHr):	26.76		

APPENDIX 19

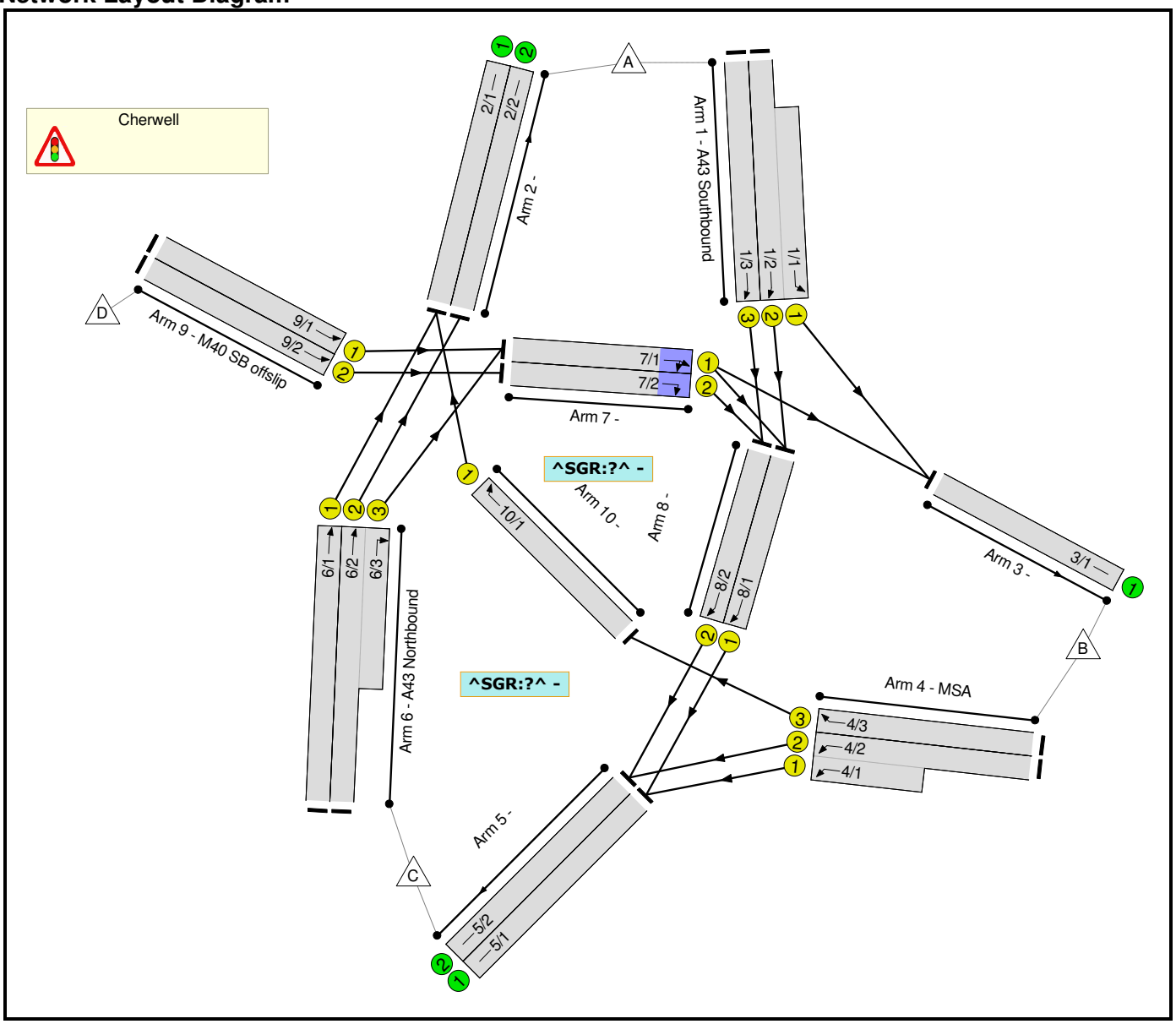
Cherwell Roundabout junction option C-6 – LinSig results

Full Input Data And Results

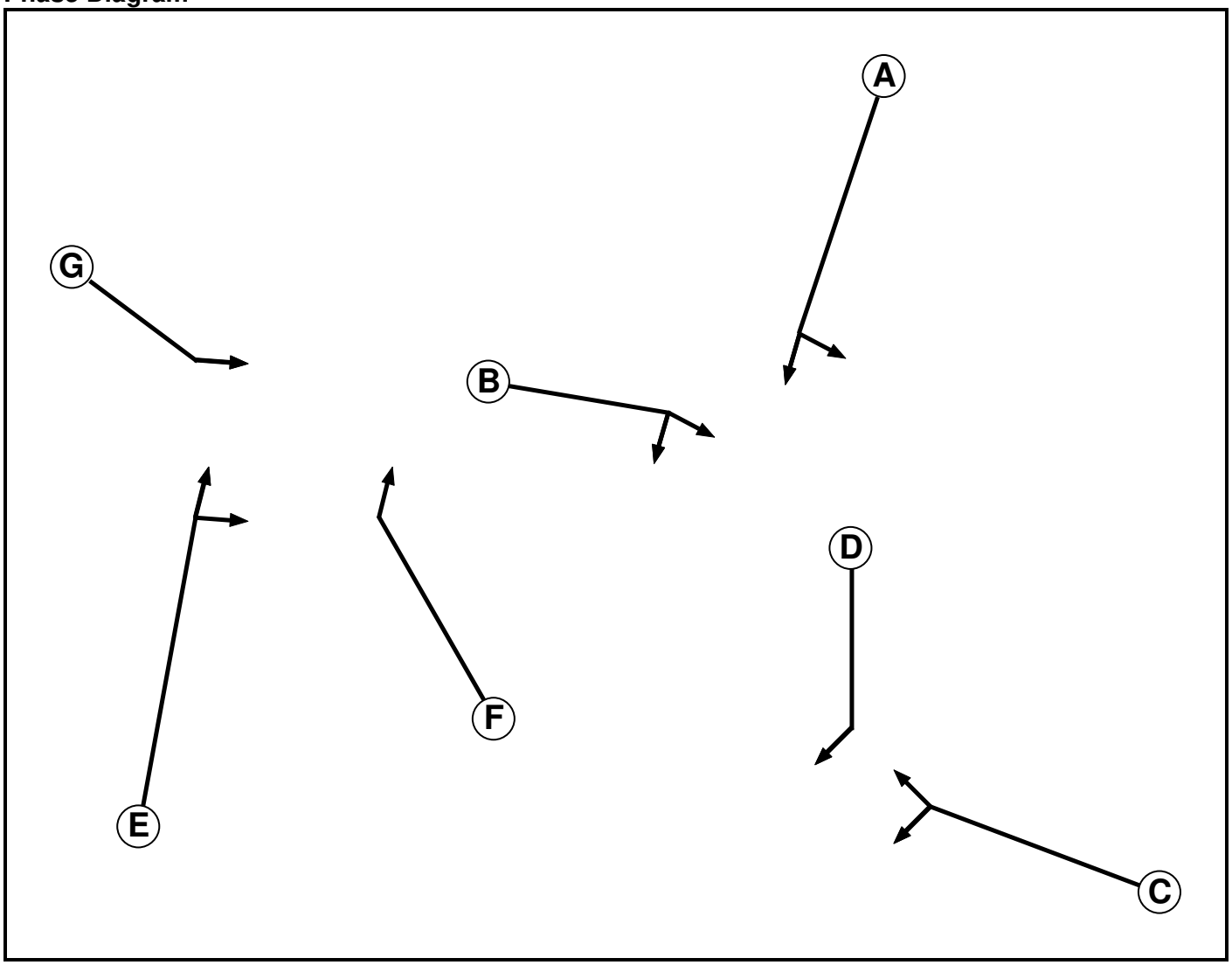
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Cherwell hamburger gyratory - Junction option C-6**
Location:	
Additional detail:	
File name:	2031_DS_M40J10_Cherwell - Junction option C-6.lsg3x
Author:	[redacted]
Company:	
Address:	

Network Layout Diagram



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
E	Traffic	3		7	7
F	Traffic	3		7	7
G	Traffic	3		7	7

Phase Intergreens Matrix

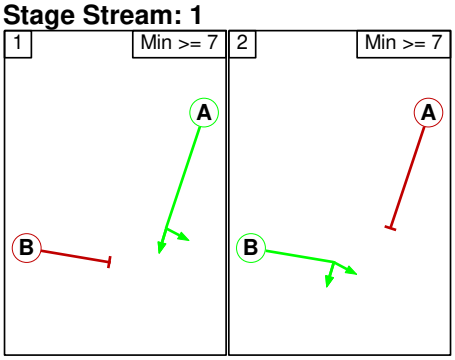
		Starting Phase						
		A	B	C	D	E	F	G
Terminating Phase	A		6	-	-	-	-	-
	B	6		-	-	-	-	-
	C	-	-		6	-	-	-
	D	-	-	6		-	-	-
	E	-	-	-	-		6	6
	F	-	-	-	-	6		6
	G	-	-	-	-	6	6	

Phases in Stage

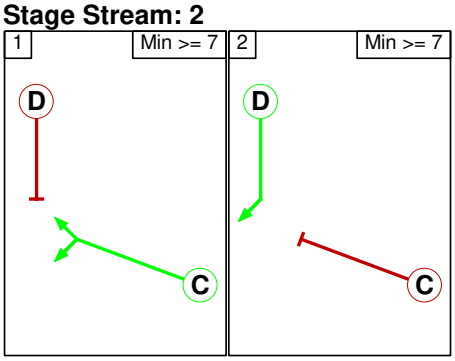
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F
3	3	G

Stage Diagram

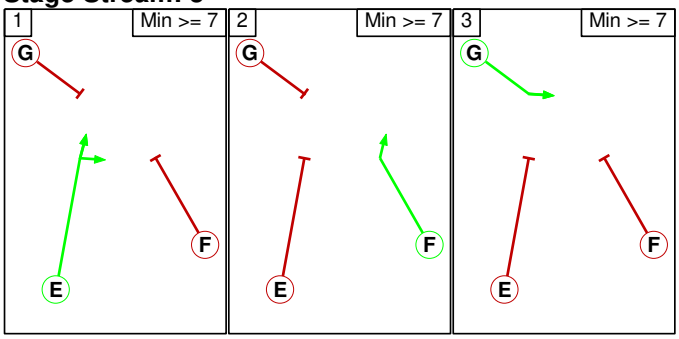
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Prohibited Stage Change

Stage Stream: 1

	To Stage		
From Stage		1	2
	1		6
	2	6	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		6
	2	6	

Stage Stream: 3

	To Stage			
From Stage		1	2	3
	1		6	6
	2	6		6
	3	6	6	

Lane Input Data

Junction: Cherwell												
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 (A43 Southbound)	U	A	2	3	13.9	Geom	-	3.65	0.00	Y	Arm 3 Left	Inf
1/2 (A43 Southbound)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 8 Ahead	Inf
1/3 (A43 Southbound)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 8 Ahead	Inf
2/1	U		2	3	60.0	Inf	-	-	-	-	-	-
2/2	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1 (MSA)	U	C	2	3	7.0	Geom	-	3.50	0.00	Y	Arm 5 Left	30.00
4/2 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Left	30.00
4/3 (MSA)	U	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 10 Ahead	Inf
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (A43 Northbound)	U	E	2	3	62.6	Geom	-	3.65	0.00	Y	Arm 2 Ahead	40.00
6/2 (A43 Northbound)	U	E	2	3	62.6	Geom	-	3.65	0.00	Y	Arm 2 Ahead	45.00
6/3 (A43 Northbound)	U	E	2	3	10.1	Geom	-	3.65	0.00	Y	Arm 7 Right	30.00
7/1	U	B	2	3	6.1	User	1850	-	-	-	-	-
7/2	U	B	2	3	6.1	User	1850	-	-	-	-	-
8/1	U	D	2	3	9.0	Geom	-	3.65	0.00	Y	Arm 5 Ahead	Inf
8/2	U	D	2	3	8.7	Geom	-	3.65	0.00	Y	Arm 5 Ahead	Inf
9/1 (M40 SB offslip)	U	G	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 7 Ahead	Inf
9/2 (M40 SB offslip)	U	G	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 7 Ahead	Inf
10/1	U	F	2	3	10.4	Geom	-	3.65	0.00	Y	Arm 2 Right	40.00

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Cherwell7_AM'	07:45	08:45	01:00	
2: 'Cherwell7_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Cherwell12 AM' (FG1: 'Cherwell7_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	124	1122	0	1246
	B	85	0	497	0	582
	C	1577	239	0	0	1816
	D	0	219	519	0	738
	Tot.	1662	582	2138	0	4382

Traffic Lane Flows

Lane	Scenario 1: 2031 Cherwell12 AM
Junction: Cherwell	
1/1 (short)	124
1/2 (with short)	687(In) 563(Out)
1/3	559
2/1	920
2/2	742
3/1	582
4/1 (short)	249
4/2 (with short)	497(In) 248(Out)
4/3	85
5/1	962
5/2	1176
6/1	835
6/2 (with short)	981(In) 742(Out)
6/3 (short)	239
7/1	608
7/2	369
8/1	713
8/2	928
9/1	369
9/2	369
10/1	85

Lane Saturation Flows

Junction: Cherwell

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 (A43 Southbound)	3.65	0.00	Y	Arm 3 Left	Inf	100.0 %	1980	1980
1/2 (A43 Southbound)	3.65	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1980	1980
1/3 (A43 Southbound)	3.65	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
4/1 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/2 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/3 (MSA)	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (A43 Northbound)	3.65	0.00	Y	Arm 2 Ahead	40.00	100.0 %	1908	1908
6/2 (A43 Northbound)	3.65	0.00	Y	Arm 2 Ahead	45.00	100.0 %	1916	1916
6/3 (A43 Northbound)	3.65	0.00	Y	Arm 7 Right	30.00	100.0 %	1886	1886
7/1	This lane uses a directly entered Saturation Flow						1850	1850
7/2	This lane uses a directly entered Saturation Flow						1850	1850
8/1	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
8/2	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
9/1 (M40 SB offslip)	3.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1980	1980
9/2 (M40 SB offslip)	3.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1980	1980
10/1	3.65	0.00	Y	Arm 2 Right	40.00	100.0 %	1908	1908

Scenario 2: '2031 Cherwell12 PM' (FG2: 'Cherwell7_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin \ Destination	A	B	C	D	Tot.
A	0	107	676	0	783
B	129	0	471	0	600
C	2346	268	0	0	2614
D	0	229	380	0	609
Tot.	2475	604	1527	0	4606

Traffic Lane Flows

Lane	Scenario 2: 2031 Cherwell12 PM
Junction: Cherwell	
1/1 (short)	107
1/2 (with short)	462(In) 355(Out)
1/3	321
2/1	1381
2/2	1094
3/1	604
4/1 (short)	236
4/2 (with short)	471(In) 235(Out)
4/3	129
5/1	667
5/2	860
6/1	1252
6/2 (with short)	1362(In) 1094(Out)
6/3 (short)	268
7/1	573
7/2	304
8/1	431
8/2	625
9/1	305
9/2	304
10/1	129

Lane Saturation Flows

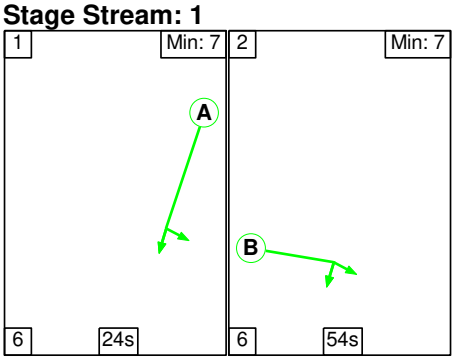
Junction: Cherwell

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 (A43 Southbound)	3.65	0.00	Y	Arm 3 Left	Inf	100.0 %	1980	1980
1/2 (A43 Southbound)	3.65	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1980	1980
1/3 (A43 Southbound)	3.65	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
4/1 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/2 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/3 (MSA)	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (A43 Northbound)	3.65	0.00	Y	Arm 2 Ahead	40.00	100.0 %	1908	1908
6/2 (A43 Northbound)	3.65	0.00	Y	Arm 2 Ahead	45.00	100.0 %	1916	1916
6/3 (A43 Northbound)	3.65	0.00	Y	Arm 7 Right	30.00	100.0 %	1886	1886
7/1	This lane uses a directly entered Saturation Flow						1850	1850
7/2	This lane uses a directly entered Saturation Flow						1850	1850
8/1	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
8/2	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
9/1 (M40 SB offslip)	3.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1980	1980
9/2 (M40 SB offslip)	3.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1980	1980
10/1	3.65	0.00	Y	Arm 2 Right	40.00	100.0 %	1908	1908

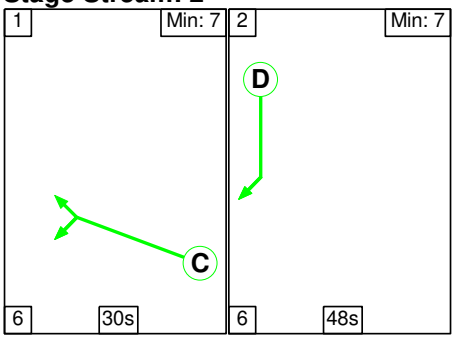
Scenario 1: '2031 Cherwell12 AM' (FG1: 'Cherwell7_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

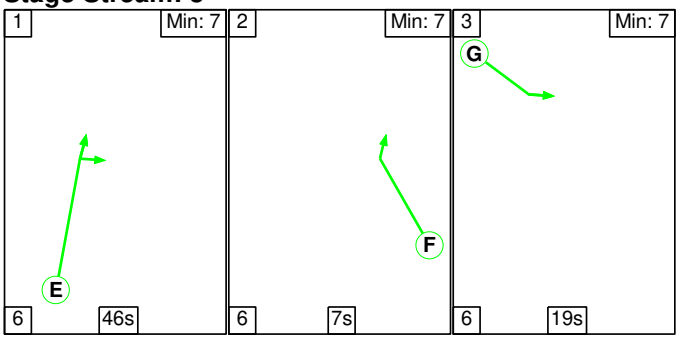
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	24	54
Change Point	0	30

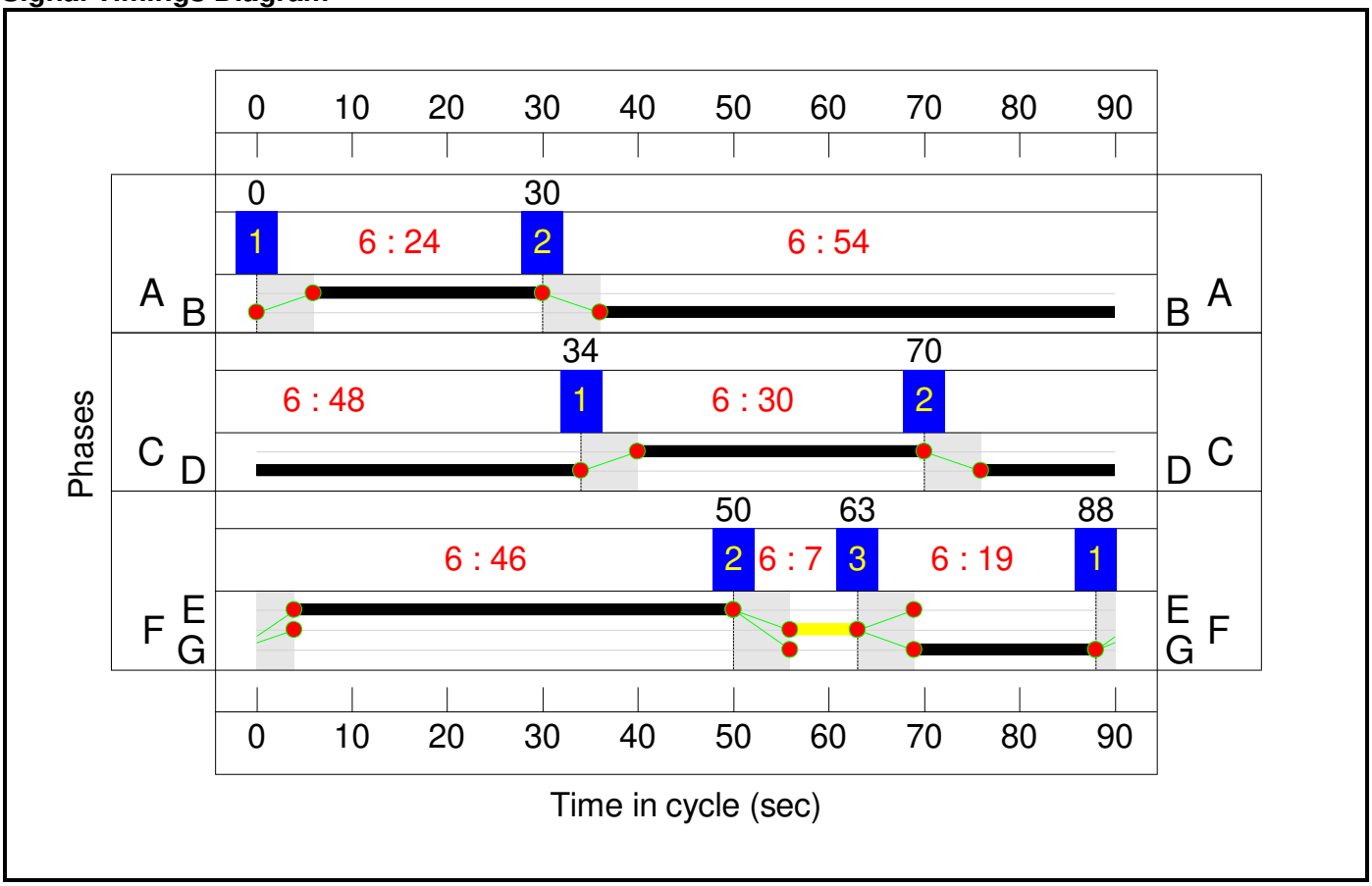
Stage Stream: 2

Stage	1	2
Duration	30	48
Change Point	34	70

Stage Stream: 3

Stage	1	2	3
Duration	46	7	19
Change Point	88	50	63

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: Cherwell hamburger gyratory - Junction option C-6	-	-	**N/A**	-	-		-	-	-	-	-	-	**102.4%**
Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**102.4%**
1/2+1/1	A43 Southbound Left Ahead	U	1	N/A	A		1	24	-	687	1980:1980	550+121	102.4 : 102.4%
1/3	A43 Southbound Ahead	U	1	N/A	A		1	24	-	559	1980	550	101.6%
4/2+4/1	MSA Left	U	2	N/A	C		1	30	-	497	1871:1871	466+467	53.3 : 53.3%
4/3	MSA Ahead	U	2	N/A	C		1	30	-	85	1980	682	12.5%
6/1	A43 Northbound Ahead	U	3	N/A	E		1	46	-	835	1908	996	83.8%
6/2+6/3	A43 Northbound Ahead Right	U	3	N/A	E		1	46	-	981	1916:1886	852+274	87.1 : 87.1%
7/1	Ahead Right	U	1	N/A	B		1	54	-	608	1850	1131	53.8%
7/2	Right	U	1	N/A	B		1	54	-	369	1850	1131	32.6%
8/1	Ahead	U	2	N/A	D		1	48	-	713	1980	1078	64.9%
8/2	Ahead	U	2	N/A	D		1	48	-	928	1980	1078	85.3%
9/1	M40 SB offslip Ahead	U	3	N/A	G		1	19	-	369	1980	440	83.9%
9/2	M40 SB offslip Ahead	U	3	N/A	G		1	19	-	369	1980	440	83.9%
10/1	Right	U	3	N/A	F		1	7	-	85	1908	170	50.1%

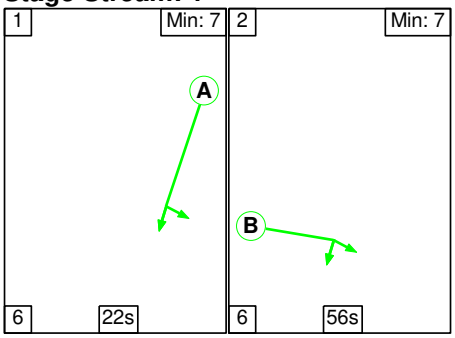
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Cherwell hamburger gyratory - Junction option C-6	**-**	**-**	**0**	**0**	**0**	**33.1**	**43.2**	**0.0**	**76.3**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**0**	**0**	**0**	**33.1**	**43.2**	**0.0**	**76.3**	**-**	**-**	**-**	**-**
1/2+1/1	687	671	-	-	-	6.6	17.7	-	24.2	127.1	14.9	17.7	32.5
1/3	559	550	-	-	-	5.4	14.3	-	19.7	127.1	14.2	14.3	28.5
4/2+4/1	497	497	-	-	-	3.1	0.6	-	3.6	26.4	4.7	0.6	5.3
4/3	85	85	-	-	-	0.5	0.1	-	0.5	23.2	1.4	0.1	1.5
6/1	835	835	-	-	-	4.2	2.5	-	6.7	29.1	17.6	2.5	20.1
6/2+6/3	981	981	-	-	-	4.5	3.2	-	7.7	28.2	17.2	3.2	20.4
7/1	608	608	-	-	-	1.4	0.0	-	1.4	8.2	5.5	0.0	5.5
7/2	369	369	-	-	-	0.1	0.0	-	0.1	0.9	2.2	0.0	2.2
8/1	700	700	-	-	-	0.0	0.0	-	0.0	0.1	0.0	0.0	0.0
8/2	919	919	-	-	-	0.0	0.0	-	0.0	0.2	1.1	0.0	1.1
9/1	369	369	-	-	-	3.4	2.4	-	5.9	57.2	8.8	2.4	11.2
9/2	369	369	-	-	-	3.4	2.4	-	5.9	57.2	8.8	2.4	11.2
10/1	85	85	-	-	-	0.4	0.0	-	0.4	18.9	2.0	0.0	2.0

C1	Stream: 1 PRC for Signalled Lanes (%):	-13.7	Total Delay for Signalled Lanes (pcuHr):	45.47	Cycle Time (s): 90
C1	Stream: 2 PRC for Signalled Lanes (%):	5.6	Total Delay for Signalled Lanes (pcuHr):	4.25	Cycle Time (s): 90
C1	Stream: 3 PRC for Signalled Lanes (%):	3.3	Total Delay for Signalled Lanes (pcuHr):	26.60	Cycle Time (s): 90
	PRC Over All Lanes (%):	-13.7	Total Delay Over All Lanes(pcuHr):	76.33	

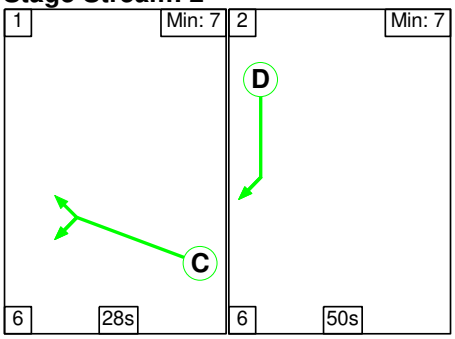
Scenario 2: '2031 Cherwell12 PM' (FG2: 'Cherwell7_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

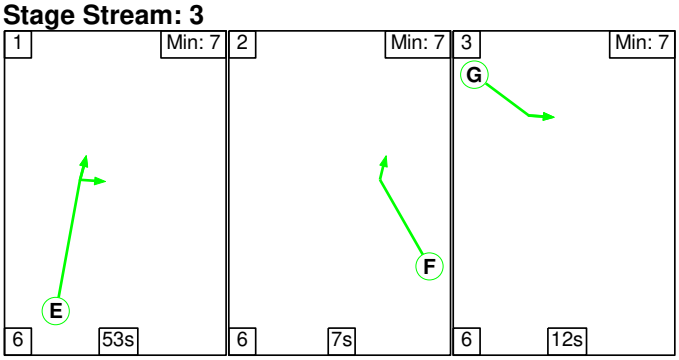
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	22	56
Change Point	55	83

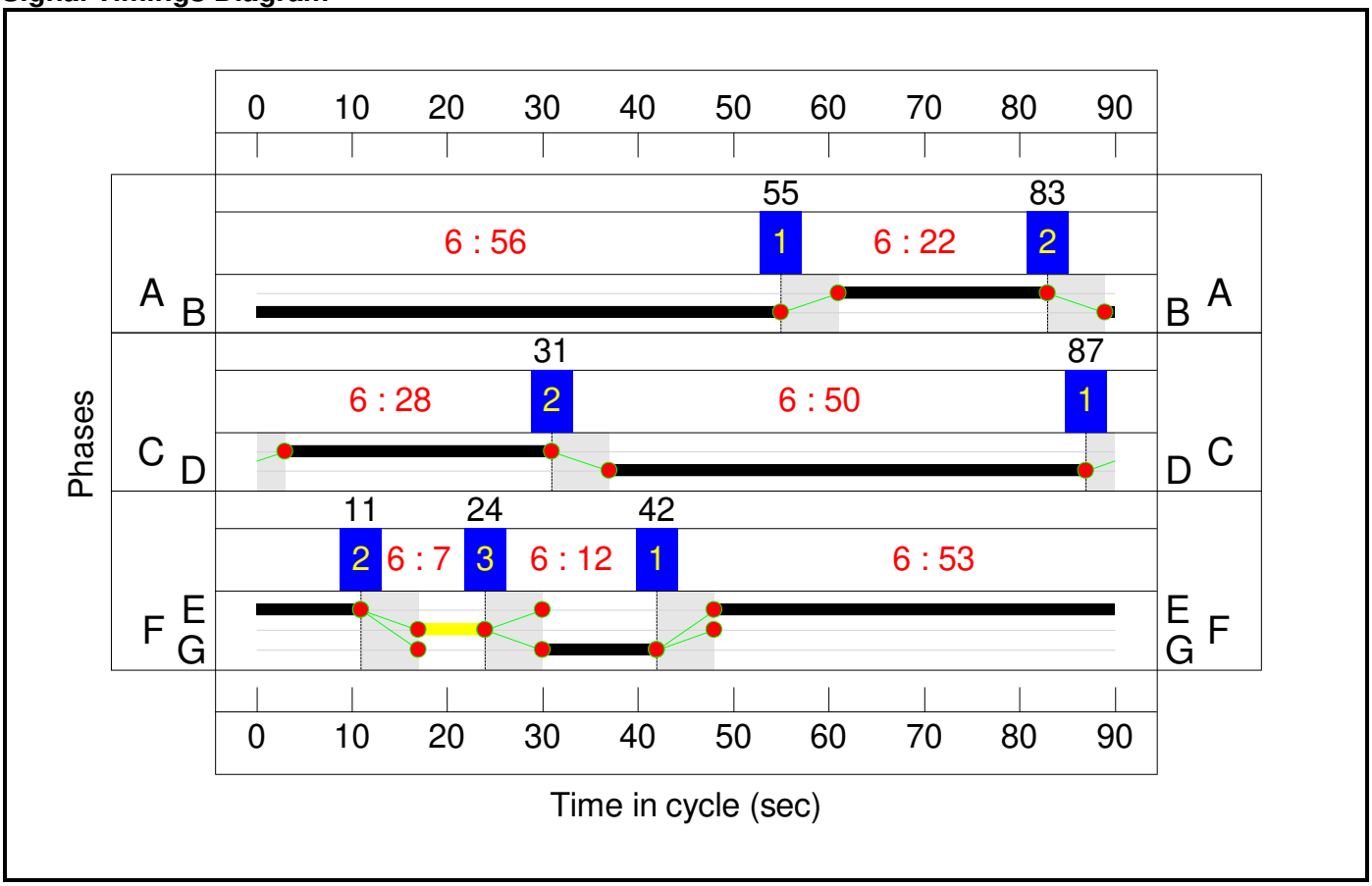
Stage Stream: 2

Stage	1	2
Duration	28	50
Change Point	87	31

Stage Stream: 3

Stage	1	2	3
Duration	53	7	12
Change Point	42	11	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: Cherwell hamburger gyratory - Junction option C-6	-	-	**N/A**	-	-		-	-	-	-	-	-	**109.5%**
Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**109.5%**
1/2+1/1	A43 Southbound Left Ahead	U	1	N/A	A		1	22	-	462	1980:1980	506+153	70.2 : 70.2%
1/3	A43 Southbound Ahead	U	1	N/A	A		1	22	-	321	1980	506	63.4%
4/2+4/1	MSA Left	U	2	N/A	C		1	28	-	471	1871:1871	445+447	52.8 : 52.8%
4/3	MSA Ahead	U	2	N/A	C		1	28	-	129	1980	638	20.2%
6/1	A43 Northbound Ahead	U	3	N/A	E		1	53	-	1252	1908	1145	109.4%
6/2+6/3	A43 Northbound Ahead Right	U	3	N/A	E		1	53	-	1362	1916:1886	999+245	109.5 : 109.5%
7/1	Ahead Right	U	1	N/A	B		1	56	-	573	1850	1172	45.3%
7/2	Right	U	1	N/A	B		1	56	-	304	1850	1172	24.4%
8/1	Ahead	U	2	N/A	D		1	50	-	431	1980	1122	38.0%
8/2	Ahead	U	2	N/A	D		1	50	-	625	1980	1122	54.1%
9/1	M40 SB offslip Ahead	U	3	N/A	G		1	12	-	305	1980	286	106.6%
9/2	M40 SB offslip Ahead	U	3	N/A	G		1	12	-	304	1980	286	106.3%
10/1	Right	U	3	N/A	F		1	7	-	129	1908	170	76.1%

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: Cherwell hamburger gyratory - Junction option C-6	**-**	**-**	**0**	**0**	**0**	**43.8**	**154.9**	**0.0**	**198.7**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**0**	**0**	**0**	**43.8**	**154.9**	**0.0**	**198.7**	**-**	**-**	**-**	**-**
1/2+1/1	462	462	-	-	-	3.8	1.2	-	4.9	38.5	8.0	1.2	9.1
1/3	321	321	-	-	-	2.7	0.9	-	3.5	39.4	7.0	0.9	7.9
4/2+4/1	471	471	-	-	-	3.1	0.6	-	3.7	27.9	4.5	0.6	5.1
4/3	129	129	-	-	-	0.8	0.1	-	0.9	25.7	2.3	0.1	2.5
6/1	1252	1145	-	-	-	12.0	58.9	-	70.9	204.0	34.0	58.9	92.9
6/2+6/3	1362	1244	-	-	-	12.5	64.3	-	76.8	202.9	37.9	64.3	102.2
7/1	531	531	-	-	-	0.3	0.0	-	0.3	2.0	2.4	0.0	2.4
7/2	286	286	-	-	-	0.0	0.0	-	0.0	0.5	0.5	0.0	0.5
8/1	426	426	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	607	607	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	305	286	-	-	-	4.0	14.7	-	18.7	220.7	8.1	14.7	22.8
9/2	304	286	-	-	-	4.0	14.3	-	18.3	216.4	8.0	14.3	22.4
10/1	129	129	-	-	-	0.6	0.0	-	0.6	17.9	3.1	0.0	3.1

C1	Stream: 1 PRC for Signalled Lanes (%):	28.3	Total Delay for Signalled Lanes (pcuHr):	8.79	Cycle Time (s): 90
C1	Stream: 2 PRC for Signalled Lanes (%):	66.4	Total Delay for Signalled Lanes (pcuHr):	4.57	Cycle Time (s): 90
C1	Stream: 3 PRC for Signalled Lanes (%):	-21.6	Total Delay for Signalled Lanes (pcuHr):	185.31	Cycle Time (s): 90
	PRC Over All Lanes (%):	-21.6	Total Delay Over All Lanes(pcuHr):	198.68	

APPENDIX 20

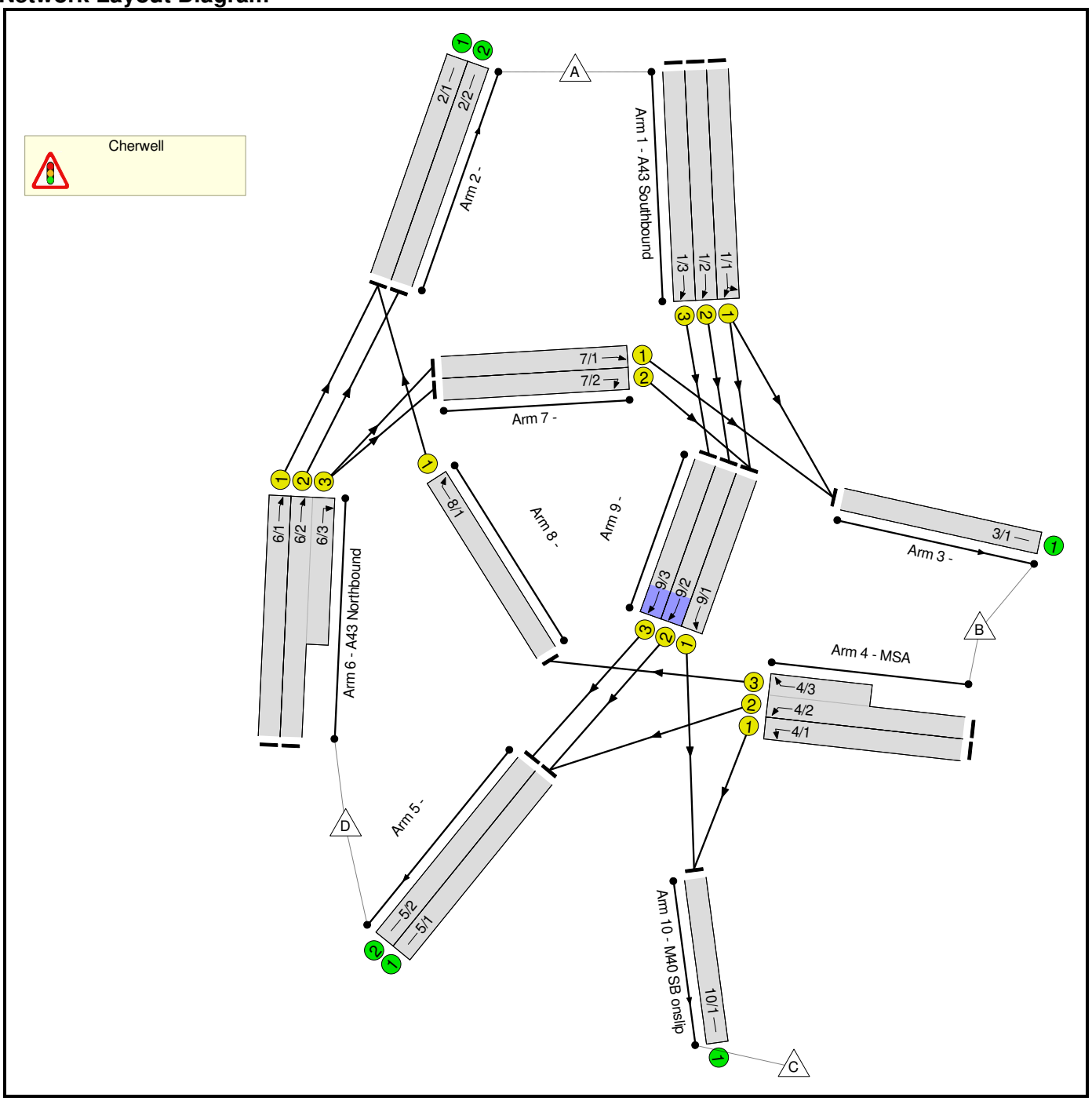
Cherwell Roundabout junction option C-7 – LinSig results

Full Input Data And Results

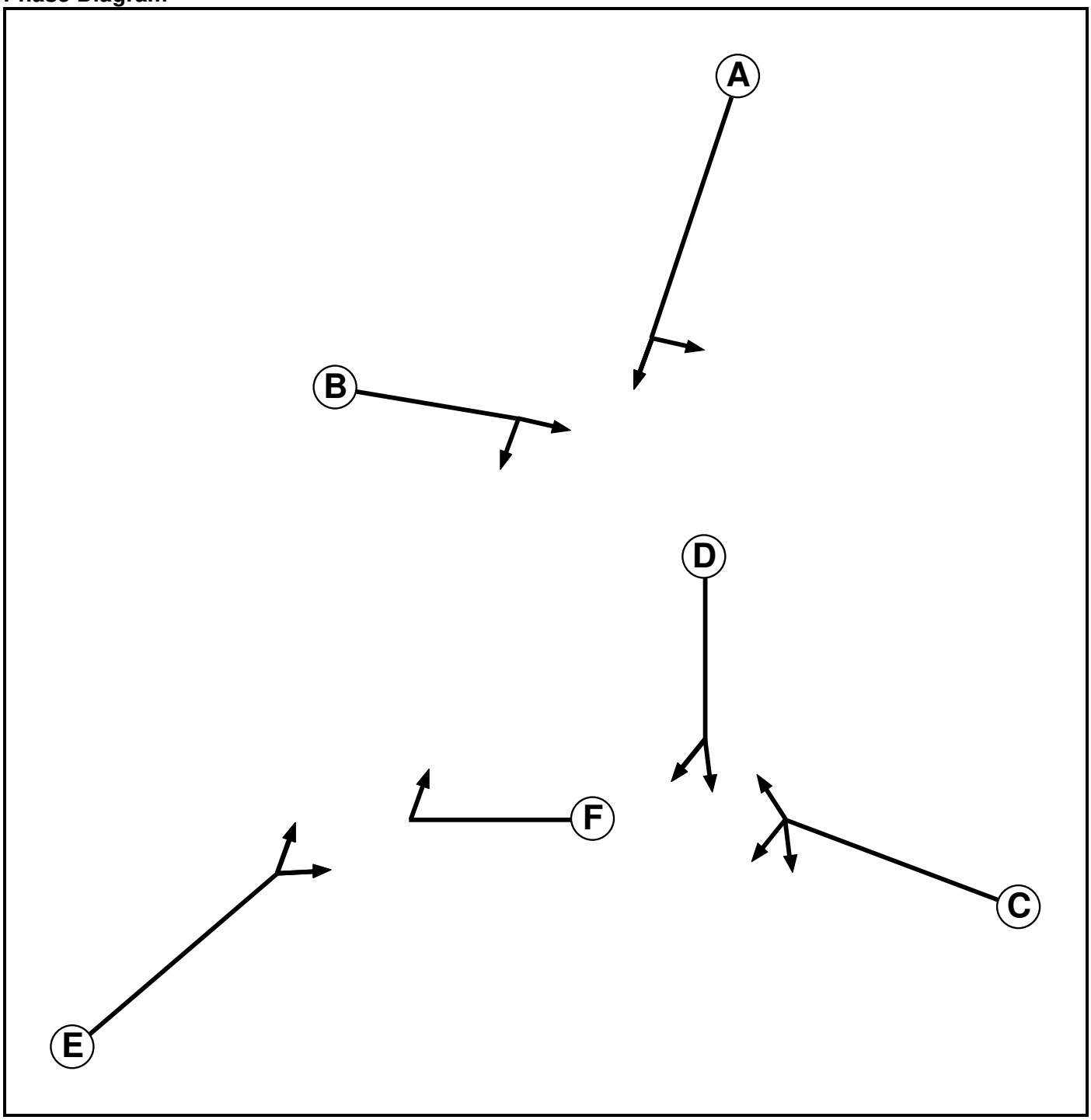
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Cherwell hambuger gyratory - Junction option C-7**
Location:	
Additional detail:	
File name:	2031_DS_M40J10_Cherwell - Junction option C-7.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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
E	Traffic	3		7	7
F	Traffic	3		7	7

Phase Intergreens Matrix

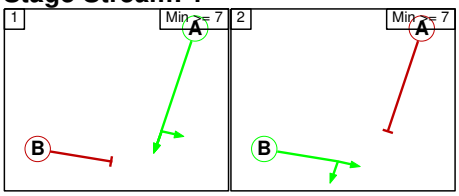
		Starting Phase					
		A	B	C	D	E	F
Terminating Phase	A		6	-	-	-	-
	B	6		-	-	-	-
	C	-	-		6	-	-
	D	-	-	6		-	-
	E	-	-	-	-		6
	F	-	-	-	-	6	

Phases in Stage

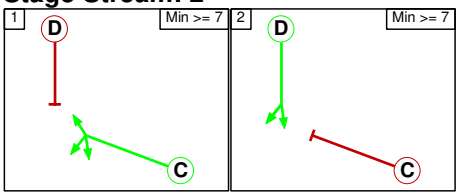
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F

Stage Diagram

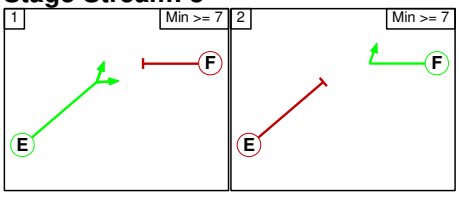
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Prohibited Stage Change

Stage Stream: 1

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		6
	2	6	

Stage Stream: 3

	To Stage		
From Stage		1	2
	1		6
	2	6	

Lane Input Data

Junction: Cherwell												
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 (A43 Southbound)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 3 Left	20.00
											Arm 9 Ahead	Inf
1/2 (A43 Southbound)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 9 Ahead	Inf
1/3 (A43 Southbound)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 9 Ahead	Inf
2/1	U		2	3	60.0	Inf	-	-	-	-	-	-
2/2	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 10 Left	Inf
4/2 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Left	20.00
4/3 (MSA)	U	C	2	3	7.0	Geom	-	3.50	0.00	Y	Arm 8 Right	Inf
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (A43 Northbound)	U	E	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 2 Ahead	45.00
6/2 (A43 Northbound)	U	E	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 2 Ahead	45.00
6/3 (A43 Northbound)	U	E	2	3	10.1	Geom	-	3.65	0.00	Y	Arm 7 Right	35.00
7/1	U	B	2	3	5.2	User	1850	-	-	-	-	-
7/2	U	B	2	3	5.2	User	1850	-	-	-	-	-
8/1	U	F	2	3	7.0	User	1850	-	-	-	-	-
9/1	U	D	2	3	8.7	User	1850	-	-	-	-	-
9/2	U	D	2	3	8.7	User	1850	-	-	-	-	-
9/3	U	D	2	3	8.7	User	1850	-	-	-	-	-
10/1 (M40 SB onslip)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Cherwell8_AM'	07:45	08:45	01:00	
2: 'Cherwell8_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Cherwell14+15 AM' (FG1: 'Cherwell8_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	343	0	1641	1984
	B	85	0	295	202	582
	C	0	0	0	0	0
	D	1577	239	282	0	2098
	Tot.	1662	582	577	1843	4664

Traffic Lane Flows

Lane	Scenario 1: 2031 Cherwell14+15 AM
Junction: Cherwell	
1/1	343
1/2	820
1/3	821
2/1	908
2/2	754
3/1	582
4/1	295
4/2 (with short)	287(In) 202(Out)
4/3 (short)	85
5/1	1022
5/2	821
6/1	823
6/2 (with short)	1275(In) 754(Out)
6/3 (short)	521
7/1	239
7/2	282
8/1	85
9/1	282
9/2	820
9/3	821
10/1	577

Lane Saturation Flows

Junction: Cherwell

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 (A43 Southbound)	3.65	0.00	Y	Arm 3 Left	20.00	100.0 %	1842	1842
				Arm 9 Ahead	Inf	0.0 %		
1/2 (A43 Southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/3 (A43 Southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
4/1 (MSA)	3.50	0.00	Y	Arm 10 Left	Inf	100.0 %	1965	1965
4/2 (MSA)	3.50	0.00	Y	Arm 5 Left	20.00	100.0 %	1828	1828
4/3 (MSA)	3.50	0.00	Y	Arm 8 Right	Inf	100.0 %	1965	1965
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (A43 Northbound)	3.65	0.00	Y	Arm 2 Ahead	45.00	100.0 %	1916	1916
6/2 (A43 Northbound)	3.65	0.00	Y	Arm 2 Ahead	45.00	100.0 %	1916	1916
6/3 (A43 Northbound)	3.65	0.00	Y	Arm 7 Right	35.00	100.0 %	1899	1899
7/1	This lane uses a directly entered Saturation Flow						1850	1850
7/2	This lane uses a directly entered Saturation Flow						1850	1850
8/1	This lane uses a directly entered Saturation Flow						1850	1850
9/1	This lane uses a directly entered Saturation Flow						1850	1850
9/2	This lane uses a directly entered Saturation Flow						1850	1850
9/3	This lane uses a directly entered Saturation Flow						1850	1850
10/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2031 Cherwell14+15 PM' (FG2: 'Cherwell8_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	336	0	1056	1392
	B	129	0	258	213	600
	C	0	0	0	0	0
	D	2346	268	472	0	3086
	Tot.	2475	604	730	1269	5078

Traffic Lane Flows

Lane	Scenario 2: 2031 Cherwell14+15 PM
Junction: Cherwell	
1/1	336
1/2	528
1/3	528
2/1	1502
2/2	973
3/1	604
4/1	258
4/2 (with short)	342(In) 213(Out)
4/3 (short)	129
5/1	741
5/2	528
6/1	1373
6/2 (with short)	1713(In) 973(Out)
6/3 (short)	740
7/1	268
7/2	472
8/1	129
9/1	472
9/2	528
9/3	528
10/1	730

Lane Saturation Flows

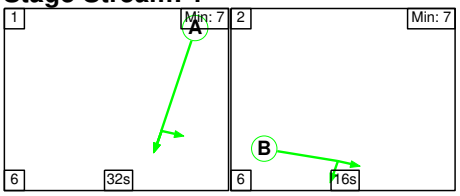
Junction: Cherwell

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 (A43 Southbound)	3.65	0.00	Y	Arm 3 Left	20.00	100.0 %	1842	1842
				Arm 9 Ahead	Inf	0.0 %		
1/2 (A43 Southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
1/3 (A43 Southbound)	3.65	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1980	1980
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
4/1 (MSA)	3.50	0.00	Y	Arm 10 Left	Inf	100.0 %	1965	1965
4/2 (MSA)	3.50	0.00	Y	Arm 5 Left	20.00	100.0 %	1828	1828
4/3 (MSA)	3.50	0.00	Y	Arm 8 Right	Inf	100.0 %	1965	1965
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (A43 Northbound)	3.65	0.00	Y	Arm 2 Ahead	45.00	100.0 %	1916	1916
6/2 (A43 Northbound)	3.65	0.00	Y	Arm 2 Ahead	45.00	100.0 %	1916	1916
6/3 (A43 Northbound)	3.65	0.00	Y	Arm 7 Right	35.00	100.0 %	1899	1899
7/1	This lane uses a directly entered Saturation Flow						1850	1850
7/2	This lane uses a directly entered Saturation Flow						1850	1850
8/1	This lane uses a directly entered Saturation Flow						1850	1850
9/1	This lane uses a directly entered Saturation Flow						1850	1850
9/2	This lane uses a directly entered Saturation Flow						1850	1850
9/3	This lane uses a directly entered Saturation Flow						1850	1850
10/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf

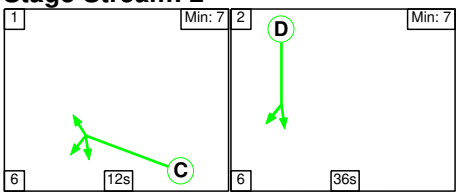
Scenario 1: '2031 Cherwell14+15 AM' (FG1: 'Cherwell8_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

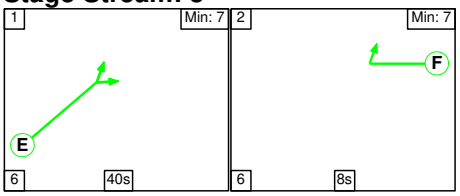
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	32	16
Change Point	0	38

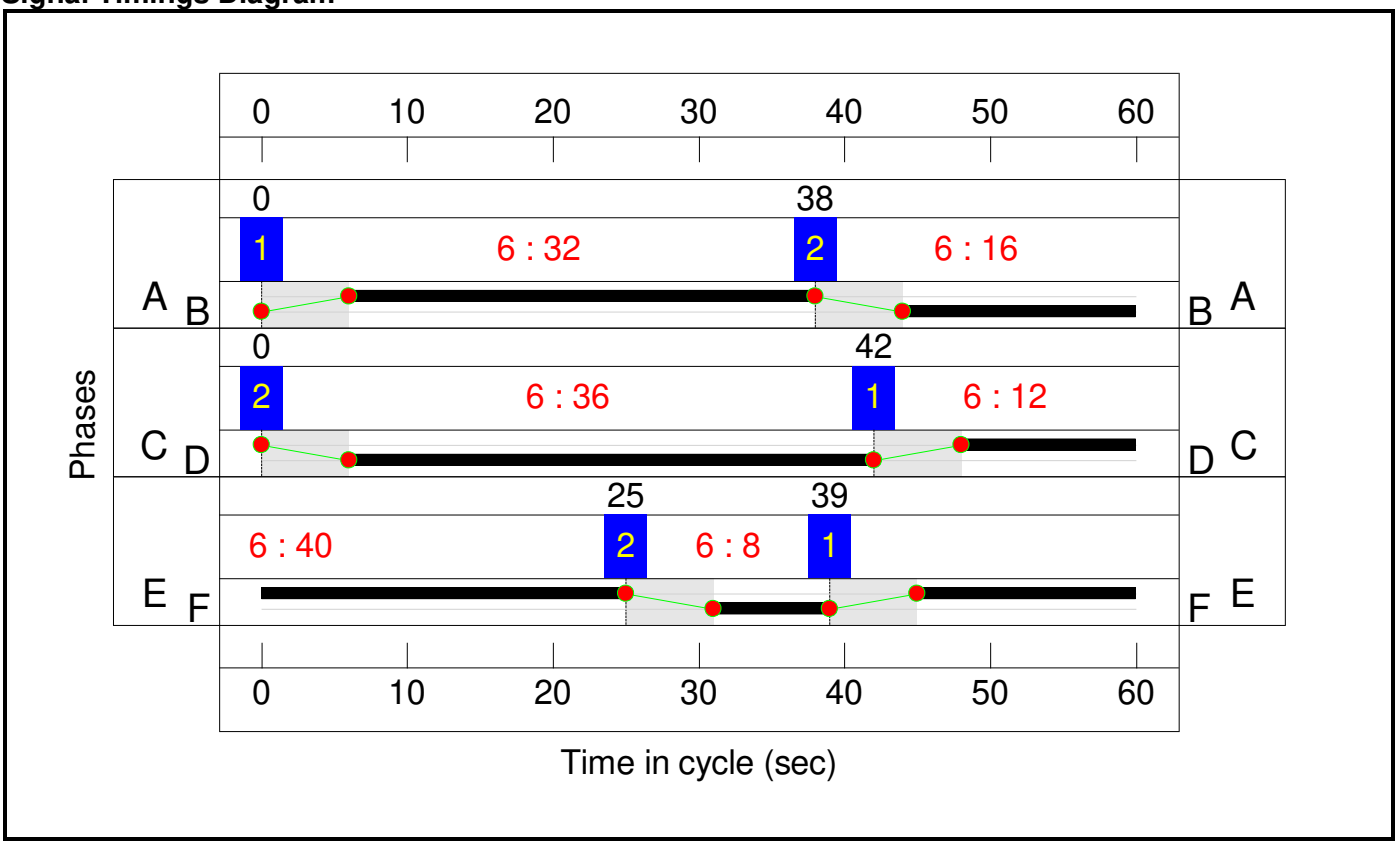
Stage Stream: 2

Stage	1	2
Duration	12	36
Change Point	42	0

Stage Stream: 3

Stage	1	2
Duration	40	8
Change Point	39	25

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: Cherwell hambuger gyratory - Junction option C-7	-	-	**N/A**	-	-		-	-	-	-	-	-	**75.4%**
Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**75.4%**
1/1	A43 Southbound Left Ahead	U	1	N/A	A		1	32	-	343	1842	1013	33.9%
1/2	A43 Southbound Ahead	U	1	N/A	A		1	32	-	820	1980	1089	75.3%
1/3	A43 Southbound Ahead	U	1	N/A	A		1	32	-	821	1980	1089	75.4%
4/1	MSA Left	U	2	N/A	C		1	12	-	295	1965	426	69.3%
4/2+4/3	MSA Left Right	U	2	N/A	C		1	12	-	287	1828:1965	396+167	51.0 : 51.0%
6/1	A43 Northbound Ahead	U	3	N/A	E		1	40	-	823	1916	1309	62.9%
6/2+6/3	A43 Northbound Ahead Right	U	3	N/A	E		1	40	-	1275	1916:1899	1019+704	74.0 : 74.0%
7/1	Ahead	U	1	N/A	B		1	16	-	239	1850	524	45.6%
7/2	Right	U	1	N/A	B		1	16	-	282	1850	524	53.8%
8/1	Right	U	3	N/A	F		1	8	-	85	1850	277	30.6%
9/1	Ahead	U	2	N/A	D		1	36	-	282	1850	1141	24.7%
9/2	Ahead	U	2	N/A	D		1	36	-	820	1850	1141	71.9%
9/3	Ahead	U	2	N/A	D		1	36	-	821	1850	1141	72.0%

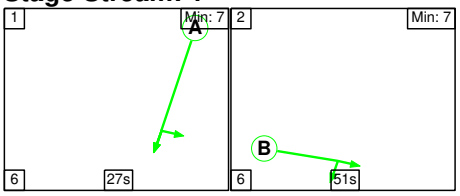
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Cherwell hambuger gyratory - Junction option C-7	**-**	**-**	**0**	**0**	**0**	**16.2**	**8.3**	**0.0**	**24.6**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**0**	**0**	**0**	**16.2**	**8.3**	**0.0**	**24.6**	**-**	**-**	**-**	**-**
1/1	343	343	-	-	-	0.7	0.3	-	1.0	10.2	3.1	0.3	3.4
1/2	820	820	-	-	-	2.4	1.5	-	3.9	17.0	10.5	1.5	12.0
1/3	821	821	-	-	-	2.4	1.5	-	3.9	17.0	10.5	1.5	12.0
4/1	295	295	-	-	-	1.8	1.1	-	2.9	35.2	4.5	1.1	5.6
4/2+4/3	287	287	-	-	-	1.6	0.5	-	2.1	26.8	2.9	0.5	3.4
6/1	823	823	-	-	-	1.2	0.8	-	2.0	9.0	7.5	0.8	8.4
6/2+6/3	1275	1275	-	-	-	1.6	1.4	-	3.1	8.6	6.5	1.4	7.9
7/1	239	239	-	-	-	0.9	0.4	-	1.4	20.4	1.8	0.4	2.2
7/2	282	282	-	-	-	1.1	0.6	-	1.7	21.7	2.7	0.6	3.3
8/1	85	85	-	-	-	0.9	0.0	-	0.9	39.2	1.4	0.0	1.4
9/1	282	282	-	-	-	1.3	0.2	-	1.5	19.2	4.7	0.2	4.9
9/2	820	820	-	-	-	0.1	0.0	-	0.1	0.5	4.3	0.0	4.3
9/3	821	821	-	-	-	0.1	0.0	-	0.1	0.5	4.3	0.0	4.3

C1	Stream: 1 PRC for Signalled Lanes (%):	19.4	Total Delay for Signalled Lanes (pcuHr):	11.77	Cycle Time (s): 60
C1	Stream: 2 PRC for Signalled Lanes (%):	25.1	Total Delay for Signalled Lanes (pcuHr):	6.77	Cycle Time (s): 60
C1	Stream: 3 PRC for Signalled Lanes (%):	21.6	Total Delay for Signalled Lanes (pcuHr):	6.03	Cycle Time (s): 60
	PRC Over All Lanes (%):	19.4	Total Delay Over All Lanes(pcuHr):	24.57	

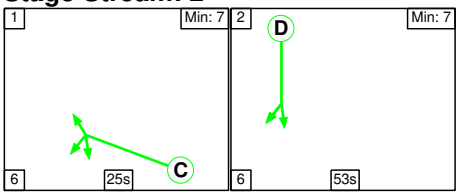
Scenario 2: '2031 Cherwell14+15 PM' (FG2: 'Cherwell8_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

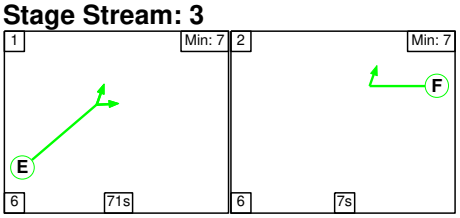
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	27	51
Change Point	0	33

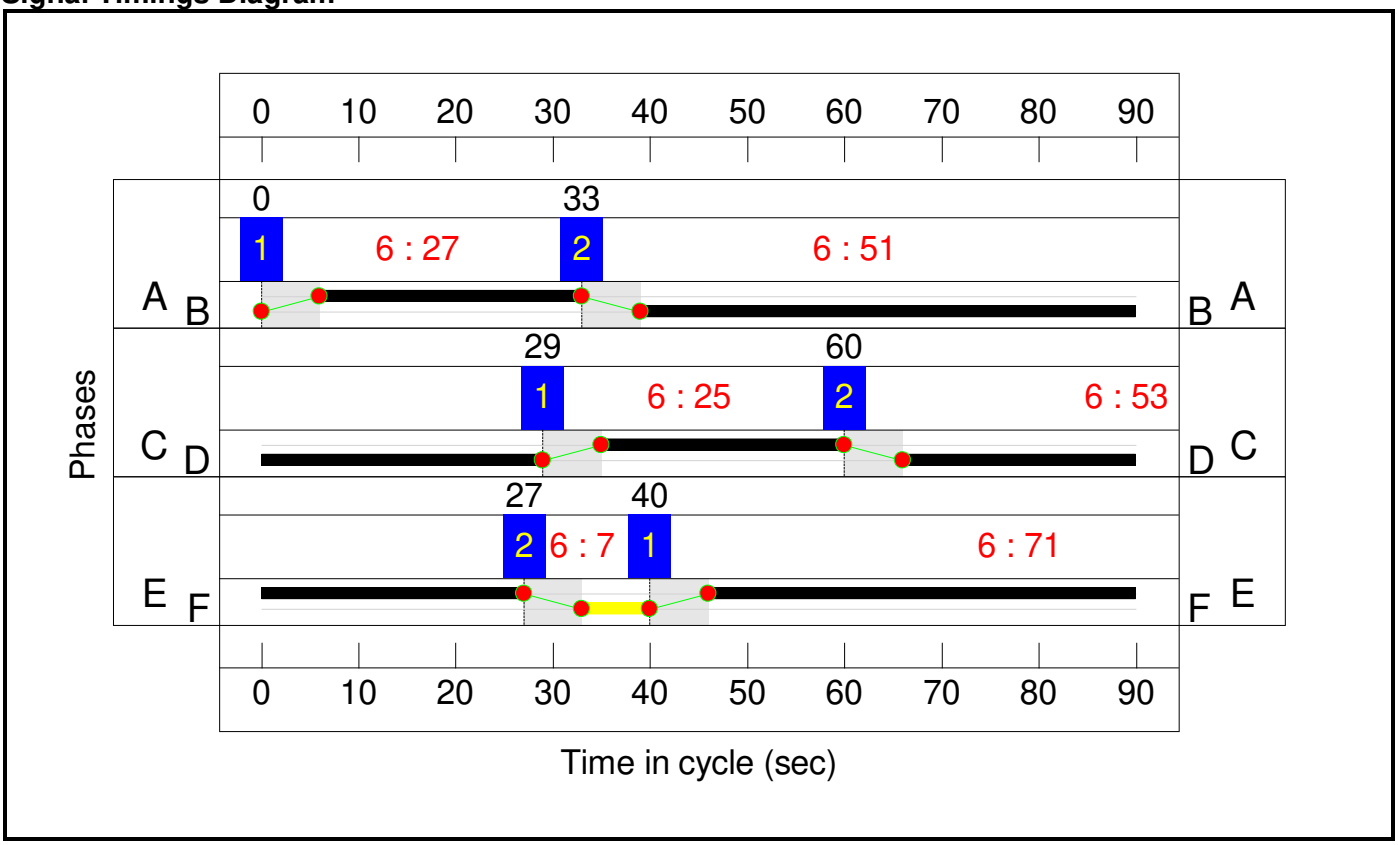
Stage Stream: 2

Stage	1	2
Duration	25	53
Change Point	29	60

Stage Stream: 3

Stage	1	2
Duration	71	7
Change Point	40	27

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: Cherwell hambuger gyratory - Junction option C-7	-	-	**N/A**	-	-		-	-	-	-	-	-	**93.4%**
Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**93.4%**
1/1	A43 Southbound Left Ahead	U	1	N/A	A		1	27	-	336	1842	573	58.6%
1/2	A43 Southbound Ahead	U	1	N/A	A		1	27	-	528	1980	616	85.7%
1/3	A43 Southbound Ahead	U	1	N/A	A		1	27	-	528	1980	616	85.7%
4/1	MSA Left	U	2	N/A	C		1	25	-	258	1965	568	45.4%
4/2+4/3	MSA Left Right	U	2	N/A	C		1	25	-	342	1828:1965	436+264	48.9 : 48.9%
6/1	A43 Northbound Ahead	U	3	N/A	E		1	71	-	1373	1916	1533	89.6%
6/2+6/3	A43 Northbound Ahead Right	U	3	N/A	E		1	71	-	1713	1916:1899	1042+792	93.4 : 93.4%
7/1	Ahead	U	1	N/A	B		1	51	-	268	1850	1069	25.1%
7/2	Right	U	1	N/A	B		1	51	-	472	1850	1069	44.2%
8/1	Right	U	3	N/A	F		1	7	-	129	1850	164	78.4%
9/1	Ahead	U	2	N/A	D		1	53	-	472	1850	1110	42.5%
9/2	Ahead	U	2	N/A	D		1	53	-	528	1850	1110	47.6%
9/3	Ahead	U	2	N/A	D		1	53	-	528	1850	1110	47.6%

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: Cherwell hambuger gyratory - Junction option C-7	**-**	**-**	**0**	**0**	**0**	**27.1**	**18.7**	**0.0**	**45.8**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**0**	**0**	**0**	**27.1**	**18.7**	**0.0**	**45.8**	**-**	**-**	**-**	**-**
1/1	336	336	-	-	-	2.4	0.7	-	3.1	33.7	7.0	0.7	7.7
1/2	528	528	-	-	-	4.3	2.8	-	7.1	48.3	12.3	2.8	15.1
1/3	528	528	-	-	-	4.3	2.8	-	7.1	48.3	12.3	2.8	15.1
4/1	258	258	-	-	-	1.9	0.4	-	2.3	32.0	5.2	0.4	5.6
4/2+4/3	342	342	-	-	-	2.4	0.5	-	2.9	30.3	4.3	0.5	4.7
6/1	1373	1373	-	-	-	2.4	4.1	-	6.5	17.1	24.0	4.1	28.1
6/2+6/3	1713	1713	-	-	-	1.6	6.4	-	8.0	16.8	9.7	6.4	16.1
7/1	268	268	-	-	-	0.6	0.2	-	0.8	10.5	2.2	0.2	2.3
7/2	472	472	-	-	-	1.1	0.4	-	1.5	11.8	3.8	0.4	4.2
8/1	129	129	-	-	-	1.5	0.0	-	1.5	40.6	1.7	0.0	1.7
9/1	472	472	-	-	-	2.1	0.4	-	2.5	18.9	10.6	0.4	11.0
9/2	528	528	-	-	-	1.3	0.0	-	1.3	8.7	4.3	0.0	4.3
9/3	528	528	-	-	-	1.3	0.0	-	1.3	8.7	4.3	0.0	4.3

C1	Stream: 1 PRC for Signalled Lanes (%):	5.0	Total Delay for Signalled Lanes (pcuHr):	19.65	Cycle Time (s): 90
C1	Stream: 2 PRC for Signalled Lanes (%):	84.2	Total Delay for Signalled Lanes (pcuHr):	10.19	Cycle Time (s): 90
C1	Stream: 3 PRC for Signalled Lanes (%):	-3.8	Total Delay for Signalled Lanes (pcuHr):	15.96	Cycle Time (s): 90
	PRC Over All Lanes (%):	-3.8	Total Delay Over All Lanes(pcuHr):	45.80	

APPENDIX 21

Ardley Roundabout junction option A-1 – Arcady results

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 2031_DS_M40J10_Ardley_OpA_Ardley1.j9
Path: D:\Dropbox (ADC Infrastructure)\!!! ADC Projects\ADC1794 Oxfordshire SRFI\Documents\reports\ADC\M40 J10 options\Options Report\Ardley
Report generation date: 27/04/2021 10:50:09

»2031_DS - 2031_DS_0645, AM1
»2031_DS - 2031_DS_0745, AM2
»2031_DS - 2031_DS_1630, PM

Summary of junction performance

	AM1			AM2			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2031_DS - 2031_DS_0645									
Arm A	1.8	7.01	0.65						
Arm B	0.6	8.19	0.39						
Arm D	5.5	11.10	0.85						
Arm E	5.8	13.31	0.86						
2031_DS - 2031_DS_0745									
Arm A				2.4	9.10	0.71			
Arm B				0.9	11.22	0.47			
Arm D				6.0	11.90	0.86			
Arm E				9.5	20.32	0.92			
2031_DS - 2031_DS_1630									
Arm A							266.4	634.18	1.46
Arm B							10.6	175.13	1.02
Arm D							1.4	4.06	0.59
Arm E							8.0	13.61	0.90

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

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

File summary

File Description

Title	2031_DS_M40J10_Ardley_OpA_Ardley1
Location	M40 J10
Site number	
Date	06/04/2021
Version	V1
Status	Preliminary
Identifier	[redacted]
Client	
Jobnumber	ADC1794
Enumerator	[redacted]
Description	Option Layout A BWB Options: 1, 2, 14, 15 Flowset: Ardley1

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15
D3	2031_DS_1630	PM	ONE HOUR	06:30	08:00	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	2031_DS	100.000

2031_DS - 2031_DS_0645, AM1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm E - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D, E	10.85	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Link Road	
B	B430	
C	M40 J10 NB On	
D	A43 Bridge	
E	M40 J10 NB Off	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	7.30	10.50	50.0	40.0	85.0	35.0	
B	3.50	8.50	96.0	30.0	85.0	34.0	
C							✓
D	7.30	8.62	10.0	30.0	85.0	35.0	
E	11.30	14.00	40.0	40.0	85.0	40.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.657	3038
B	0.559	2365
C		
D	0.576	2490
E	0.799	4055

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	872	100.000
B		✓	254	100.000
C				
D		✓	1685	100.000
E		✓	1484	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		A	B	C	D	E
From	A	0	66	346	460	0
	B	215	0	20	19	0
	C	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	D	1372	16	297	0	0
	E	341	1	0	1142	0

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	2	10	37	0
	B	0	0	0	0	0
	C	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	D	7	0	12	0	0
	E	28	0	0	17	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.65	7.01	1.8	A
B	0.39	8.19	0.6	A
C				
D	0.85	11.10	5.5	B
E	0.86	13.31	5.8	B

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	656	1092	1785	0.368	654	0.6	3.175	A
B	191	1684	1243	0.154	191	0.2	3.420	A
C		1378						
D	1269	161	2217	0.572	1263	1.3	3.754	A
E	1117	1425	2379	0.470	1114	0.9	2.836	A

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	784	1306	1655	0.474	783	0.9	4.123	A
B	228	2014	1023	0.223	228	0.3	4.526	A
C		1647						
D	1515	193	2200	0.689	1511	2.2	5.202	A
E	1334	1704	2178	0.613	1331	1.6	4.239	A

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	960	1589	1481	0.648	956	1.8	6.810	A
B	280	2454	730	0.383	278	0.6	7.953	A
C		2006						
D	1855	236	2177	0.852	1843	5.4	10.383	B
E	1634	2078	1909	0.856	1618	5.4	11.813	B

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	960	1602	1473	0.652	960	1.8	7.007	A
B	280	2470	719	0.389	280	0.6	8.188	A
C		2020						
D	1855	237	2177	0.852	1854	5.5	11.103	B
E	1634	2091	1900	0.860	1632	5.8	13.311	B

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	784	1324	1643	0.477	788	0.9	4.224	A
B	228	2037	1008	0.227	230	0.3	4.634	A
C		1667						
D	1515	194	2199	0.689	1528	2.3	5.467	A
E	1334	1722	2165	0.616	1351	1.6	4.512	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	656	1099	1781	0.369	658	0.6	3.207	A
B	191	1694	1236	0.155	192	0.2	3.447	A
C		1386						
D	1269	162	2216	0.572	1272	1.4	3.826	A
E	1117	1434	2372	0.471	1120	0.9	2.883	A

2031_DS - 2031_DS_0745, AM2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm E - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D, E	14.37	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	887	100.000
B		✓	254	100.000
C				
D		✓	1697	100.000
E		✓	1618	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		A	B	C	D	E
From	A	0	66	332	489	0
	B	215	0	19	20	0
	C	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	D	1288	16	393	0	0
	E	352	1	0	1265	0

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	2	12	35	0
	B	0	0	0	0	0
	C	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	D	9	0	7	0	0
	E	26	0	0	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.71	9.10	2.4	A
B	0.47	11.22	0.9	B
C				
D	0.86	11.90	6.0	B
E	0.92	20.32	9.5	C

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	668	1257	1715	0.389	665	0.6	3.419	A
B	191	1860	1161	0.165	190	0.2	3.706	A
C		1492						
D	1278	161	2207	0.579	1272	1.4	3.827	A
E	1218	1433	2446	0.498	1214	1.0	2.912	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	797	1502	1570	0.508	796	1.0	4.638	A
B	228	2224	925	0.247	228	0.3	5.160	A
C		1784						
D	1526	193	2191	0.696	1522	2.3	5.356	A
E	1455	1715	2236	0.650	1451	1.8	4.566	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	977	1820	1383	0.706	971	2.3	8.635	A
B	280	2701	616	0.454	278	0.8	10.588	B
C		2165						
D	1868	235	2168	0.862	1855	5.7	11.015	B
E	1781	2090	1957	0.910	1755	8.4	16.159	C

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	977	1841	1371	0.712	976	2.4	9.098	A
B	280	2725	600	0.466	279	0.9	11.218	B
C		2186						
D	1868	237	2167	0.862	1867	6.0	11.903	B
E	1781	2104	1946	0.916	1777	9.5	20.321	C

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	797	1533	1552	0.514	803	1.1	4.836	A
B	228	2261	902	0.253	230	0.3	5.379	A
C		1817						
D	1526	195	2189	0.697	1540	2.3	5.663	A
E	1455	1735	2221	0.655	1485	1.9	5.088	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	668	1265	1710	0.390	669	0.6	3.463	A
B	191	1872	1153	0.166	192	0.2	3.746	A
C		1502						
D	1278	162	2207	0.579	1281	1.4	3.907	A
E	1218	1444	2438	0.500	1222	1.0	2.970	A

2031_DS - 2031_DS_1630, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm E - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D, E	207.40	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2031_DS_1630	PM	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	1486	100.000
B		✓	198	100.000
C				
D		✓	1136	100.000
E		✓	2004	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		A	B	C	D	E
From	A	0	132	390	964	0
	B	175	0	7	16	0
	C	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	D	667	24	445	0	0
	E	217	3	0	1784	0

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	1	8	14	0
	B	1	0	0	0	0
	C	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	D	14	0	9	0	0
	E	37	0	0	11	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	1.46	634.18	266.4	F
B	1.02	175.13	10.6	F
C				
D	0.59	4.06	1.4	A
E	0.90	13.61	8.0	B

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1119	1693	1633	0.685	1110	2.1	6.786	A
B	149	2685	694	0.215	148	0.3	6.575	A
C		2202						
D	855	131	2162	0.396	853	0.7	2.744	A
E	1509	983	2812	0.537	1504	1.2	2.745	A

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1336	2024	1417	0.943	1302	10.6	26.032	D
B	178	3187	386	0.461	176	0.8	16.929	C
C		2615						
D	1021	155	2149	0.475	1020	0.9	3.186	A
E	1802	1176	2662	0.677	1798	2.1	4.147	A

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1636	2464	1131	1.446	1129	137.2	244.248	F
B	218	3463	219	0.995	194	6.9	101.050	F
C		2865						
D	1251	171	2141	0.584	1249	1.4	4.028	A
E	2206	1420	2471	0.893	2185	7.4	11.808	B

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1636	2482	1120	1.461	1120	266.4	597.648	F
B	218	3472	214	1.019	203	10.6	175.128	F
C		2884						
D	1251	179	2136	0.585	1251	1.4	4.065	A
E	2206	1430	2464	0.896	2204	8.0	13.612	B

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1336	2049	1401	0.954	1396	251.4	634.178	F
B	178	3297	318	0.559	215	1.4	45.281	E
C		2737						
D	1021	190	2131	0.479	1023	0.9	3.257	A
E	1802	1213	2635	0.684	1825	2.2	4.563	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1119	1703	1627	0.688	1620	126.1	420.617	F
B	149	3158	400	0.372	152	0.6	14.667	B
C		2544						
D	855	134	2160	0.396	856	0.7	2.765	A
E	1509	991	2806	0.538	1513	1.2	2.791	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 2031_DS_M40J10_Ardley_OpA_Ardley2.j9
Path: D:\Dropbox (ADC Infrastructure)\!!! ADC Projects\ADC1794 Oxfordshire SRFI\Documents\reports\ADC\M40 J10 options\Options Report\Ardley
Report generation date: 27/04/2021 10:56:28

»2031_DS - 2031_DS_0645, AM1
»2031_DS - 2031_DS_0745, AM2
»2031_DS - 2031_DS_1630, PM

Summary of junction performance

	AM1			AM2			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2031_DS - 2031_DS_0645									
Arm A	1.0	4.69	0.51						
Arm B	0.5	6.14	0.32						
Arm D	5.5	11.10	0.85						
Arm E	5.8	13.31	0.86						
2031_DS - 2031_DS_0745									
Arm A				1.2	5.58	0.56			
Arm B				0.6	7.70	0.37			
Arm D				6.0	11.91	0.86			
Arm E				9.5	20.34	0.92			
2031_DS - 2031_DS_1630									
Arm A							65.7	162.52	1.10
Arm B							6.3	107.99	0.93
Arm D							1.4	4.08	0.59
Arm E							8.1	13.82	0.90

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

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

File summary

File Description

Title	2031_DS_M40J10_Ardley_OpA_Ardley2
Location	M40 J10
Site number	
Date	06/04/2021
Version	V1
Status	Preliminary
Identifier	[redacted]
Client	
Jobnumber	ADC1794
Enumerator	[redacted]
Description	Option Layout A BWB Options: 4, 5 Flowset: Ardley2

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15
D3	2031_DS_1630	PM	ONE HOUR	06:30	08:00	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	2031_DS	100.000

2031_DS - 2031_DS_0645, AM1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm E - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D, E	10.52	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Link Road	
B	B430	
C	M40 J10 NB On	
D	A43 Bridge	
E	M40 J10 NB Off	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	7.30	10.50	50.0	40.0	85.0	35.0	
B	3.50	8.50	96.0	30.0	85.0	34.0	
C							✓
D	7.30	8.62	10.0	30.0	85.0	35.0	
E	11.30	14.00	40.0	40.0	85.0	40.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.657	3038
B	0.559	2365
C		
D	0.576	2490
E	0.799	4055

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	718	100.000
B		✓	254	100.000
C				
D		✓	1685	100.000
E		✓	1484	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		A	B	C	D	E
From	A	0	66	346	306	0
	B	215	0	20	19	0
	C	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	D	1372	16	297	0	0
	E	341	1	0	1142	0

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	2	10	28	0
	B	0	0	0	0	0
	C	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	D	7	0	12	0	0
	E	28	0	0	17	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.51	4.69	1.0	A
B	0.32	6.14	0.5	A
C				
D	0.85	11.10	5.5	B
E	0.86	13.31	5.8	B

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	541	1092	1889	0.286	539	0.4	2.663	A
B	191	1569	1343	0.142	191	0.2	3.123	A
C		1262						
D	1269	161	2217	0.572	1263	1.3	3.754	A
E	1117	1425	2379	0.470	1114	0.9	2.836	A

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	645	1306	1750	0.369	645	0.6	3.255	A
B	228	1876	1143	0.200	228	0.2	3.935	A
C		1509						
D	1515	193	2200	0.689	1511	2.2	5.203	A
E	1334	1704	2178	0.613	1331	1.6	4.239	A

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	791	1589	1567	0.504	789	1.0	4.616	A
B	280	2286	875	0.319	279	0.5	6.024	A
C		1838						
D	1855	236	2177	0.852	1842	5.4	10.387	B
E	1634	2078	1909	0.856	1618	5.4	11.821	B

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	791	1602	1559	0.507	790	1.0	4.687	A
B	280	2301	866	0.323	280	0.5	6.137	A
C		1851						
D	1855	237	2177	0.852	1854	5.5	11.104	B
E	1634	2091	1900	0.860	1632	5.8	13.312	B

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	645	1324	1738	0.371	647	0.6	3.306	A
B	228	1897	1130	0.202	229	0.3	4.003	A
C		1526						
D	1515	194	2199	0.689	1528	2.3	5.465	A
E	1334	1722	2165	0.616	1351	1.6	4.509	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	541	1099	1884	0.287	541	0.4	2.683	A
B	191	1578	1337	0.143	192	0.2	3.142	A
C		1269						
D	1269	162	2216	0.572	1272	1.4	3.826	A
E	1117	1434	2372	0.471	1120	0.9	2.881	A

2031_DS - 2031_DS_0745, AM2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm E - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D, E	13.82	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	736	100.000
B		✓	254	100.000
C				
D		✓	1697	100.000
E		✓	1618	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		A	B	C	D	E
From	A	0	66	332	338	0
	B	215	0	19	20	0
	C	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	D	1288	16	393	0	0
	E	352	1	0	1265	0

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	2	12	24	0
	B	0	0	0	0	0
	C	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	D	9	0	7	0	0
	E	26	0	0	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.56	5.58	1.2	A
B	0.37	7.70	0.6	A
C				
D	0.86	11.91	6.0	B
E	0.92	20.34	9.5	C

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	554	1257	1820	0.305	552	0.4	2.837	A
B	191	1747	1261	0.152	191	0.2	3.362	A
C		1379						
D	1278	161	2207	0.579	1272	1.4	3.828	A
E	1218	1433	2446	0.498	1214	1.0	2.913	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	662	1502	1666	0.397	661	0.7	3.577	A
B	228	2089	1045	0.219	228	0.3	4.406	A
C		1649						
D	1526	193	2190	0.696	1522	2.3	5.356	A
E	1455	1715	2236	0.651	1451	1.8	4.566	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	810	1820	1467	0.552	808	1.2	5.442	A
B	280	2537	761	0.368	278	0.6	7.445	A
C		2001						
D	1868	236	2168	0.862	1854	5.7	11.026	B
E	1781	2090	1956	0.911	1755	8.4	16.184	C

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	810	1841	1455	0.557	810	1.2	5.584	A
B	280	2559	747	0.374	280	0.6	7.700	A
C		2020						
D	1868	237	2167	0.862	1867	6.0	11.907	B
E	1781	2104	1946	0.916	1777	9.5	20.336	C

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	662	1533	1647	0.402	664	0.7	3.672	A
B	228	2122	1024	0.223	230	0.3	4.539	A
C		1678						
D	1526	194	2190	0.697	1540	2.3	5.660	A
E	1455	1734	2221	0.655	1485	1.9	5.083	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	554	1265	1815	0.305	555	0.4	2.859	A
B	191	1757	1254	0.152	192	0.2	3.389	A
C		1387						
D	1278	162	2207	0.579	1281	1.4	3.907	A
E	1218	1444	2438	0.500	1222	1.0	2.967	A

2031_DS - 2031_DS_1630, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm E - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D, E	52.26	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2031_DS_1630	PM	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	1157	100.000
B		✓	198	100.000
C				
D		✓	1136	100.000
E		✓	2004	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		A	B	C	D	E
From	A	0	132	390	635	0
	B	175	0	7	16	0
	C	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	D	667	24	445	0	0
	E	217	3	0	1784	0

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	1	8	9	0
	B	1	0	0	0	0
	C	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	D	14	0	9	0	0
	E	37	0	0	11	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	1.10	162.52	65.7	F
B	0.93	107.99	6.3	F
C				
D	0.59	4.08	1.4	A
E	0.90	13.82	8.1	B

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	871	1693	1685	0.517	867	1.1	4.375	A
B	149	2441	861	0.173	148	0.2	5.047	A
C		1958						
D	855	131	2162	0.396	853	0.7	2.744	A
E	1509	984	2812	0.537	1504	1.2	2.745	A

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1040	2024	1463	0.711	1035	2.4	8.307	A
B	178	2917	572	0.311	177	0.4	9.095	A
C		2339						
D	1021	156	2148	0.475	1020	0.9	3.188	A
E	1802	1177	2661	0.677	1798	2.1	4.151	A

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1274	2464	1168	1.090	1143	35.2	70.818	F
B	218	3446	250	0.871	203	4.2	64.045	F
C		2768						
D	1251	180	2136	0.586	1249	1.4	4.047	A
E	2206	1428	2465	0.895	2185	7.5	12.004	B

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1274	2482	1156	1.102	1152	65.7	162.517	F
B	218	3473	234	0.932	209	6.3	107.993	F
C		2797						
D	1251	185	2133	0.586	1251	1.4	4.078	A
E	2206	1436	2460	0.897	2204	8.1	13.822	B

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1040	2050	1446	0.719	1292	2.8	58.787	F
B	178	3170	420	0.424	200	0.8	17.995	C
C		2527						
D	1021	177	2138	0.478	1023	0.9	3.235	A
E	1802	1200	2645	0.681	1825	2.2	4.519	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	871	1702	1679	0.519	878	1.1	4.530	A
B	149	2460	849	0.175	151	0.2	5.173	A
C		1974						
D	855	134	2160	0.396	856	0.7	2.764	A
E	1509	990	2807	0.538	1513	1.2	2.792	A

APPENDIX 22

Ardley Roundabout junction option A-2 – Arcady results

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 2031_DS_M40J10_Ardley_OpB_Ardley3.j9
Path: D:\Dropbox (ADC Infrastructure)\!!! ADC Projects\ADC1794 Oxfordshire SRFI\Documents\reports\ADC\M40 J10 options\Options Report\Ardley
Report generation date: 27/04/2021 11:01:58

»2031_DS - 2031_DS_0645, AM1
»2031_DS - 2031_DS_0745, AM2
»2031_DS - 2031_DS_1630, PM

Summary of junction performance

	AM1			AM2			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
	2031_DS - 2031_DS_0645								
Arm A	4.5	8.28	0.82						
Arm B	0.3	4.37	0.25						
Arm C	4.6	9.16	0.83						
	2031_DS - 2031_DS_0745								
Arm A				6.3	10.89	0.87			
Arm B				0.4	4.80	0.27			
Arm C				4.9	9.68	0.83			
	2031_DS - 2031_DS_1630								
Arm A							319.2	445.59	1.23
Arm B							0.3	5.77	0.26
Arm C							1.3	3.69	0.56

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

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

File summary

File Description

Title	2031_DS_M40J10_Ardley_OpB_Ardley3
Location	M40 J10
Site number	
Date	06/04/2021
Version	V1
Status	Preliminary
Identifier	[redacted]
Client	
Jobnumber	ADC1794
Enumerator	[redacted]
Description	Option Layout B BWB Options: 6, 7 Flowset: Ardley3

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15
D3	2031_DS_1630	PM	ONE HOUR	06:30	08:00	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	2031_DS	100.000

2031_DS - 2031_DS_0645, AM1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D	8.42	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Link Road	
B	B430	
C	A43 Bridge	
D	M40 J10 NB On	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	7.30	10.50	20.0	30.0	85.0	35.0	
B	3.50	8.50	96.0	30.0	85.0	34.0	
C	7.30	10.50	20.0	30.0	85.0	35.0	
D							✓

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.628	2850
B	0.559	2365
C	0.628	2850
D		

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	1817	100.000
B		✓	254	100.000
C		✓	1685	100.000
D				

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	67	1404	346
	B	219	0	15	20
	C	1372	16	0	297
	D	Exit-only	Exit-only	Exit-only	Exit-only

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	19	10
	B	0	0	0	0
	C	7	0	0	12
	D	Exit-only	Exit-only	Exit-only	Exit-only

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.82	8.28	4.5	A
B	0.25	4.37	0.3	A
C	0.83	9.16	4.6	A
D				

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1368	12	2437	0.561	1363	1.3	3.338	A
B	191	1313	1505	0.127	191	0.1	2.737	A
C	1269	439	2373	0.535	1264	1.1	3.233	A
D		1206						

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1633	14	2435	0.671	1630	2.0	4.456	A
B	228	1570	1336	0.171	228	0.2	3.248	A
C	1515	525	2320	0.653	1512	1.9	4.440	A
D		1442						

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2001	18	2434	0.822	1991	4.4	7.961	A
B	280	1918	1109	0.252	279	0.3	4.335	A
C	1855	642	2248	0.825	1845	4.5	8.711	A
D		1760						

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2001	18	2434	0.822	2000	4.5	8.282	A
B	280	1926	1103	0.254	280	0.3	4.371	A
C	1855	644	2246	0.826	1855	4.6	9.159	A
D		1769						

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1633	14	2435	0.671	1643	2.1	4.598	A
B	228	1583	1328	0.172	229	0.2	3.275	A
C	1515	528	2318	0.654	1526	1.9	4.605	A
D		1454						

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1368	12	2437	0.561	1371	1.3	3.387	A
B	191	1320	1500	0.127	191	0.1	2.751	A
C	1269	441	2371	0.535	1272	1.2	3.283	A
D		1213						

2031_DS - 2031_DS_0745, AM2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D	10.02	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	1964	100.000
B		✓	254	100.000
C		✓	1697	100.000
D				

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	67	1565	332
	B	218	0	17	19
	C	1288	16	0	393
	D	Exit-only	Exit-only	Exit-only	Exit-only

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	15	12
	B	0	0	0	0
	C	9	0	0	7
	D	Exit-only	Exit-only	Exit-only	Exit-only

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.87	10.89	6.3	B
B	0.27	4.80	0.4	A
C	0.83	9.68	4.9	A
D				

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1479	12	2492	0.593	1473	1.4	3.511	A
B	191	1423	1455	0.131	191	0.2	2.845	A
C	1278	427	2362	0.541	1273	1.2	3.294	A
D		1142						

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1766	14	2491	0.709	1762	2.4	4.910	A
B	228	1702	1276	0.179	228	0.2	3.434	A
C	1526	511	2310	0.660	1523	1.9	4.555	A
D		1366						

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2162	18	2489	0.869	2148	6.1	10.115	B
B	280	2074	1038	0.269	279	0.4	4.736	A
C	1868	623	2240	0.834	1857	4.7	9.142	A
D		1667						

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2162	18	2489	0.869	2161	6.3	10.893	B
B	280	2088	1029	0.272	280	0.4	4.800	A
C	1868	626	2238	0.835	1868	4.9	9.677	A
D		1675						

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1766	14	2491	0.709	1781	2.5	5.177	A
B	228	1720	1265	0.181	229	0.2	3.480	A
C	1526	515	2307	0.661	1537	2.0	4.743	A
D		1378						

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1479	12	2492	0.593	1483	1.5	3.581	A
B	191	1432	1449	0.132	191	0.2	2.863	A
C	1278	429	2360	0.541	1281	1.2	3.344	A
D		1149						

2031_DS - 2031_DS_1630, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D	305.32	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2031_DS_1630	PM	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	2877	100.000
B		✓	198	100.000
C		✓	1136	100.000
D				

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	135	2352	390
	B	176	0	15	7
	C	667	24	0	445
	D	Exit-only	Exit-only	Exit-only	Exit-only

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	1	11	8
	B	1	0	0	0
	C	14	0	0	9
	D	Exit-only	Exit-only	Exit-only	Exit-only

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	1.23	445.59	319.2	F
B	0.26	5.77	0.3	A
C	0.56	3.69	1.3	A
D				

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2166	18	2588	0.837	2147	4.9	7.835	A
B	149	2046	1096	0.136	148	0.2	3.799	A
C	855	428	2298	0.372	853	0.6	2.487	A
D		651						

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2586	22	2586	1.000	2504	25.5	29.428	D
B	178	2386	888	0.200	178	0.2	5.065	A
C	1021	504	2253	0.453	1020	0.8	2.919	A
D		779						

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	3168	26	2584	1.226	2581	172.1	142.997	F
B	218	2460	843	0.259	218	0.3	5.750	A
C	1251	551	2226	0.562	1249	1.3	3.679	A
D		953						

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	3168	26	2584	1.226	2583	318.2	344.663	F
B	218	2462	842	0.259	218	0.3	5.769	A
C	1251	552	2225	0.562	1251	1.3	3.692	A
D		955						

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2586	22	2586	1.000	2582	319.2	445.585	F
B	178	2461	843	0.211	178	0.3	5.421	A
C	1021	515	2246	0.455	1023	0.8	2.948	A
D		781						

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2166	18	2588	0.837	2580	215.6	373.561	F
B	149	2459	844	0.177	149	0.2	5.187	A
C	855	488	2262	0.378	856	0.6	2.562	A
D		653						

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 2031_DS_M40J10_Ardley_OpB_Ardley4.j9
Path: D:\Dropbox (ADC Infrastructure)\!!! ADC Projects\ADC1794 Oxfordshire SRFI\Documents\reports\ADC\M40 J10 options\Options Report\Ardley
Report generation date: 27/04/2021 11:18:55

»2031_DS - 2031_DS_0645, AM1
»2031_DS - 2031_DS_0745, AM2
»2031_DS - 2031_DS_1630, PM

Summary of junction performance

	AM1			AM2			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
	2031_DS - 2031_DS_0645								
Arm A	3.6	6.60	0.79						
Arm B	0.3	4.37	0.25						
Arm C	10.9	19.94	0.93						
	2031_DS - 2031_DS_0745								
Arm A				4.8	8.13	0.83			
Arm B				0.4	4.80	0.27			
Arm C				13.2	23.66	0.94			
	2031_DS - 2031_DS_1630								
Arm A							248.9	314.68	1.17
Arm B							0.4	6.48	0.28
Arm C							1.9	4.65	0.66

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

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

File summary

File Description

Title	2031_DS_M40J10_Ardley_OpB_Ardley4
Location	M40 J10
Site number	
Date	06/04/2021
Version	V1
Status	Preliminary
[redacted]	[redacted]
Client	
Jobnumber	ADC1794
[redacted]	[redacted]
Description	Option Layout B BWB Options: 13 Flowset: Ardley4

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15
D3	2031_DS_1630	PM	ONE HOUR	06:30	08:00	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	2031_DS	100.000

2031_DS - 2031_DS_0645, AM1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D	12.73	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Link Road	
B	B430	
C	A43 Bridge	
D	M40 J10 NB On	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	7.30	10.50	40.0	30.0	85.0	35.0	
B	3.50	8.50	96.0	30.0	85.0	34.0	
C	7.30	10.50	30.0	30.0	85.0	35.0	
D							✓

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.647	2981
B	0.559	2365
C	0.640	2932
D		

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	1817	100.000
B		✓	254	100.000
C		✓	1904	100.000
D				

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	67	1404	346
	B	219	0	15	20
	C	1591	16	0	297
	D	Exit-only	Exit-only	Exit-only	Exit-only

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	19	10
	B	0	0	0	0
	C	10	0	0	12
	D	Exit-only	Exit-only	Exit-only	Exit-only

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.79	6.60	3.6	A
B	0.25	4.37	0.3	A
C	0.93	19.94	10.9	C
D				

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1368	12	2548	0.537	1363	1.2	3.027	A
B	191	1313	1505	0.127	191	0.1	2.737	A
C	1433	439	2390	0.600	1427	1.5	3.718	A
D		1369						

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1633	14	2547	0.641	1631	1.8	3.919	A
B	228	1571	1336	0.171	228	0.2	3.249	A
C	1712	525	2337	0.732	1707	2.7	5.671	A
D		1637						

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2001	17	2545	0.786	1993	3.6	6.438	A
B	280	1920	1107	0.253	279	0.3	4.343	A
C	2096	642	2265	0.926	2067	9.9	16.275	C
D		1986						

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2001	18	2545	0.786	2000	3.6	6.597	A
B	280	1927	1103	0.254	280	0.3	4.372	A
C	2096	644	2264	0.926	2092	10.9	19.943	C
D		2007						

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1633	15	2547	0.641	1641	1.8	4.002	A
B	228	1580	1330	0.172	229	0.2	3.273	A
C	1712	528	2335	0.733	1744	2.8	6.414	A
D		1669						

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1368	12	2548	0.537	1371	1.2	3.064	A
B	191	1320	1500	0.127	191	0.1	2.752	A
C	1433	441	2389	0.600	1439	1.5	3.809	A
D		1379						

2031_DS - 2031_DS_0745, AM2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D	15.12	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	1964	100.000
B		✓	254	100.000
C		✓	1942	100.000
D				

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	67	1565	332
	B	218	0	17	19
	C	1533	16	0	393
	D	Exit-only	Exit-only	Exit-only	Exit-only

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	15	12
	B	0	0	0	0
	C	11	0	0	7
	D	Exit-only	Exit-only	Exit-only	Exit-only

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.83	8.13	4.8	A
B	0.27	4.80	0.4	A
C	0.94	23.66	13.2	C
D				

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1479	12	2607	0.567	1473	1.3	3.162	A
B	191	1423	1455	0.131	191	0.2	2.846	A
C	1462	427	2396	0.610	1456	1.5	3.806	A
D		1325						

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1766	14	2605	0.678	1763	2.1	4.256	A
B	228	1702	1276	0.179	228	0.2	3.435	A
C	1746	511	2344	0.745	1741	2.8	5.920	A
D		1584						

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2162	17	2604	0.831	2152	4.7	7.795	A
B	280	2079	1035	0.270	279	0.4	4.756	A
C	2138	624	2273	0.941	2103	11.6	18.305	C
D		1917						

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2162	18	2604	0.831	2162	4.8	8.129	A
B	280	2088	1029	0.272	280	0.4	4.802	A
C	2138	626	2272	0.941	2132	13.2	23.659	C
D		1940						

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1766	15	2605	0.678	1776	2.1	4.396	A
B	228	1716	1268	0.180	229	0.2	3.470	A
C	1746	514	2342	0.746	1787	3.0	6.946	A
D		1622						

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1479	12	2607	0.567	1482	1.3	3.208	A
B	191	1431	1449	0.132	191	0.2	2.864	A
C	1462	429	2394	0.611	1468	1.6	3.910	A
D		1335						

2031_DS - 2031_DS_1630, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D	205.24	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2031_DS_1630	PM	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	2877	100.000
B		✓	198	100.000
C		✓	1351	100.000
D				

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	135	2352	390
	B	176	0	15	7
	C	882	24	0	445
	D	Exit-only	Exit-only	Exit-only	Exit-only

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	1	11	8
	B	1	0	0	0
	C	15	0	0	9
	D	Exit-only	Exit-only	Exit-only	Exit-only

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	1.17	314.68	248.9	F
B	0.28	6.48	0.4	A
C	0.66	4.65	1.9	A
D				

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2166	18	2707	0.800	2150	3.9	6.302	A
B	149	2050	1093	0.136	148	0.2	3.808	A
C	1017	429	2343	0.434	1014	0.8	2.703	A
D		812						

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2586	22	2705	0.956	2544	14.5	18.717	C
B	178	2425	865	0.206	178	0.3	5.236	A
C	1215	509	2295	0.529	1213	1.1	3.322	A
D		971						

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	3168	26	2702	1.172	2696	132.4	103.899	F
B	218	2569	777	0.281	217	0.4	6.434	A
C	1487	566	2262	0.658	1484	1.9	4.614	A
D		1189						

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	3168	26	2702	1.172	2702	248.9	257.499	F
B	218	2575	773	0.282	218	0.4	6.483	A
C	1487	568	2261	0.658	1487	1.9	4.654	A
D		1191						

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2586	22	2705	0.956	2694	221.9	314.676	F
B	178	2568	778	0.229	178	0.3	6.011	A
C	1215	530	2282	0.532	1218	1.1	3.392	A
D		975						

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2166	18	2707	0.800	2695	89.7	209.341	F
B	149	2569	777	0.192	149	0.2	5.735	A
C	1017	503	2298	0.443	1018	0.8	2.818	A
D		816						

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 2031_DS_M40J10_Ardley_OpC_Ardley7.j9
Path: D:\Dropbox (ADC Infrastructure)\!!! ADC Projects\ADC1794 Oxfordshire SRFI\Documents\reports\ADC\M40 J10 options\Options Report\Ardley
Report generation date: 27/04/2021 11:41:00

»2031_DS - 2031_DS_0645, AM1
»2031_DS - 2031_DS_0745, AM2
»2031_DS - 2031_DS_1630, PM

Summary of junction performance

	AM1			AM2			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
	2031_DS - 2031_DS_0645								
Arm A	1.3	3.92	0.57						
Arm B	0.3	3.31	0.20						
Arm D	5.5	11.10	0.85						
	2031_DS - 2031_DS_0745								
Arm A				1.4	4.11	0.58			
Arm B				0.3	3.47	0.21			
Arm D				6.0	11.91	0.86			
	2031_DS - 2031_DS_1630								
Arm A							6.3	12.06	0.87
Arm B							0.3	5.05	0.23
Arm D							1.4	4.10	0.59

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

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

File summary

File Description

Title	2031_DS_M40J10_Ardley_OpC_Ardley7
Location	M40 J10
Site number	
Date	06/04/2021
Version	V1
Status	Preliminary
[redacted]	[redacted]
Client	
Jobnumber	ADC1794
[redacted]	[redacted]
Description	Option Layout C BWB Options: 16 Flowset: Ardley7

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15
D3	2031_DS_1630	PM	ONE HOUR	06:30	08:00	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	2031_DS	100.000

2031_DS - 2031_DS_0645, AM1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D	7.69	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Link Road	
B	B430	
C	M40 J10 NB On	
D	A43 Bridge	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	7.30	10.50	20.0	30.0	85.0	35.0	
B	3.50	8.50	96.0	30.0	85.0	34.0	
C							✓
D	7.30	8.62	10.0	30.0	85.0	35.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.628	2850
B	0.559	2365
C		
D	0.576	2490

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	1118	100.000
B		✓	254	100.000
C				
D		✓	1685	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	67	346	705
	B	215	0	20	19
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	1372	16	297	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	10	29
	B	0	0	0	0
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	7	0	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.57	3.92	1.3	A
B	0.20	3.31	0.3	A
C				
D	0.85	11.10	5.5	B

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	842	235	2212	0.381	839	0.6	2.618	A
B	191	1012	1685	0.114	191	0.1	2.410	A
C		705						
D	1269	161	2217	0.572	1263	1.3	3.754	A

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1005	281	2185	0.460	1004	0.8	3.044	A
B	228	1210	1551	0.147	228	0.2	2.721	A
C		843						
D	1515	193	2200	0.689	1511	2.2	5.203	A

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1231	342	2150	0.573	1229	1.3	3.902	A
B	280	1480	1369	0.204	279	0.3	3.302	A
C		1032						
D	1855	236	2177	0.852	1842	5.4	10.392	B

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1231	344	2149	0.573	1231	1.3	3.923	A
B	280	1484	1367	0.205	280	0.3	3.310	A
C		1034						
D	1855	237	2177	0.852	1854	5.5	11.104	B

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1005	284	2183	0.460	1007	0.9	3.064	A
B	228	1216	1547	0.148	229	0.2	2.732	A
C		846						
D	1515	194	2200	0.689	1528	2.3	5.461	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	842	236	2211	0.381	843	0.6	2.632	A
B	191	1016	1681	0.114	191	0.1	2.417	A
C		708						
D	1269	162	2216	0.572	1272	1.4	3.826	A

2031_DS - 2031_DS_0745, AM2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D	8.24	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	1110	100.000
B		✓	254	100.000
C				
D		✓	1697	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	67	332	711
	B	215	0	19	20
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	1288	16	393	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	12	28
	B	0	0	0	0
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	9	0	7	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.58	4.11	1.4	A
B	0.21	3.47	0.3	A
C				
D	0.86	11.91	6.0	B

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	836	307	2176	0.384	833	0.6	2.676	A
B	191	1078	1651	0.116	191	0.1	2.465	A
C		710						
D	1278	161	2207	0.579	1272	1.4	3.828	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	998	367	2143	0.466	997	0.9	3.137	A
B	228	1289	1511	0.151	228	0.2	2.806	A
C		850						
D	1526	193	2190	0.696	1522	2.3	5.357	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1222	447	2099	0.582	1220	1.4	4.087	A
B	280	1576	1321	0.212	279	0.3	3.457	A
C		1040						
D	1868	236	2167	0.862	1854	5.7	11.037	B

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1222	450	2097	0.583	1222	1.4	4.114	A
B	280	1581	1318	0.212	280	0.3	3.467	A
C		1042						
D	1868	237	2167	0.862	1867	6.0	11.911	B

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	998	371	2141	0.466	1000	0.9	3.160	A
B	228	1296	1506	0.152	229	0.2	2.818	A
C		852						
D	1526	194	2190	0.697	1540	2.3	5.659	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	836	309	2175	0.384	837	0.6	2.691	A
B	191	1083	1647	0.116	191	0.1	2.474	A
C		713						
D	1278	162	2207	0.579	1281	1.4	3.906	A

2031_DS - 2031_DS_1630, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D	8.71	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2031_DS_1630	PM	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	1757	100.000
B		✓	198	100.000
C				
D		✓	1136	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	135	390	1232
	B	175	0	7	16
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	667	24	445	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	1	8	15
	B	1	0	0	0
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	14	0	9	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.87	12.06	6.3	B
B	0.23	5.05	0.3	A
C				
D	0.59	4.10	1.4	A

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1323	352	2329	0.568	1318	1.3	3.539	A
B	149	1550	1380	0.108	149	0.1	2.924	A
C		1067						
D	855	131	2161	0.396	853	0.7	2.744	A

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1580	421	2287	0.691	1576	2.2	5.037	A
B	178	1855	1191	0.149	178	0.2	3.552	A
C		1277						
D	1021	157	2148	0.475	1020	0.9	3.189	A

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1934	516	2230	0.868	1919	6.0	11.089	B
B	218	2261	939	0.232	218	0.3	4.987	A
C		1556						
D	1251	192	2130	0.587	1249	1.4	4.078	A

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1934	516	2229	0.868	1933	6.3	12.060	B
B	218	2275	930	0.234	218	0.3	5.053	A
C		1566						
D	1251	193	2129	0.587	1251	1.4	4.096	A

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1580	422	2286	0.691	1595	2.3	5.328	A
B	178	1874	1179	0.151	179	0.2	3.601	A
C		1291						
D	1021	158	2148	0.476	1023	0.9	3.206	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1323	354	2328	0.568	1327	1.3	3.606	A
B	149	1560	1374	0.109	149	0.1	2.941	A
C		1074						
D	855	132	2161	0.396	856	0.7	2.760	A

APPENDIX 23

Ardley Roundabout junction option A-3 – Arcady results

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 2031_DS_M40J10_Ardley_OpC_Ardley5.j9
Path: D:\Dropbox (ADC Infrastructure)\!!! ADC Projects\ADC1794 Oxfordshire SRFI\Documents\reports\ADC\M40 J10 options\Options Report\Ardley
Report generation date: 27/04/2021 11:27:51

»2031_DS - 2031_DS_0645, AM1
»2031_DS - 2031_DS_0745, AM2
»2031_DS - 2031_DS_1630, PM

Summary of junction performance

	AM1			AM2			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
	2031_DS - 2031_DS_0645								
Arm A	8.1	15.19	0.90						
Arm B	0.5	5.84	0.31						
Arm D	5.6	11.18	0.85						
	2031_DS - 2031_DS_0745								
Arm A				19.3	33.83	0.97			
Arm B				0.6	7.21	0.36			
Arm D				6.0	11.97	0.86			
	2031_DS - 2031_DS_1630								
Arm A							582.3	844.05	1.39
Arm B							0.4	7.12	0.30
Arm D							1.4	4.10	0.59

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

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

File summary

File Description

Title	2031_DS_M40J10_Ardley_OpC_Ardley5
Location	M40 J10
Site number	
Date	06/04/2021
Version	V1
Status	Preliminary
Identifier	[redacted]
Client	
Jobnumber	ADC1794
Enumerator	[redacted]
Description	Option Layout C BWB Options: 8, 9 Flowset: Ardley5

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15
D3	2031_DS_1630	PM	ONE HOUR	06:30	08:00	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	2031_DS	100.000

2031_DS - 2031_DS_0645, AM1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D	12.89	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Link Road	
B	B430	
C	M40 J10 NB On	
D	A43 Bridge	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	7.30	10.50	20.0	30.0	85.0	35.0	
B	3.50	8.50	96.0	30.0	85.0	34.0	
C							✓
D	7.30	8.62	10.0	30.0	85.0	35.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.628	2850
B	0.559	2365
C		
D	0.576	2490

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	1817	100.000
B		✓	254	100.000
C				
D		✓	1685	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	67	346	1404
	B	219	0	20	15
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	1372	16	297	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	10	19
	B	0	0	0	0
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	7	0	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.90	15.19	8.1	C
B	0.31	5.84	0.5	A
C				
D	0.85	11.18	5.6	B

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1368	235	2296	0.596	1362	1.5	3.830	A
B	191	1535	1364	0.140	191	0.2	3.067	A
C		1228						
D	1269	164	2215	0.573	1263	1.3	3.760	A

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1633	281	2269	0.720	1629	2.5	5.592	A
B	228	1836	1167	0.196	228	0.2	3.832	A
C		1469						
D	1515	197	2198	0.689	1511	2.2	5.217	A

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2001	342	2232	0.896	1980	7.6	13.357	B
B	280	2232	909	0.308	279	0.4	5.708	A
C		1787						
D	1855	240	2175	0.853	1842	5.4	10.453	B

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2001	344	2231	0.897	1999	8.1	15.194	C
B	280	2252	896	0.312	280	0.5	5.840	A
C		1802						
D	1855	241	2174	0.853	1854	5.6	11.183	B

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1633	284	2267	0.721	1655	2.6	6.084	A
B	228	1863	1149	0.199	229	0.2	3.917	A
C		1490						
D	1515	198	2197	0.689	1528	2.3	5.483	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1368	236	2295	0.596	1373	1.5	3.920	A
B	191	1546	1356	0.141	192	0.2	3.091	A
C		1237						
D	1269	165	2215	0.573	1272	1.4	3.833	A

2031_DS - 2031_DS_0745, AM2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D	22.98	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	1964	100.000
B		✓	254	100.000
C				
D		✓	1697	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	67	332	1565
	B	218	0	19	17
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	1288	16	393	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	12	15
	B	0	0	0	0
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	9	0	7	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.97	33.83	19.3	D
B	0.36	7.21	0.6	A
C				
D	0.86	11.97	6.0	B

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1479	307	2319	0.638	1472	1.7	4.216	A
B	191	1716	1279	0.150	191	0.2	3.306	A
C		1349						
D	1278	164	2206	0.579	1272	1.4	3.833	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1766	367	2283	0.773	1759	3.3	6.792	A
B	228	2052	1066	0.214	228	0.3	4.291	A
C		1613						
D	1526	196	2189	0.697	1522	2.3	5.368	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2162	447	2236	0.967	2113	15.6	23.272	C
B	280	2470	802	0.349	279	0.5	6.868	A
C		1942						
D	1868	239	2166	0.863	1854	5.8	11.081	B

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2162	450	2234	0.968	2148	19.3	33.835	D
B	280	2507	778	0.359	280	0.6	7.215	A
C		1970						
D	1868	240	2166	0.863	1867	6.0	11.975	B

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1766	371	2281	0.774	1828	3.6	9.033	A
B	228	2123	1021	0.224	229	0.3	4.554	A
C		1669						
D	1526	197	2188	0.697	1540	2.3	5.674	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1479	309	2317	0.638	1486	1.8	4.364	A
B	191	1732	1269	0.151	192	0.2	3.342	A
C		1361						
D	1278	165	2206	0.579	1281	1.4	3.911	A

2031_DS - 2031_DS_1630, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D	577.39	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2031_DS_1630	PM	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	2877	100.000
B		✓	198	100.000
C				
D		✓	1136	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	135	390	2352
	B	176	0	7	15
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	667	24	445	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	1	8	11
	B	1	0	0	0
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	14	0	9	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	1.39	844.05	582.3	F
B	0.30	7.12	0.4	A
C				
D	0.59	4.10	1.4	A

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2166	352	2380	0.910	2132	8.6	13.078	B
B	149	2366	903	0.165	148	0.2	4.766	A
C		1886						
D	855	132	2161	0.396	853	0.7	2.745	A

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2586	421	2337	1.107	2321	74.9	72.532	F
B	178	2612	753	0.236	178	0.3	6.250	A
C		2069						
D	1021	158	2148	0.476	1020	0.9	3.190	A

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	3168	516	2278	1.390	2278	297.3	297.942	F
B	218	2660	724	0.301	218	0.4	7.100	A
C		2072						
D	1251	193	2129	0.587	1249	1.4	4.080	A

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	3168	516	2278	1.391	2278	519.7	641.478	F
B	218	2661	724	0.301	218	0.4	7.116	A
C		2073						
D	1251	194	2129	0.588	1251	1.4	4.099	A

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2586	422	2336	1.107	2336	582.3	844.053	F
B	178	2627	744	0.239	178	0.3	6.373	A
C		2082						
D	1021	159	2147	0.476	1023	0.9	3.208	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2166	354	2379	0.910	2375	530.0	843.048	F
B	149	2599	761	0.196	149	0.2	5.894	A
C		2086						
D	855	133	2161	0.396	856	0.7	2.763	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 2031_DS_M40J10_Ardley_OpC_Ardley6.j9
Path: D:\Dropbox (ADC Infrastructure)\!!! ADC Projects\ADC1794 Oxfordshire SRFI\Documents\reports\ADC\M40 J10 options\Options Report\Ardley
Report generation date: 27/04/2021 11:35:42

»2031_DS - 2031_DS_0645, AM1
»2031_DS - 2031_DS_0745, AM2
»2031_DS - 2031_DS_1630, PM

Summary of junction performance

	AM1			AM2			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
	2031_DS - 2031_DS_0645								
Arm A	8.0	15.04	0.90						
Arm B	0.4	5.82	0.31						
Arm D	24.2	42.97	0.98						
	2031_DS - 2031_DS_0745								
Arm A				18.6	32.64	0.97			
Arm B				0.6	7.15	0.36			
Arm D				33.3	55.52	1.00			
	2031_DS - 2031_DS_1630								
Arm A							581.9	843.53	1.39
Arm B							0.4	7.12	0.30
Arm D							2.4	5.79	0.71

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

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

File summary

File Description

Title	2031_DS_M40J10_Ardley_OpC_Ardley6
Location	M40 J10
Site number	
Date	06/04/2021
Version	V1
Status	Preliminary
Identifier	M Tatler
Client	
Jobnumber	ADC1794
Enumerator	M Tatler
Description	Option Layout C BWB Options: 10, 11, 12 Flowset: Ardley6

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15
D3	2031_DS_1630	PM	ONE HOUR	06:30	08:00	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	2031_DS	100.000

2031_DS - 2031_DS_0645, AM1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D	27.61	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Link Road	
B	B430	
C	M40 J10 NB On	
D	A43 Bridge	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	7.30	10.50	20.0	30.0	85.0	35.0	
B	3.50	8.50	96.0	30.0	85.0	34.0	
C							✓
D	7.30	8.62	10.0	30.0	85.0	35.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.628	2850
B	0.559	2365
C		
D	0.576	2490

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	1817	100.000
B		✓	254	100.000
C				
D		✓	1904	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	67	346	1404
	B	219	0	20	15
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	1591	16	297	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	10	19
	B	0	0	0	0
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	10	0	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.90	15.04	8.0	C
B	0.31	5.82	0.4	A
C				
D	0.98	42.97	24.2	E

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1368	234	2296	0.596	1362	1.5	3.829	A
B	191	1534	1364	0.140	191	0.2	3.066	A
C		1228						
D	1433	164	2173	0.660	1426	1.9	4.770	A

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1633	280	2269	0.720	1629	2.5	5.590	A
B	228	1835	1168	0.196	228	0.2	3.831	A
C		1469						
D	1712	197	2156	0.794	1704	3.7	7.844	A

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2001	335	2236	0.895	1981	7.4	13.177	B
B	280	2226	913	0.306	279	0.4	5.671	A
C		1788						
D	2096	240	2133	0.983	2037	18.6	27.609	D

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2001	341	2233	0.896	1998	8.0	15.045	C
B	280	2248	898	0.311	280	0.4	5.819	A
C		1802						
D	2096	241	2133	0.983	2074	24.2	42.971	E

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1633	295	2260	0.723	1655	2.7	6.142	A
B	228	1873	1143	0.200	229	0.3	3.943	A
C		1490						
D	1712	198	2156	0.794	1792	4.0	12.011	B

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1368	237	2295	0.596	1373	1.5	3.924	A
B	191	1547	1356	0.141	192	0.2	3.094	A
C		1237						
D	1433	165	2173	0.660	1442	2.0	4.980	A

2031_DS - 2031_DS_0745, AM2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D	41.81	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	1964	100.000
B		✓	254	100.000
C				
D		✓	1942	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	67	332	1565
	B	218	0	19	17
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	1533	16	393	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	12	15
	B	0	0	0	0
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	11	0	7	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.97	32.64	18.6	D
B	0.36	7.15	0.6	A
C				
D	1.00	55.52	33.3	F

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1479	306	2319	0.638	1472	1.7	4.215	A
B	191	1716	1279	0.150	191	0.2	3.305	A
C		1349						
D	1462	164	2175	0.672	1454	2.0	4.941	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1766	366	2284	0.773	1759	3.3	6.785	A
B	228	2051	1067	0.214	228	0.3	4.289	A
C		1613						
D	1746	196	2158	0.809	1738	4.0	8.403	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2162	434	2244	0.964	2115	15.1	22.592	C
B	280	2460	808	0.346	279	0.5	6.792	A
C		1943						
D	2138	239	2135	1.001	2061	23.4	32.471	D

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2162	442	2239	0.966	2148	18.6	32.644	D
B	280	2500	783	0.357	280	0.6	7.152	A
C		1971						
D	2138	240	2135	1.002	2099	33.3	55.519	F

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1766	392	2268	0.778	1825	3.6	9.176	A
B	228	2140	1011	0.226	229	0.3	4.610	A
C		1667						
D	1746	197	2157	0.809	1861	4.5	16.605	C

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1479	310	2317	0.638	1486	1.8	4.371	A
B	191	1733	1268	0.151	192	0.2	3.345	A
C		1361						
D	1462	165	2174	0.672	1472	2.1	5.194	A

2031_DS - 2031_DS_1630, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D	547.64	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2031_DS_1630	PM	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	2877	100.000
B		✓	198	100.000
C				
D		✓	1351	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	135	390	2352
	B	176	0	7	15
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	882	24	445	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	1	8	11
	B	1	0	0	0
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	15	0	9	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	1.39	843.53	581.9	F
B	0.30	7.12	0.4	A
C				
D	0.71	5.79	2.4	A

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2166	352	2380	0.910	2132	8.6	13.061	B
B	149	2365	903	0.165	148	0.2	4.766	A
C		1886						
D	1017	132	2141	0.475	1014	0.9	3.183	A

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2586	421	2337	1.106	2321	74.8	72.435	F
B	178	2612	753	0.236	178	0.3	6.252	A
C		2069						
D	1215	158	2127	0.571	1213	1.3	3.930	A

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	3168	515	2279	1.390	2279	297.0	297.581	F
B	218	2660	724	0.301	218	0.4	7.101	A
C		2073						
D	1487	193	2109	0.705	1483	2.3	5.718	A

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	3168	516	2278	1.390	2278	519.4	640.962	F
B	218	2661	724	0.301	218	0.4	7.118	A
C		2073						
D	1487	194	2109	0.705	1487	2.4	5.792	A

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2586	423	2336	1.107	2336	581.9	843.525	F
B	178	2628	743	0.239	178	0.3	6.376	A
C		2082						
D	1215	159	2127	0.571	1219	1.3	3.983	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	2166	354	2379	0.910	2375	529.6	842.450	F
B	149	2599	760	0.196	149	0.2	5.896	A
C		2086						
D	1017	133	2140	0.475	1019	0.9	3.214	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 2031_DS_M40J10_Ardley_OpC_Ardley8.j9
Path: D:\Dropbox (ADC Infrastructure)\!!! ADC Projects\ADC1794 Oxfordshire SRFI\Documents\reports\ADC\M40 J10 options\Options Report\Ardley
Report generation date: 27/04/2021 11:46:30

»2031_DS - 2031_DS_0645, AM1
»2031_DS - 2031_DS_0745, AM2
»2031_DS - 2031_DS_1630, PM

Summary of junction performance

	AM1			AM2			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
	2031_DS - 2031_DS_0645								
Arm A	0.5	2.51	0.36						
Arm B	0.2	2.56	0.17						
Arm D	5.6	11.18	0.85						
	2031_DS - 2031_DS_0745								
Arm A				0.6	2.62	0.37			
Arm B				0.2	2.69	0.17			
Arm D				6.0	11.98	0.86			
	2031_DS - 2031_DS_1630								
Arm A							1.2	3.46	0.55
Arm B							0.2	3.13	0.16
Arm D							1.4	4.10	0.59

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

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

File summary

File Description

Title	2031_DS_M40J10_Ardley_OpC_Ardley8
Location	M40 J10
Site number	
Date	06/04/2021
Version	V1
Status	Preliminary
[redacted]	[redacted]
Client	
Jobnumber	ADC1794
[redacted]	[redacted]
Description	Option Layout C BWB Options: 17 Flowset: Ardley8

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15
D3	2031_DS_1630	PM	ONE HOUR	06:30	08:00	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	2031_DS	100.000

2031_DS - 2031_DS_0645, AM1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D	7.93	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Link Road	
B	B430	
C	M40 J10 NB On	
D	A43 Bridge	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	7.30	10.50	20.0	30.0	85.0	35.0	
B	3.50	8.50	96.0	30.0	85.0	34.0	
C							✓
D	7.30	8.62	10.0	30.0	85.0	35.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.628	2850
B	0.559	2365
C		
D	0.576	2490

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	719	100.000
B		✓	254	100.000
C				
D		✓	1685	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	67	346	306
	B	219	0	20	15
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	1372	16	297	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	10	28
	B	0	0	0	0
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	7	0	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.36	2.51	0.5	A
B	0.17	2.56	0.2	A
C				
D	0.85	11.18	5.6	B

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	541	235	2294	0.236	540	0.3	2.052	A
B	191	712	1901	0.101	191	0.1	2.105	A
C		406						
D	1269	164	2215	0.573	1263	1.3	3.761	A

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	646	281	2266	0.285	646	0.4	2.222	A
B	228	852	1810	0.126	228	0.1	2.276	A
C		485						
D	1515	197	2198	0.689	1511	2.2	5.218	A

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	792	342	2229	0.355	791	0.5	2.501	A
B	280	1042	1686	0.166	279	0.2	2.559	A
C		594						
D	1855	241	2174	0.853	1842	5.4	10.459	B

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	792	344	2228	0.355	792	0.5	2.505	A
B	280	1045	1684	0.166	280	0.2	2.562	A
C		595						
D	1855	241	2174	0.853	1854	5.6	11.184	B

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	646	284	2264	0.285	647	0.4	2.226	A
B	228	856	1807	0.126	229	0.1	2.282	A
C		486						
D	1515	197	2198	0.689	1528	2.3	5.479	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	541	236	2293	0.236	542	0.3	2.056	A
B	191	715	1899	0.101	191	0.1	2.108	A
C		407						
D	1269	165	2215	0.573	1272	1.4	3.835	A

2031_DS - 2031_DS_0745, AM2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D	8.46	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	737	100.000
B		✓	254	100.000
C				
D		✓	1697	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	67	332	338
	B	218	0	19	17
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	1288	16	393	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	12	24
	B	0	0	0	0
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	9	0	7	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.37	2.62	0.6	A
B	0.17	2.69	0.2	A
C				
D	0.86	11.98	6.0	B

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	555	307	2269	0.245	554	0.3	2.098	A
B	191	798	1856	0.103	191	0.1	2.162	A
C		430						
D	1278	164	2206	0.579	1272	1.4	3.833	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	663	367	2234	0.297	662	0.4	2.290	A
B	228	954	1756	0.130	228	0.1	2.355	A
C		515						
D	1526	196	2189	0.697	1522	2.3	5.368	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	811	447	2188	0.371	811	0.6	2.613	A
B	280	1167	1621	0.173	279	0.2	2.683	A
C		630						
D	1868	240	2166	0.863	1854	5.8	11.092	B

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	811	450	2186	0.371	811	0.6	2.618	A
B	280	1170	1619	0.173	280	0.2	2.687	A
C		631						
D	1868	240	2166	0.863	1867	6.0	11.979	B

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	663	371	2231	0.297	663	0.4	2.296	A
B	228	960	1753	0.130	229	0.2	2.361	A
C		516						
D	1526	196	2189	0.697	1540	2.3	5.673	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	555	309	2267	0.245	555	0.3	2.104	A
B	191	802	1854	0.103	191	0.1	2.165	A
C		432						
D	1278	164	2206	0.579	1281	1.4	3.912	A

2031_DS - 2031_DS_1630, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M40 J10 - Ardley Rbt	Standard Roundabout		A, B, C, D	3.73	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2031_DS_1630	PM	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	1160	100.000
B		✓	198	100.000
C				
D		✓	1136	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	135	390	635
	B	176	0	7	15
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	667	24	445	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	1	8	9
	B	1	0	0	0
	C	Exit-only	Exit-only	Exit-only	Exit-only
	D	14	0	9	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.55	3.46	1.2	A
B	0.16	3.13	0.2	A
C				
D	0.59	4.10	1.4	A

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	873	352	2422	0.361	871	0.6	2.318	A
B	149	1104	1678	0.089	149	0.1	2.354	A
C		620						
D	855	132	2161	0.396	853	0.7	2.745	A

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1043	421	2379	0.438	1042	0.8	2.692	A
B	178	1320	1547	0.115	178	0.1	2.628	A
C		742						
D	1021	158	2147	0.476	1020	0.9	3.190	A

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1277	516	2319	0.551	1275	1.2	3.444	A
B	218	1616	1369	0.159	218	0.2	3.126	A
C		908						
D	1251	194	2129	0.588	1249	1.4	4.081	A

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1277	516	2318	0.551	1277	1.2	3.456	A
B	218	1618	1368	0.159	218	0.2	3.130	A
C		909						
D	1251	194	2129	0.588	1251	1.4	4.099	A

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1043	422	2378	0.439	1045	0.8	2.703	A
B	178	1324	1545	0.115	178	0.1	2.633	A
C		744						
D	1021	158	2147	0.476	1023	0.9	3.207	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	873	354	2421	0.361	874	0.6	2.327	A
B	149	1108	1675	0.089	149	0.1	2.360	A
C		622						
D	855	133	2161	0.396	856	0.7	2.763	A

APPENDIX 24

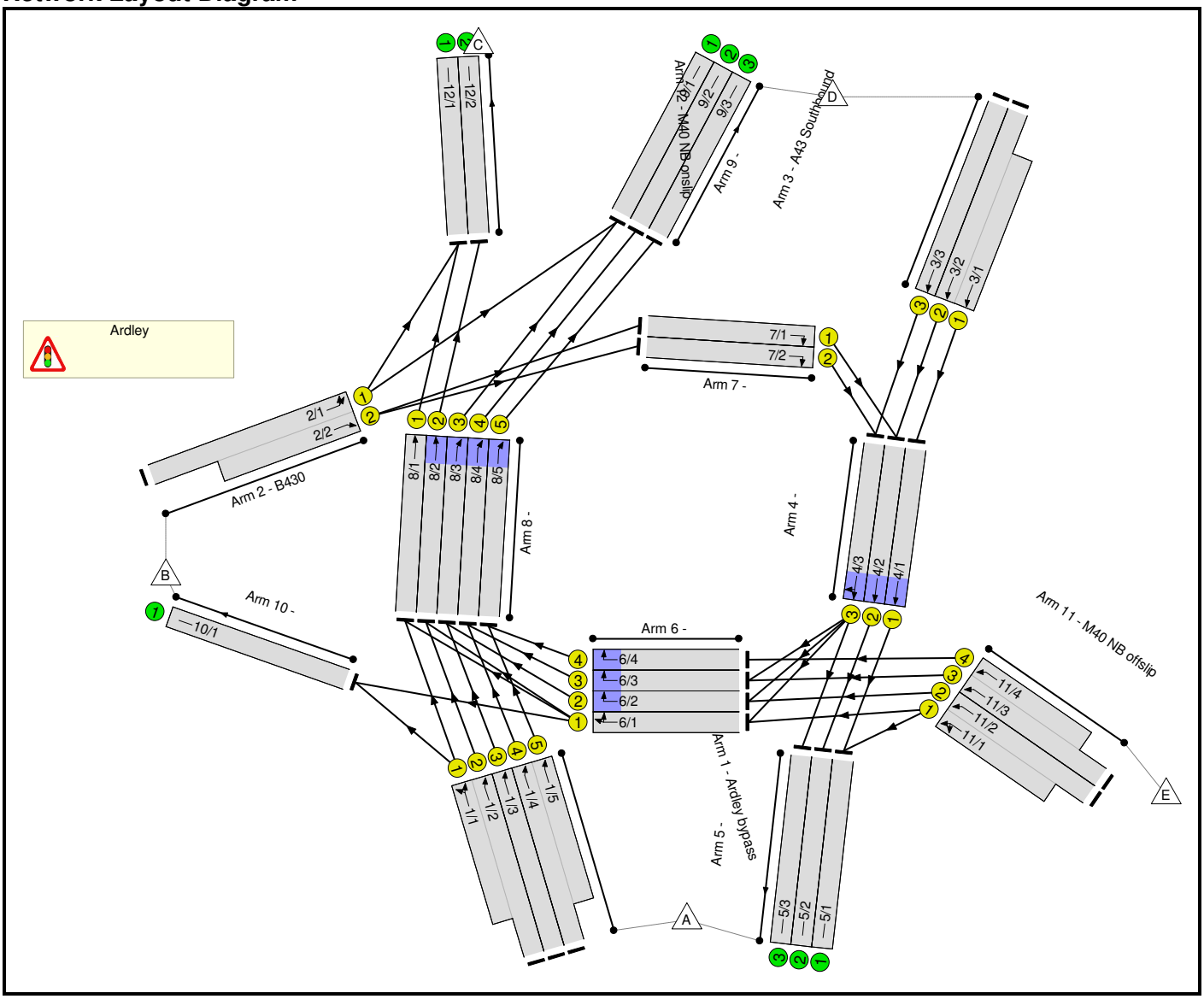
Ardley Roundabout junction option A-1 – LinSig results

Full Input Data And Results

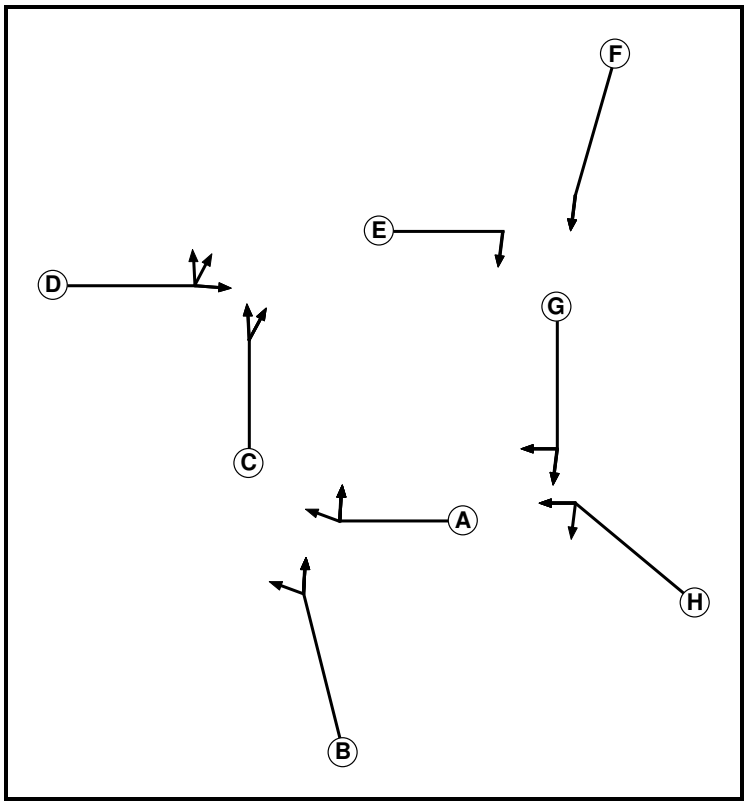
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Ardley roundabout - 5-arm signalised roundabout A-1**
Location:	
Additional detail:	
File name:	2031_DS_M40J10_Ardley - 5-arm signalised roundabout A-1.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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
E	Traffic	3		7	7
F	Traffic	3		7	7
G	Traffic	4		7	7
H	Traffic	4		7	7

Phase Intergreens Matrix

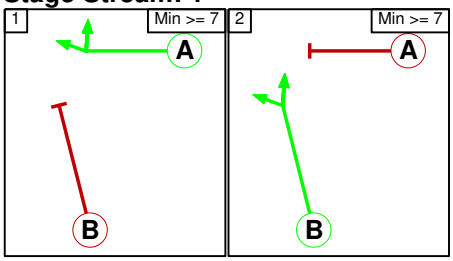
		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A		6	-	-	-	-	-	-
	B	6		-	-	-	-	-	-
	C	-	-		6	-	-	-	-
	D	-	-	6		-	-	-	-
	E	-	-	-	-		6	-	-
	F	-	-	-	-	6		-	-
	G	-	-	-	-	-	-		6
	H	-	-	-	-	-	-	6	

Phases in Stage

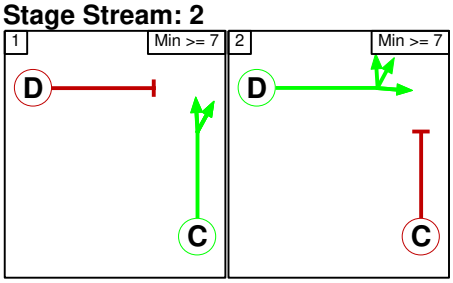
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F
4	1	G
4	2	H

Stage Diagram

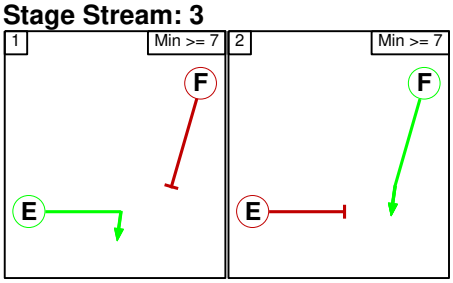
Stage Stream: 1



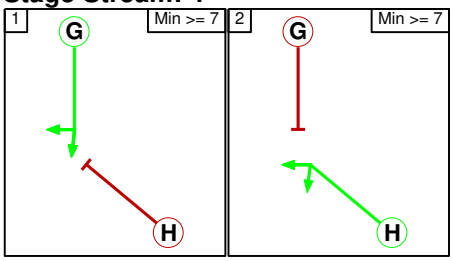
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Prohibited Stage Change

Stage Stream: 1

	To Stage		
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

	To Stage		
		1	2
From Stage	1		6
	2	6	

Stage Stream: 3

	To Stage		
		1	2
From Stage	1		6
	2	6	

Stage Stream: 4

	To Stage		
		1	2
From Stage	1		6
	2	6	

Lane Input Data

Junction: Ardley												
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 (Ardley bypass)	U	B	2	3	10.4	Geom	-	3.65	0.00	Y	Arm 8 Ahead	Inf
											Arm 10 Left	40.00
1/2 (Ardley bypass)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 8 Ahead	50.00
1/3 (Ardley bypass)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 8 Ahead	50.00
1/4 (Ardley bypass)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 8 Ahead	50.00
1/5 (Ardley bypass)	U	B	2	3	34.8	Geom	-	3.65	0.00	Y	Arm 8 Ahead	50.00
2/1 (B430)	U	D	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 9 Ahead	50.00
											Arm 12 Left	Inf
2/2 (B430)	U	D	2	3	10.4	Geom	-	3.50	0.00	Y	Arm 7 Ahead	50.00
3/1 (A43 Southbound)	U	F	2	3	13.9	Geom	-	3.65	0.00	Y	Arm 4 Ahead	Inf
3/2 (A43 Southbound)	U	F	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Ahead	50.00
3/3 (A43 Southbound)	U	F	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Ahead	50.00
4/1	U	G	2	3	7.0	User	1850	-	-	-	-	-
4/2	U	G	2	3	7.0	User	1850	-	-	-	-	-
4/3	U	G	2	3	7.0	User	1850	-	-	-	-	-
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
5/3	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U	A	2	3	8.7	User	1850	-	-	-	-	-
6/2	U	A	2	3	8.7	User	1850	-	-	-	-	-
6/3	U	A	2	3	8.7	User	1850	-	-	-	-	-
6/4	U	A	2	3	8.7	User	1850	-	-	-	-	-
7/1	U	E	2	3	8.7	User	1850	-	-	-	-	-
7/2	U	E	2	3	8.7	User	1850	-	-	-	-	-
8/1	U	C	2	3	8.7	User	1850	-	-	-	-	-
8/2	U	C	2	3	8.7	User	1850	-	-	-	-	-

8/3	U	C	2	3	8.7	User	1850	-	-	-	-	-
8/4	U	C	2	3	10.4	User	1850	-	-	-	-	-
8/5	U	C	2	3	10.4	User	1850	-	-	-	-	-
9/1	U		2	3	60.0	Inf	-	-	-	-	-	-
9/2	U		2	3	60.0	Inf	-	-	-	-	-	-
9/3	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1 (M40 NB offslip)	U	H	2	3	20.9	Geom	-	3.65	0.00	Y	Arm 5 Left	40.00
											Arm 6 Ahead	Inf
11/2 (M40 NB offslip)	U	H	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 6 Ahead	Inf
11/3 (M40 NB offslip)	U	H	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 6 Ahead	Inf
11/4 (M40 NB offslip)	U	H	2	3	20.9	Geom	-	3.65	0.00	Y	Arm 6 Ahead	Inf
12/1 (M40 NB onslip)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/2 (M40 NB onslip)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Ardley1_AM'	07:45	08:45	01:00	
2: 'Ardley1_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Ardley14, 15 AM' (FG1: 'Ardley1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	67	372	658	0	1097
	B	215	0	19	20	0	254
	C	0	0	0	0	0	0
	D	1405	16	422	0	0	1843
	E	445	1	0	1420	0	1866
	Tot.	2065	84	813	2098	0	5060

Traffic Lane Flows

Lane	Scenario 1: 2031 Ardley14, 15 AM
Junction: Ardley	
1/1 (short)	226
1/2 (with short)	439(In) 213(Out)
1/3	174
1/4 (with short)	484(In) 242(Out)
1/5 (short)	242
2/1 (with short)	254(In) 39(Out)
2/2 (short)	215
3/1 (short)	651
3/2 (with short)	1302(In) 651(Out)
3/3	541
4/1	651
4/2	759
4/3	648
5/1	1096
5/2	759
5/3	210
6/1	439
6/2	493
6/3	489
6/4	438
7/1	108
7/2	107
8/1	370
8/2	424
8/3	667
8/4	731
8/5	680
9/1	687
9/2	731
9/3	680
10/1	84
11/1 (short)	446
11/2 (with short)	939(In) 493(Out)
11/3 (with short)	927(In) 489(Out)

11/4 (short)	438
12/1	389
12/2	424

Lane Saturation Flows

Junction: Ardley

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 (Ardley bypass)	3.65	0.00	Y	Arm 8 Ahead	Inf	70.4 %	1958	1958
				Arm 10 Left	40.00	29.6 %		
1/2 (Ardley bypass)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
1/3 (Ardley bypass)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
1/4 (Ardley bypass)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
1/5 (Ardley bypass)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
2/1 (B430)	3.50	0.00	Y	Arm 9 Ahead	50.00	51.3 %	1935	1935
				Arm 12 Left	Inf	48.7 %		
2/2 (B430)	3.50	0.00	Y	Arm 7 Ahead	50.00	100.0 %	1908	1908
3/1 (A43 Southbound)	3.65	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1980	1980
3/2 (A43 Southbound)	3.65	0.00	Y	Arm 4 Ahead	50.00	100.0 %	1922	1922
3/3 (A43 Southbound)	3.65	0.00	Y	Arm 4 Ahead	50.00	100.0 %	1922	1922
4/1	This lane uses a directly entered Saturation Flow						1850	1850
4/2	This lane uses a directly entered Saturation Flow						1850	1850
4/3	This lane uses a directly entered Saturation Flow						1850	1850
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf
6/1	This lane uses a directly entered Saturation Flow						1850	1850
6/2	This lane uses a directly entered Saturation Flow						1850	1850
6/3	This lane uses a directly entered Saturation Flow						1850	1850
6/4	This lane uses a directly entered Saturation Flow						1850	1850
7/1	This lane uses a directly entered Saturation Flow						1850	1850
7/2	This lane uses a directly entered Saturation Flow						1850	1850
8/1	This lane uses a directly entered Saturation Flow						1850	1850
8/2	This lane uses a directly entered Saturation Flow						1850	1850
8/3	This lane uses a directly entered Saturation Flow						1850	1850
8/4	This lane uses a directly entered Saturation Flow						1850	1850
8/5	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
9/3	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf

11/1 (M40 NB offslip)	3.65	0.00	Y	Arm 5 Left	40.00	99.8 %	1909	1909
				Arm 6 Ahead	Inf	0.2 %		
11/2 (M40 NB offslip)	3.65	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1980	1980
11/3 (M40 NB offslip)	3.65	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1980	1980
11/4 (M40 NB offslip)	3.65	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1980	1980
12/1 (M40 NB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M40 NB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2031 Ardley14, 15 PM' (FG2: 'Ardley1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	133	420	1098	0	1651
	B	177	0	7	16	0	200
	C	0	0	0	0	0	0
	D	760	24	485	0	0	1269
	E	298	3	0	1972	0	2273
	Tot.	1235	160	912	3086	0	5393

Traffic Lane Flows

Lane	Scenario 2: 2031 Ardley14, 15 PM
Junction: Ardley	
1/1 (short)	303
1/2 (with short)	553(In) 250(Out)
1/3	341
1/4 (with short)	757(In) 379(Out)
1/5 (short)	378
2/1 (with short)	200(In) 23(Out)
2/2 (short)	177
3/1 (short)	380
3/2 (with short)	760(In) 380(Out)
3/3	509
4/1	380
4/2	485
4/3	581
5/1	678
5/2	485
5/3	72
6/1	512
6/2	656
6/3	659
6/4	657
7/1	105
7/2	72
8/1	413
8/2	492
8/3	997
8/4	1038
8/5	1035
9/1	1013
9/2	1038
9/3	1035
10/1	160
11/1 (short)	301
11/2 (with short)	957(In) 656(Out)
11/3 (with short)	1316(In) 659(Out)

11/4 (short)	657
12/1	420
12/2	492

Lane Saturation Flows

Junction: Ardley

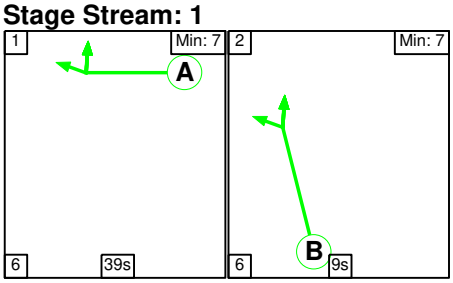
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Ardley bypass)	3.65	0.00	Y	Arm 8 Ahead	Inf	56.1 %	1948	1948
				Arm 10 Left	40.00	43.9 %		
1/2 (Ardley bypass)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
1/3 (Ardley bypass)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
1/4 (Ardley bypass)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
1/5 (Ardley bypass)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
2/1 (B430)	3.50	0.00	Y	Arm 9 Ahead	50.00	69.6 %	1925	1925
				Arm 12 Left	Inf	30.4 %		
2/2 (B430)	3.50	0.00	Y	Arm 7 Ahead	50.00	100.0 %	1908	1908
3/1 (A43 Southbound)	3.65	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1980	1980
3/2 (A43 Southbound)	3.65	0.00	Y	Arm 4 Ahead	50.00	100.0 %	1922	1922
3/3 (A43 Southbound)	3.65	0.00	Y	Arm 4 Ahead	50.00	100.0 %	1922	1922
4/1	This lane uses a directly entered Saturation Flow						1850	1850
4/2	This lane uses a directly entered Saturation Flow						1850	1850
4/3	This lane uses a directly entered Saturation Flow						1850	1850
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf
6/1	This lane uses a directly entered Saturation Flow						1850	1850
6/2	This lane uses a directly entered Saturation Flow						1850	1850
6/3	This lane uses a directly entered Saturation Flow						1850	1850
6/4	This lane uses a directly entered Saturation Flow						1850	1850
7/1	This lane uses a directly entered Saturation Flow						1850	1850
7/2	This lane uses a directly entered Saturation Flow						1850	1850
8/1	This lane uses a directly entered Saturation Flow						1850	1850
8/2	This lane uses a directly entered Saturation Flow						1850	1850
8/3	This lane uses a directly entered Saturation Flow						1850	1850
8/4	This lane uses a directly entered Saturation Flow						1850	1850
8/5	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
9/3	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf

11/1 (M40 NB offslip)	3.65	0.00	Y	Arm 5 Left	40.00	99.0 %	1909	1909
				Arm 6 Ahead	Inf	1.0 %		
11/2 (M40 NB offslip)	3.65	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1980	1980
11/3 (M40 NB offslip)	3.65	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1980	1980
11/4 (M40 NB offslip)	3.65	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1980	1980
12/1 (M40 NB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/2 (M40 NB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf

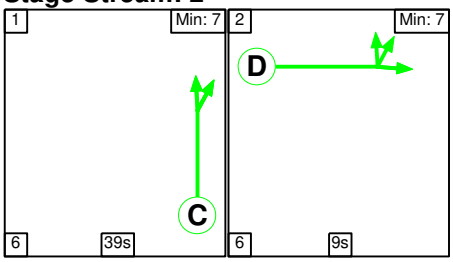
Scenario 1: '2031 Ardley14, 15 AM' (FG1: 'Ardley1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

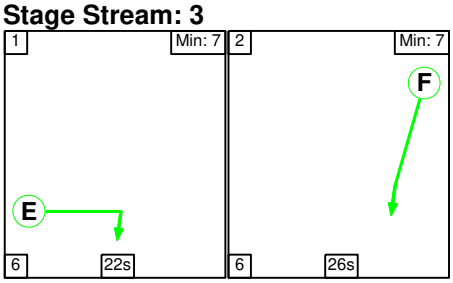
Stage Stream: 1



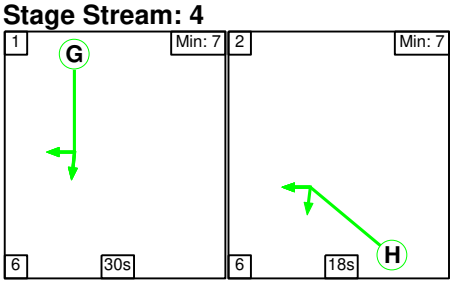
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	39	9
Change Point	0	45

Stage Stream: 2

Stage	1	2
Duration	39	9
Change Point	34	19

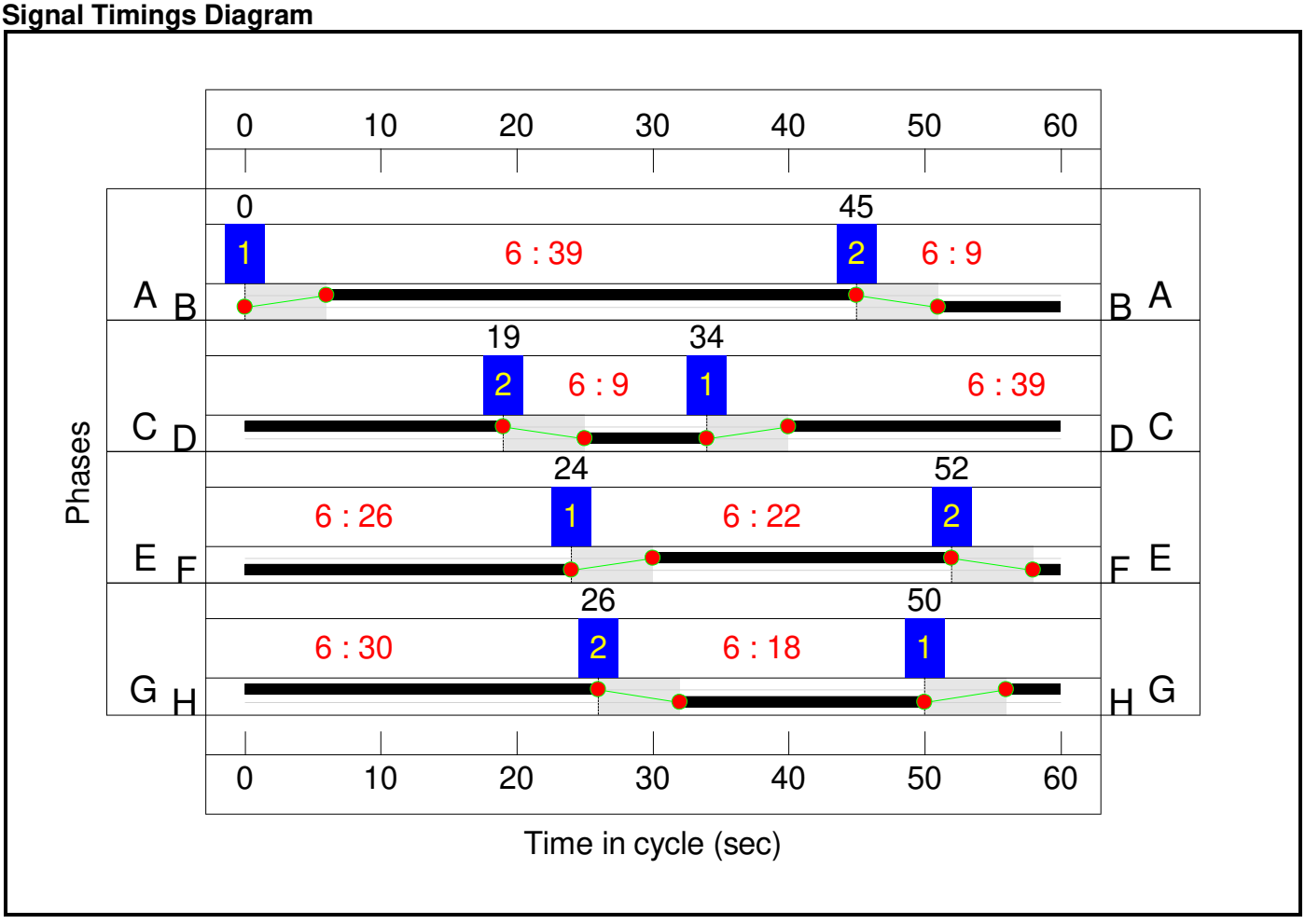
Stage Stream: 3

Stage	1	2
Duration	22	26
Change Point	24	52

Stage Stream: 4

Stage	1	2
Duration	30	18
Change Point	50	26

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: Ardley roundabout - 5-arm signalised roundabout A-1	-	-	**N/A**	-	-		-	-	-	-	-	-	**79.4%**
Ardley	-	-	**N/A**	-	-		-	-	-	-	-	-	**79.4%**
1/2+1/1	Ardley bypass Ahead Left	U	1	N/A	B		1	9	-	439	1922:1958	320+326	66.5 : 69.3%
1/3	Ardley bypass Ahead	U	1	N/A	B		1	9	-	174	1922	320	54.3%
1/4+1/5	Ardley bypass Ahead	U	1	N/A	B		1	9	-	484	1922:1922	320+320	75.5 : 75.5%
2/1+2/2	B430 Ahead Ahead2 Left	U	2	N/A	D		1	9	-	254	1935:1908	58+318	67.6 : 67.6%
3/2+3/1	A43 Southbound Ahead	U	3	N/A	F		1	26	-	1302	1922:1980	865+866	75.3 : 75.2%
3/3	A43 Southbound Ahead	U	3	N/A	F		1	26	-	541	1922	865	62.6%
4/1	Ahead	U	4	N/A	G		1	30	-	651	1850	956	68.1%
4/2	Ahead	U	4	N/A	G		1	30	-	759	1850	956	79.4%
4/3	Ahead Right	U	4	N/A	G		1	30	-	648	1850	956	67.8%
6/1	Right Ahead	U	1	N/A	A		1	39	-	439	1850	1233	35.6%
6/2	Right	U	1	N/A	A		1	39	-	493	1850	1233	40.0%
6/3	Right	U	1	N/A	A		1	39	-	489	1850	1233	39.6%
6/4	Right	U	1	N/A	A		1	39	-	438	1850	1233	35.5%
7/1	Right	U	3	N/A	E		1	22	-	108	1850	709	15.2%
7/2	Right	U	3	N/A	E		1	22	-	107	1850	709	15.1%
8/1	Ahead	U	2	N/A	C		1	39	-	370	1850	1233	30.0%
8/2	Ahead	U	2	N/A	C		1	39	-	424	1850	1233	34.4%
8/3	Ahead	U	2	N/A	C		1	39	-	667	1850	1233	54.1%
8/4	Ahead	U	2	N/A	C		1	39	-	731	1850	1233	59.3%
8/5	Ahead	U	2	N/A	C		1	39	-	680	1850	1233	55.1%

11/2+11/1	M40 NB offslip Left Ahead	U	4	N/A	H		1	18	-	939	1980:1909	627+605	78.6 : 73.8%
11/3+11/4	M40 NB offslip Ahead	U	4	N/A	H		1	18	-	927	1980:1980	627+627	78.0 : 69.9%

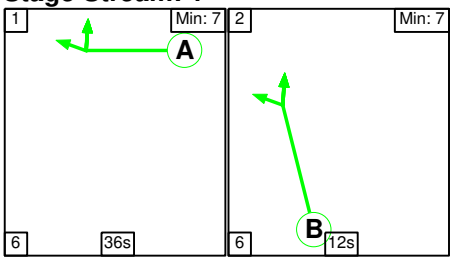
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ardley roundabout - 5-arm signalised roundabout A-1	**-**	**-**	**0**	**0**	**0**	**30.5**	**9.8**	**0.0**	**40.3**	**-**	**-**	**-**	**-**
Ardley	**-**	**-**	**0**	**0**	**0**	**30.5**	**9.8**	**0.0**	**40.3**	**-**	**-**	**-**	**-**
1/2+1/1	439	439	-	-	-	2.9	1.0	-	3.9	32.1	3.5	1.0	4.6
1/3	174	174	-	-	-	1.1	0.6	-	1.7	35.1	2.6	0.6	3.2
1/4+1/5	484	484	-	-	-	3.2	1.5	-	4.7	35.1	3.8	1.5	5.3
2/1+2/2	254	254	-	-	-	1.6	1.0	-	2.7	37.7	3.3	1.0	4.4
3/2+3/1	1302	1302	-	-	-	4.9	1.5	-	6.4	17.8	8.9	1.5	10.4
3/3	541	541	-	-	-	1.9	0.8	-	2.7	18.2	6.8	0.8	7.6
4/1	651	651	-	-	-	0.2	0.0	-	0.2	1.0	0.6	0.0	0.6
4/2	759	759	-	-	-	0.8	0.0	-	0.8	3.8	2.0	0.0	2.0
4/3	648	648	-	-	-	0.8	0.0	-	0.8	4.3	1.9	0.0	1.9
6/1	439	439	-	-	-	0.0	0.0	-	0.0	0.3	2.6	0.0	2.6
6/2	493	493	-	-	-	1.1	0.0	-	1.1	7.8	3.1	0.0	3.1
6/3	489	489	-	-	-	1.0	0.0	-	1.0	7.7	3.0	0.0	3.0
6/4	438	438	-	-	-	0.7	0.3	-	1.0	8.3	2.2	0.3	2.4
7/1	108	108	-	-	-	0.0	0.0	-	0.0	0.2	0.5	0.0	0.5
7/2	107	107	-	-	-	0.0	0.0	-	0.0	0.2	0.5	0.0	0.5
8/1	370	370	-	-	-	0.3	0.0	-	0.3	3.2	1.3	0.0	1.3
8/2	424	424	-	-	-	0.3	0.0	-	0.3	2.8	1.3	0.0	1.3
8/3	667	667	-	-	-	0.0	0.0	-	0.0	0.0	0.1	0.0	0.1
8/4	731	731	-	-	-	0.0	0.0	-	0.0	0.0	0.1	0.0	0.1
8/5	680	680	-	-	-	0.0	0.0	-	0.0	0.0	0.1	0.0	0.1
11/2+11/1	939	939	-	-	-	4.8	1.6	-	6.4	24.6	7.4	1.6	9.0
11/3+11/4	927	927	-	-	-	4.7	1.4	-	6.1	23.8	7.3	1.4	8.7

C1	Stream: 1	PRC for Signalled Lanes (%):	19.1	Total Delay for Signalled Lanes (pcuHr):	13.50	Cycle Time (s):	60
C1	Stream: 2	PRC for Signalled Lanes (%):	33.1	Total Delay for Signalled Lanes (pcuHr):	3.34	Cycle Time (s):	60
C1	Stream: 3	PRC for Signalled Lanes (%):	19.6	Total Delay for Signalled Lanes (pcuHr):	9.17	Cycle Time (s):	60
C1	Stream: 4	PRC for Signalled Lanes (%):	13.3	Total Delay for Signalled Lanes (pcuHr):	14.28	Cycle Time (s):	60
		PRC Over All Lanes (%):	13.3	Total Delay Over All Lanes(pcuHr):	40.30		

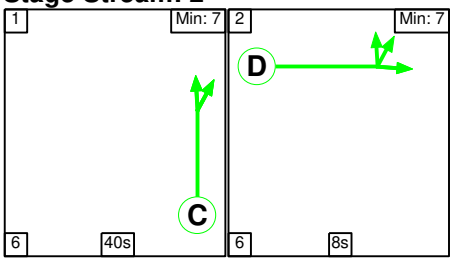
Scenario 2: '2031 Ardley14, 15 PM' (FG2: 'Ardley1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

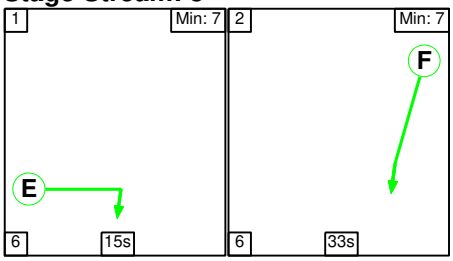
Stage Stream: 1



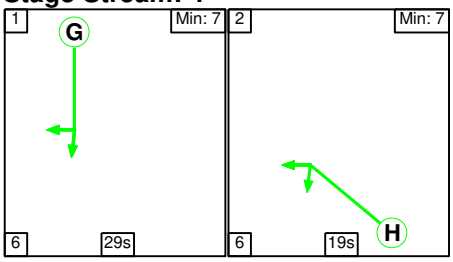
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	36	12
Change Point	0	42

Stage Stream: 2

Stage	1	2
Duration	40	8
Change Point	44	30

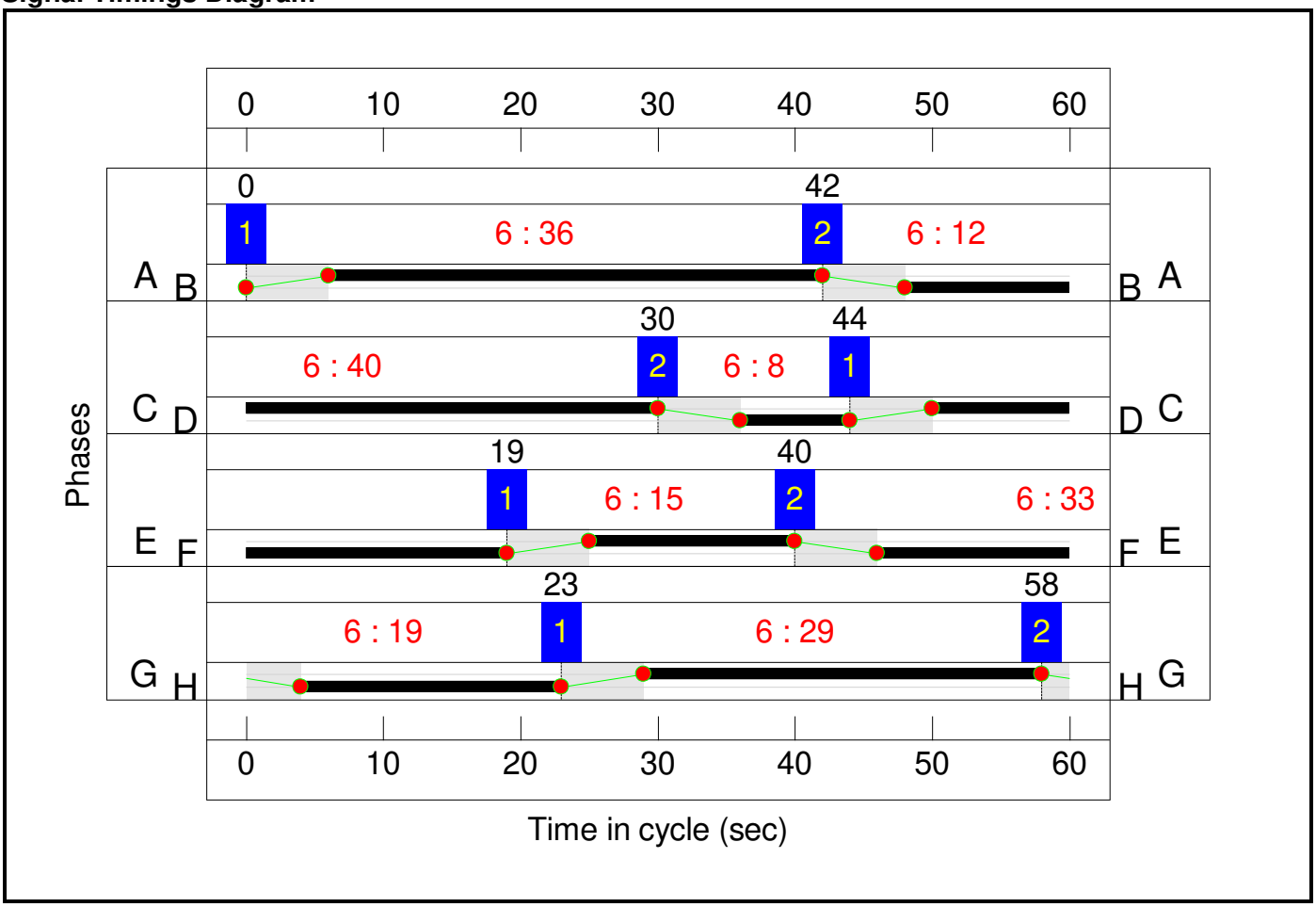
Stage Stream: 3

Stage	1	2
Duration	15	33
Change Point	19	40

Stage Stream: 4

Stage	1	2
Duration	29	19
Change Point	23	58

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: Ardley roundabout - 5-arm signalised roundabout A-1	-	-	**N/A**	-	-		-	-	-	-	-	-	**99.8%**
Ardley	-	-	**N/A**	-	-		-	-	-	-	-	-	**99.8%**
1/2+1/1	Ardley bypass Ahead Left	U	1	N/A	B		1	12	-	553	1922:1948	416+422	60.0 : 71.8%
1/3	Ardley bypass Ahead	U	1	N/A	B		1	12	-	341	1922	416	81.9%
1/4+1/5	Ardley bypass Ahead	U	1	N/A	B		1	12	-	757	1922:1922	416+416	91.0 : 90.8%
2/1+2/2	B430 Ahead Ahead2 Left	U	2	N/A	D		1	8	-	200	1925:1908	37+286	61.8 : 61.8%
3/2+3/1	A43 Southbound Ahead	U	3	N/A	F		1	33	-	760	1922:1980	975+975	39.0 : 39.0%
3/3	A43 Southbound Ahead	U	3	N/A	F		1	33	-	509	1922	1089	46.7%
4/1	Ahead	U	4	N/A	G		1	29	-	380	1850	925	41.1%
4/2	Ahead	U	4	N/A	G		1	29	-	485	1850	925	52.4%
4/3	Ahead Right	U	4	N/A	G		1	29	-	581	1850	925	62.8%
6/1	Right Ahead	U	1	N/A	A		1	36	-	512	1850	1141	44.9%
6/2	Right	U	1	N/A	A		1	36	-	656	1850	1141	57.5%
6/3	Right	U	1	N/A	A		1	36	-	659	1850	1141	57.8%
6/4	Right	U	1	N/A	A		1	36	-	657	1850	1141	57.6%
7/1	Right	U	3	N/A	E		1	15	-	105	1850	493	21.3%
7/2	Right	U	3	N/A	E		1	15	-	72	1850	493	14.6%
8/1	Ahead	U	2	N/A	C		1	40	-	413	1850	1264	32.7%
8/2	Ahead	U	2	N/A	C		1	40	-	492	1850	1264	38.9%
8/3	Ahead	U	2	N/A	C		1	40	-	997	1850	1264	78.9%
8/4	Ahead	U	2	N/A	C		1	40	-	1038	1850	1264	82.1%
8/5	Ahead	U	2	N/A	C		1	40	-	1035	1850	1264	81.9%

11/2+11/1	M40 NB offslip Left Ahead	U	4	N/A	H		1	19	-	957	1980:1909	660+303	99.4 : 99.4%
11/3+11/4	M40 NB offslip Ahead	U	4	N/A	H		1	19	-	1316	1980:1980	660+660	99.8 : 99.5%

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: Ardley roundabout - 5-arm signalised roundabout A-1	**-**	**-**	**0**	**0**	**0**	**35.1**	**41.0**	**0.0**	**76.2**	**-**	**-**	**-**	**-**
Ardley	**-**	**-**	**0**	**0**	**0**	**35.1**	**41.0**	**0.0**	**76.2**	**-**	**-**	**-**	**-**
1/2+1/1	553	553	-	-	-	3.3	1.0	-	4.3	27.8	4.6	1.0	5.6
1/3	341	341	-	-	-	2.1	2.1	-	4.3	45.0	5.4	2.1	7.5
1/4+1/5	757	757	-	-	-	4.8	4.5	-	9.3	44.2	6.1	4.5	10.6
2/1+2/2	200	200	-	-	-	1.3	0.8	-	2.1	38.1	2.8	0.8	3.6
3/2+3/1	760	760	-	-	-	1.5	0.3	-	1.8	8.5	3.4	0.3	3.7
3/3	509	509	-	-	-	1.1	0.4	-	1.5	10.8	4.9	0.4	5.4
4/1	380	380	-	-	-	0.9	0.0	-	0.9	8.3	2.5	0.0	2.5
4/2	485	485	-	-	-	1.0	0.0	-	1.0	7.5	4.0	0.0	4.0
4/3	581	581	-	-	-	1.3	0.0	-	1.3	8.3	4.4	0.0	4.4
6/1	512	512	-	-	-	1.1	0.0	-	1.1	7.8	5.1	0.0	5.1
6/2	656	656	-	-	-	0.1	0.0	-	0.1	0.7	0.7	0.0	0.7
6/3	659	659	-	-	-	0.1	0.0	-	0.1	0.7	0.7	0.0	0.7
6/4	657	657	-	-	-	0.1	0.7	-	0.8	4.4	0.7	0.7	1.4
7/1	105	105	-	-	-	1.0	0.0	-	1.0	35.3	1.4	0.0	1.4
7/2	72	72	-	-	-	0.7	0.0	-	0.7	34.9	1.0	0.0	1.0
8/1	413	413	-	-	-	0.3	0.0	-	0.3	2.7	2.2	0.0	2.2
8/2	492	492	-	-	-	0.4	0.0	-	0.4	2.8	5.4	0.0	5.4
8/3	997	997	-	-	-	0.4	0.0	-	0.4	1.5	1.7	0.0	1.7
8/4	1038	1038	-	-	-	0.6	0.0	-	0.6	2.1	2.3	0.0	2.3
8/5	1035	1035	-	-	-	0.6	0.0	-	0.6	2.1	2.2	0.0	2.2
11/2+11/1	957	957	-	-	-	5.0	14.1	-	19.0	71.6	10.8	14.1	24.8
11/3+11/4	1316	1316	-	-	-	7.3	17.2	-	24.5	66.9	10.8	17.2	28.0

C1	Stream: 1	PRC for Signalled Lanes (%):	-1.1	Total Delay for Signalled Lanes (pcuHr):	19.98	Cycle Time (s):	60
C1	Stream: 2	PRC for Signalled Lanes (%):	9.6	Total Delay for Signalled Lanes (pcuHr):	4.43	Cycle Time (s):	60
C1	Stream: 3	PRC for Signalled Lanes (%):	92.6	Total Delay for Signalled Lanes (pcuHr):	5.05	Cycle Time (s):	60
C1	Stream: 4	PRC for Signalled Lanes (%):	-10.9	Total Delay for Signalled Lanes (pcuHr):	46.74	Cycle Time (s):	60
		PRC Over All Lanes (%):	-10.9	Total Delay Over All Lanes(pcuHr):	76.19		

APPENDIX 25

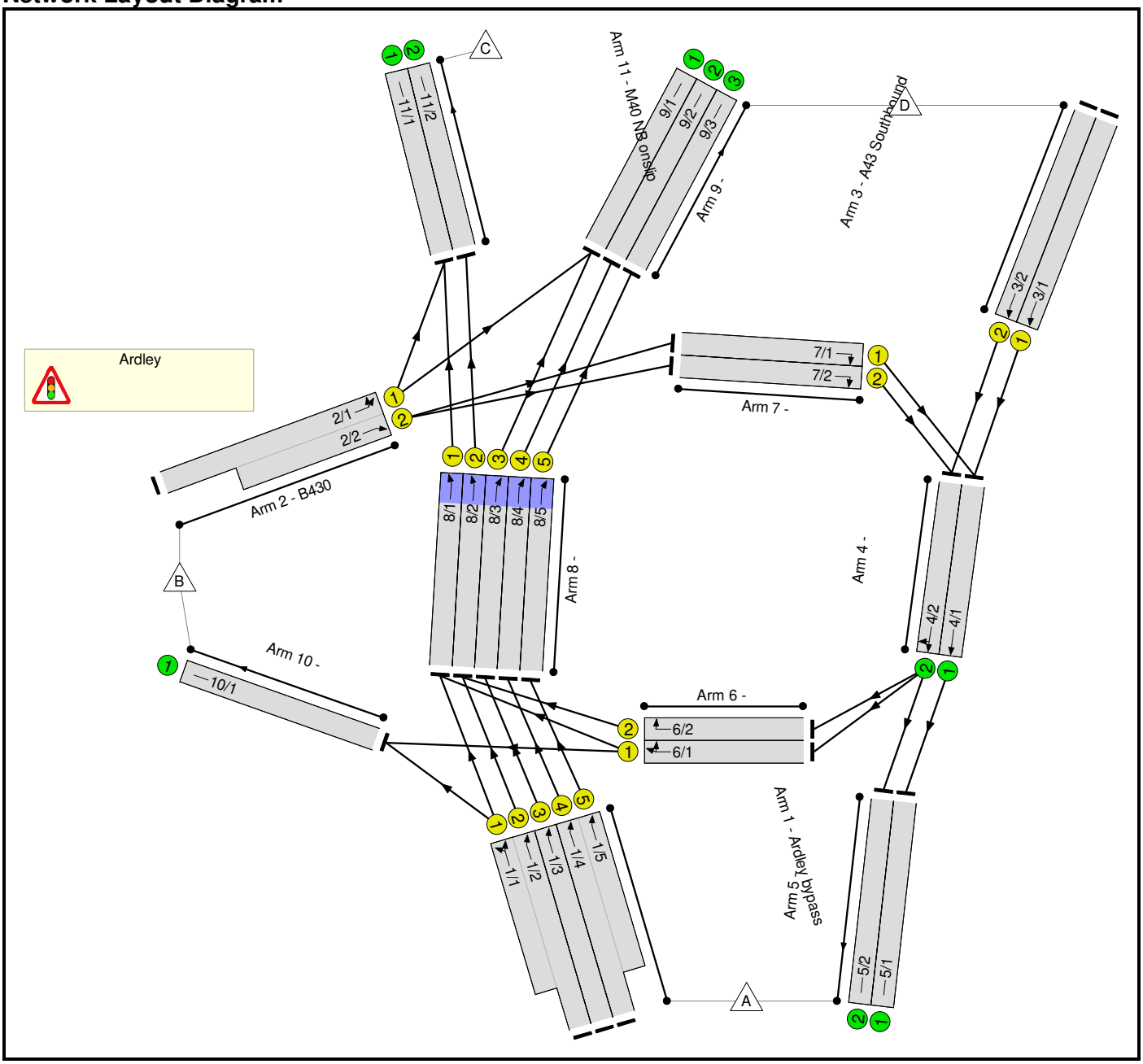
Ardley Roundabout junction option A-2 – LinSig results

Full Input Data And Results

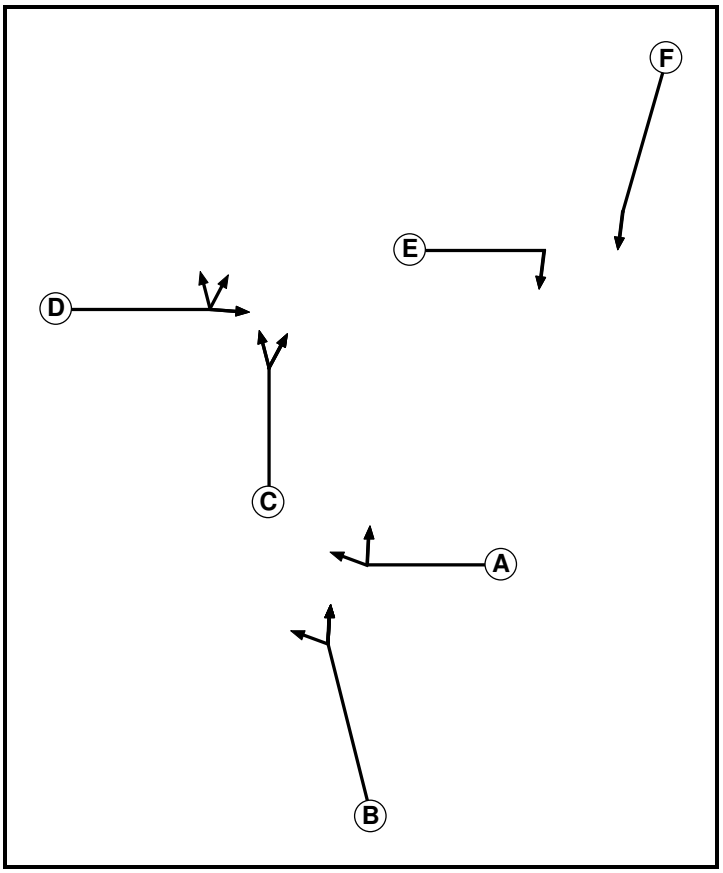
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Ardley roundabout - 4-arm signalised roundabout A-3**
Location:	
Additional detail:	
File name:	2031_DS_M40J10_Ardley - 4-arm signalised roundabout A-3.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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
E	Traffic	3		7	7
F	Traffic	3		7	7

Phase Intergreens Matrix

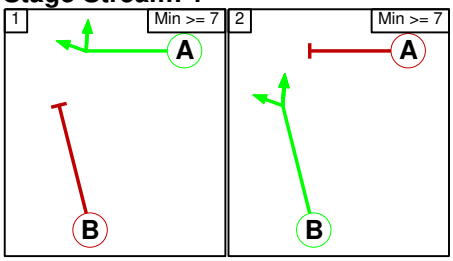
		Starting Phase					
		A	B	C	D	E	F
Terminating Phase	A		6	-	-	-	-
	B	6		-	-	-	-
	C	-	-		6	-	-
	D	-	-	6		-	-
	E	-	-	-	-		6
	F	-	-	-	-	6	

Phases in Stage

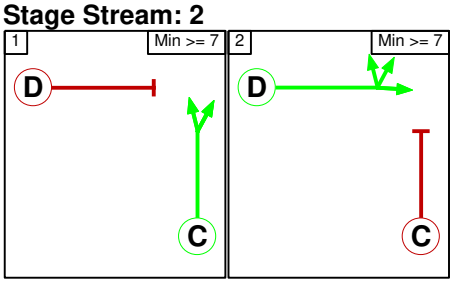
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F

Stage Diagram

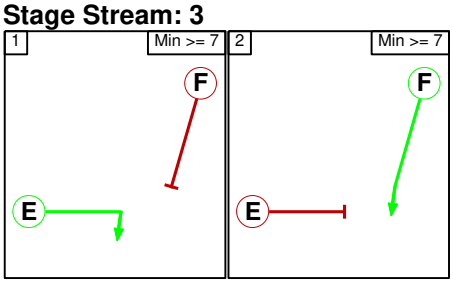
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Prohibited Stage Change

Stage Stream: 1

From Stage \ To Stage		1	2
	1		6
	2	6	

Stage Stream: 2

From Stage \ To Stage		1	2
	1		6
	2	6	

Stage Stream: 3

From Stage \ To Stage		1	2
	1		6
	2	6	

Lane Input Data

Junction: Ardley												
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 (Ardley bypass)	U	B	2	3	10.4	Geom	-	3.65	0.00	Y	Arm 8 Ahead	Inf
											Arm 10 Left	40.00
1/2 (Ardley bypass)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 8 Ahead	50.00
1/3 (Ardley bypass)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 8 Ahead	50.00
1/4 (Ardley bypass)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 8 Ahead	50.00
1/5 (Ardley bypass)	U	B	2	3	27.8	Geom	-	3.65	0.00	Y	Arm 8 Ahead	50.00
2/1 (B430)	U	D	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 9 Ahead	50.00
											Arm 11 Left	Inf
2/2 (B430)	U	D	2	3	10.4	Geom	-	3.50	0.00	Y	Arm 7 Ahead	50.00
3/1 (A43 Southbound)	U	F	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Ahead	50.00
3/2 (A43 Southbound)	U	F	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Ahead	50.00
4/1	U		2	3	7.0	Inf	-	-	-	-	-	-
4/2	U		2	3	7.0	Inf	-	-	-	-	-	-
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U	A	2	3	8.7	User	1850	-	-	-	-	-
6/2	U	A	2	3	8.7	User	1850	-	-	-	-	-
7/1	U	E	2	3	8.7	User	1850	-	-	-	-	-
7/2	U	E	2	3	8.7	User	1850	-	-	-	-	-
8/1	U	C	2	3	8.7	User	1850	-	-	-	-	-
8/2	U	C	2	3	8.7	User	1850	-	-	-	-	-
8/3	U	C	2	3	8.7	User	1850	-	-	-	-	-
8/4	U	C	2	3	10.4	User	1850	-	-	-	-	-
8/5	U	C	2	3	10.4	User	1850	-	-	-	-	-
9/1	U		2	3	60.0	Inf	-	-	-	-	-	-
9/2	U		2	3	60.0	Inf	-	-	-	-	-	-
9/3	U		2	3	60.0	Inf	-	-	-	-	-	-

10/1	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1 (M40 NB onslip)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2 (M40 NB onslip)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Ardley6_AM'	07:45	08:45	01:00	
2: 'Ardley6_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Ardley8 AM' (FG3: 'Ardley5_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	68	372	1799	2239
	B	218	0	19	17	254
	C	0	0	0	0	0
	D	1405	16	422	0	1843
	Tot.	1623	84	813	1816	4336

Traffic Lane Flows

Lane	Scenario 1: 2031 Ardley8 AM
Junction: Ardley	
1/1 (short)	239
1/2 (with short)	440(In) 201(Out)
1/3	617
1/4 (with short)	1182(In) 591(Out)
1/5 (short)	591
2/1 (with short)	254(In) 36(Out)
2/2 (short)	218
3/1	922
3/2	921
4/1	1031
4/2	1030
5/1	1031
5/2	592
6/1	222
6/2	216
7/1	109
7/2	109
8/1	377
8/2	417
8/3	617
8/4	591
8/5	591
9/1	634
9/2	591
9/3	591
10/1	84
11/1	396
11/2	417

Lane Saturation Flows

Junction: Ardley

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 (Ardley bypass)	3.65	0.00	Y	Arm 8 Ahead	Inf	71.5 %	1959	1959
				Arm 10 Left	40.00	28.5 %		
1/2 (Ardley bypass)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
1/3 (Ardley bypass)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
1/4 (Ardley bypass)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
1/5 (Ardley bypass)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
2/1 (B430)	3.50	0.00	Y	Arm 9 Ahead	50.00	47.2 %	1938	1938
				Arm 11 Left	Inf	52.8 %		
2/2 (B430)	3.50	0.00	Y	Arm 7 Ahead	50.00	100.0 %	1908	1908
3/1 (A43 Southbound)	3.65	0.00	Y	Arm 4 Ahead	50.00	100.0 %	1922	1922
3/2 (A43 Southbound)	3.65	0.00	Y	Arm 4 Ahead	50.00	100.0 %	1922	1922
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	This lane uses a directly entered Saturation Flow						1850	1850
6/2	This lane uses a directly entered Saturation Flow						1850	1850
7/1	This lane uses a directly entered Saturation Flow						1850	1850
7/2	This lane uses a directly entered Saturation Flow						1850	1850
8/1	This lane uses a directly entered Saturation Flow						1850	1850
8/2	This lane uses a directly entered Saturation Flow						1850	1850
8/3	This lane uses a directly entered Saturation Flow						1850	1850
8/4	This lane uses a directly entered Saturation Flow						1850	1850
8/5	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
9/3	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
11/1 (M40 NB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (M40 NB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2031 Ardley8 PM' (FG4: 'Ardley5_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	136	420	2599	3155
	B	178	0	7	15	200
	C	0	0	0	0	0
	D	760	24	485	0	1269
	Tot.	938	160	912	2614	4624

Traffic Lane Flows

Lane	Scenario 2: 2031 Ardley8 PM
Junction: Ardley	
1/1 (short)	291
1/2 (with short)	556(In) 265(Out)
1/3	877
1/4 (with short)	1722(In) 861(Out)
1/5 (short)	861
2/1 (with short)	200(In) 22(Out)
2/2 (short)	178
3/1	635
3/2	634
4/1	724
4/2	723
5/1	724
5/2	214
6/1	259
6/2	250
7/1	89
7/2	89
8/1	390
8/2	515
8/3	877
8/4	861
8/5	861
9/1	892
9/2	861
9/3	861
10/1	160
11/1	397
11/2	515

Lane Saturation Flows

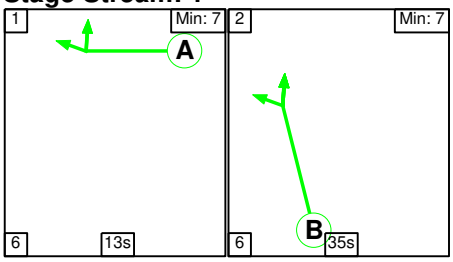
Junction: Ardley

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 (Ardley bypass)	3.65	0.00	Y	Arm 8 Ahead	Inf	53.3 %	1946	1946
				Arm 10 Left	40.00	46.7 %		
1/2 (Ardley bypass)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
1/3 (Ardley bypass)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
1/4 (Ardley bypass)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
1/5 (Ardley bypass)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
2/1 (B430)	3.50	0.00	Y	Arm 9 Ahead	50.00	68.2 %	1926	1926
				Arm 11 Left	Inf	31.8 %		
2/2 (B430)	3.50	0.00	Y	Arm 7 Ahead	50.00	100.0 %	1908	1908
3/1 (A43 Southbound)	3.65	0.00	Y	Arm 4 Ahead	50.00	100.0 %	1922	1922
3/2 (A43 Southbound)	3.65	0.00	Y	Arm 4 Ahead	50.00	100.0 %	1922	1922
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	This lane uses a directly entered Saturation Flow						1850	1850
6/2	This lane uses a directly entered Saturation Flow						1850	1850
7/1	This lane uses a directly entered Saturation Flow						1850	1850
7/2	This lane uses a directly entered Saturation Flow						1850	1850
8/1	This lane uses a directly entered Saturation Flow						1850	1850
8/2	This lane uses a directly entered Saturation Flow						1850	1850
8/3	This lane uses a directly entered Saturation Flow						1850	1850
8/4	This lane uses a directly entered Saturation Flow						1850	1850
8/5	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
9/3	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
11/1 (M40 NB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (M40 NB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf

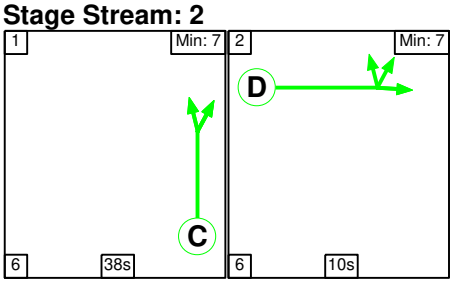
Scenario 1: '2031 Ardley8 AM' (FG3: 'Ardley5_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

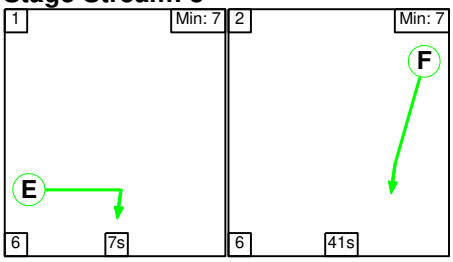
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	13	35
Change Point	0	19

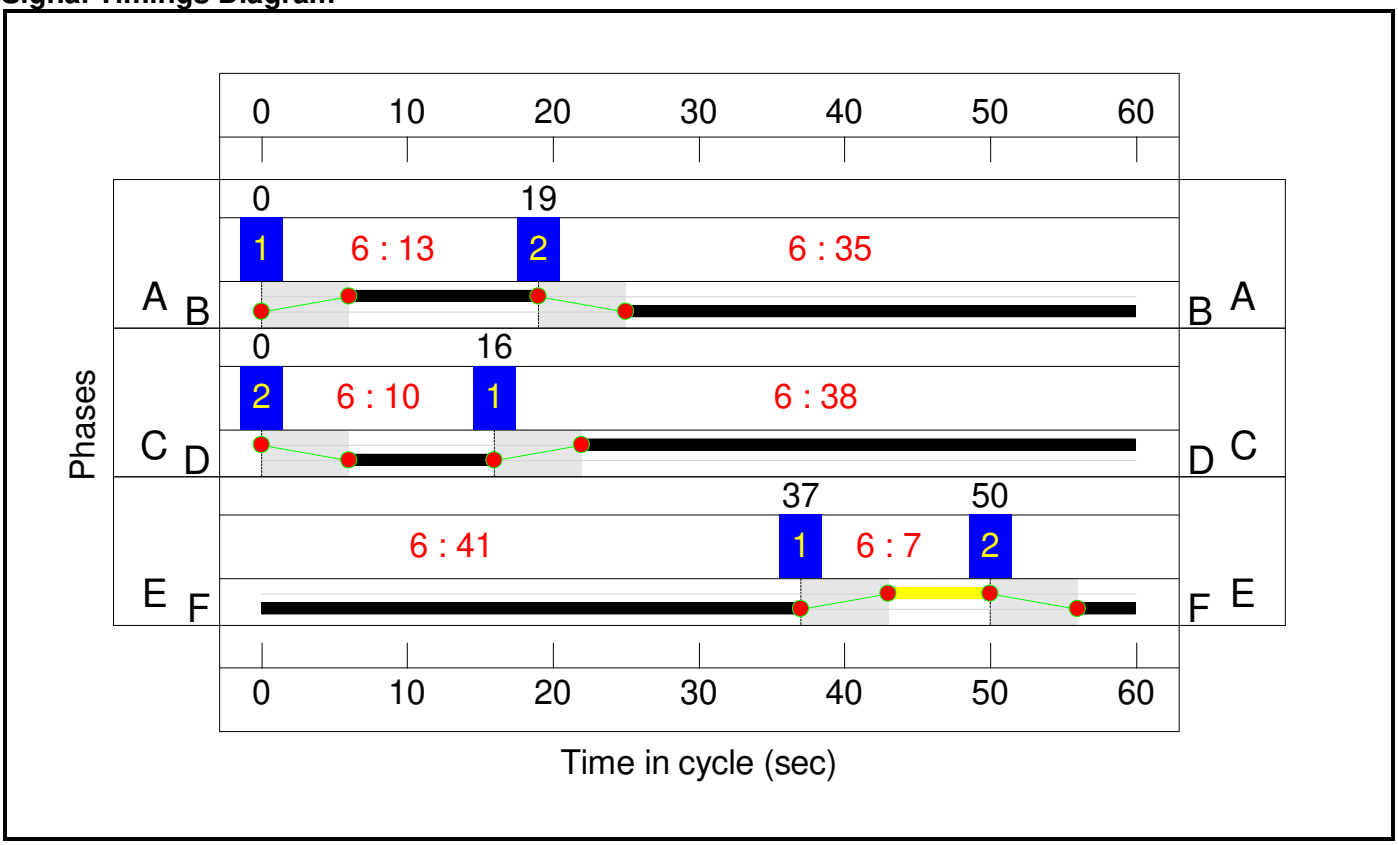
Stage Stream: 2

Stage	1	2
Duration	38	10
Change Point	16	0

Stage Stream: 3

Stage	1	2
Duration	7	41
Change Point	37	50

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: Ardley roundabout - 4-arm signalised roundabout A-3	-	-	**N/A**	-	-		-	-	-	-	-	-	**68.5%**
Ardley	-	-	**N/A**	-	-		-	-	-	-	-	-	**68.5%**
1/2+1/1	Ardley bypass Ahead Left	U	1	N/A	B		1	35	-	440	1922:1959	787+936	25.5 : 25.5%
1/3	Ardley bypass Ahead	U	1	N/A	B		1	35	-	617	1922	1153	53.5%
1/4+1/5	Ardley bypass Ahead	U	1	N/A	B		1	35	-	1182	1922:1922	961+961	61.5 : 61.5%
2/1+2/2	B430 Ahead Ahead2 Left	U	2	N/A	D		1	10	-	254	1938:1908	58+350	62.3 : 62.3%
3/1	A43 Southbound Ahead	U	3	N/A	F		1	41	-	922	1922	1345	68.5%
3/2	A43 Southbound Ahead	U	3	N/A	F		1	41	-	921	1922	1345	68.5%
6/1	Right Ahead	U	1	N/A	A		1	13	-	222	1850	432	51.4%
6/2	Right	U	1	N/A	A		1	13	-	216	1850	432	50.0%
7/1	Right	U	3	N/A	E		1	7	-	109	1850	247	44.2%
7/2	Right	U	3	N/A	E		1	7	-	109	1850	247	44.2%
8/1	Ahead	U	2	N/A	C		1	38	-	377	1850	1203	31.4%
8/2	Ahead	U	2	N/A	C		1	38	-	417	1850	1203	34.7%
8/3	Ahead	U	2	N/A	C		1	38	-	617	1850	1203	51.3%
8/4	Ahead	U	2	N/A	C		1	38	-	591	1850	1203	49.1%
8/5	Ahead	U	2	N/A	C		1	38	-	591	1850	1203	49.1%

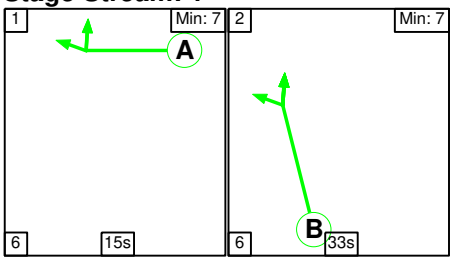
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ardley roundabout - 4-arm signalised roundabout A-3	**-**	**-**	**0**	**0**	**0**	**14.4**	**5.5**	**0.0**	**20.0**	**-**	**-**	**-**	**-**
Ardley	**-**	**-**	**0**	**0**	**0**	**14.4**	**5.5**	**0.0**	**20.0**	**-**	**-**	**-**	**-**
1/2+1/1	440	440	-	-	-	0.7	0.2	-	0.8	6.8	1.8	0.2	2.0
1/3	617	617	-	-	-	1.2	0.6	-	1.8	10.4	6.0	0.6	6.6
1/4+1/5	1182	1182	-	-	-	2.3	0.8	-	3.1	9.4	5.6	0.8	6.4
2/1+2/2	254	254	-	-	-	1.6	0.8	-	2.4	33.9	3.3	0.8	4.1
3/1	922	922	-	-	-	1.3	1.1	-	2.4	9.4	8.7	1.1	9.8
3/2	921	921	-	-	-	1.3	1.1	-	2.4	9.4	8.7	1.1	9.8
6/1	222	222	-	-	-	1.0	0.5	-	1.5	24.0	2.6	0.5	3.1
6/2	216	216	-	-	-	0.9	0.5	-	1.4	23.7	2.4	0.5	2.9
7/1	109	109	-	-	-	0.9	0.0	-	0.9	31.2	1.8	0.0	1.8
7/2	109	109	-	-	-	0.9	0.0	-	0.9	31.2	1.8	0.0	1.8
8/1	377	377	-	-	-	0.7	0.0	-	0.7	6.7	3.6	0.0	3.6
8/2	417	417	-	-	-	0.8	0.0	-	0.8	6.6	4.4	0.0	4.4
8/3	617	617	-	-	-	0.2	0.0	-	0.2	1.4	0.7	0.0	0.7
8/4	591	591	-	-	-	0.3	0.0	-	0.3	1.7	0.8	0.0	0.8
8/5	591	591	-	-	-	0.3	0.0	-	0.3	1.7	0.8	0.0	0.8

C1 Stream: 1 PRC for Signalled Lanes (%): 46.3 Total Delay for Signalled Lanes (pcuHr): 8.59 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 44.4 Total Delay for Signalled Lanes (pcuHr): 4.67 Cycle Time (s): 60
C1 Stream: 3 PRC for Signalled Lanes (%): 31.3 Total Delay for Signalled Lanes (pcuHr): 6.71 Cycle Time (s): 60
PRC Over All Lanes (%): 31.3 Total Delay Over All Lanes(pcuHr): 19.98

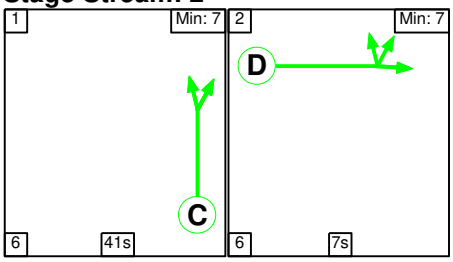
Scenario 2: '2031 Ardley8 PM' (FG4: 'Ardley5_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

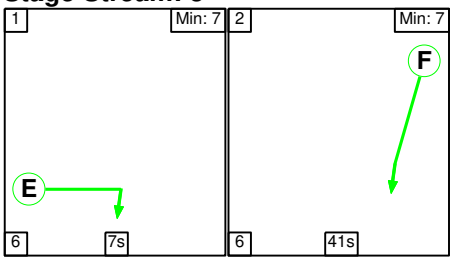
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	15	33
Change Point	0	21

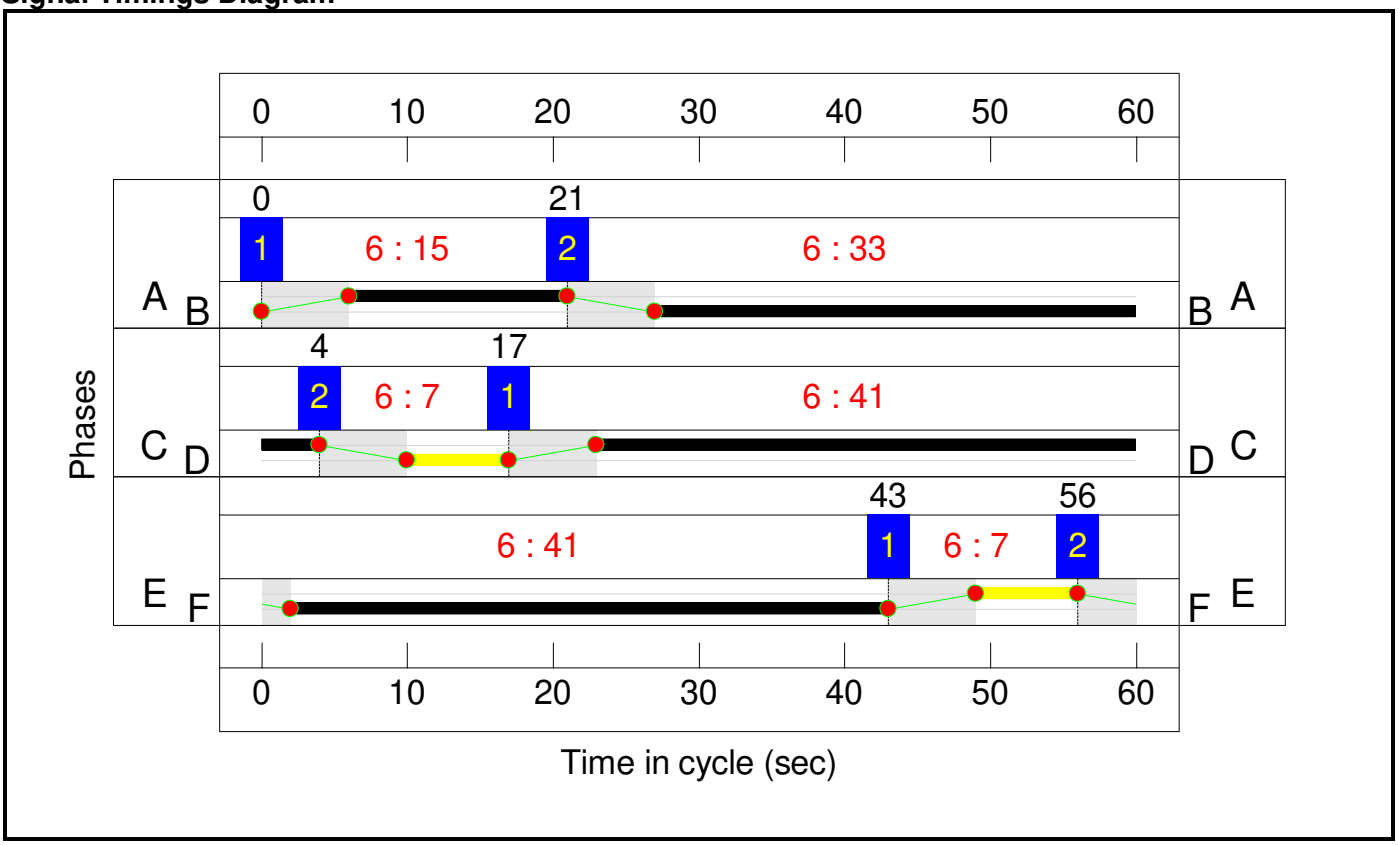
Stage Stream: 2

Stage	1	2
Duration	41	7
Change Point	17	4

Stage Stream: 3

Stage	1	2
Duration	7	41
Change Point	43	56

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: Ardley roundabout - 4-arm signalised roundabout A-3	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**89.6%**
Ardley	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**89.6%**
1/2+1/1	Ardley bypass Ahead Left	U	1	N/A	B		1	33	-	556	1922:1946	810+890	32.7 : 32.7%
1/3	Ardley bypass Ahead	U	1	N/A	B		1	33	-	877	1922	1089	80.5%
1/4+1/5	Ardley bypass Ahead	U	1	N/A	B		1	33	-	1722	1922:1922	961+961	89.6 : 89.6%
2/1+2/2	B430 Ahead Ahead2 Left	U	2	N/A	D		1	7	-	200	1926:1908	31+254	70.0 : 70.0%
3/1	A43 Southbound Ahead	U	3	N/A	F		1	41	-	635	1922	1345	47.2%
3/2	A43 Southbound Ahead	U	3	N/A	F		1	41	-	634	1922	1345	47.1%
6/1	Right Ahead	U	1	N/A	A		1	15	-	259	1850	493	52.5%
6/2	Right	U	1	N/A	A		1	15	-	250	1850	493	50.7%
7/1	Right	U	3	N/A	E		1	7	-	89	1850	247	36.1%
7/2	Right	U	3	N/A	E		1	7	-	89	1850	247	36.1%
8/1	Ahead	U	2	N/A	C		1	41	-	390	1850	1295	30.1%
8/2	Ahead	U	2	N/A	C		1	41	-	515	1850	1295	39.8%
8/3	Ahead	U	2	N/A	C		1	41	-	877	1850	1295	67.7%
8/4	Ahead	U	2	N/A	C		1	41	-	861	1850	1295	66.5%
8/5	Ahead	U	2	N/A	C		1	41	-	861	1850	1295	66.5%

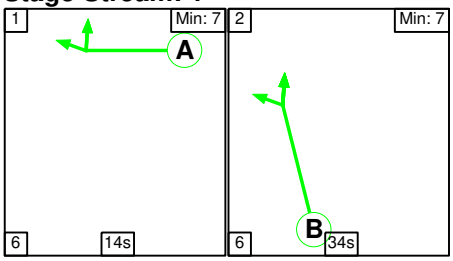
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ardley roundabout - 4-arm signalised roundabout A-3	**-**	**-**	**0**	**0**	**0**	**17.0**	**9.5**	**0.0**	**26.5**	**-**	**-**	**-**	**-**
Ardley	**-**	**-**	**0**	**0**	**0**	**17.0**	**9.5**	**0.0**	**26.5**	**-**	**-**	**-**	**-**
1/2+1/1	556	556	-	-	-	1.0	0.2	-	1.3	8.2	2.4	0.2	2.7
1/3	877	877	-	-	-	2.5	2.0	-	4.6	18.7	11.4	2.0	13.5
1/4+1/5	1722	1722	-	-	-	4.9	4.1	-	9.0	18.8	11.2	4.1	15.4
2/1+2/2	200	200	-	-	-	1.4	1.1	-	2.5	45.1	2.8	1.1	4.0
3/1	635	635	-	-	-	0.7	0.4	-	1.2	6.6	4.6	0.4	5.0
3/2	634	634	-	-	-	0.7	0.4	-	1.2	6.6	4.6	0.4	5.0
6/1	259	259	-	-	-	1.1	0.6	-	1.7	22.9	2.3	0.6	2.9
6/2	250	250	-	-	-	1.1	0.5	-	1.6	22.6	2.2	0.5	2.7
7/1	89	89	-	-	-	0.8	0.0	-	0.8	33.6	1.5	0.0	1.5
7/2	89	89	-	-	-	0.8	0.0	-	0.8	33.6	1.5	0.0	1.5
8/1	390	390	-	-	-	0.8	0.0	-	0.8	6.9	3.9	0.0	3.9
8/2	515	515	-	-	-	0.8	0.0	-	0.8	5.8	4.7	0.0	4.7
8/3	877	877	-	-	-	0.1	0.0	-	0.1	0.4	0.4	0.0	0.4
8/4	861	861	-	-	-	0.2	0.0	-	0.2	0.6	0.4	0.0	0.4
8/5	861	861	-	-	-	0.2	0.0	-	0.2	0.6	0.4	0.0	0.4

C1	Stream: 1 PRC for Signalled Lanes (%):	0.5	Total Delay for Signalled Lanes (pcuHr):	18.05	Cycle Time (s): 60
C1	Stream: 2 PRC for Signalled Lanes (%):	28.6	Total Delay for Signalled Lanes (pcuHr):	4.47	Cycle Time (s): 60
C1	Stream: 3 PRC for Signalled Lanes (%):	90.7	Total Delay for Signalled Lanes (pcuHr):	3.97	Cycle Time (s): 60
	PRC Over All Lanes (%):	0.5	Total Delay Over All Lanes(pcuHr):	26.49	

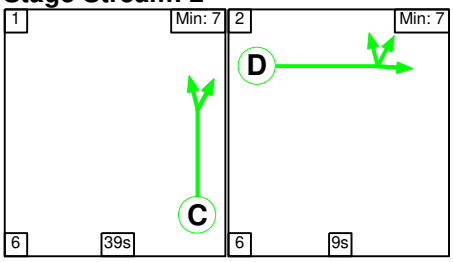
Scenario 3: '2031 Ardley11 AM' (FG1: 'Ardley6_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

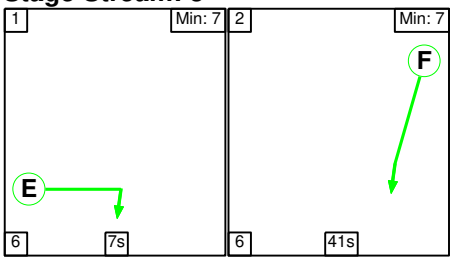
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	14	34
Change Point	0	20

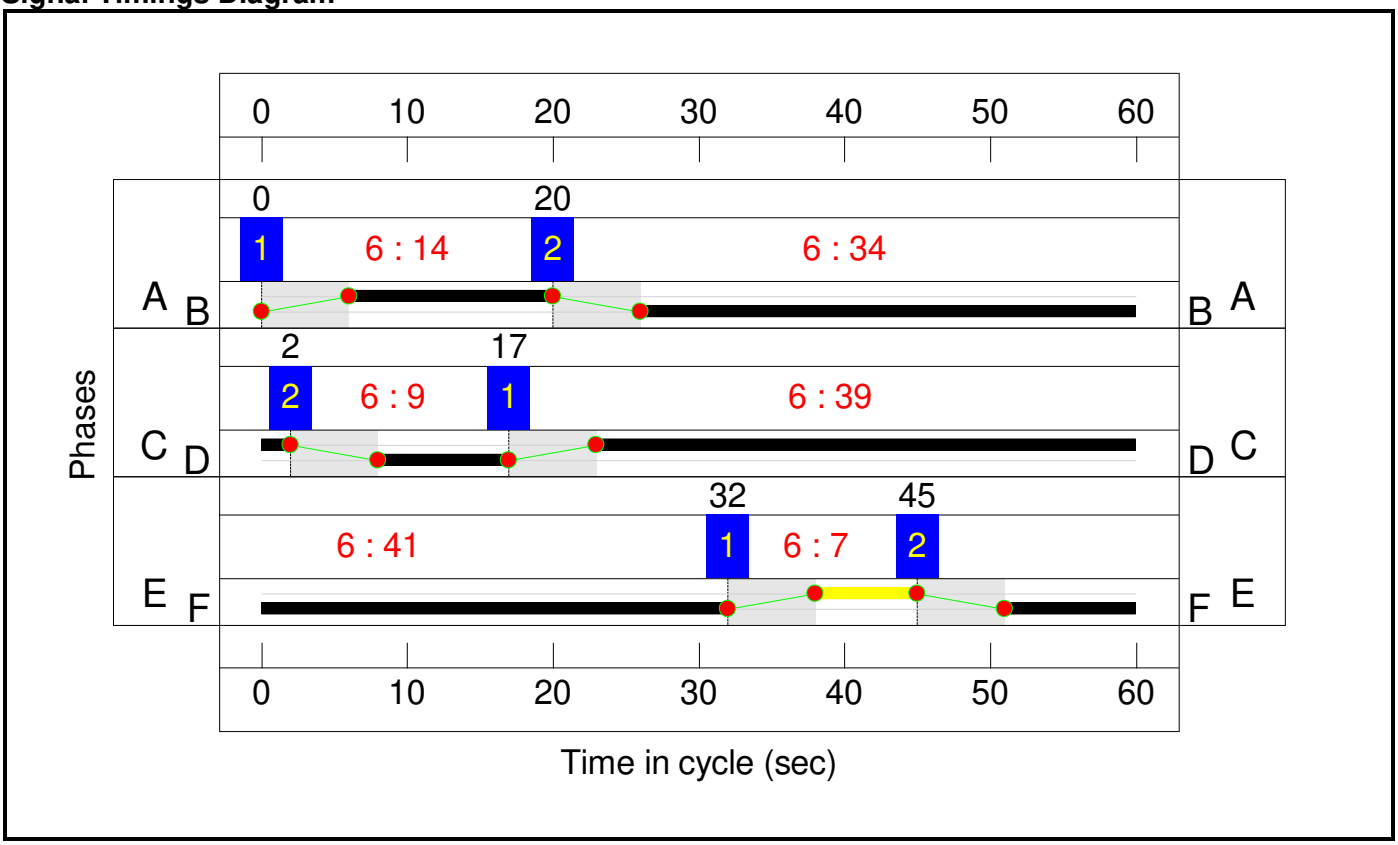
Stage Stream: 2

Stage	1	2
Duration	39	9
Change Point	17	2

Stage Stream: 3

Stage	1	2
Duration	7	41
Change Point	32	45

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: Ardley roundabout - 4-arm signalised roundabout A-3	-	-	**N/A**	-	-		-	-	-	-	-	-	**79.5%**
Ardley	-	-	**N/A**	-	-		-	-	-	-	-	-	**79.5%**
1/2+1/1	Ardley bypass Ahead Left	U	1	N/A	B		1	34	-	440	1922:1959	772+918	26.0 : 26.0%
1/3	Ardley bypass Ahead	U	1	N/A	B		1	34	-	617	1922	1121	55.0%
1/4+1/5	Ardley bypass Ahead	U	1	N/A	B		1	34	-	1182	1922:1922	961+961	61.5 : 61.5%
2/1+2/2	B430 Ahead Ahead2 Left	U	2	N/A	D		1	9	-	254	1938:1908	53+318	68.6 : 68.6%
3/1	A43 Southbound Ahead	U	3	N/A	F		1	41	-	1069	1922	1345	79.5%
3/2	A43 Southbound Ahead	U	3	N/A	F		1	41	-	1069	1922	1345	79.5%
6/1	Right Ahead	U	1	N/A	A		1	14	-	222	1850	462	48.0%
6/2	Right	U	1	N/A	A		1	14	-	216	1850	462	46.7%
7/1	Right	U	3	N/A	E		1	7	-	109	1850	247	44.2%
7/2	Right	U	3	N/A	E		1	7	-	109	1850	247	44.2%
8/1	Ahead	U	2	N/A	C		1	39	-	377	1850	1233	30.6%
8/2	Ahead	U	2	N/A	C		1	39	-	417	1850	1233	33.8%
8/3	Ahead	U	2	N/A	C		1	39	-	617	1850	1233	50.0%
8/4	Ahead	U	2	N/A	C		1	39	-	591	1850	1233	47.9%
8/5	Ahead	U	2	N/A	C		1	39	-	591	1850	1233	47.9%

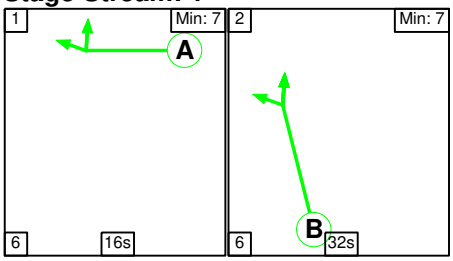
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ardley roundabout - 4-arm signalised roundabout A-3	**-**	**-**	**0**	**0**	**0**	**14.8**	**7.4**	**0.0**	**22.2**	**-**	**-**	**-**	**-**
Ardley	**-**	**-**	**0**	**0**	**0**	**14.8**	**7.4**	**0.0**	**22.2**	**-**	**-**	**-**	**-**
1/2+1/1	440	440	-	-	-	0.7	0.2	-	0.9	7.3	1.9	0.2	2.0
1/3	617	617	-	-	-	1.3	0.6	-	1.9	11.2	6.2	0.6	6.8
1/4+1/5	1182	1182	-	-	-	2.5	0.8	-	3.3	9.9	5.9	0.8	6.7
2/1+2/2	254	254	-	-	-	1.6	1.1	-	2.7	38.4	3.4	1.1	4.5
3/1	1069	1069	-	-	-	1.8	1.9	-	3.7	12.5	11.9	1.9	13.8
3/2	1069	1069	-	-	-	1.8	1.9	-	3.7	12.5	11.9	1.9	13.8
6/1	222	222	-	-	-	0.8	0.5	-	1.3	21.1	2.6	0.5	3.1
6/2	216	216	-	-	-	0.8	0.4	-	1.3	20.9	2.4	0.4	2.9
7/1	109	109	-	-	-	0.7	0.0	-	0.7	24.3	1.8	0.0	1.8
7/2	109	109	-	-	-	0.7	0.0	-	0.7	24.3	1.8	0.0	1.8
8/1	377	377	-	-	-	0.7	0.0	-	0.7	6.7	3.5	0.0	3.5
8/2	417	417	-	-	-	0.8	0.0	-	0.8	6.6	4.2	0.0	4.2
8/3	617	617	-	-	-	0.1	0.0	-	0.1	0.8	0.3	0.0	0.3
8/4	591	591	-	-	-	0.2	0.0	-	0.2	1.1	0.5	0.0	0.5
8/5	591	591	-	-	-	0.2	0.0	-	0.2	1.1	0.5	0.0	0.5

C1 Stream: 1 PRC for Signalled Lanes (%): 46.3 Total Delay for Signalled Lanes (pcuHr): 8.64 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 31.3 Total Delay for Signalled Lanes (pcuHr): 4.67 Cycle Time (s): 60
C1 Stream: 3 PRC for Signalled Lanes (%): 13.3 Total Delay for Signalled Lanes (pcuHr): 8.90 Cycle Time (s): 60
PRC Over All Lanes (%): 13.3 Total Delay Over All Lanes(pcuHr): 22.21

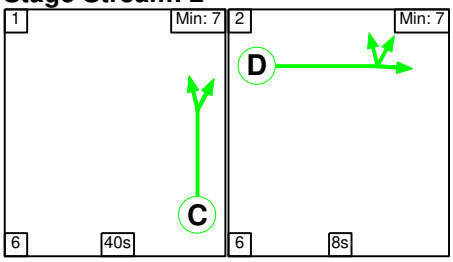
Scenario 4: '2031 Ardley11 PM' (FG2: 'Ardley6_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

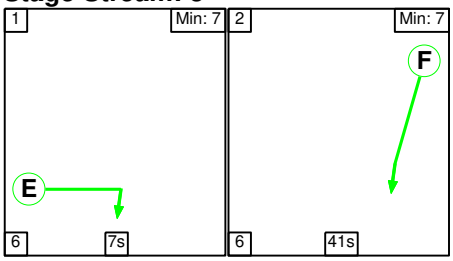
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	16	32
Change Point	0	22

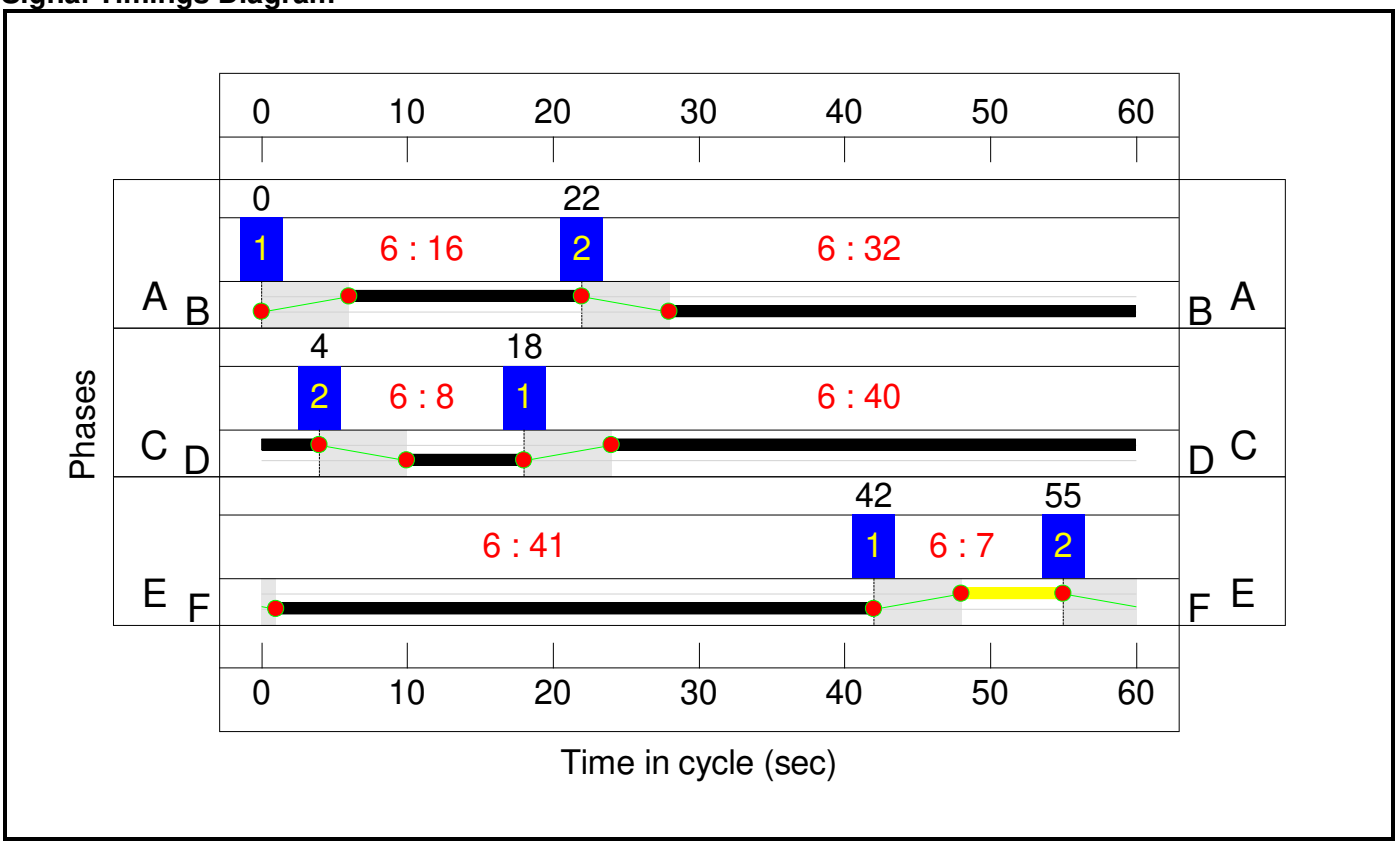
Stage Stream: 2

Stage	1	2
Duration	40	8
Change Point	18	4

Stage Stream: 3

Stage	1	2
Duration	7	41
Change Point	42	55

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: Ardley roundabout - 4-arm signalised roundabout A-3	-	-	**N/A**	-	-		-	-	-	-	-	-	**89.6%**
Ardley	-	-	**N/A**	-	-		-	-	-	-	-	-	**89.6%**
1/2+1/1	Ardley bypass Ahead Left	U	1	N/A	B		1	32	-	556	1922:1946	795+873	33.3 : 33.3%
1/3	Ardley bypass Ahead	U	1	N/A	B		1	32	-	877	1922	1057	83.0%
1/4+1/5	Ardley bypass Ahead	U	1	N/A	B		1	32	-	1722	1922:1922	961+961	89.6 : 89.6%
2/1+2/2	B430 Ahead Ahead2 Left	U	2	N/A	D		1	8	-	200	1926:1908	35+286	62.2 : 62.2%
3/1	A43 Southbound Ahead	U	3	N/A	F		1	41	-	764	1922	1345	56.8%
3/2	A43 Southbound Ahead	U	3	N/A	F		1	41	-	763	1922	1345	56.7%
6/1	Right Ahead	U	1	N/A	A		1	16	-	259	1850	524	49.4%
6/2	Right	U	1	N/A	A		1	16	-	250	1850	524	47.7%
7/1	Right	U	3	N/A	E		1	7	-	89	1850	247	36.1%
7/2	Right	U	3	N/A	E		1	7	-	89	1850	247	36.1%
8/1	Ahead	U	2	N/A	C		1	40	-	390	1850	1264	30.9%
8/2	Ahead	U	2	N/A	C		1	40	-	515	1850	1264	40.7%
8/3	Ahead	U	2	N/A	C		1	40	-	877	1850	1264	69.4%
8/4	Ahead	U	2	N/A	C		1	40	-	861	1850	1264	68.1%
8/5	Ahead	U	2	N/A	C		1	40	-	861	1850	1264	68.1%

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: Ardley roundabout - 4-arm signalised roundabout A-3	**-**	**-**	**0**	**0**	**0**	**18.0**	**9.8**	**0.0**	**27.8**	**-**	**-**	**-**	**-**
Ardley	**-**	**-**	**0**	**0**	**0**	**18.0**	**9.8**	**0.0**	**27.8**	**-**	**-**	**-**	**-**
1/2+1/1	556	556	-	-	-	1.1	0.2	-	1.3	8.7	2.5	0.2	2.8
1/3	877	877	-	-	-	2.7	2.4	-	5.1	20.9	11.9	2.4	14.3
1/4+1/5	1722	1722	-	-	-	5.3	4.1	-	9.4	19.6	11.5	4.1	15.6
2/1+2/2	200	200	-	-	-	1.3	0.8	-	2.1	38.3	2.8	0.8	3.6
3/1	764	764	-	-	-	1.0	0.7	-	1.6	7.6	6.2	0.7	6.8
3/2	763	763	-	-	-	0.9	0.7	-	1.6	7.6	6.1	0.7	6.8
6/1	259	259	-	-	-	1.0	0.5	-	1.5	21.0	2.3	0.5	2.8
6/2	250	250	-	-	-	1.0	0.5	-	1.4	20.7	2.2	0.5	2.7
7/1	89	89	-	-	-	0.8	0.0	-	0.8	32.5	1.5	0.0	1.5
7/2	89	89	-	-	-	0.8	0.0	-	0.8	32.5	1.5	0.0	1.5
8/1	390	390	-	-	-	0.8	0.0	-	0.8	7.3	3.9	0.0	3.9
8/2	515	515	-	-	-	0.9	0.0	-	0.9	6.1	4.7	0.0	4.7
8/3	877	877	-	-	-	0.1	0.0	-	0.1	0.4	0.4	0.0	0.4
8/4	861	861	-	-	-	0.2	0.0	-	0.2	0.7	0.4	0.0	0.4
8/5	861	861	-	-	-	0.2	0.0	-	0.2	0.7	0.4	0.0	0.4

C1	Stream: 1 PRC for Signalled Lanes (%):	0.5	Total Delay for Signalled Lanes (pcuHr):	18.79	Cycle Time (s): 60
C1	Stream: 2 PRC for Signalled Lanes (%):	29.7	Total Delay for Signalled Lanes (pcuHr):	4.20	Cycle Time (s): 60
C1	Stream: 3 PRC for Signalled Lanes (%):	58.5	Total Delay for Signalled Lanes (pcuHr):	4.82	Cycle Time (s): 60
	PRC Over All Lanes (%):	0.5	Total Delay Over All Lanes(pcuHr):	27.81	

APPENDIX 26

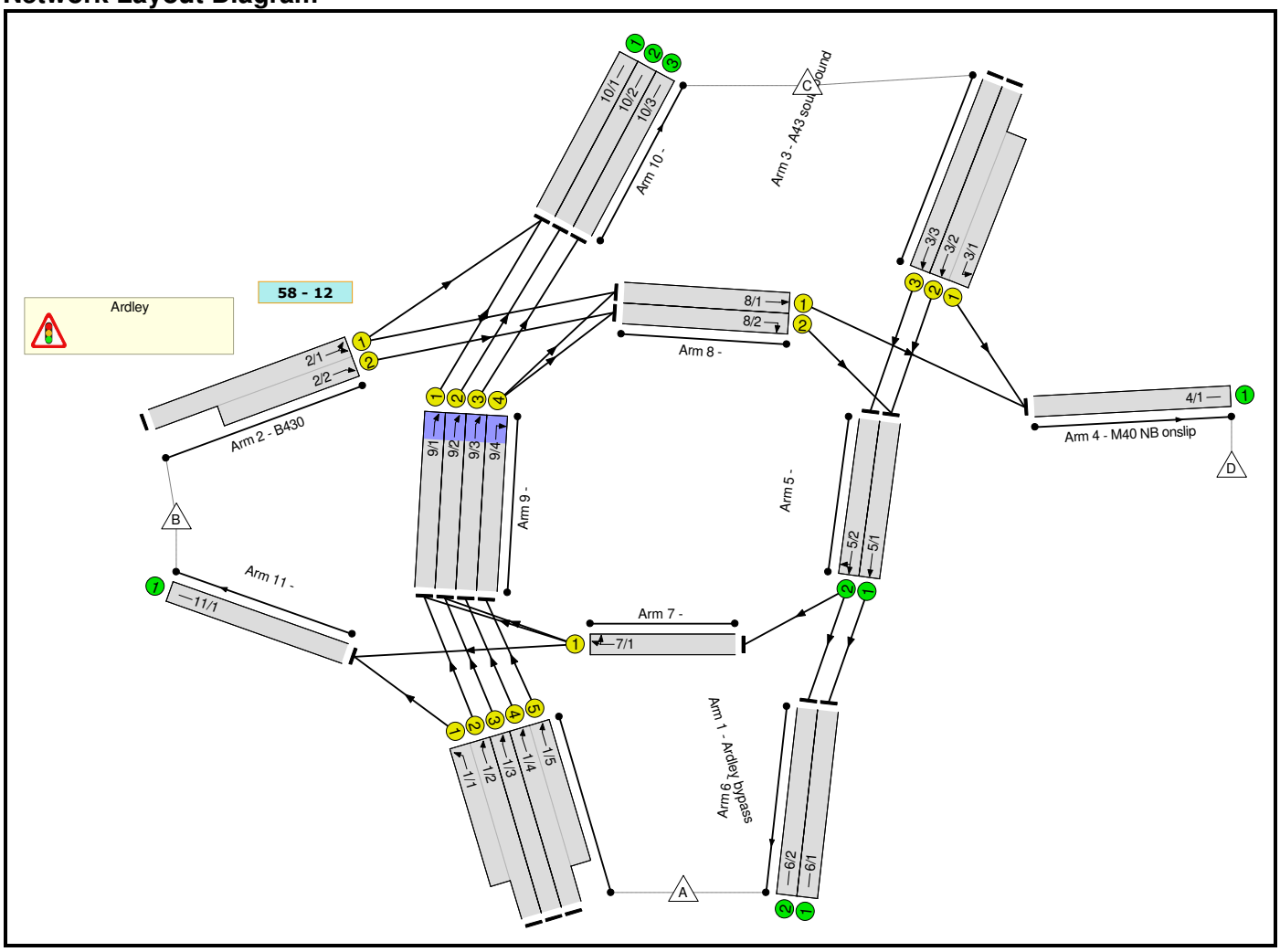
Ardley Roundabout junction option A-3 – LinSig results

Full Input Data And Results

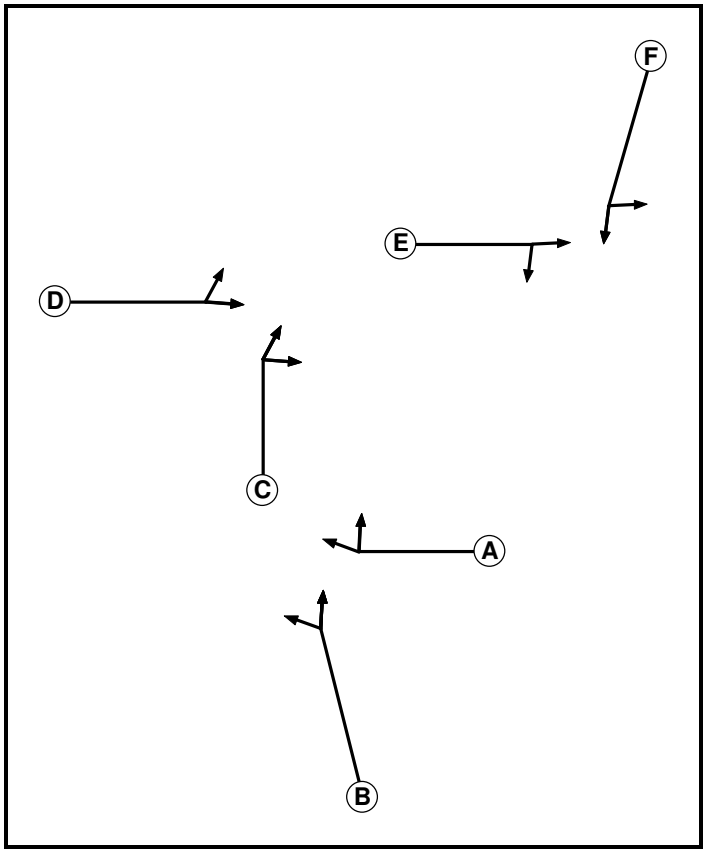
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Ardley improvements - 4-arm signalised roundabout A-1**
Location:	
Additional detail:	
File name:	2031_DS_M40J10_Ardley - 4-arm signalised roundabout A-2.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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
E	Traffic	3		7	7
F	Traffic	3		7	7

Phase Intergreens Matrix

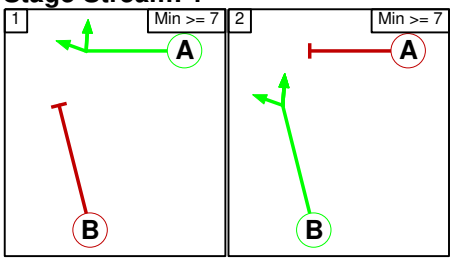
		Starting Phase					
		A	B	C	D	E	F
Terminating Phase	A		6	-	-	-	-
	B	6		-	-	-	-
	C	-	-		6	-	-
	D	-	-	6		-	-
	E	-	-	-	-		6
	F	-	-	-	-	6	

Phases in Stage

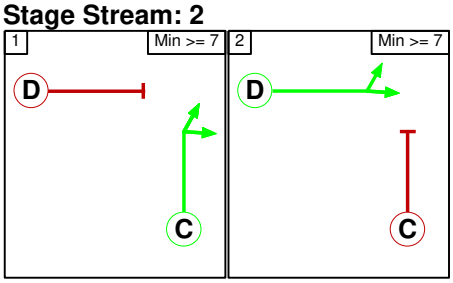
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F

Stage Diagram

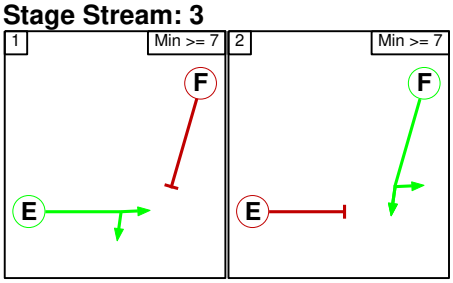
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Prohibited Stage Change

Stage Stream: 1

From Stage \ To Stage		1	2
	1		6
	2	6	

Stage Stream: 2

From Stage \ To Stage		1	2
	1		6
	2	6	

Stage Stream: 3

From Stage \ To Stage		1	2
	1		6
	2	6	

Lane Input Data

Junction: Ardley

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 (Ardley bypass)	U	B	2	3	10.4	Geom	-	3.65	0.00	Y	Arm 11 Left	40.00
1/2 (Ardley bypass)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 9 Ahead	50.00
1/3 (Ardley bypass)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 9 Ahead	50.00
1/4 (Ardley bypass)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 9 Ahead	50.00
1/5 (Ardley bypass)	U	B	2	3	20.9	Geom	-	3.65	0.00	Y	Arm 9 Ahead	50.00
2/1 (B430)	U	D	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 8 Ahead	50.00
											Arm 10 Ahead	50.00
2/2 (B430)	U	D	2	3	10.4	Geom	-	3.62	0.00	Y	Arm 8 Ahead	50.00
3/1 (A43 southbound)	U	F	2	3	17.4	Geom	-	3.65	0.00	Y	Arm 4 Left	40.00
3/2 (A43 southbound)	U	F	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 5 Ahead	54.00
3/3 (A43 southbound)	U	F	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 5 Ahead	54.00
4/1 (M40 NB onslip)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1	U		2	3	10.4	Inf	-	-	-	-	-	-
5/2	U		2	3	10.4	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U	A	2	3	5.2	User	1850	-	-	-	-	-
8/1	U	E	2	3	10.4	User	1850	-	-	-	-	-
8/2	U	E	2	3	10.4	User	1850	-	-	-	-	-
9/1	U	C	2	3	7.8	User	1850	-	-	-	-	-
9/2	U	C	2	3	7.8	User	1850	-	-	-	-	-
9/3	U	C	2	3	7.8	User	1850	-	-	-	-	-
9/4	U	C	2	3	7.8	User	1850	-	-	-	-	-
10/1	U		2	3	60.0	Inf	-	-	-	-	-	-
10/2	U		2	3	60.0	Inf	-	-	-	-	-	-

10/3	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Ardley4_AM'	07:45	08:45	01:00	
2: 'Ardley4_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Ardley13, 19 AM' (FG1: 'Ardley4_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	68	1799	372	2239
	B	218	0	17	19	254
	C	1700	16	0	422	2138
	D	0	0	0	0	0
	Tot.	1918	84	1816	813	4631

Traffic Lane Flows

Lane	Scenario 1: 2031 Ardley13, 19 AM
Junction: Ardley	
1/1 (short)	68
1/2 (with short)	642(In) 574(Out)
1/3	571
1/4 (with short)	1026(In) 654(Out)
1/5 (short)	372
2/1 (with short)	254(In) 36(Out)
2/2 (short)	218
3/1 (short)	422
3/2 (with short)	1307(In) 885(Out)
3/3	831
4/1	813
5/1	1103
5/2	831
6/1	1103
6/2	815
7/1	16
8/1	391
8/2	218
9/1	574
9/2	571
9/3	654
9/4	372
10/1	591
10/2	571
10/3	654
11/1	84

Lane Saturation Flows

Junction: Ardley

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 (Ardley bypass)	3.65	0.00	Y	Arm 11 Left	40.00	100.0 %	1908	1908
1/2 (Ardley bypass)	3.65	0.00	Y	Arm 9 Ahead	50.00	100.0 %	1922	1922
1/3 (Ardley bypass)	3.65	0.00	Y	Arm 9 Ahead	50.00	100.0 %	1922	1922
1/4 (Ardley bypass)	3.65	0.00	Y	Arm 9 Ahead	50.00	100.0 %	1922	1922
1/5 (Ardley bypass)	3.65	0.00	Y	Arm 9 Ahead	50.00	100.0 %	1922	1922
2/1 (B430)	3.65	0.00	Y	Arm 8 Ahead	50.00	52.8 %	1922	1922
				Arm 10 Ahead	50.00	47.2 %		
2/2 (B430)	3.62	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1919	1919
3/1 (A43 southbound)	3.65	0.00	Y	Arm 4 Left	40.00	100.0 %	1908	1908
3/2 (A43 southbound)	3.65	0.00	Y	Arm 5 Ahead	54.00	100.0 %	1926	1926
3/3 (A43 southbound)	3.65	0.00	Y	Arm 5 Ahead	54.00	100.0 %	1926	1926
4/1 (M40 NB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	This lane uses a directly entered Saturation Flow						1850	1850
8/1	This lane uses a directly entered Saturation Flow						1850	1850
8/2	This lane uses a directly entered Saturation Flow						1850	1850
9/1	This lane uses a directly entered Saturation Flow						1850	1850
9/2	This lane uses a directly entered Saturation Flow						1850	1850
9/3	This lane uses a directly entered Saturation Flow						1850	1850
9/4	This lane uses a directly entered Saturation Flow						1850	1850
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
10/3	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2031 Ardley13, 19 PM' (FG2: 'Ardley4_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	136	2599	420	3155
	B	178	0	15	7	200
	C	1018	24	0	485	1527
	D	0	0	0	0	0
	Tot.	1196	160	2614	912	4882

Traffic Lane Flows

Lane	Scenario 2: 2031 Ardley13, 19 PM
Junction: Ardley	
1/1 (short)	136
1/2 (with short)	962(In) 826(Out)
1/3	844
1/4 (with short)	1349(In) 929(Out)
1/5 (short)	420
2/1 (with short)	200(In) 22(Out)
2/2 (short)	178
3/1 (short)	485
3/2 (with short)	1077(In) 592(Out)
3/3	450
4/1	912
5/1	770
5/2	450
6/1	770
6/2	426
7/1	24
8/1	427
8/2	178
9/1	826
9/2	844
9/3	929
9/4	420
10/1	841
10/2	844
10/3	929
11/1	160

Lane Saturation Flows

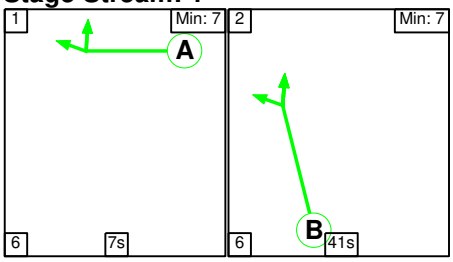
Junction: Ardley

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 (Ardley bypass)	3.65	0.00	Y	Arm 11 Left	40.00	100.0 %	1908	1908
1/2 (Ardley bypass)	3.65	0.00	Y	Arm 9 Ahead	50.00	100.0 %	1922	1922
1/3 (Ardley bypass)	3.65	0.00	Y	Arm 9 Ahead	50.00	100.0 %	1922	1922
1/4 (Ardley bypass)	3.65	0.00	Y	Arm 9 Ahead	50.00	100.0 %	1922	1922
1/5 (Ardley bypass)	3.65	0.00	Y	Arm 9 Ahead	50.00	100.0 %	1922	1922
2/1 (B430)	3.65	0.00	Y	Arm 8 Ahead	50.00	31.8 %	1922	1922
				Arm 10 Ahead	50.00	68.2 %		
2/2 (B430)	3.62	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1919	1919
3/1 (A43 southbound)	3.65	0.00	Y	Arm 4 Left	40.00	100.0 %	1908	1908
3/2 (A43 southbound)	3.65	0.00	Y	Arm 5 Ahead	54.00	100.0 %	1926	1926
3/3 (A43 southbound)	3.65	0.00	Y	Arm 5 Ahead	54.00	100.0 %	1926	1926
4/1 (M40 NB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	This lane uses a directly entered Saturation Flow						1850	1850
8/1	This lane uses a directly entered Saturation Flow						1850	1850
8/2	This lane uses a directly entered Saturation Flow						1850	1850
9/1	This lane uses a directly entered Saturation Flow						1850	1850
9/2	This lane uses a directly entered Saturation Flow						1850	1850
9/3	This lane uses a directly entered Saturation Flow						1850	1850
9/4	This lane uses a directly entered Saturation Flow						1850	1850
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
10/3	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf

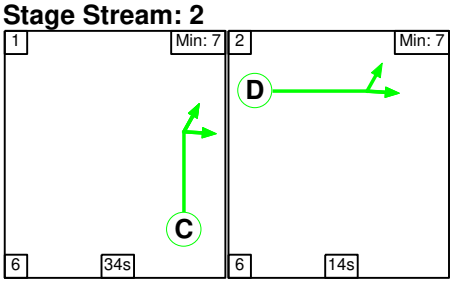
Scenario 1: '2031 Ardley13, 19 AM' (FG1: 'Ardley4_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

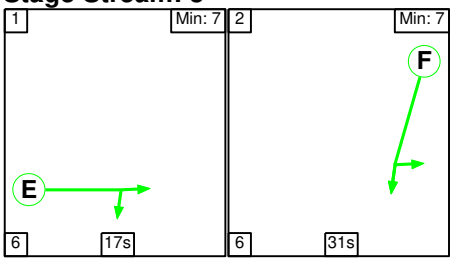
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	7	41
Change Point	0	13

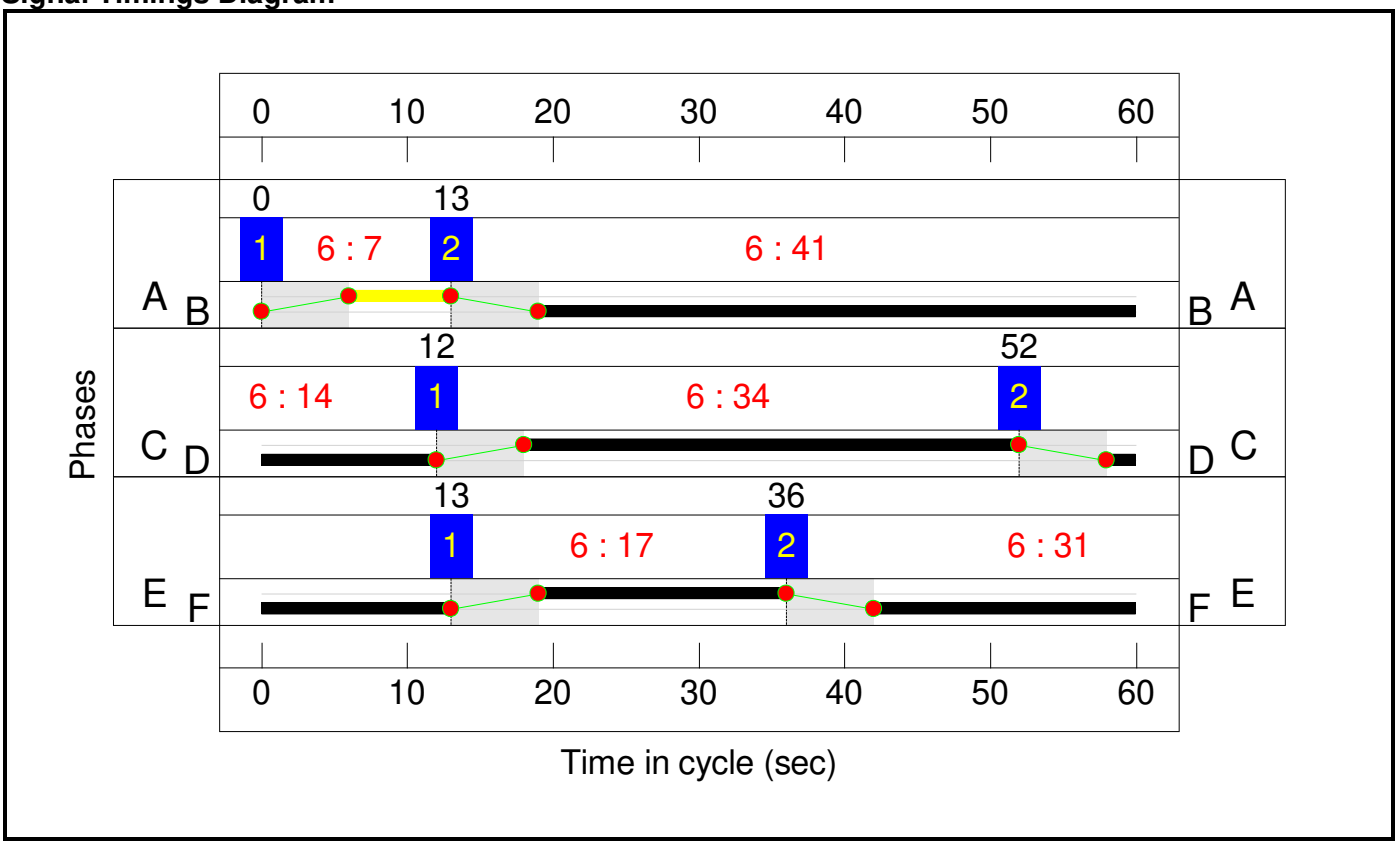
Stage Stream: 2

Stage	1	2
Duration	34	14
Change Point	12	52

Stage Stream: 3

Stage	1	2
Duration	17	31
Change Point	13	36

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: Ardley improvments - 4-arm signalised roundbaout A-1	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.2%**
Ardley	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.2%**
1/2+1/1	Ardley bypass Ahead Left	U	1	N/A	B		1	41	-	642	1922:1908	1272+151	45.1 : 45.1%
1/3	Ardley bypass Ahead	U	1	N/A	B		1	41	-	571	1922	1345	42.4%
1/4+1/5	Ardley bypass Ahead	U	1	N/A	B		1	41	-	1026	1922:1922	1225+697	53.4 : 53.4%
2/1+2/2	B430 Ahead Ahead2	U	2	N/A	D		1	14	-	254	1922:1919	79+480	45.4 : 45.4%
3/2+3/1	A43 southbound Left Ahead	U	3	N/A	F		1	31	-	1307	1926:1908	1027+490	86.2 : 86.2%
3/3	A43 southbound Ahead	U	3	N/A	F		1	31	-	831	1926	1027	80.9%
7/1	Right Ahead	U	1	N/A	A		1	7	-	16	1850	247	6.5%
8/1	Ahead	U	3	N/A	E		1	17	-	391	1850	555	70.5%
8/2	Right	U	3	N/A	E		1	17	-	218	1850	555	39.3%
9/1	Ahead	U	2	N/A	C		1	34	-	574	1850	1079	53.2%
9/2	Ahead	U	2	N/A	C		1	34	-	571	1850	1079	52.9%
9/3	Ahead	U	2	N/A	C		1	34	-	654	1850	1079	60.6%
9/4	Right	U	2	N/A	C		1	34	-	372	1850	1079	34.5%

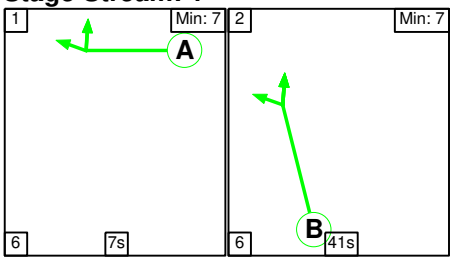
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ardley improvments - 4-arm signalised roundbaout A-1	**-**	**-**	**0**	**0**	**0**	**15.0**	**6.9**	**0.0**	**21.9**	**-**	**-**	**-**	**-**
Ardley	**-**	**-**	**0**	**0**	**0**	**15.0**	**6.9**	**0.0**	**21.9**	**-**	**-**	**-**	**-**
1/2+1/1	642	642	-	-	-	0.7	0.4	-	1.1	6.1	4.0	0.4	4.4
1/3	571	571	-	-	-	0.6	0.4	-	1.0	6.2	4.0	0.4	4.3
1/4+1/5	1026	1026	-	-	-	1.1	0.6	-	1.7	5.8	4.9	0.6	5.5
2/1+2/2	254	254	-	-	-	1.3	0.4	-	1.7	24.7	3.0	0.4	3.4
3/2+3/1	1307	1307	-	-	-	4.0	3.0	-	7.0	19.2	12.5	3.0	15.6
3/3	831	831	-	-	-	2.7	2.1	-	4.7	20.5	11.3	2.1	13.4
7/1	16	16	-	-	-	0.1	0.0	-	0.1	19.4	0.2	0.0	0.2
8/1	391	391	-	-	-	1.3	0.0	-	1.3	12.0	3.5	0.0	3.5
8/2	218	218	-	-	-	1.0	0.0	-	1.0	16.5	3.6	0.0	3.6
9/1	574	574	-	-	-	0.6	0.0	-	0.6	4.0	1.8	0.0	1.8
9/2	571	571	-	-	-	0.6	0.0	-	0.6	4.0	1.7	0.0	1.7
9/3	654	654	-	-	-	0.7	0.0	-	0.7	4.0	2.0	0.0	2.0
9/4	372	372	-	-	-	0.4	0.0	-	0.4	3.8	1.1	0.0	1.1

C1	Stream: 1 PRC for Signalled Lanes (%):	68.6	Total Delay for Signalled Lanes (pcuHr):	3.81	Cycle Time (s): 60
C1	Stream: 2 PRC for Signalled Lanes (%):	48.5	Total Delay for Signalled Lanes (pcuHr):	4.12	Cycle Time (s): 60
C1	Stream: 3 PRC for Signalled Lanes (%):	4.5	Total Delay for Signalled Lanes (pcuHr):	14.01	Cycle Time (s): 60
	PRC Over All Lanes (%):	4.5	Total Delay Over All Lanes(pcuHr):	21.94	

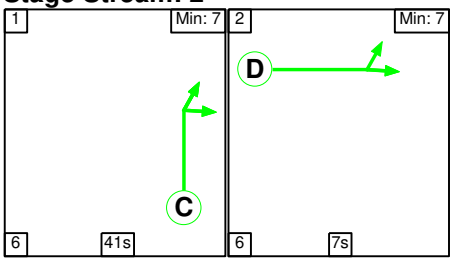
Scenario 2: '2031 Ardley13, 19 PM' (FG2: 'Ardley4_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

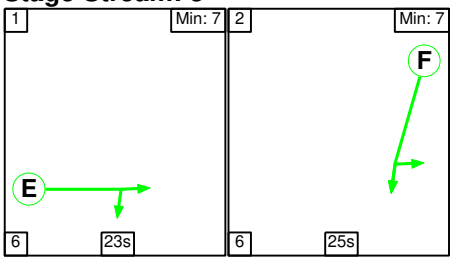
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	7	41
Change Point	0	13

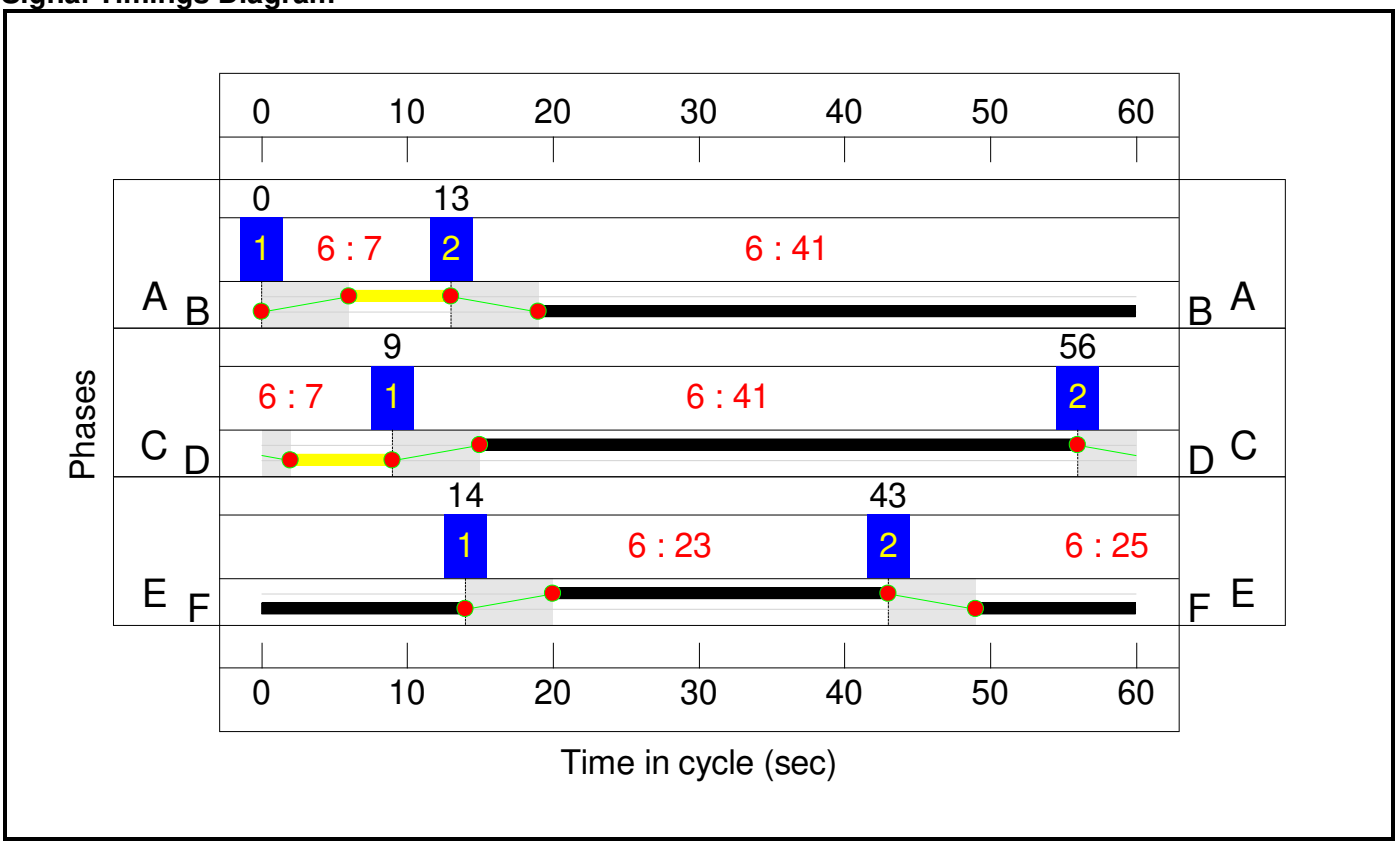
Stage Stream: 2

Stage	1	2
Duration	41	7
Change Point	9	56

Stage Stream: 3

Stage	1	2
Duration	23	25
Change Point	14	43

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: Ardley improvments - 4-arm signalised roundbaout A-1	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**71.7%**
Ardley	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**71.7%**
1/2+1/1	Ardley bypass Ahead Left	U	1	N/A	B		1	41	-	962	1922:1908	1246+205	66.3 : 66.3%
1/3	Ardley bypass Ahead	U	1	N/A	B		1	41	-	844	1922	1345	62.7%
1/4+1/5	Ardley bypass Ahead	U	1	N/A	B		1	41	-	1349	1922:1922	1324+598	70.2 : 70.2%
2/1+2/2	B430 Ahead Ahead2	U	2	N/A	D		1	7	-	200	1922:1919	32+256	69.6 : 69.6%
3/2+3/1	A43 southbound Left Ahead	U	3	N/A	F		1	25	-	1077	1926:1908	835+712	70.9 : 68.1%
3/3	A43 southbound Ahead	U	3	N/A	F		1	25	-	450	1926	835	53.9%
7/1	Right Ahead	U	1	N/A	A		1	7	-	24	1850	247	9.7%
8/1	Ahead	U	3	N/A	E		1	23	-	427	1850	740	57.7%
8/2	Right	U	3	N/A	E		1	23	-	178	1850	740	24.1%
9/1	Ahead	U	2	N/A	C		1	41	-	826	1850	1295	63.8%
9/2	Ahead	U	2	N/A	C		1	41	-	844	1850	1295	65.2%
9/3	Ahead	U	2	N/A	C		1	41	-	929	1850	1295	71.7%
9/4	Right	U	2	N/A	C		1	41	-	420	1850	1295	32.4%

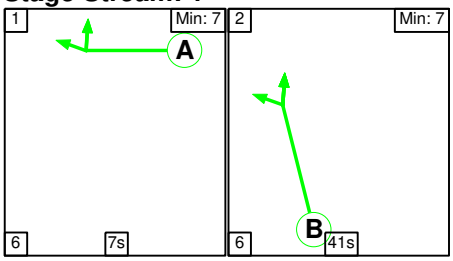
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ardley improvments - 4-arm signalised roundbaout A-1	**-**	**-**	**0**	**0**	**0**	**14.6**	**5.9**	**0.0**	**20.5**	**-**	**-**	**-**	**-**
Ardley	**-**	**-**	**0**	**0**	**0**	**14.6**	**5.9**	**0.0**	**20.5**	**-**	**-**	**-**	**-**
1/2+1/1	962	962	-	-	-	1.2	1.0	-	2.2	8.1	7.1	1.0	8.1
1/3	844	844	-	-	-	1.1	0.8	-	2.0	8.4	7.5	0.8	8.3
1/4+1/5	1349	1349	-	-	-	1.8	1.2	-	2.9	7.8	8.8	1.2	9.9
2/1+2/2	200	200	-	-	-	1.4	1.1	-	2.5	44.7	2.8	1.1	3.9
3/2+3/1	1077	1077	-	-	-	4.0	1.1	-	5.2	17.3	8.1	1.1	9.2
3/3	450	450	-	-	-	1.6	0.6	-	2.2	17.2	5.5	0.6	6.1
7/1	24	24	-	-	-	0.1	0.1	-	0.1	18.5	0.3	0.1	0.4
8/1	427	427	-	-	-	1.1	0.0	-	1.1	9.1	2.9	0.0	2.9
8/2	178	178	-	-	-	0.7	0.0	-	0.7	14.0	3.0	0.0	3.0
9/1	826	826	-	-	-	0.5	0.0	-	0.5	2.0	1.6	0.0	1.6
9/2	844	844	-	-	-	0.5	0.0	-	0.5	2.0	1.6	0.0	1.6
9/3	929	929	-	-	-	0.5	0.0	-	0.5	2.1	1.8	0.0	1.8
9/4	420	420	-	-	-	0.2	0.0	-	0.2	1.8	0.8	0.0	0.8

C1	Stream: 1 PRC for Signalled Lanes (%):	28.2	Total Delay for Signalled Lanes (pcuHr):	7.19	Cycle Time (s): 60
C1	Stream: 2 PRC for Signalled Lanes (%):	25.5	Total Delay for Signalled Lanes (pcuHr):	4.18	Cycle Time (s): 60
C1	Stream: 3 PRC for Signalled Lanes (%):	26.9	Total Delay for Signalled Lanes (pcuHr):	9.09	Cycle Time (s): 60
	PRC Over All Lanes (%):	25.5	Total Delay Over All Lanes(pcuHr):	20.47	

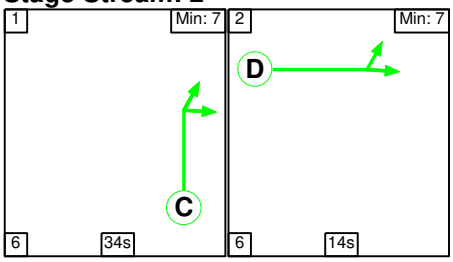
Scenario 3: '2031 Ardley6, 7 AM' (FG3: 'Ardley3_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

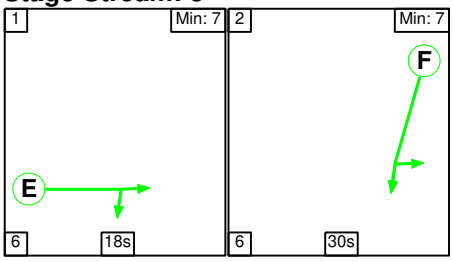
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	7	41
Change Point	0	13

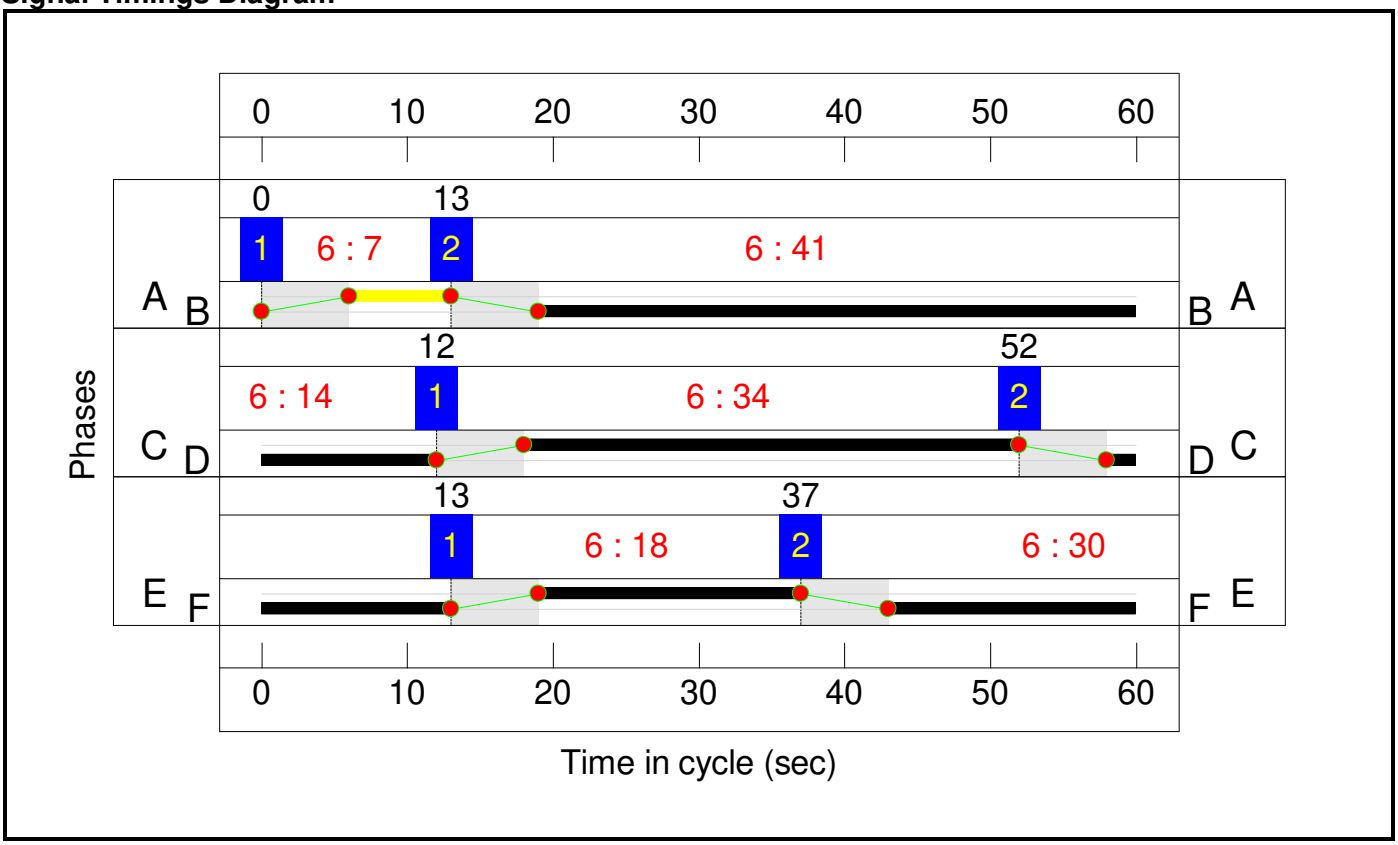
Stage Stream: 2

Stage	1	2
Duration	34	14
Change Point	12	52

Stage Stream: 3

Stage	1	2
Duration	18	30
Change Point	13	37

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: Ardley improvments - 4-arm signalised roundbaout A-1	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**75.9%**
Ardley	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**75.9%**
1/2+1/1	Ardley bypass Ahead Left	U	1	N/A	B		1	41	-	642	1922:1908	1272+151	45.1 : 45.1%
1/3	Ardley bypass Ahead	U	1	N/A	B		1	41	-	571	1922	1345	42.4%
1/4+1/5	Ardley bypass Ahead	U	1	N/A	B		1	41	-	1026	1922:1922	1225+697	53.4 : 53.4%
2/1+2/2	B430 Ahead Ahead2	U	2	N/A	D		1	14	-	254	1922:1919	79+480	45.4 : 45.4%
3/2+3/1	A43 southbound Left Ahead	U	3	N/A	F		1	30	-	1177	1926:1908	995+556	75.9 : 75.9%
3/3	A43 southbound Ahead	U	3	N/A	F		1	30	-	666	1926	995	66.9%
7/1	Right Ahead	U	1	N/A	A		1	7	-	16	1850	247	6.5%
8/1	Ahead	U	3	N/A	E		1	18	-	391	1850	586	66.7%
8/2	Right	U	3	N/A	E		1	18	-	218	1850	586	37.2%
9/1	Ahead	U	2	N/A	C		1	34	-	574	1850	1079	53.2%
9/2	Ahead	U	2	N/A	C		1	34	-	571	1850	1079	52.9%
9/3	Ahead	U	2	N/A	C		1	34	-	654	1850	1079	60.6%
9/4	Right	U	2	N/A	C		1	34	-	372	1850	1079	34.5%

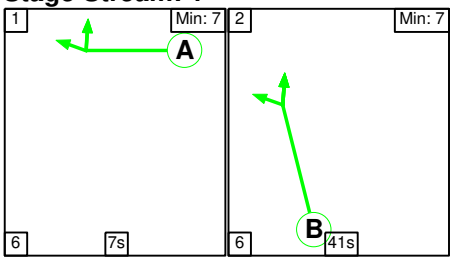
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ardley improvments - 4-arm signalised roundbaout A-1	**-**	**-**	**0**	**0**	**0**	**13.8**	**4.4**	**0.0**	**18.2**	**-**	**-**	**-**	**-**
Ardley	**-**	**-**	**0**	**0**	**0**	**13.8**	**4.4**	**0.0**	**18.2**	**-**	**-**	**-**	**-**
1/2+1/1	642	642	-	-	-	0.7	0.4	-	1.1	6.1	4.0	0.4	4.4
1/3	571	571	-	-	-	0.6	0.4	-	1.0	6.2	4.0	0.4	4.3
1/4+1/5	1026	1026	-	-	-	1.1	0.6	-	1.7	5.8	4.9	0.6	5.5
2/1+2/2	254	254	-	-	-	1.3	0.4	-	1.7	24.7	3.0	0.4	3.4
3/2+3/1	1177	1177	-	-	-	3.5	1.6	-	5.0	15.4	9.9	1.6	11.4
3/3	666	666	-	-	-	2.0	1.0	-	3.0	16.2	8.1	1.0	9.1
7/1	16	16	-	-	-	0.1	0.0	-	0.1	20.1	0.2	0.0	0.3
8/1	391	391	-	-	-	1.2	0.0	-	1.2	11.2	3.4	0.0	3.4
8/2	218	218	-	-	-	1.0	0.0	-	1.0	16.5	3.6	0.0	3.6
9/1	574	574	-	-	-	0.6	0.0	-	0.6	4.0	1.8	0.0	1.8
9/2	571	571	-	-	-	0.6	0.0	-	0.6	4.0	1.7	0.0	1.7
9/3	654	654	-	-	-	0.7	0.0	-	0.7	4.0	2.0	0.0	2.0
9/4	372	372	-	-	-	0.4	0.0	-	0.4	3.8	1.1	0.0	1.1

C1 Stream: 1 PRC for Signalled Lanes (%): 68.6 Total Delay for Signalled Lanes (pcuHr): 3.81 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 48.5 Total Delay for Signalled Lanes (pcuHr): 4.12 Cycle Time (s): 60
C1 Stream: 3 PRC for Signalled Lanes (%): 18.6 Total Delay for Signalled Lanes (pcuHr): 10.24 Cycle Time (s): 60
PRC Over All Lanes (%): 18.6 Total Delay Over All Lanes(pcuHr): 18.17

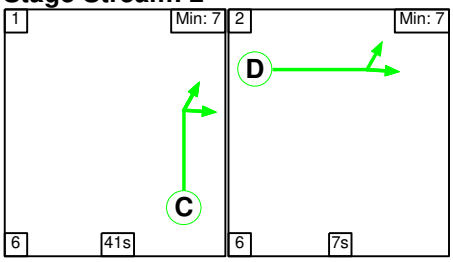
Scenario 4: '2031 Ardley6, 7 PM' (FG4: 'Ardley3_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

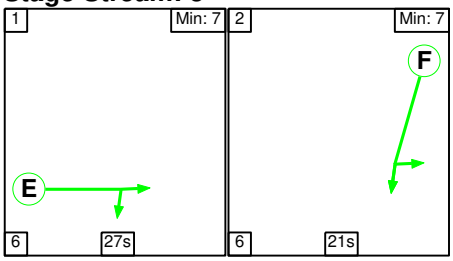
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	7	41
Change Point	0	13

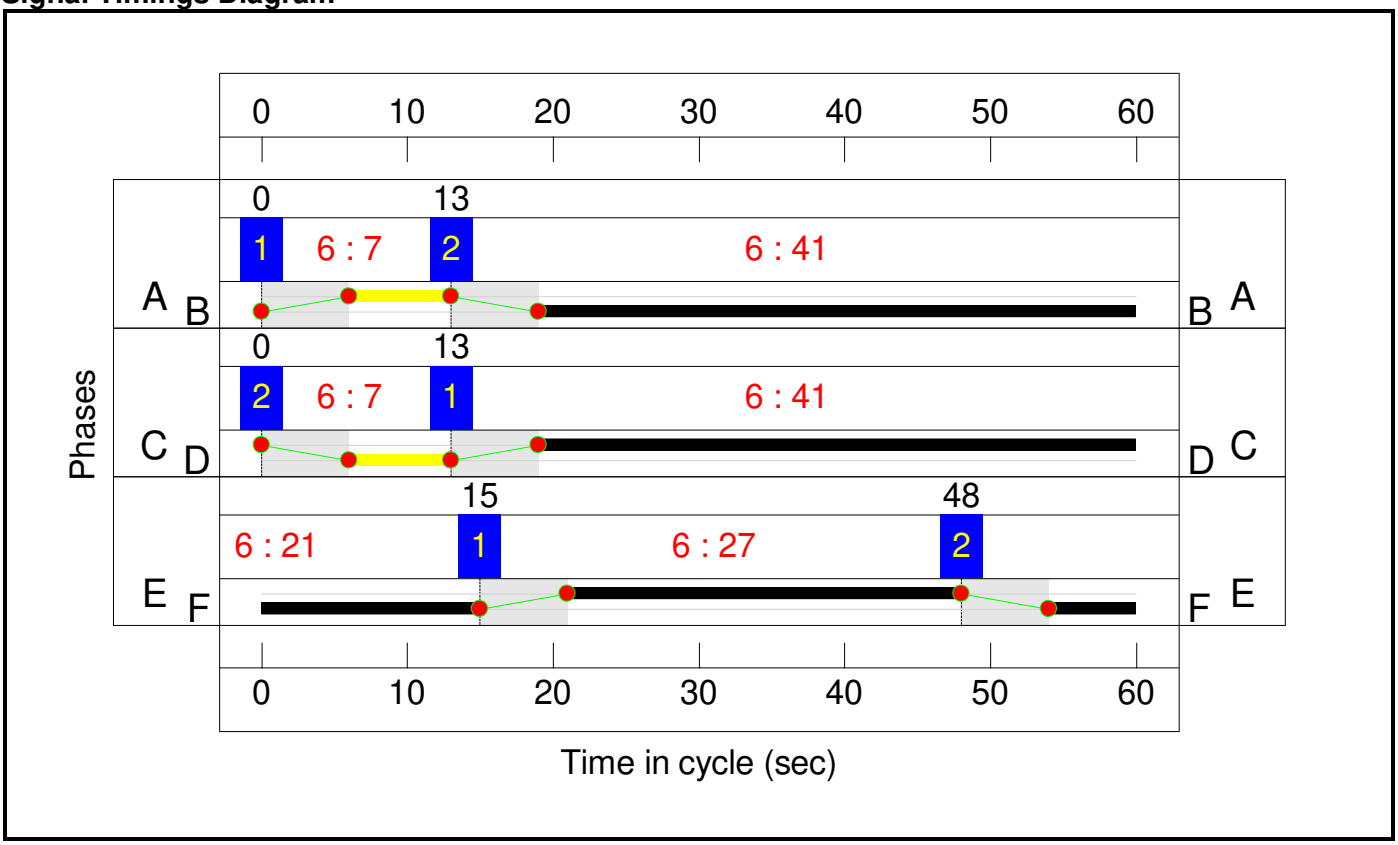
Stage Stream: 2

Stage	1	2
Duration	41	7
Change Point	13	0

Stage Stream: 3

Stage	1	2
Duration	27	21
Change Point	15	48

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: Ardley improvments - 4-arm signalised roundbaout A-1	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**71.6%**
Ardley	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**71.6%**
1/2+1/1	Ardley bypass Ahead Left	U	1	N/A	B		1	41	-	963	1922:1908	1246+205	66.4 : 66.4%
1/3	Ardley bypass Ahead	U	1	N/A	B		1	41	-	845	1922	1345	62.8%
1/4+1/5	Ardley bypass Ahead	U	1	N/A	B		1	41	-	1347	1922:1922	1323+599	70.1 : 70.1%
2/1+2/2	B430 Ahead Ahead2	U	2	N/A	D		1	7	-	200	1922:1919	32+256	69.6 : 69.6%
3/2+3/1	A43 southbound Left Ahead	U	3	N/A	F		1	21	-	942	1926:1908	706+700	64.7 : 69.3%
3/3	A43 southbound Ahead	U	3	N/A	F		1	21	-	327	1926	706	46.3%
7/1	Right Ahead	U	1	N/A	A		1	7	-	24	1850	247	9.7%
8/1	Ahead	U	3	N/A	E		1	27	-	427	1850	863	49.5%
8/2	Right	U	3	N/A	E		1	27	-	178	1850	863	20.6%
9/1	Ahead	U	2	N/A	C		1	41	-	827	1850	1295	63.9%
9/2	Ahead	U	2	N/A	C		1	41	-	845	1850	1295	65.3%
9/3	Ahead	U	2	N/A	C		1	41	-	927	1850	1295	71.6%
9/4	Right	U	2	N/A	C		1	41	-	420	1850	1295	32.4%

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: Ardley improvments - 4-arm signalised roundbaout A-1	**-**	**-**	**0**	**0**	**0**	**13.2**	**5.6**	**0.0**	**18.8**	**-**	**-**	**-**	**-**
Ardley	**-**	**-**	**0**	**0**	**0**	**13.2**	**5.6**	**0.0**	**18.8**	**-**	**-**	**-**	**-**
1/2+1/1	963	963	-	-	-	1.2	1.0	-	2.2	8.2	7.1	1.0	8.1
1/3	845	845	-	-	-	1.1	0.8	-	2.0	8.4	7.5	0.8	8.4
1/4+1/5	1347	1347	-	-	-	1.7	1.2	-	2.9	7.8	8.8	1.2	9.9
2/1+2/2	200	200	-	-	-	1.4	1.1	-	2.5	44.7	2.8	1.1	3.9
3/2+3/1	942	942	-	-	-	4.2	1.0	-	5.2	19.8	6.7	1.0	7.7
3/3	327	327	-	-	-	1.3	0.4	-	1.7	19.2	4.1	0.4	4.5
7/1	24	24	-	-	-	0.1	0.1	-	0.1	16.6	0.3	0.1	0.3
8/1	427	427	-	-	-	0.8	0.0	-	0.8	7.1	2.3	0.0	2.3
8/2	178	178	-	-	-	0.5	0.0	-	0.5	11.0	3.0	0.0	3.0
9/1	827	827	-	-	-	0.2	0.0	-	0.2	1.0	0.7	0.0	0.7
9/2	845	845	-	-	-	0.2	0.0	-	0.2	1.0	0.7	0.0	0.7
9/3	927	927	-	-	-	0.3	0.0	-	0.3	1.1	0.8	0.0	0.8
9/4	420	420	-	-	-	0.1	0.0	-	0.1	0.9	0.4	0.0	0.4

C1	Stream: 1 PRC for Signalled Lanes (%):	28.4	Total Delay for Signalled Lanes (pcuHr):	7.18	Cycle Time (s): 60
C1	Stream: 2 PRC for Signalled Lanes (%):	25.7	Total Delay for Signalled Lanes (pcuHr):	3.33	Cycle Time (s): 60
C1	Stream: 3 PRC for Signalled Lanes (%):	29.8	Total Delay for Signalled Lanes (pcuHr):	8.32	Cycle Time (s): 60
	PRC Over All Lanes (%):	25.7	Total Delay Over All Lanes(pcuHr):	18.83	

APPENDIX 27

Ardley East Roundabout junction option AE-1 – Arcady results

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 2031_DS_M40J10_ArdleyEast_OpA_ArdleyEast1.j9
Path: D:\Dropbox (ADC Infrastructure)\!!! ADC Projects\ADC1794 Oxfordshire SRFI\Documents\reports\ADC\M. M40 J10 options\Options Report\5. Ardley East
Report generation date: 11/06/2021 16:00:46

»2031_DS - 2031_DS_0645, AM1
»2031_DS - 2031_DS_0745, AM2
»2031_DS - 2031_DS_1630, PM

Summary of junction performance

	AM1			AM2			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
	2031_DS - 2031_DS_0645								
Arm A	0.8	2.85	0.44						
Arm B	0.2	2.84	0.18						
Arm C	4.5	8.71	0.82						
Arm D	0.1	3.51	0.12						
	2031_DS - 2031_DS_0745								
Arm A				0.8	2.88	0.45			
Arm B				0.2	2.86	0.18			
Arm C				3.8	7.72	0.80			
Arm D				0.1	3.40	0.11			
	2031_DS - 2031_DS_1630								
Arm A							2.0	4.29	0.67
Arm B							0.2	3.52	0.18
Arm C							0.8	3.02	0.46
Arm D							0.2	2.70	0.14

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

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

File summary

File Description

Title	2031_DS_M40J10_ArdleyEast_OpA_ArdleyEast1
Location	M40 J10
Site number	
Date	08/04/2021
Version	V1
Status	Preliminary
Identifier	[redacted]
Client	
Jobnumber	ADC1794
Enumerator	[redacted]
Description	Option Layout A BWB Option: 1, 2, 3, 14, 15 Flowset: ArdleyEast1

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15
D3	2031_DS_1630	PM	ONE HOUR	16:15	17:45	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	2031_DS	100.000

2031_DS - 2031_DS_0645, AM1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D	6.17	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Link Road (S)	
B	Ardley Road (W)	
C	Link Road (N)	
D	Ardley Road (E)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	7.50	10.50	15.0	30.0	85.0	30.0	
B	3.50	8.50	50.0	30.0	85.0	30.0	
C	7.30	10.50	15.0	30.0	85.0	30.0	
D	3.50	8.50	50.0	30.0	85.0	30.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.635	2873
B	0.544	2244
C	0.629	2834
D	0.544	2244

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	912	100.000
B		✓	254	100.000
C		✓	1730	100.000
D		✓	121	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	49	712	151
	B	26	0	39	189
	C	1574	17	0	139
	D	10	17	94	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	29	0
	B	0	0	0	0
	C	13	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.44	2.85	0.8	A
B	0.18	2.84	0.2	A
C	0.82	8.71	4.5	A
D	0.12	3.51	0.1	A

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	687	96	2292	0.300	685	0.4	2.238	A
B	191	719	1769	0.108	191	0.1	2.281	A
C	1302	275	2389	0.545	1298	1.2	3.284	A
D	91	1213	1504	0.061	91	0.1	2.548	A

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	820	115	2282	0.359	819	0.6	2.460	A
B	228	860	1676	0.136	228	0.2	2.487	A
C	1555	329	2358	0.659	1552	1.9	4.450	A
D	109	1451	1358	0.080	109	0.1	2.880	A

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1004	141	2269	0.443	1003	0.8	2.843	A
B	280	1053	1548	0.181	279	0.2	2.837	A
C	1905	403	2317	0.822	1895	4.4	8.339	A
D	133	1771	1163	0.115	133	0.1	3.496	A

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1004	141	2269	0.443	1004	0.8	2.845	A
B	280	1054	1547	0.181	280	0.2	2.839	A
C	1905	403	2317	0.822	1904	4.5	8.707	A
D	133	1780	1157	0.115	133	0.1	3.514	A

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	820	115	2282	0.359	821	0.6	2.466	A
B	228	861	1675	0.136	229	0.2	2.489	A
C	1555	329	2358	0.660	1565	2.0	4.599	A
D	109	1463	1351	0.081	109	0.1	2.898	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	687	96	2292	0.300	687	0.4	2.245	A
B	191	721	1767	0.108	191	0.1	2.286	A
C	1302	276	2388	0.545	1305	1.2	3.332	A
D	91	1220	1499	0.061	91	0.1	2.558	A

2031_DS - 2031_DS_0745, AM2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D	5.57	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	927	100.000
B		✓	254	100.000
C		✓	1657	100.000
D		✓	121	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	49	727	151
	B	26	0	39	189
	C	1501	17	0	139
	D	10	17	94	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	29	0
	B	0	0	0	0
	C	14	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.45	2.88	0.8	A
B	0.18	2.86	0.2	A
C	0.80	7.72	3.8	A
D	0.11	3.40	0.1	A

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	698	96	2293	0.304	696	0.4	2.252	A
B	191	730	1762	0.109	191	0.1	2.292	A
C	1247	275	2361	0.528	1243	1.1	3.206	A
D	91	1158	1528	0.060	91	0.1	2.505	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	833	115	2283	0.365	833	0.6	2.482	A
B	228	873	1667	0.137	228	0.2	2.502	A
C	1490	329	2331	0.639	1487	1.7	4.252	A
D	109	1386	1387	0.078	109	0.1	2.815	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1021	141	2270	0.450	1020	0.8	2.878	A
B	280	1069	1537	0.182	279	0.2	2.862	A
C	1824	403	2290	0.797	1816	3.8	7.477	A
D	133	1693	1197	0.111	133	0.1	3.382	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1021	141	2270	0.450	1021	0.8	2.880	A
B	280	1070	1537	0.182	280	0.2	2.863	A
C	1824	403	2290	0.797	1824	3.8	7.719	A
D	133	1700	1193	0.112	133	0.1	3.396	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	833	115	2283	0.365	834	0.6	2.485	A
B	228	875	1666	0.137	229	0.2	2.504	A
C	1490	329	2331	0.639	1498	1.8	4.363	A
D	109	1396	1381	0.079	109	0.1	2.831	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	698	96	2293	0.304	698	0.4	2.258	A
B	191	732	1760	0.109	191	0.1	2.296	A
C	1247	276	2361	0.528	1250	1.1	3.248	A
D	91	1165	1524	0.060	91	0.1	2.514	A

2031_DS - 2031_DS_1630, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D	3.71	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2031_DS_1630	PM	ONE HOUR	16:15	17:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	1513	100.000
B		✓	198	100.000
C		✓	911	100.000
D		✓	197	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	112	1265	136
	B	125	0	23	50
	C	830	27	0	54
	D	88	20	89	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	1	13	0
	B	2	0	0	0
	C	21	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.67	4.29	2.0	A
B	0.18	3.52	0.2	A
C	0.46	3.02	0.8	A
D	0.14	2.70	0.2	A

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1139	102	2531	0.450	1136	0.8	2.575	A
B	149	1119	1552	0.096	149	0.1	2.564	A
C	686	233	2254	0.304	684	0.4	2.291	A
D	148	737	1771	0.084	148	0.1	2.218	A

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1360	122	2520	0.540	1359	1.2	3.096	A
B	178	1338	1421	0.125	178	0.1	2.895	A
C	819	279	2230	0.367	818	0.6	2.548	A
D	177	882	1678	0.106	177	0.1	2.398	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1666	150	2504	0.665	1663	2.0	4.262	A
B	218	1637	1242	0.176	218	0.2	3.515	A
C	1003	342	2197	0.457	1002	0.8	3.010	A
D	217	1080	1551	0.140	217	0.2	2.698	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1666	150	2504	0.665	1666	2.0	4.295	A
B	218	1640	1240	0.176	218	0.2	3.521	A
C	1003	342	2196	0.457	1003	0.8	3.015	A
D	217	1081	1550	0.140	217	0.2	2.700	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1360	122	2520	0.540	1363	1.2	3.123	A
B	178	1342	1418	0.125	178	0.1	2.905	A
C	819	280	2230	0.367	820	0.6	2.557	A
D	177	884	1677	0.106	177	0.1	2.402	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1139	102	2531	0.450	1141	0.8	2.591	A
B	149	1123	1550	0.096	149	0.1	2.570	A
C	686	234	2254	0.304	686	0.4	2.297	A
D	148	740	1769	0.084	148	0.1	2.221	A

APPENDIX 28

Ardley East Roundabout junction option AE-3 – Arcady results

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 2031_DS_M40J10_ArdleyEast_OpB_ArdleyEast2.j9
Path: D:\Dropbox (ADC Infrastructure)\!!! ADC Projects\ADC1794 Oxfordshire SRFI\Documents\reports\ADC\M. M40 J10 options\Options Report\5. Ardley East
Report generation date: 11/06/2021 16:01:26

»2031_DS - 2031_DS_0645, AM1
»2031_DS - 2031_DS_0745, AM2
»2031_DS - 2031_DS_1630, PM

Summary of junction performance

	AM1			AM2			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
	2031_DS - 2031_DS_0645								
Arm A	0.8	2.84	0.44						
Arm B	0.2	2.83	0.18						
Arm C	4.8	9.26	0.83						
Arm D	0.1	3.48	0.11						
	2031_DS - 2031_DS_0745								
Arm A				0.8	2.86	0.45			
Arm B				0.2	2.85	0.18			
Arm C				4.0	8.12	0.80			
Arm D				0.1	3.37	0.11			
	2031_DS - 2031_DS_1630								
Arm A							2.0	4.28	0.66
Arm B							0.2	3.51	0.18
Arm C							0.9	3.36	0.48
Arm D							0.2	2.69	0.14

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

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

File summary

File Description

Title	2031_DS_M40J10_ArdleyEast_OpA_ArdleyEast1
Location	M40 J10
Site number	
Date	08/04/2021
Version	V1
Status	Preliminary
[redacted]	[redacted]
Client	
Jobnumber	ADC1794
Enumerator	[redacted]
Description	Option Layout A BWB Option: 4 Flowset: ArdleyEast1

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15
D3	2031_DS_1630	PM	ONE HOUR	16:15	17:45	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	2031_DS	100.000

2031_DS - 2031_DS_0645, AM1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D	6.48	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Link Road (S)	
B	Ardley Road (W)	
C	Link Road (N)	
D	Ardley Road (E)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	7.50	10.50	15.0	30.0	85.0	30.0	
B	3.50	8.50	50.0	30.0	85.0	30.0	
C	7.30	10.50	30.0	30.0	85.0	30.0	
D	3.50	8.50	50.0	30.0	85.0	30.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.635	2873
B	0.544	2244
C	0.651	2983
D	0.544	2244

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	912	100.000
B		✓	254	100.000
C		✓	1730	100.000
D		✓	113	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	49	566	297
	B	26	0	35	193
	C	1574	17	0	139
	D	10	17	86	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	21	29
	B	0	0	0	0
	C	13	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.44	2.84	0.8	A
B	0.18	2.83	0.2	A
C	0.83	9.26	4.8	A
D	0.11	3.48	0.1	A

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	687	90	2295	0.299	685	0.4	2.234	A
B	191	713	1772	0.108	191	0.1	2.276	A
C	1302	388	2414	0.539	1298	1.2	3.211	A
D	85	1213	1503	0.057	85	0.1	2.537	A

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	820	108	2286	0.359	819	0.6	2.455	A
B	228	853	1679	0.136	228	0.2	2.480	A
C	1555	464	2363	0.658	1552	1.9	4.427	A
D	102	1451	1358	0.075	102	0.1	2.864	A

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1004	132	2273	0.442	1003	0.8	2.834	A
B	280	1044	1553	0.180	279	0.2	2.827	A
C	1905	568	2292	0.831	1894	4.7	8.807	A
D	124	1770	1163	0.107	124	0.1	3.464	A

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1004	132	2273	0.442	1004	0.8	2.836	A
B	280	1045	1552	0.180	280	0.2	2.829	A
C	1905	568	2292	0.831	1904	4.8	9.262	A
D	124	1780	1157	0.108	124	0.1	3.484	A

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	820	108	2285	0.359	821	0.6	2.461	A
B	228	854	1678	0.136	229	0.2	2.485	A
C	1555	464	2362	0.658	1567	2.0	4.589	A
D	102	1464	1350	0.075	102	0.1	2.883	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	687	90	2295	0.299	687	0.4	2.240	A
B	191	715	1770	0.108	191	0.1	2.281	A
C	1302	389	2414	0.540	1306	1.2	3.259	A
D	85	1220	1499	0.057	85	0.1	2.545	A

2031_DS - 2031_DS_0745, AM2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D	5.79	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	927	100.000
B		✓	254	100.000
C		✓	1657	100.000
D		✓	114	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	49	583	295
	B	26	0	36	192
	C	1501	17	0	139
	D	10	17	87	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	21	29
	B	0	0	0	0
	C	14	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.45	2.86	0.8	A
B	0.18	2.85	0.2	A
C	0.80	8.12	4.0	A
D	0.11	3.37	0.1	A

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	698	91	2300	0.303	696	0.4	2.242	A
B	191	725	1765	0.108	191	0.1	2.286	A
C	1247	385	2388	0.523	1243	1.1	3.134	A
D	86	1158	1528	0.056	86	0.1	2.496	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	833	109	2291	0.364	833	0.6	2.469	A
B	228	867	1671	0.137	228	0.2	2.494	A
C	1490	461	2337	0.638	1487	1.7	4.225	A
D	102	1386	1387	0.074	102	0.1	2.801	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1021	133	2278	0.448	1020	0.8	2.859	A
B	280	1061	1543	0.181	279	0.2	2.849	A
C	1824	564	2267	0.805	1816	3.9	7.824	A
D	126	1692	1198	0.105	125	0.1	3.356	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1021	133	2278	0.448	1021	0.8	2.861	A
B	280	1062	1542	0.181	280	0.2	2.851	A
C	1824	565	2267	0.805	1824	4.0	8.118	A
D	126	1700	1193	0.105	126	0.1	3.371	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	833	109	2291	0.364	834	0.6	2.472	A
B	228	869	1670	0.137	229	0.2	2.497	A
C	1490	462	2336	0.638	1499	1.8	4.343	A
D	102	1396	1381	0.074	103	0.1	2.818	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	698	91	2300	0.303	698	0.4	2.249	A
B	191	727	1764	0.108	191	0.1	2.291	A
C	1247	387	2387	0.523	1250	1.1	3.177	A
D	86	1165	1524	0.056	86	0.1	2.503	A

2031_DS - 2031_DS_1630, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D	3.82	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2031_DS_1630	PM	ONE HOUR	16:15	17:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	1513	100.000
B		✓	198	100.000
C		✓	911	100.000
D		✓	194	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	112	939	462
	B	125	0	22	51
	C	830	27	0	54
	D	88	20	86	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	1	10	16
	B	2	0	0	0
	C	21	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.66	4.28	2.0	A
B	0.18	3.51	0.2	A
C	0.48	3.36	0.9	A
D	0.14	2.69	0.2	A

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1139	100	2533	0.450	1136	0.8	2.571	A
B	149	1116	1554	0.096	149	0.1	2.562	A
C	686	479	2211	0.310	684	0.4	2.357	A
D	146	737	1771	0.082	146	0.1	2.215	A

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1360	119	2522	0.539	1359	1.2	3.090	A
B	178	1335	1423	0.125	178	0.1	2.891	A
C	819	573	2153	0.380	818	0.6	2.695	A
D	174	882	1678	0.104	174	0.1	2.394	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1666	146	2507	0.665	1663	2.0	4.250	A
B	218	1634	1244	0.175	218	0.2	3.508	A
C	1003	701	2074	0.484	1002	0.9	3.351	A
D	214	1080	1551	0.138	213	0.2	2.691	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1666	146	2506	0.665	1666	2.0	4.282	A
B	218	1637	1242	0.176	218	0.2	3.514	A
C	1003	702	2074	0.484	1003	0.9	3.361	A
D	214	1081	1550	0.138	214	0.2	2.693	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1360	120	2522	0.539	1363	1.2	3.117	A
B	178	1340	1420	0.125	178	0.1	2.901	A
C	819	575	2152	0.381	820	0.6	2.707	A
D	174	884	1676	0.104	175	0.1	2.396	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1139	100	2533	0.450	1141	0.8	2.589	A
B	149	1121	1551	0.096	149	0.1	2.567	A
C	686	481	2209	0.310	687	0.5	2.364	A
D	146	740	1769	0.083	146	0.1	2.218	A

APPENDIX 29

Ardley East Roundabout junction option AE-4 – Arcady results

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 2031_DS_M40J10_ArdleyEast_OpC_ArdleyEast3.j9
Path: D:\Dropbox (ADC Infrastructure)\!!! ADC Projects\ADC1794 Oxfordshire SRFI\Documents\reports\ADC\M40 J10 options\Options Report
Report generation date: 08/04/2021 08:38:36

»2031_DS - 2031_DS_0645, AM1
»2031_DS - 2031_DS_0745, AM2
»2031_DS - 2031_DS_1630, PM

Summary of junction performance

	AM1			AM2			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
	2031_DS - 2031_DS_0645								
Arm A	0.8	2.84	0.44						
Arm B	0.2	2.83	0.18						
Arm C	4.8	9.26	0.83						
Arm D	0.2	4.07	0.13						
	2031_DS - 2031_DS_0745								
Arm A				0.8	2.87	0.45			
Arm B				0.2	2.85	0.18			
Arm C				4.0	8.15	0.81			
Arm D				0.1	3.92	0.13			
	2031_DS - 2031_DS_1630								
Arm A							2.0	4.28	0.66
Arm B							0.2	3.51	0.18
Arm C							0.9	3.36	0.48
Arm D							0.2	3.30	0.17

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

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

File summary

File Description

Title	2031_DS_M40J10_ArdleyEast_OpC_ArdleyEast3
Location	M40 J10
Site number	
Date	08/04/2021
Version	V1
Status	Preliminary
Identifier	[redacted]
Client	
Jobnumber	ADC1794
Enumerator	[redacted]
Description	Option Layout C BWB Option: 5 Flowset: ArdleyEast3

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15
D3	2031_DS_1630	PM	ONE HOUR	16:15	17:45	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	2031_DS	100.000

2031_DS - 2031_DS_0645, AM1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D, E	6.50	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Link Road (S)	
B	Ardley Road (W)	
C	Link Road (N)	
D	Ardley Road (E)	
E	M40 SB On	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	7.50	10.50	15.0	30.0	85.0	30.0	
B	3.50	8.50	50.0	30.0	85.0	30.0	
C	7.30	10.50	30.0	30.0	85.0	30.0	
D	3.50	8.50	50.0	30.0	85.0	30.0	
E							✓

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.635	2873
B	0.544	2244
C	0.651	2983
D	0.544	2244
E		

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	912	100.000
B		✓	254	100.000
C		✓	1730	100.000
D		✓	121	100.000
E				

Origin-Destination Data

Demand (Veh/hr)

		To				
		A	B	C	D	E
From	A	0	49	566	151	146
	B	26	0	35	189	4
	C	1574	17	0	139	0
	D	10	17	86	0	8
	E	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	2	21	0	58
	B	0	0	0	0	0
	C	13	0	0	0	0
	D	0	0	0	0	0
	E	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.44	2.84	0.8	A
B	0.18	2.83	0.2	A
C	0.83	9.26	4.8	A
D	0.13	4.07	0.2	A
E				

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	687	90	2295	0.299	685	0.4	2.234	A
B	191	713	1772	0.108	191	0.1	2.276	A
C	1302	388	2414	0.539	1298	1.2	3.211	A
D	91	1326	1407	0.065	91	0.1	2.734	A
E		1298						

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	820	108	2285	0.359	819	0.6	2.455	A
B	228	853	1679	0.136	228	0.2	2.480	A
C	1555	464	2363	0.658	1552	1.9	4.427	A
D	109	1586	1243	0.087	109	0.1	3.172	A
E		1552						

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1004	132	2273	0.442	1003	0.8	2.834	A
B	280	1044	1553	0.180	279	0.2	2.827	A
C	1905	568	2292	0.831	1894	4.7	8.808	A
D	133	1935	1023	0.130	133	0.1	4.046	A
E		1894						

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1004	132	2273	0.442	1004	0.8	2.836	A
B	280	1045	1552	0.180	280	0.2	2.829	A
C	1905	568	2291	0.831	1904	4.8	9.263	A
D	133	1945	1017	0.131	133	0.2	4.075	A
E		1904						

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	820	108	2285	0.359	821	0.6	2.461	A
B	228	854	1678	0.136	229	0.2	2.485	A
C	1555	464	2362	0.658	1567	2.0	4.587	A
D	109	1599	1235	0.088	109	0.1	3.199	A
E		1566						

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	687	90	2294	0.299	687	0.4	2.241	A
B	191	715	1770	0.108	191	0.1	2.281	A
C	1302	389	2414	0.540	1306	1.2	3.257	A
D	91	1333	1403	0.065	91	0.1	2.744	A
E		1305						

2031_DS - 2031_DS_0745, AM2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D, E	5.82	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	927	100.000
B		✓	254	100.000
C		✓	1657	100.000
D		✓	121	100.000
E				

Origin-Destination Data

Demand (Veh/hr)

		To				
		A	B	C	D	E
From	A	0	49	583	151	144
	B	26	0	36	189	3
	C	1501	17	0	139	0
	D	10	17	87	0	7
	E	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	2	21	0	61
	B	0	0	0	0	0
	C	14	0	0	0	0
	D	0	0	0	0	0
	E	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.45	2.87	0.8	A
B	0.18	2.85	0.2	A
C	0.81	8.15	4.0	A
D	0.13	3.92	0.1	A
E				

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	698	91	2295	0.304	696	0.4	2.250	A
B	191	725	1764	0.108	191	0.1	2.288	A
C	1247	385	2386	0.523	1243	1.1	3.138	A
D	91	1269	1432	0.064	91	0.1	2.684	A
E		1244						

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	833	109	2286	0.365	833	0.6	2.478	A
B	228	867	1670	0.137	228	0.2	2.496	A
C	1490	461	2335	0.638	1487	1.7	4.232	A
D	109	1518	1272	0.086	109	0.1	3.093	A
E		1488						

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1021	133	2273	0.449	1020	0.8	2.871	A
B	280	1061	1541	0.181	279	0.2	2.853	A
C	1824	564	2265	0.805	1815	4.0	7.853	A
D	133	1854	1057	0.126	133	0.1	3.894	A
E		1817						

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1021	133	2273	0.449	1021	0.8	2.874	A
B	280	1062	1540	0.182	280	0.2	2.854	A
C	1824	565	2265	0.806	1824	4.0	8.148	A
D	133	1862	1052	0.127	133	0.1	3.917	A
E		1825						

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	833	109	2285	0.365	834	0.6	2.482	A
B	228	869	1669	0.137	229	0.2	2.501	A
C	1490	462	2335	0.638	1499	1.8	4.353	A
D	109	1529	1265	0.086	109	0.1	3.115	A
E		1499						

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	698	91	2295	0.304	698	0.4	2.257	A
B	191	727	1763	0.108	191	0.1	2.292	A
C	1247	387	2385	0.523	1250	1.1	3.177	A
D	91	1276	1427	0.064	91	0.1	2.693	A
E		1251						

2031_DS - 2031_DS_1630, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D, E	3.86	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2031_DS_1630	PM	ONE HOUR	16:15	17:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	1513	100.000
B		✓	198	100.000
C		✓	911	100.000
D		✓	197	100.000
E				

Origin-Destination Data

Demand (Veh/hr)

		To				
		A	B	C	D	E
From	A	0	112	939	136	326
	B	125	0	22	50	1
	C	830	27	0	54	0
	D	88	20	86	0	3
	E	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	1	10	0	23
	B	2	0	0	0	0
	C	21	0	0	0	0
	D	0	0	0	0	0
	E	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.66	4.28	2.0	A
B	0.18	3.51	0.2	A
C	0.48	3.36	0.9	A
D	0.17	3.30	0.2	A
E				

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1139	100	2533	0.450	1136	0.8	2.572	A
B	149	1116	1554	0.096	149	0.1	2.562	A
C	686	479	2210	0.310	684	0.4	2.357	A
D	148	983	1606	0.092	148	0.1	2.468	A
E		883						

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1360	119	2522	0.539	1359	1.2	3.091	A
B	178	1335	1423	0.125	178	0.1	2.891	A
C	819	573	2153	0.380	818	0.6	2.696	A
D	177	1176	1481	0.120	177	0.1	2.759	A
E		1056						

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1666	146	2506	0.665	1663	2.0	4.251	A
B	218	1634	1244	0.175	218	0.2	3.508	A
C	1003	701	2074	0.484	1002	0.9	3.351	A
D	217	1439	1310	0.166	217	0.2	3.291	A
E		1293						

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1666	146	2506	0.665	1666	2.0	4.283	A
B	218	1637	1242	0.176	218	0.2	3.514	A
C	1003	702	2074	0.484	1003	0.9	3.361	A
D	217	1441	1309	0.166	217	0.2	3.295	A
E		1295						

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1360	120	2522	0.539	1363	1.2	3.115	A
B	178	1340	1420	0.125	178	0.1	2.901	A
C	819	575	2152	0.381	820	0.6	2.705	A
D	177	1179	1479	0.120	177	0.1	2.765	A
E		1059						

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1139	100	2533	0.450	1141	0.8	2.590	A
B	149	1121	1551	0.096	149	0.1	2.569	A
C	686	481	2209	0.310	687	0.5	2.364	A
D	148	987	1604	0.092	148	0.1	2.474	A
E		886						

APPENDIX 30

Ardley East Roundabout junction option AE-5 – Arcady results

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 2031_DS_M40J10_ArdleyEast_OpD_ArdleyEast4.j9
Path: D:\Dropbox (ADC Infrastructure)\!!! ADC Projects\ADC1794 Oxfordshire SRFI\Documents\reports\ADC\M40 J10 options\Options Report
Report generation date: 08/04/2021 08:53:51

»2031_DS - 2031_DS_0645, AM1
»2031_DS - 2031_DS_0745, AM2
»2031_DS - 2031_DS_1630, PM

Summary of junction performance

	AM1			AM2			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
	2031_DS - 2031_DS_0645								
Arm A	1.0	3.46	0.49						
Arm B	0.4	5.41	0.30						
Arm C	1.9	4.43	0.65						
Arm D	0.1	3.24	0.11						
Arm E	3.8	8.45	0.79						
	2031_DS - 2031_DS_0745								
Arm A				1.1	3.74	0.51			
Arm B				0.5	6.06	0.32			
Arm C				1.6	4.11	0.62			
Arm D				0.1	3.11	0.10			
Arm E				4.4	9.14	0.82			
	2031_DS - 2031_DS_1630								
Arm A							12.4	28.45	0.94
Arm B							10.2	156.12	1.04
Arm C							0.5	2.60	0.36
Arm D							0.2	2.91	0.15
Arm E							7.3	12.42	0.89

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

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

File summary

File Description

Title	2031_DS_M40J10_ArdleyEast_OpD_ArdleyEast4
Location	M40 J10
Site number	
Date	08/04/2021
Version	V1
Status	Preliminary
Identifier	[redacted]
Client	
Jobnumber	ADC1794
Enumerator	[redacted]
Description	Option Layout D BWB Option: 6 Flowset: ArdleyEast4

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15
D3	2031_DS_1630	PM	ONE HOUR	16:15	17:45	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	2031_DS	100.000

2031_DS - 2031_DS_0645, AM1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm E - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D, E	5.72	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Link Road (S)	
B	Ardley Road (W)	
C	Link Road (N)	
D	Ardley Road (E)	
E	M40 SB Slips	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	7.50	14.00	50.0	30.0	85.0	30.0	
B	3.50	10.50	50.0	30.0	85.0	30.0	
C	7.30	10.50	30.0	30.0	85.0	30.0	
D	3.50	8.50	50.0	30.0	85.0	30.0	
E	7.30	14.00	50.0	30.0	85.0	30.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.757	3723
B	0.591	2566
C	0.651	2983
D	0.544	2244
E	0.753	3692

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	912	100.000
B		✓	254	100.000
C		✓	1388	100.000
D		✓	121	100.000
E		✓	1484	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		A	B	C	D	E
From	A	0	49	566	151	146
	B	26	0	35	189	4
	C	1240	16	0	132	0
	D	10	17	86	0	8
	E	334	1	1098	7	44

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	2	21	0	58
	B	0	0	0	0	0
	C	8	0	0	0	0
	D	0	0	0	0	0
	E	28	0	17	0	9

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.49	3.46	1.0	A
B	0.30	5.41	0.4	A
C	0.65	4.43	1.9	A
D	0.11	3.24	0.1	A
E	0.79	8.45	3.8	A

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	687	952	2359	0.291	685	0.4	2.149	A
B	191	1575	1460	0.131	191	0.2	2.833	A
C	1045	426	2480	0.421	1042	0.7	2.497	A
D	91	1108	1563	0.058	91	0.1	2.445	A
E	1117	1047	2390	0.468	1114	0.9	2.815	A

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	820	1139	2226	0.368	819	0.6	2.557	A
B	228	1884	1244	0.184	228	0.2	3.544	A
C	1248	509	2422	0.515	1246	1.1	3.060	A
D	109	1325	1429	0.076	109	0.1	2.725	A
E	1334	1253	2250	0.593	1332	1.4	3.909	A

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1004	1390	2048	0.490	1003	1.0	3.438	A
B	280	2302	950	0.294	279	0.4	5.356	A
C	1528	623	2342	0.652	1525	1.9	4.389	A
D	133	1622	1247	0.107	133	0.1	3.230	A
E	1634	1533	2061	0.793	1625	3.7	8.103	A

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1004	1397	2043	0.491	1004	1.0	3.463	A
B	280	2310	945	0.296	280	0.4	5.412	A
C	1528	624	2341	0.653	1528	1.9	4.427	A
D	133	1625	1245	0.107	133	0.1	3.236	A
E	1634	1536	2059	0.794	1634	3.8	8.453	A

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	820	1148	2220	0.369	821	0.6	2.576	A
B	228	1895	1236	0.185	229	0.2	3.579	A
C	1248	511	2421	0.516	1251	1.1	3.088	A
D	109	1330	1426	0.076	109	0.1	2.734	A
E	1334	1257	2248	0.594	1343	1.5	4.021	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	687	957	2355	0.292	687	0.4	2.158	A
B	191	1582	1456	0.131	192	0.2	2.848	A
C	1045	427	2479	0.421	1046	0.7	2.514	A
D	91	1113	1560	0.058	91	0.1	2.452	A
E	1117	1052	2387	0.468	1120	0.9	2.847	A

2031_DS - 2031_DS_0745, AM2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm E - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D, E	6.06	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	927	100.000
B		✓	254	100.000
C		✓	1304	100.000
D		✓	121	100.000
E		✓	1618	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		A	B	C	D	E
From	A	0	49	583	151	144
	B	26	0	36	189	3
	C	1157	16	0	131	0
	D	10	17	87	0	7
	E	344	1	1227	8	38

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	2	21	0	61
	B	0	0	0	0	0
	C	10	0	0	0	0
	D	0	0	0	0	0
	E	27	0	13	0	5

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.51	3.74	1.1	A
B	0.32	6.06	0.5	A
C	0.62	4.11	1.6	A
D	0.10	3.11	0.1	A
E	0.82	9.14	4.4	A

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	698	1046	2317	0.301	696	0.4	2.219	A
B	191	1680	1412	0.135	191	0.2	2.945	A
C	982	420	2446	0.401	979	0.7	2.449	A
D	91	1039	1594	0.057	91	0.1	2.394	A
E	1218	986	2500	0.487	1214	0.9	2.791	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	833	1251	2177	0.383	833	0.6	2.677	A
B	228	2009	1186	0.193	228	0.2	3.757	A
C	1172	502	2389	0.491	1171	1.0	2.952	A
D	109	1243	1466	0.074	109	0.1	2.651	A
E	1455	1179	2363	0.616	1452	1.6	3.941	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1021	1526	1988	0.513	1019	1.0	3.709	A
B	280	2454	880	0.318	279	0.5	5.974	A
C	1436	614	2312	0.621	1433	1.6	4.085	A
D	133	1521	1293	0.103	133	0.1	3.104	A
E	1781	1443	2175	0.819	1771	4.3	8.671	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1021	1534	1982	0.515	1021	1.1	3.742	A
B	280	2464	874	0.320	280	0.5	6.057	A
C	1436	615	2311	0.621	1436	1.6	4.114	A
D	133	1524	1291	0.103	133	0.1	3.109	A
E	1781	1446	2174	0.820	1781	4.4	9.140	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	833	1262	2169	0.384	835	0.6	2.703	A
B	228	2022	1177	0.194	229	0.2	3.800	A
C	1172	504	2388	0.491	1175	1.0	2.973	A
D	109	1247	1464	0.074	109	0.1	2.656	A
E	1455	1183	2360	0.616	1466	1.6	4.075	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	698	1052	2313	0.302	699	0.4	2.231	A
B	191	1688	1407	0.136	192	0.2	2.964	A
C	982	421	2445	0.402	983	0.7	2.465	A
D	91	1043	1591	0.057	91	0.1	2.401	A
E	1218	990	2498	0.488	1221	1.0	2.827	A

2031_DS - 2031_DS_1630, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm E - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D, E	21.40	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2031_DS_1630	PM	ONE HOUR	16:15	17:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	1513	100.000
B		✓	198	100.000
C		✓	691	100.000
D		✓	197	100.000
E		✓	2004	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		A	B	C	D	E
From	A	0	112	939	136	326
	B	125	0	22	50	1
	C	620	24	0	47	0
	D	88	20	86	0	3
	E	210	3	1717	7	67

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	1	10	0	23
	B	2	0	0	0	0
	C	15	0	0	0	0
	D	0	0	0	0	0
	E	39	0	11	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.94	28.45	12.4	D
B	1.04	156.12	10.2	F
C	0.36	2.60	0.5	A
D	0.15	2.91	0.2	A
E	0.89	12.42	7.3	B

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1139	1444	2275	0.501	1135	1.0	3.148	A
B	149	2460	948	0.157	148	0.2	4.498	A
C	520	534	2289	0.227	519	0.3	2.032	A
D	148	873	1700	0.087	148	0.1	2.320	A
E	1509	723	2729	0.553	1504	1.2	2.926	A

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1360	1726	2064	0.659	1357	1.9	5.065	A
B	178	2940	637	0.279	177	0.4	7.817	A
C	621	638	2223	0.279	621	0.4	2.246	A
D	177	1044	1593	0.111	177	0.1	2.542	A
E	1802	865	2625	0.686	1798	2.2	4.331	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1666	2101	1783	0.934	1632	10.3	20.538	C
B	218	3561	235	0.927	199	5.2	77.306	F
C	761	756	2148	0.354	760	0.5	2.592	A
D	217	1260	1458	0.149	217	0.2	2.900	A
E	2206	1047	2492	0.886	2187	7.0	11.183	B

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1666	2117	1771	0.941	1658	12.4	28.454	D
B	218	3600	210	1.041	198	10.2	156.123	F
C	761	764	2143	0.355	761	0.5	2.604	A
D	217	1266	1453	0.149	217	0.2	2.910	A
E	2206	1048	2491	0.886	2205	7.3	12.418	B

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1360	1748	2047	0.664	1402	2.0	5.927	A
B	178	3003	596	0.299	217	0.4	10.516	B
C	621	688	2193	0.283	622	0.4	2.293	A
D	177	1080	1571	0.113	177	0.1	2.582	A
E	1802	891	2608	0.691	1822	2.3	4.696	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1139	1452	2269	0.502	1143	1.0	3.210	A
B	149	2475	938	0.159	150	0.2	4.574	A
C	520	538	2287	0.227	521	0.3	2.040	A
D	148	878	1697	0.087	148	0.1	2.326	A
E	1509	726	2727	0.553	1513	1.2	2.977	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 2031_DS_M40J10_ArdleyEast_OpD_ArdleyEast8.j9
Path: D:\Dropbox (ADC Infrastructure)\!!! ADC Projects\ADC1794 Oxfordshire SRFI\Documents\reports\ADC\M40 J10 options\Options Report
Report generation date: 08/04/2021 10:10:00

»2031_DS - 2031_DS_0645, AM1
»2031_DS - 2031_DS_0745, AM2
»2031_DS - 2031_DS_1630, PM

Summary of junction performance

	AM1			AM2			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
	2031_DS - 2031_DS_0645								
Arm A	0.9	3.12	0.47						
Arm B	0.2	2.66	0.17						
Arm C	1.9	4.43	0.65						
Arm D	0.1	3.24	0.11						
Arm E	1.4	7.73	0.58						
	2031_DS - 2031_DS_0745								
Arm A				0.9	3.13	0.47			
Arm B				0.2	2.66	0.17			
Arm C				1.6	4.11	0.62			
Arm D				0.1	3.11	0.10			
Arm E				1.2	7.01	0.55			
	2031_DS - 2031_DS_1630								
Arm A							2.4	5.23	0.71
Arm B							0.2	3.42	0.17
Arm C							0.6	2.63	0.36
Arm D							0.2	2.93	0.15
Arm E							0.7	4.86	0.42

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

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

File summary

File Description

Title	2031_DS_M40J10_ArdleyEast_OpD_ArdleyEast8
Location	M40 J10
Site number	
Date	08/04/2021
Version	V1
Status	Preliminary
Identifier	[redacted]
Client	
Jobnumber	ADC1794
Enumerator	[redacted]
Description	Option Layout D BWB Option: 17 Flowset: ArdleyEast8

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15
D3	2031_DS_1630	PM	ONE HOUR	16:15	17:45	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	2031_DS	100.000

2031_DS - 2031_DS_0645, AM1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D, E	4.51	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Link Road (S)	
B	Ardley Road (W)	
C	Link Road (N)	
D	Ardley Road (E)	
E	M40 SB Slips	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	7.50	10.50	20.0	30.0	85.0	30.0	
B	3.50	10.50	50.0	30.0	85.0	30.0	
C	7.30	10.50	30.0	30.0	85.0	30.0	
D	3.50	8.50	50.0	30.0	85.0	30.0	
E	7.30	7.30	0.0	30.0	85.0	30.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.644	2934
B	0.591	2566
C	0.651	2983
D	0.544	2244
E	0.545	2248

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	912	100.000
B		✓	254	100.000
C		✓	1388	100.000
D		✓	121	100.000
E		✓	587	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		A	B	C	D	E
From	A	0	49	566	151	146
	B	26	0	35	189	4
	C	1240	16	0	132	0
	D	10	17	86	0	8
	E	334	1	201	7	44

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	2	21	0	58
	B	0	0	0	0	0
	C	8	0	0	0	0
	D	0	0	0	0	0
	E	28	0	14	0	9

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.47	3.12	0.9	A
B	0.17	2.66	0.2	A
C	0.65	4.43	1.9	A
D	0.11	3.24	0.1	A
E	0.58	7.73	1.4	A

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	687	279	2232	0.308	685	0.4	2.325	A
B	191	901	1928	0.099	191	0.1	2.072	A
C	1045	426	2480	0.421	1042	0.7	2.497	A
D	91	1108	1563	0.058	91	0.1	2.445	A
E	442	1047	1347	0.328	440	0.5	3.961	A

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	820	334	2201	0.373	819	0.6	2.604	A
B	228	1079	1803	0.127	228	0.1	2.285	A
C	1248	509	2422	0.515	1246	1.1	3.060	A
D	109	1326	1429	0.076	109	0.1	2.725	A
E	528	1253	1248	0.423	527	0.7	4.985	A

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1004	408	2158	0.465	1003	0.9	3.113	A
B	280	1320	1632	0.171	279	0.2	2.661	A
C	1528	623	2342	0.653	1525	1.9	4.394	A
D	133	1622	1247	0.107	133	0.1	3.230	A
E	646	1533	1113	0.581	644	1.4	7.628	A

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1004	410	2158	0.465	1004	0.9	3.120	A
B	280	1322	1630	0.172	280	0.2	2.664	A
C	1528	624	2341	0.653	1528	1.9	4.427	A
D	133	1625	1245	0.107	133	0.1	3.236	A
E	646	1536	1112	0.581	646	1.4	7.731	A

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	820	336	2200	0.373	821	0.6	2.614	A
B	228	1082	1801	0.127	229	0.1	2.291	A
C	1248	511	2421	0.515	1251	1.1	3.084	A
D	109	1330	1427	0.076	109	0.1	2.733	A
E	528	1257	1246	0.424	530	0.7	5.048	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	687	281	2231	0.308	687	0.4	2.334	A
B	191	905	1926	0.099	191	0.1	2.077	A
C	1045	427	2479	0.421	1046	0.7	2.516	A
D	91	1113	1560	0.058	91	0.1	2.452	A
E	442	1052	1345	0.329	443	0.5	3.995	A

2031_DS - 2031_DS_0745, AM2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D, E	4.22	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	927	100.000
B		✓	254	100.000
C		✓	1304	100.000
D		✓	121	100.000
E		✓	575	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		A	B	C	D	E
From	A	0	49	583	151	144
	B	26	0	36	189	3
	C	1157	16	0	131	0
	D	10	17	87	0	7
	E	344	1	184	8	38

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	2	21	0	61
	B	0	0	0	0	0
	C	10	0	0	0	0
	D	0	0	0	0	0
	E	27	0	15	0	5

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.47	3.13	0.9	A
B	0.17	2.66	0.2	A
C	0.62	4.11	1.6	A
D	0.10	3.11	0.1	A
E	0.55	7.01	1.2	A

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	698	263	2242	0.311	696	0.5	2.327	A
B	191	897	1931	0.099	191	0.1	2.069	A
C	982	420	2446	0.401	979	0.7	2.449	A
D	91	1039	1594	0.057	91	0.1	2.394	A
E	433	986	1372	0.316	431	0.5	3.820	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	833	315	2212	0.377	833	0.6	2.607	A
B	228	1073	1806	0.126	228	0.1	2.281	A
C	1172	502	2389	0.491	1171	1.0	2.953	A
D	109	1243	1466	0.074	109	0.1	2.651	A
E	517	1179	1277	0.405	516	0.7	4.724	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1021	385	2172	0.470	1020	0.9	3.119	A
B	280	1314	1636	0.171	279	0.2	2.654	A
C	1436	615	2311	0.621	1433	1.6	4.088	A
D	133	1521	1292	0.103	133	0.1	3.105	A
E	633	1443	1148	0.551	631	1.2	6.931	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1021	386	2172	0.470	1021	0.9	3.126	A
B	280	1316	1634	0.171	280	0.2	2.657	A
C	1436	615	2311	0.621	1436	1.6	4.114	A
D	133	1524	1291	0.103	133	0.1	3.109	A
E	633	1446	1147	0.552	633	1.2	7.005	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	833	317	2212	0.377	834	0.6	2.617	A
B	228	1076	1804	0.127	229	0.1	2.287	A
C	1172	503	2388	0.491	1175	1.0	2.974	A
D	109	1247	1464	0.074	109	0.1	2.658	A
E	517	1183	1275	0.405	519	0.7	4.771	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	698	265	2241	0.311	699	0.5	2.336	A
B	191	901	1928	0.099	191	0.1	2.074	A
C	982	421	2445	0.401	983	0.7	2.465	A
D	91	1043	1591	0.057	91	0.1	2.401	A
E	433	990	1370	0.316	434	0.5	3.848	A

2031_DS - 2031_DS_1630, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D, E	4.34	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2031_DS_1630	PM	ONE HOUR	16:15	17:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	1513	100.000
B		✓	198	100.000
C		✓	691	100.000
D		✓	197	100.000
E		✓	488	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		A	B	C	D	E
From	A	0	112	939	136	326
	B	125	0	22	50	1
	C	620	24	0	47	0
	D	88	20	86	0	3
	E	210	3	201	7	67

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	1	10	0	23
	B	2	0	0	0	0
	C	15	0	0	0	0
	D	0	0	0	0	0
	E	39	0	23	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.71	5.23	2.4	A
B	0.17	3.42	0.2	A
C	0.36	2.63	0.6	A
D	0.15	2.93	0.2	A
E	0.42	4.86	0.7	A

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1139	306	2447	0.466	1136	0.9	2.739	A
B	149	1322	1675	0.089	149	0.1	2.359	A
C	520	534	2289	0.227	519	0.3	2.033	A
D	148	873	1699	0.087	148	0.1	2.320	A
E	367	723	1438	0.256	366	0.3	3.355	A

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1360	366	2408	0.565	1358	1.3	3.425	A
B	178	1582	1505	0.118	178	0.1	2.713	A
C	621	639	2223	0.280	621	0.4	2.247	A
D	177	1045	1592	0.111	177	0.1	2.543	A
E	439	865	1370	0.320	438	0.5	3.861	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1666	449	2355	0.708	1661	2.4	5.163	A
B	218	1935	1273	0.171	218	0.2	3.410	A
C	761	782	2132	0.357	760	0.6	2.623	A
D	217	1279	1446	0.150	217	0.2	2.927	A
E	537	1059	1278	0.420	536	0.7	4.846	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1666	449	2354	0.708	1666	2.4	5.228	A
B	218	1940	1270	0.172	218	0.2	3.420	A
C	761	784	2131	0.357	761	0.6	2.627	A
D	217	1280	1445	0.150	217	0.2	2.930	A
E	537	1060	1278	0.420	537	0.7	4.861	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1360	367	2407	0.565	1364	1.3	3.466	A
B	178	1589	1500	0.119	178	0.1	2.725	A
C	621	642	2221	0.280	622	0.4	2.253	A
D	177	1047	1591	0.111	177	0.1	2.548	A
E	439	867	1370	0.320	440	0.5	3.875	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1139	308	2446	0.466	1141	0.9	2.761	A
B	149	1328	1671	0.089	149	0.1	2.365	A
C	520	537	2288	0.227	521	0.3	2.038	A
D	148	876	1697	0.087	148	0.1	2.323	A
E	367	726	1437	0.256	368	0.3	3.372	A

APPENDIX 31

Ardley East Roundabout junction option AE-6 – Arcady results

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 2031_DS_M40J10_ArdleyEast_OpE_ArdleyEast5.j9
Path: D:\Dropbox (ADC Infrastructure)\!!! ADC Projects\ADC1794 Oxfordshire SRFI\Documents\reports\ADC\M40 J10 options\Options Report
Report generation date: 08/04/2021 09:01:00

»2031_DS - 2031_DS_0645, AM1
»2031_DS - 2031_DS_0745, AM2
»2031_DS - 2031_DS_1630, PM

Summary of junction performance

	AM1			AM2			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
	2031_DS - 2031_DS_0645								
Arm A	0.8	2.99	0.45						
Arm B	2.3	4.76	0.70						
Arm C	0.1	3.21	0.11						
Arm D	3.3	7.42	0.77						
	2031_DS - 2031_DS_0745								
Arm A				0.9	3.20	0.48			
Arm B				2.0	4.39	0.67			
Arm C				0.1	3.09	0.10			
Arm D				3.8	7.93	0.80			
	2031_DS - 2031_DS_1630								
Arm A							5.9	13.38	0.86
Arm B							0.7	2.65	0.41
Arm C							0.2	2.90	0.15
Arm D							6.1	10.21	0.86

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

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

File summary

File Description

Title	2031_DS_M40J10_ArdleyEast_OpE_ArdleyEast5
Location	M40 J10
Site number	
Date	08/04/2021
Version	V1
Status	Preliminary
Identifier	[redacted]
Client	
Jobnumber	ADC1794
Enumerator	[redacted]
Description	Option Layout E BWB Option: 7, 8, 9 Flowset: ArdleyEast5

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15
D3	2031_DS_1630	PM	ONE HOUR	16:15	17:45	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	2031_DS	100.000

2031_DS - 2031_DS_0645, AM1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D	5.30	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Link Road (S)	
B	Link Road (N)	
C	Ardley Road (E)	
D	M40 SB Slips	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	7.50	14.00	70.0	30.0	85.0	20.0	
B	7.30	10.50	30.0	30.0	85.0	30.0	
C	3.50	8.50	50.0	30.0	85.0	30.0	
D	7.30	14.00	60.0	30.0	85.0	30.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.802	3984
B	0.651	2983
C	0.544	2244
D	0.764	3768

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	912	100.000
B		✓	1591	100.000
C		✓	121	100.000
D		✓	1484	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	615	151	146
	B	1266	0	321	4
	C	10	103	0	8
	D	334	1099	7	44

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	20	0	58
	B	8	0	0	0
	C	0	0	0	0
	D	28	17	0	9

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.45	2.99	0.8	A
B	0.70	4.76	2.3	A
C	0.11	3.21	0.1	A
D	0.77	7.42	3.3	A

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	687	941	2540	0.270	685	0.4	1.939	A
B	1198	261	2601	0.460	1194	0.8	2.552	A
C	91	1096	1569	0.058	91	0.1	2.435	A
D	1117	1035	2450	0.456	1114	0.8	2.687	A

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	820	1125	2401	0.341	819	0.5	2.276	A
B	1430	313	2562	0.558	1429	1.3	3.172	A
C	109	1311	1437	0.076	109	0.1	2.710	A
D	1334	1238	2311	0.577	1332	1.4	3.671	A

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1004	1374	2214	0.454	1003	0.8	2.971	A
B	1752	382	2508	0.698	1748	2.3	4.706	A
C	133	1604	1257	0.106	133	0.1	3.204	A
D	1634	1515	2120	0.771	1626	3.2	7.185	A

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1004	1379	2209	0.455	1004	0.8	2.986	A
B	1752	383	2508	0.698	1752	2.3	4.758	A
C	133	1607	1254	0.106	133	0.1	3.210	A
D	1634	1518	2118	0.772	1634	3.3	7.425	A

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	820	1133	2395	0.342	821	0.5	2.290	A
B	1430	314	2561	0.558	1434	1.3	3.207	A
C	109	1316	1434	0.076	109	0.1	2.717	A
D	1334	1243	2307	0.578	1342	1.4	3.760	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	687	945	2536	0.271	687	0.4	1.948	A
B	1198	262	2601	0.461	1199	0.9	2.571	A
C	91	1101	1566	0.058	91	0.1	2.441	A
D	1117	1040	2447	0.457	1119	0.8	2.714	A

2031_DS - 2031_DS_0745, AM2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D	5.47	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	927	100.000
B		✓	1506	100.000
C		✓	121	100.000
D		✓	1618	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	632	151	144
	B	1183	0	320	3
	C	10	104	0	7
	D	344	1228	8	38

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	19	0	61
	B	10	0	0	0
	C	0	0	0	0
	D	27	13	0	5

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.48	3.20	0.9	A
B	0.67	4.39	2.0	A
C	0.10	3.09	0.1	A
D	0.80	7.93	3.8	A

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	698	1034	2495	0.280	696	0.4	1.999	A
B	1134	256	2568	0.441	1131	0.8	2.499	A
C	91	1027	1599	0.057	91	0.1	2.386	A
D	1218	974	2563	0.475	1215	0.9	2.664	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	833	1237	2348	0.355	833	0.5	2.374	A
B	1354	306	2530	0.535	1352	1.1	3.053	A
C	109	1229	1473	0.074	109	0.1	2.638	A
D	1455	1165	2424	0.600	1452	1.5	3.693	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1021	1510	2149	0.475	1019	0.9	3.181	A
B	1658	375	2478	0.669	1655	2.0	4.355	A
C	133	1503	1301	0.102	133	0.1	3.083	A
D	1781	1425	2236	0.797	1772	3.8	7.617	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1021	1517	2144	0.476	1021	0.9	3.203	A
B	1658	375	2477	0.669	1658	2.0	4.394	A
C	133	1506	1299	0.103	133	0.1	3.088	A
D	1781	1428	2234	0.797	1781	3.8	7.930	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	833	1246	2341	0.356	835	0.6	2.391	A
B	1354	307	2529	0.535	1357	1.2	3.079	A
C	109	1233	1470	0.074	109	0.1	2.646	A
D	1455	1169	2422	0.601	1464	1.5	3.797	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	698	1039	2492	0.280	699	0.4	2.008	A
B	1134	257	2568	0.442	1135	0.8	2.517	A
C	91	1031	1597	0.057	91	0.1	2.390	A
D	1218	978	2560	0.476	1221	0.9	2.692	A

2031_DS - 2031_DS_1630, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D	9.58	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2031_DS_1630	PM	ONE HOUR	16:15	17:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	1513	100.000
B		✓	843	100.000
C		✓	197	100.000
D		✓	2004	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	1051	136	326
	B	745	0	97	1
	C	88	106	0	3
	D	210	1720	7	67

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	9	0	23
	B	13	0	0	0
	C	0	0	0	0
	D	39	11	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.86	13.38	5.9	B
B	0.41	2.65	0.7	A
C	0.15	2.90	0.2	A
D	0.86	10.21	6.1	B

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1139	1426	2458	0.463	1136	0.9	2.715	A
B	635	402	2411	0.263	633	0.4	2.022	A
C	148	855	1709	0.087	148	0.1	2.306	A
D	1509	705	2800	0.539	1504	1.2	2.768	A

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1360	1705	2237	0.608	1357	1.5	4.082	A
B	758	481	2359	0.321	757	0.5	2.247	A
C	177	1023	1604	0.110	177	0.1	2.522	A
D	1802	844	2697	0.668	1798	2.0	3.991	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1666	2078	1940	0.858	1650	5.5	11.793	B
B	928	585	2290	0.405	927	0.7	2.640	A
C	217	1249	1462	0.148	217	0.2	2.889	A
D	2206	1033	2557	0.863	2191	5.9	9.473	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1666	2091	1930	0.863	1664	5.9	13.376	B
B	928	590	2287	0.406	928	0.7	2.649	A
C	217	1254	1460	0.149	217	0.2	2.896	A
D	2206	1034	2556	0.863	2206	6.1	10.209	B

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1360	1723	2223	0.612	1378	1.6	4.344	A
B	758	488	2354	0.322	759	0.5	2.256	A
C	177	1029	1600	0.111	177	0.1	2.529	A
D	1802	845	2696	0.668	1818	2.0	4.173	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1139	1434	2452	0.464	1142	0.9	2.752	A
B	635	405	2410	0.263	635	0.4	2.030	A
C	148	859	1707	0.087	148	0.1	2.309	A
D	1509	707	2798	0.539	1512	1.2	2.806	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 2031_DS_M40J10_ArdleyEast_OpE_ArdleyEast6.j9
Path: D:\Dropbox (ADC Infrastructure)\!!! ADC Projects\ADC1794 Oxfordshire SRFI\Documents\reports\ADC\M40 J10 options\Options Report
Report generation date: 08/04/2021 09:05:05

»2031_DS - 2031_DS_0645, AM1
»2031_DS - 2031_DS_0745, AM2
»2031_DS - 2031_DS_1630, PM

Summary of junction performance

	AM1			AM2			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
	2031_DS - 2031_DS_0645								
Arm A	0.8	2.99	0.45						
Arm B	4.2	7.76	0.81						
Arm C	0.1	3.76	0.12						
Arm D	3.3	7.42	0.77						
	2031_DS - 2031_DS_0745								
Arm A				0.9	3.20	0.48			
Arm B				3.7	7.05	0.79			
Arm C				0.1	3.64	0.12			
Arm D				3.8	7.93	0.80			
	2031_DS - 2031_DS_1630								
Arm A							5.9	13.38	0.86
Arm B							1.1	3.31	0.52
Arm C							0.2	3.31	0.17
Arm D							6.1	10.21	0.86

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

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

File summary

File Description

Title	2031_DS_M40J10_ArdleyEast_OpE_ArdleyEast6
Location	M40 J10
Site number	
Date	08/04/2021
Version	V1
Status	Preliminary
Identifier	[redacted]
Client	
Jobnumber	ADC1794
Enumerator	[redacted]
Description	Option Layout E BWB Option: 10, 11, 12, 13 Flowset: ArdleyEast6

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15
D3	2031_DS_1630	PM	ONE HOUR	16:15	17:45	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	2031_DS	100.000

2031_DS - 2031_DS_0645, AM1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D	6.47	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Link Road (S)	
B	Link Road (N)	
C	Ardley Road (E)	
D	M40 SB Slips	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	7.50	14.00	70.0	30.0	85.0	20.0	
B	7.30	10.50	30.0	30.0	85.0	30.0	
C	3.50	8.50	50.0	30.0	85.0	30.0	
D	7.30	14.00	60.0	30.0	85.0	30.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.802	3984
B	0.651	2983
C	0.544	2244
D	0.764	3768

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	912	100.000
B		✓	1810	100.000
C		✓	121	100.000
D		✓	1484	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	615	151	146
	B	1266	0	321	223
	C	10	103	0	8
	D	334	1099	7	44

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	20	0	58
	B	8	0	0	25
	C	0	0	0	0
	D	28	17	0	9

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.45	2.99	0.8	A
B	0.81	7.76	4.2	A
C	0.12	3.76	0.1	A
D	0.77	7.42	3.3	A

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	687	941	2540	0.270	685	0.4	1.939	A
B	1363	261	2547	0.535	1358	1.1	3.017	A
C	91	1260	1458	0.063	91	0.1	2.634	A
D	1117	1035	2451	0.456	1114	0.8	2.686	A

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	820	1125	2401	0.341	819	0.5	2.276	A
B	1627	313	2509	0.649	1624	1.8	4.059	A
C	109	1507	1303	0.083	109	0.1	3.013	A
D	1334	1238	2311	0.577	1332	1.4	3.669	A

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1004	1374	2214	0.454	1003	0.8	2.971	A
B	1993	382	2456	0.811	1984	4.1	7.476	A
C	133	1841	1095	0.122	133	0.1	3.742	A
D	1634	1512	2122	0.770	1626	3.2	7.155	A

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1004	1379	2209	0.455	1004	0.8	2.986	A
B	1993	383	2456	0.812	1992	4.2	7.755	A
C	133	1848	1090	0.122	133	0.1	3.760	A
D	1634	1518	2118	0.772	1634	3.3	7.423	A

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	820	1133	2395	0.342	821	0.5	2.290	A
B	1627	314	2508	0.649	1637	1.9	4.175	A
C	109	1518	1297	0.084	109	0.1	3.030	A
D	1334	1246	2305	0.579	1342	1.4	3.769	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	687	945	2536	0.271	687	0.4	1.948	A
B	1363	262	2547	0.535	1366	1.2	3.054	A
C	91	1267	1453	0.063	91	0.1	2.644	A
D	1117	1040	2447	0.457	1119	0.8	2.717	A

2031_DS - 2031_DS_0745, AM2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D	6.42	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	927	100.000
B		✓	1751	100.000
C		✓	121	100.000
D		✓	1618	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	632	151	144
	B	1183	0	320	248
	C	10	104	0	7
	D	344	1228	8	38

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	19	0	61
	B	10	0	0	20
	C	0	0	0	0
	D	27	13	0	5

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.48	3.20	0.9	A
B	0.79	7.05	3.7	A
C	0.12	3.64	0.1	A
D	0.80	7.93	3.8	A

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	698	1034	2495	0.280	696	0.4	1.999	A
B	1318	256	2527	0.522	1314	1.1	2.956	A
C	91	1210	1479	0.062	91	0.1	2.593	A
D	1218	973	2563	0.475	1215	0.9	2.663	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	833	1237	2348	0.355	833	0.5	2.374	A
B	1574	306	2490	0.632	1572	1.7	3.912	A
C	109	1448	1329	0.082	109	0.1	2.949	A
D	1455	1164	2425	0.600	1452	1.5	3.691	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1021	1510	2149	0.475	1019	0.9	3.181	A
B	1928	375	2438	0.791	1920	3.6	6.846	A
C	133	1769	1126	0.118	133	0.1	3.625	A
D	1781	1423	2238	0.796	1772	3.7	7.588	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1021	1517	2144	0.476	1021	0.9	3.203	A
B	1928	375	2438	0.791	1928	3.7	7.045	A
C	133	1776	1122	0.119	133	0.1	3.640	A
D	1781	1428	2234	0.797	1781	3.8	7.927	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	833	1246	2341	0.356	835	0.6	2.393	A
B	1574	307	2489	0.632	1582	1.7	4.004	A
C	109	1457	1324	0.082	109	0.1	2.963	A
D	1455	1171	2420	0.601	1464	1.5	3.801	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	698	1039	2492	0.280	699	0.4	2.008	A
B	1318	257	2527	0.522	1321	1.1	2.993	A
C	91	1217	1475	0.062	91	0.1	2.600	A
D	1218	978	2559	0.476	1221	0.9	2.695	A

2031_DS - 2031_DS_1630, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D	9.41	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2031_DS_1630	PM	ONE HOUR	16:15	17:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	1513	100.000
B		✓	1058	100.000
C		✓	197	100.000
D		✓	2004	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	1051	136	326
	B	745	0	97	216
	C	88	106	0	3
	D	210	1720	7	67

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	9	0	23
	B	13	0	0	20
	C	0	0	0	0
	D	39	11	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.86	13.38	5.9	B
B	0.52	3.31	1.1	A
C	0.17	3.31	0.2	A
D	0.86	10.21	6.1	B

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1139	1426	2458	0.463	1136	0.9	2.715	A
B	797	402	2374	0.336	795	0.5	2.276	A
C	148	1017	1604	0.092	148	0.1	2.473	A
D	1509	705	2800	0.539	1504	1.2	2.768	A

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1360	1705	2237	0.608	1357	1.5	4.082	A
B	951	481	2322	0.410	950	0.7	2.622	A
C	177	1216	1478	0.120	177	0.1	2.766	A
D	1802	843	2697	0.668	1798	2.0	3.991	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1666	2078	1940	0.858	1650	5.5	11.793	B
B	1165	585	2254	0.517	1163	1.1	3.296	A
C	217	1485	1308	0.166	217	0.2	3.298	A
D	2206	1033	2557	0.863	2191	5.8	9.467	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1666	2091	1930	0.863	1664	5.9	13.375	B
B	1165	590	2251	0.518	1165	1.1	3.313	A
C	217	1490	1305	0.166	217	0.2	3.307	A
D	2206	1034	2556	0.863	2206	6.1	10.209	B

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1360	1723	2223	0.612	1378	1.6	4.344	A
B	951	488	2318	0.410	953	0.7	2.639	A
C	177	1223	1474	0.120	177	0.1	2.779	A
D	1802	845	2696	0.668	1818	2.0	4.175	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1139	1434	2452	0.464	1142	0.9	2.752	A
B	797	405	2372	0.336	797	0.5	2.288	A
C	148	1021	1601	0.093	148	0.1	2.478	A
D	1509	708	2798	0.539	1512	1.2	2.806	A

APPENDIX 32

Ardley East Roundabout junction option AE-7 – Arcady results

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 2031_DS_M40J10_ArdleyEast_OpF_ArdleyEast7.j9
Path: D:\Dropbox (ADC Infrastructure)\!!! ADC Projects\ADC1794 Oxfordshire SRFI\Documents\reports\ADC\M40 J10 options\Options Report
Report generation date: 08/04/2021 09:29:34

»2031_DS - 2031_DS_0645, AM1
»2031_DS - 2031_DS_0745, AM2
»2031_DS - 2031_DS_1630, PM

Summary of junction performance

	AM1			AM2			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
	2031_DS - 2031_DS_0645								
Arm A	0.8	2.85	0.44						
Arm B	0.3	3.77	0.23						
Arm C	1.5	3.59	0.60						
Arm D	0.1	2.81	0.09						
Arm E	0.7	3.69	0.40						
	2031_DS - 2031_DS_0745								
Arm A				0.8	2.85	0.45			
Arm B				0.3	3.75	0.23			
Arm C				1.4	3.41	0.58			
Arm D				0.1	2.72	0.09			
Arm E				0.6	3.48	0.38			
	2031_DS - 2031_DS_1630								
Arm A							2.0	4.43	0.67
Arm B							0.3	5.11	0.24
Arm C							0.5	2.16	0.31
Arm D							0.1	2.38	0.13
Arm E							0.4	2.81	0.30

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

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

File summary

File Description

Title	2031_DS_M40J10_ArdleyEast_OpF_ArdleyEast7
Location	M40 J10
Site number	
Date	08/04/2021
Version	V1
Status	Preliminary
Identifier	[redacted]
Client	
Jobnumber	ADC1794
[redacted]	[redacted]
Description	Option Layout F BWB Option: 16 Flowset: ArdleyEast7

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15
D3	2031_DS_1630	PM	ONE HOUR	16:15	17:45	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	2031_DS	100.000

2031_DS - 2031_DS_0645, AM1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm E - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D, E	3.37	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Link Road (S)	
B	Ardley Road (W)	
C	Link Road (N)	
D	Ardley Road (E)	
E	M40 SB Slips	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	7.50	10.50	50.0	30.0	85.0	30.0	
B	3.50	7.50	50.0	30.0	85.0	30.0	
C	7.30	10.50	30.0	30.0	85.0	30.0	
D	3.50	8.50	50.0	30.0	85.0	30.0	
E	7.30	10.50	50.0	30.0	85.0	30.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.665	3085
B	0.518	2058
C	0.651	2983
D	0.544	2244
E	0.663	3066

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS_0645	AM1	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	912	100.000
B		✓	254	100.000
C		✓	1388	100.000
D		✓	121	100.000
E		✓	587	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		A	B	C	D	E
From	A	0	49	712	151	0
	B	26	0	39	189	0
	C	1240	16	0	132	0
	D	10	17	94	0	0
	E	334	1	245	7	0

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	2	29	0	0
	B	0	0	0	0	0
	C	8	0	0	0	0
	D	0	0	0	0	0
	E	28	0	13	0	9

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.44	2.85	0.8	A
B	0.23	3.77	0.3	A
C	0.60	3.59	1.5	A
D	0.09	2.81	0.1	A
E	0.40	3.69	0.7	A

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	687	285	2347	0.293	685	0.4	2.164	A
B	191	908	1496	0.128	191	0.1	2.756	A
C	1045	280	2609	0.400	1042	0.7	2.293	A
D	91	963	1679	0.054	91	0.1	2.267	A
E	442	1054	1908	0.232	441	0.3	2.451	A

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	820	341	2314	0.354	819	0.5	2.409	A
B	228	1086	1386	0.165	228	0.2	3.110	A
C	1248	335	2576	0.484	1247	0.9	2.705	A
D	109	1152	1568	0.069	109	0.1	2.467	A
E	528	1260	1787	0.295	527	0.4	2.858	A

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1004	418	2269	0.443	1003	0.8	2.843	A
B	280	1330	1235	0.227	279	0.3	3.765	A
C	1528	410	2530	0.604	1526	1.5	3.577	A
D	133	1409	1416	0.094	133	0.1	2.805	A
E	646	1542	1622	0.399	645	0.7	3.683	A

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1004	418	2268	0.443	1004	0.8	2.846	A
B	280	1331	1234	0.227	280	0.3	3.771	A
C	1528	411	2530	0.604	1528	1.5	3.592	A
D	133	1411	1415	0.094	133	0.1	2.808	A
E	646	1545	1620	0.399	646	0.7	3.694	A

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	820	342	2313	0.354	821	0.6	2.413	A
B	228	1088	1384	0.165	229	0.2	3.118	A
C	1248	336	2575	0.484	1250	0.9	2.720	A
D	109	1155	1566	0.069	109	0.1	2.470	A
E	528	1263	1785	0.296	529	0.4	2.869	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	687	286	2346	0.293	687	0.4	2.170	A
B	191	911	1494	0.128	191	0.1	2.765	A
C	1045	281	2609	0.401	1046	0.7	2.306	A
D	91	966	1677	0.054	91	0.1	2.272	A
E	442	1057	1906	0.232	442	0.3	2.462	A

2031_DS - 2031_DS_0745, AM2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm E - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D, E	3.25	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2031_DS_0745	AM2	ONE HOUR	07:30	09:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	927	100.000
B		✓	254	100.000
C		✓	1304	100.000
D		✓	121	100.000
E		✓	575	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		A	B	C	D	E
From	A	0	49	727	151	0
	B	26	0	39	189	0
	C	1157	16	0	131	0
	D	10	17	94	0	0
	E	344	1	222	8	0

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	2	29	0	61
	B	0	0	0	0	0
	C	10	0	0	0	0
	D	0	0	0	0	0
	E	27	0	13	0	5

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.45	2.85	0.8	A
B	0.23	3.75	0.3	A
C	0.58	3.41	1.4	A
D	0.09	2.72	0.1	A
E	0.38	3.48	0.6	A

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	698	269	2358	0.296	696	0.4	2.164	A
B	191	903	1499	0.128	191	0.1	2.749	A
C	982	281	2570	0.382	979	0.6	2.261	A
D	91	900	1706	0.053	91	0.1	2.228	A
E	433	991	1943	0.223	432	0.3	2.381	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	833	322	2328	0.358	833	0.6	2.408	A
B	228	1080	1390	0.164	228	0.2	3.099	A
C	1172	336	2537	0.462	1171	0.9	2.635	A
D	109	1077	1601	0.068	109	0.1	2.412	A
E	517	1186	1827	0.283	516	0.4	2.746	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1021	394	2285	0.447	1020	0.8	2.840	A
B	280	1322	1239	0.226	279	0.3	3.746	A
C	1436	411	2492	0.576	1434	1.3	3.397	A
D	133	1318	1457	0.091	133	0.1	2.719	A
E	633	1451	1669	0.379	632	0.6	3.469	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1021	394	2285	0.447	1021	0.8	2.846	A
B	280	1323	1239	0.226	280	0.3	3.752	A
C	1436	412	2491	0.576	1436	1.4	3.409	A
D	133	1320	1456	0.092	133	0.1	2.721	A
E	633	1453	1668	0.380	633	0.6	3.478	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	833	322	2327	0.358	834	0.6	2.412	A
B	228	1082	1388	0.164	229	0.2	3.107	A
C	1172	337	2536	0.462	1174	0.9	2.648	A
D	109	1080	1599	0.068	109	0.1	2.417	A
E	517	1189	1826	0.283	518	0.4	2.753	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	698	270	2358	0.296	698	0.4	2.171	A
B	191	906	1497	0.128	191	0.1	2.756	A
C	982	282	2569	0.382	983	0.6	2.272	A
D	91	904	1704	0.053	91	0.1	2.233	A
E	433	995	1941	0.223	433	0.3	2.387	A

2031_DS - 2031_DS_1630, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm A - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm B - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm E - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ardley East	Standard Roundabout		A, B, C, D, E	3.56	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2031_DS_1630	PM	ONE HOUR	16:15	17:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	1513	100.000
B		✓	198	100.000
C		✓	691	100.000
D		✓	197	100.000
E		✓	488	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		A	B	C	D	E
From	A	0	112	1265	136	0
	B	125	0	23	50	0
	C	620	24	0	47	0
	D	88	20	89	0	0
	E	210	3	268	7	0

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	1	13	0	23
	B	2	0	0	0	0
	C	15	0	0	0	0
	D	0	0	0	0	0
	E	39	0	18	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
A	0.67	4.43	2.0	A
B	0.24	5.11	0.3	A
C	0.31	2.16	0.5	A
D	0.13	2.38	0.1	A
E	0.30	2.81	0.4	A

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1139	309	2574	0.442	1136	0.8	2.498	A
B	149	1325	1277	0.117	149	0.1	3.187	A
C	520	239	2491	0.209	519	0.3	1.825	A
D	148	578	1891	0.078	148	0.1	2.065	A
E	367	726	2011	0.183	367	0.2	2.188	A

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1360	369	2534	0.537	1359	1.2	3.059	A
B	178	1585	1128	0.158	178	0.2	3.787	A
C	621	286	2464	0.252	621	0.3	1.953	A
D	177	691	1822	0.097	177	0.1	2.188	A
E	439	868	1929	0.227	438	0.3	2.415	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1666	452	2478	0.672	1662	2.0	4.393	A
B	218	1940	925	0.236	218	0.3	5.087	A
C	761	349	2427	0.313	760	0.5	2.160	A
D	217	846	1727	0.126	217	0.1	2.383	A
E	537	1063	1816	0.296	537	0.4	2.812	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1666	453	2478	0.672	1666	2.0	4.431	A
B	218	1943	923	0.236	218	0.3	5.107	A
C	761	350	2427	0.314	761	0.5	2.160	A
D	217	847	1726	0.126	217	0.1	2.384	A
E	537	1064	1816	0.296	537	0.4	2.815	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1360	370	2533	0.537	1364	1.2	3.085	A
B	178	1590	1125	0.158	178	0.2	3.806	A
C	621	287	2463	0.252	622	0.3	1.954	A
D	177	692	1821	0.097	177	0.1	2.190	A
E	439	869	1928	0.228	439	0.3	2.420	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	1139	310	2574	0.443	1141	0.8	2.514	A
B	149	1330	1274	0.117	149	0.1	3.201	A
C	520	240	2490	0.209	521	0.3	1.829	A
D	148	579	1890	0.078	148	0.1	2.068	A
E	367	728	2009	0.183	368	0.2	2.192	A

APPENDIX 33

Ardley East Roundabout junction option AE-6 – LinSig results

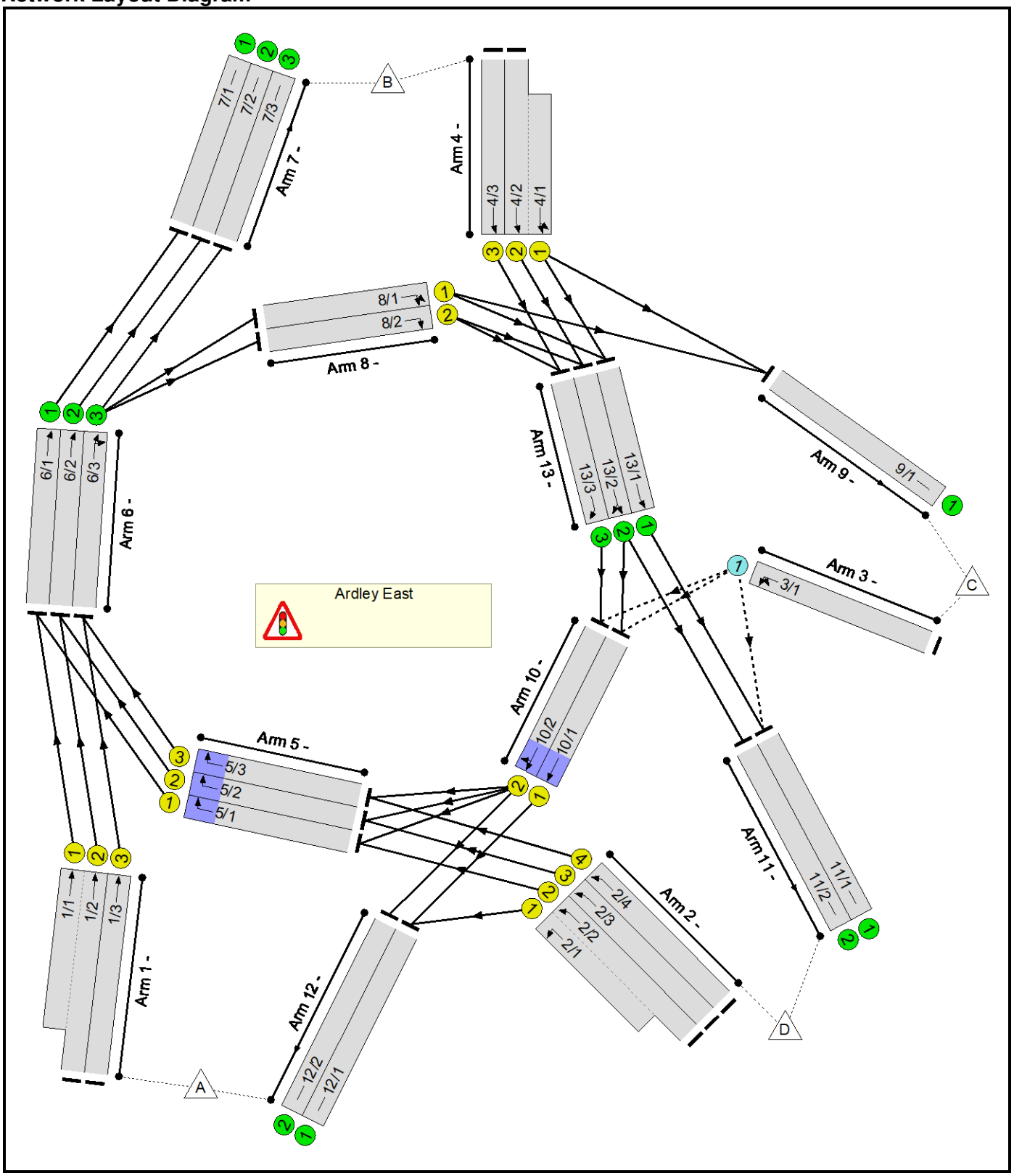
Full Input Data And Results

User and Project Details

Project:	**OxSRFI**
Title:	**Ardley East Roundabout**
Location:	
Design Layout Ref:	AE-6
Flow Details:	ArdleyEast6_AM ArdleyEast6_PM
Additional detail:	
File name:	2031_DS_M40J10_ArdleyEast_AE6_ArdleyEast6 (Signals Option).lsg3x
Author:	[redacted]
Company:	ADC Infrastructure Limited
Address:	King Edward Court, Nottingham NG1 3EW

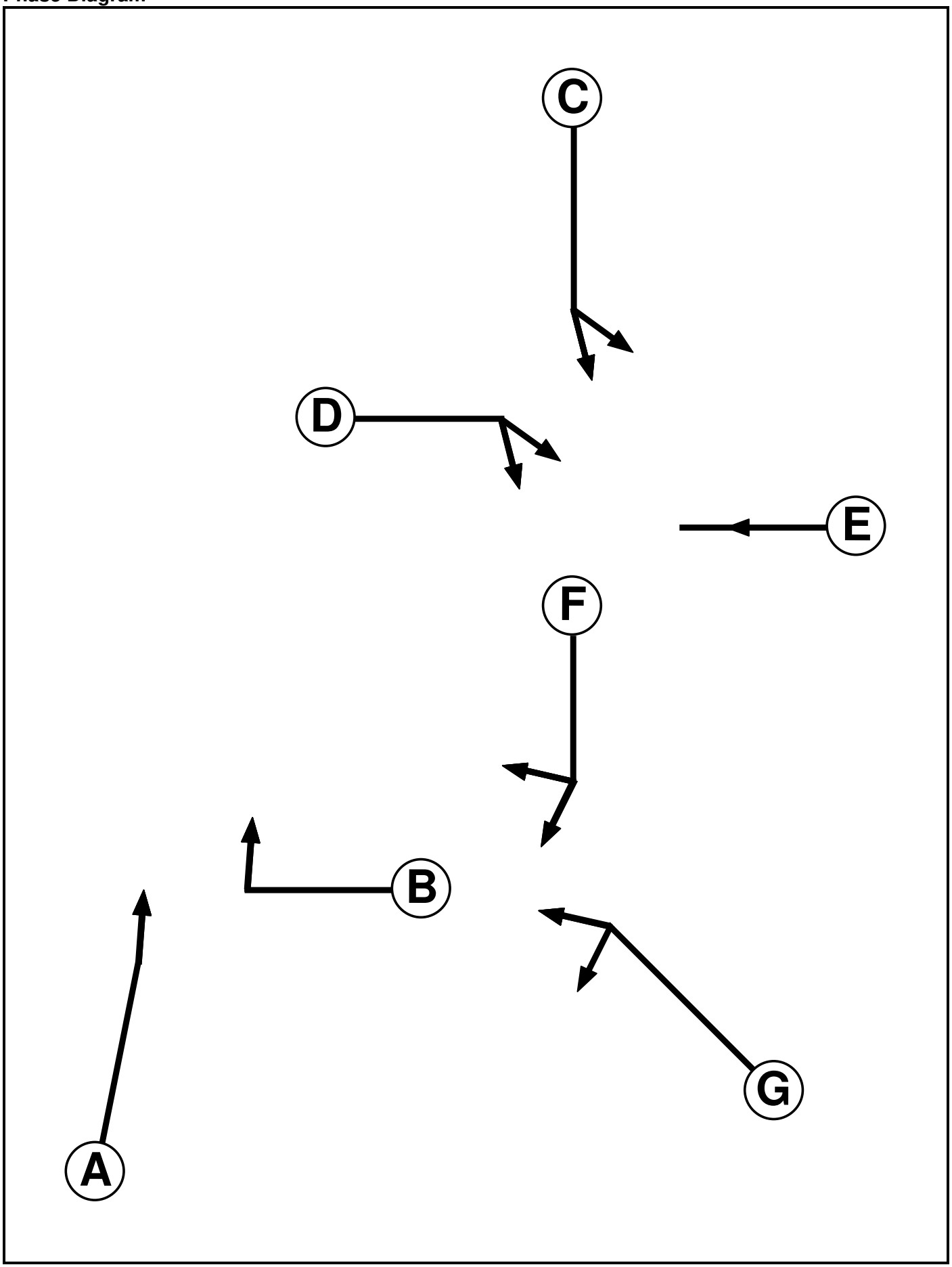
Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Full Input Data And Results

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
E	Traffic	2		7	7
F	Traffic	3		7	7
G	Traffic	3		7	7

Phase Intergreens Matrix

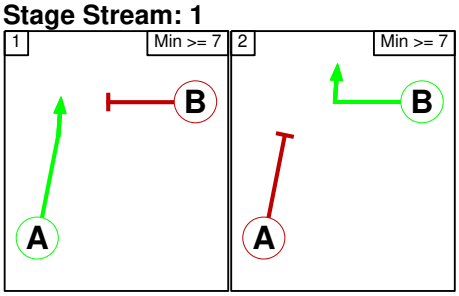
Terminating Phase \ Starting Phase	A	B	C	D	E	F	G
A		5	-	-	-	-	-
B	5		-	-	-	-	-
C	-	-		5	5	-	-
D	-	-	5		5	-	-
E	-	-	5	5		-	-
F	-	-	-	-	-		5
G	-	-	-	-	-	5	

Phases in Stage

Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	D
2	2	C
3	1	G
3	2	F

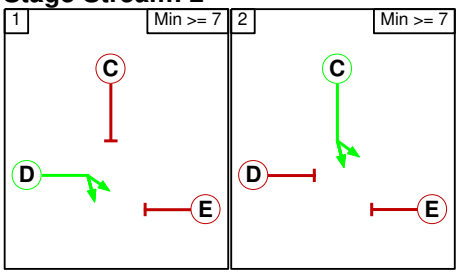
Stage Diagram

Stage Stream: 1

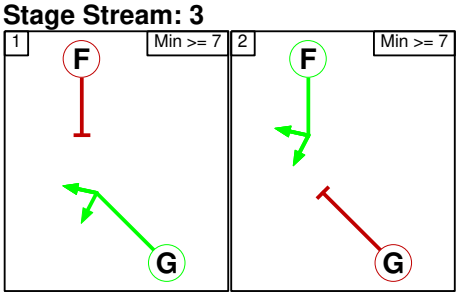


Full Input Data And Results

Stage Stream: 2



Stage Stream: 3



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					

Stage Stream: 3

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		5
	2	5	

Full Input Data And Results

Stage Stream: 3

	To Stage		
		1	2
From Stage	1		5
	2	5	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Ardley East											
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)**
3/1	10/1 (Left)	1000	0	13/1	0.33	All	-	-	-	-	-
				13/2	0.33	All					
	10/2 (Left)	1000	0	13/1	0.33	All					
				13/2	0.33	All					
				13/3	0.33	All					
	11/1 (U-Turn)	1000	0	13/1	0.33	All					

Lane Input Data

Junction: Ardley East

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	U	A	2	3	20.9	Geom	-	3.65	0.00	Y	Arm 6 Ahead	Inf
1/2	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 6 Ahead	Inf
1/3	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 6 Ahead	Inf
2/1	U	G	2	3	10.0	Geom	-	3.65	0.00	Y	Arm 12 Left	30.00
2/2	U	G	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 5 Ahead	45.00
2/3	U	G	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 5 Ahead	45.00
2/4	U	G	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 5 Ahead	45.00
3/1	O		2	3	60.0	User	1900	-	-	-	-	-
4/1	U	C	2	3	17.4	User	1900	-	-	-	-	-
4/2	U	C	2	3	60.0	User	1900	-	-	-	-	-
4/3	U	C	2	3	60.0	User	1900	-	-	-	-	-
5/1	U	B	2	3	9.6	User	1850	-	-	-	-	-
5/2	U	B	2	3	9.6	User	1850	-	-	-	-	-
5/3	U	B	2	3	9.6	User	1850	-	-	-	-	-
6/1	U		2	3	10.4	Inf	-	-	-	-	-	-
6/2	U		2	3	10.4	Inf	-	-	-	-	-	-
6/3	U		2	3	10.4	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/2	U		2	3	60.0	Inf	-	-	-	-	-	-
7/3	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U	D	2	3	5.2	User	1850	-	-	-	-	-
8/2	U	D	2	3	5.2	User	1850	-	-	-	-	-
9/1	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1	U	F	2	3	7.0	User	1850	-	-	-	-	-
10/2	U	F	2	3	7.0	User	1850	-	-	-	-	-
11/1	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1	U		2	3	60.0	Inf	-	-	-	-	-	-
12/2	U		2	3	60.0	Inf	-	-	-	-	-	-
13/1	U		2	3	8.7	Inf	-	-	-	-	-	-
13/2	U		2	3	8.7	Inf	-	-	-	-	-	-
13/3	U		2	3	8.7	Inf	-	-	-	-	-	-

Full Input Data And Results

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'ArdleyEast6 AM (Shoulder)'	06:45	07:45	01:00	
2: 'ArdleyEast6 AM'	07:45	08:45	01:00	
3: 'ArdleyEast PM'	16:30	17:30	01:00	

Scenario 1: '2031 ArdleyEast6 AM (Shoulder) 11, 13' (FG1: 'ArdleyEast6 AM (Shoulder)', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	737	151	231	1119
	B	1368	0	321	278	1967
	C	10	103	0	8	121
	D	428	1285	7	48	1768
	Tot.	1806	2125	479	565	4975

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 1: 2031 ArdleyEast6 AM (Shoulder) 11, 13
Junction: Ardley East	
1/1 (short)	368
1/2 (with short)	737(In) 369(Out)
1/3	382
2/1 (short)	428
2/2 (with short)	905(In) 477(Out)
2/3	430
2/4	433
3/1	121
4/1 (short)	578
4/2 (with short)	1411(In) 833(Out)
4/3	556
5/1	566
5/2	443
5/3	434
6/1	934
6/2	812
6/3	816
7/1	934
7/2	812
7/3	379
8/1	215
8/2	222
9/1	479
10/1	822
10/2	659
11/1	322
11/2	243
12/1	1250
12/2	556
13/1	314
13/2	1055
13/3	556

Full Input Data And Results

Lane Saturation Flows

Junction: Ardley East								
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	3.65	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1980	1980
1/2	3.65	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1980	1980
1/3	3.65	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1980	1980
2/1	3.65	0.00	Y	Arm 12 Left	30.00	100.0 %	1886	1886
2/2	3.65	0.00	Y	Arm 5 Ahead	45.00	100.0 %	1916	1916
2/3	3.65	0.00	Y	Arm 5 Ahead	45.00	100.0 %	1916	1916
2/4	3.65	0.00	Y	Arm 5 Ahead	45.00	100.0 %	1916	1916
3/1	This lane uses a directly entered Saturation Flow						1900	1900
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	This lane uses a directly entered Saturation Flow						1850	1850
5/2	This lane uses a directly entered Saturation Flow						1850	1850
5/3	This lane uses a directly entered Saturation Flow						1850	1850
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
6/3	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
7/3	Infinite Saturation Flow						Inf	Inf
8/1	This lane uses a directly entered Saturation Flow						1850	1850
8/2	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
10/1	This lane uses a directly entered Saturation Flow						1850	1850
10/2	This lane uses a directly entered Saturation Flow						1850	1850
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
13/2	Infinite Saturation Flow						Inf	Inf
13/3	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 2: '2031 ArdleyEast6 AM' (FG2: 'ArdleyEast6 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	754	151	232	1137
	B	1300	0	320	298	1918
	C	10	104	0	7	121
	D	437	1381	8	40	1866
	Tot.	1747	2239	479	577	5042

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: 2031 ArdleyEast6 AM
Junction: Ardley East	
1/1 (short)	377
1/2 (with short)	754(In) 377(Out)
1/3	383
2/1 (short)	437
2/2 (with short)	934(In) 497(Out)
2/3	466
2/4	466
3/1	121
4/1 (short)	585
4/2 (with short)	1385(In) 800(Out)
4/3	533
5/1	594
5/2	469
5/3	470
6/1	971
6/2	846
6/3	853
7/1	971
7/2	846
7/3	422
8/1	216
8/2	215
9/1	479
10/1	777
10/2	637
11/1	329
11/2	248
12/1	1214
12/2	533
13/1	322
13/2	1015
13/3	533

Full Input Data And Results

Lane Saturation Flows

Junction: Ardley East								
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	3.65	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1980	1980
1/2	3.65	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1980	1980
1/3	3.65	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1980	1980
2/1	3.65	0.00	Y	Arm 12 Left	30.00	100.0 %	1886	1886
2/2	3.65	0.00	Y	Arm 5 Ahead	45.00	100.0 %	1916	1916
2/3	3.65	0.00	Y	Arm 5 Ahead	45.00	100.0 %	1916	1916
2/4	3.65	0.00	Y	Arm 5 Ahead	45.00	100.0 %	1916	1916
3/1	This lane uses a directly entered Saturation Flow						1900	1900
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	This lane uses a directly entered Saturation Flow						1850	1850
5/2	This lane uses a directly entered Saturation Flow						1850	1850
5/3	This lane uses a directly entered Saturation Flow						1850	1850
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
6/3	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
7/3	Infinite Saturation Flow						Inf	Inf
8/1	This lane uses a directly entered Saturation Flow						1850	1850
8/2	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
10/1	This lane uses a directly entered Saturation Flow						1850	1850
10/2	This lane uses a directly entered Saturation Flow						1850	1850
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
13/2	Infinite Saturation Flow						Inf	Inf
13/3	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 3: '2031 ArdleyEast6 PM' (FG3: 'ArdleyEast PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	1141	136	401	1678
	B	840	0	97	259	1196
	C	88	106	0	3	197
	D	291	1908	7	67	2273
	Tot.	1219	3155	240	730	5344

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 3: 2031 ArdleyEast6 PM
Junction: Ardley East	
1/1 (short)	570
1/2 (with short)	1141(In) 571(Out)
1/3	537
2/1 (short)	291
2/2 (with short)	937(In) 646(Out)
2/3	668
2/4	668
3/1	197
4/1 (short)	356
4/2 (with short)	882(In) 526(Out)
4/3	314
5/1	690
5/2	699
5/3	699
6/1	1260
6/2	1270
6/3	1236
7/1	1260
7/2	1270
7/3	625
8/1	284
8/2	327
9/1	240
10/1	614
10/2	420
11/1	403
11/2	327
12/1	905
12/2	314
13/1	400
13/2	853
13/3	314

Full Input Data And Results

Lane Saturation Flows

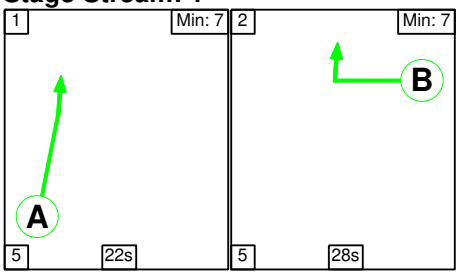
Junction: Ardley East								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1	3.65	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1980	1980
1/2	3.65	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1980	1980
1/3	3.65	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1980	1980
2/1	3.65	0.00	Y	Arm 12 Left	30.00	100.0 %	1886	1886
2/2	3.65	0.00	Y	Arm 5 Ahead	45.00	100.0 %	1916	1916
2/3	3.65	0.00	Y	Arm 5 Ahead	45.00	100.0 %	1916	1916
2/4	3.65	0.00	Y	Arm 5 Ahead	45.00	100.0 %	1916	1916
3/1	This lane uses a directly entered Saturation Flow						1900	1900
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	This lane uses a directly entered Saturation Flow						1850	1850
5/2	This lane uses a directly entered Saturation Flow						1850	1850
5/3	This lane uses a directly entered Saturation Flow						1850	1850
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
6/3	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
7/3	Infinite Saturation Flow						Inf	Inf
8/1	This lane uses a directly entered Saturation Flow						1850	1850
8/2	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
10/1	This lane uses a directly entered Saturation Flow						1850	1850
10/2	This lane uses a directly entered Saturation Flow						1850	1850
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
13/2	Infinite Saturation Flow						Inf	Inf
13/3	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

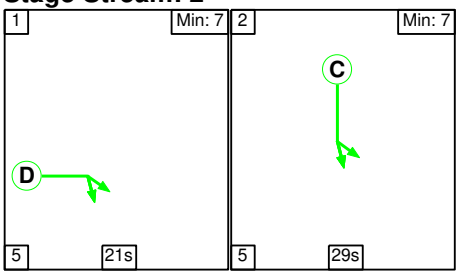
Scenario 1: '2031 ArdleyEast6 AM (Shoulder) 11, 13' (FG1: 'ArdleyEast6 AM (Shoulder)', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

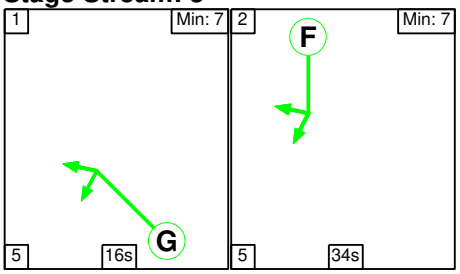
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	22	28
Change Point	0	27

Stage Stream: 2

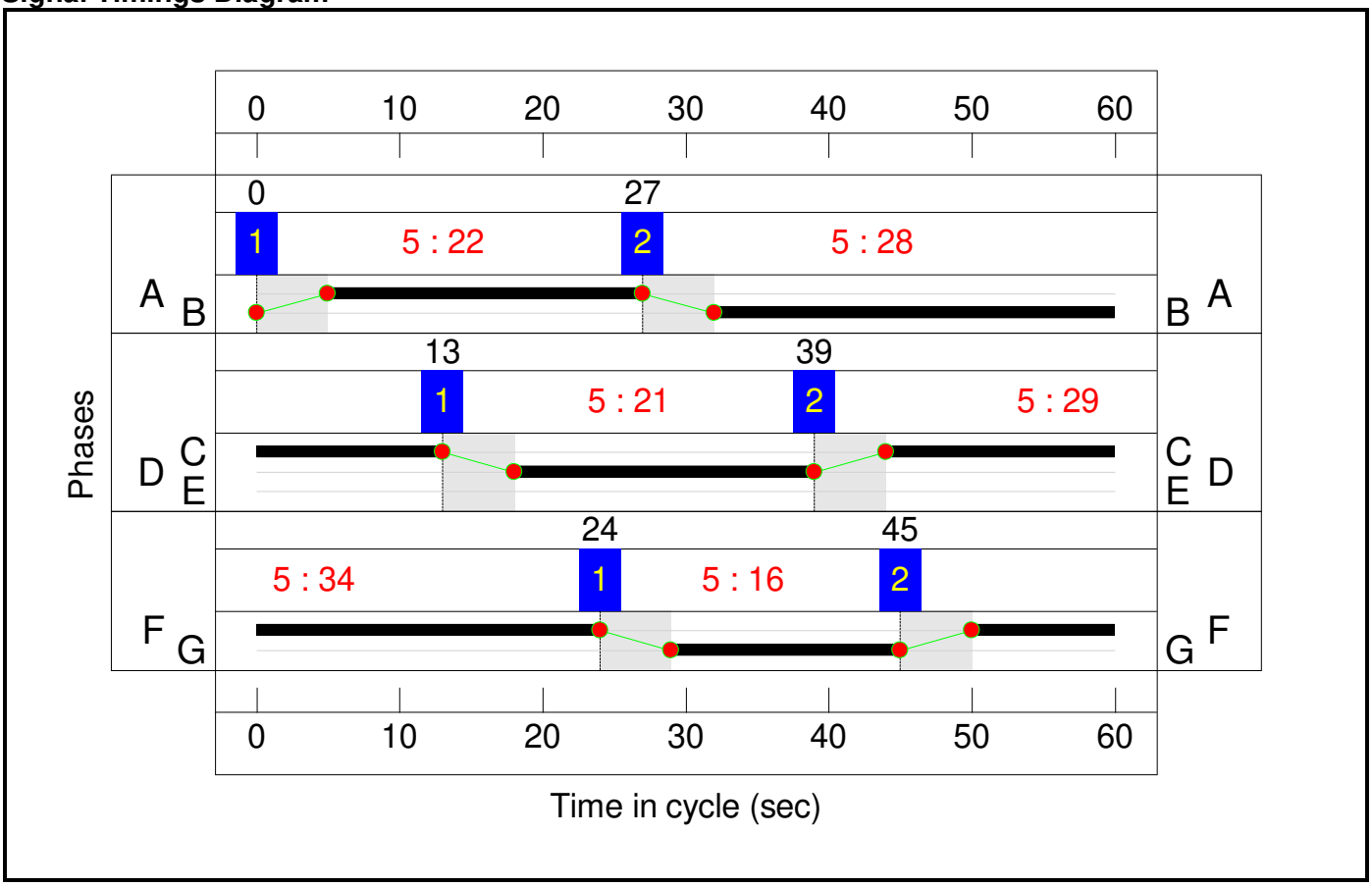
Stage	1	2
Duration	21	29
Change Point	13	39

Stage Stream: 3

Stage	1	2
Duration	16	34
Change Point	24	45

Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ardley East Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.9%**
Ardley East	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.9%**
1/2+1/1	Ahead	U	1	N/A	A		1	22	-	737	1980:1980	759+759	48.6 : 48.5%
1/3	Ahead	U	1	N/A	A		1	22	-	382	1980	759	50.3%
2/2+2/1	Ahead Left	U	3	N/A	G		1	16	-	905	1916:1886	543+487	87.9 : 87.9%
2/3	Ahead	U	3	N/A	G		1	16	-	430	1916	543	79.2%
2/4	Ahead	U	3	N/A	G		1	16	-	433	1916	543	79.8%
3/1	Left U-Turn	O	N/A	N/A	-		-	-	-	121	1900	467	25.9%
4/2+4/1	Left Ahead	U	2	N/A	C		1	29	-	1411	1900:1900	950+659	87.7 : 87.7%
4/3	Ahead	U	2	N/A	C		1	29	-	556	1900	950	58.5%
5/1	Right	U	1	N/A	B		1	28	-	566	1850	894	63.3%
5/2	Right	U	1	N/A	B		1	28	-	443	1850	894	49.5%
5/3	Right	U	1	N/A	B		1	28	-	434	1850	894	48.5%
6/1	Ahead	U	N/A	N/A	-		-	-	-	934	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	812	Inf	Inf	0.0%
6/3	Ahead Right	U	N/A	N/A	-		-	-	-	816	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	934	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	812	Inf	Inf	0.0%
7/3		U	N/A	N/A	-		-	-	-	379	Inf	Inf	0.0%
8/1	Ahead Right	U	2	N/A	D		1	21	-	215	1850	678	31.7%
8/2	Right	U	2	N/A	D		1	21	-	222	1850	678	32.7%
9/1		U	N/A	N/A	-		-	-	-	479	Inf	Inf	0.0%
10/1	Ahead	U	3	N/A	F		1	34	-	822	1850	1079	76.2%
10/2	Right Ahead	U	3	N/A	F		1	34	-	659	1850	1079	61.1%
11/1		U	N/A	N/A	-		-	-	-	322	Inf	Inf	0.0%

Full Input Data And Results

11/2		U	N/A	N/A	-		-	-	-	243	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	1250	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	556	Inf	Inf	0.0%
13/1	Ahead	U	N/A	N/A	-		-	-	-	314	Inf	Inf	0.0%
13/2	Ahead Ahead2	U	N/A	N/A	-		-	-	-	1055	Inf	Inf	0.0%
13/3	Ahead	U	N/A	N/A	-		-	-	-	556	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ardley East Roundabout	**-**	**-**	**121**	**0**	**0**	**22.2**	**13.3**	**0.0**	**35.5**	**-**	**-**	**-**	**-**
Ardley East	**-**	**-**	**121**	**0**	**0**	**22.2**	**13.3**	**0.0**	**35.5**	**-**	**-**	**-**	**-**
1/2+1/1	737	737	-	-	-	2.9	0.5	-	3.3 (1.7+1.7)	16.3 (16.3:16.3)	4.6	0.5	5.1
1/3	382	382	-	-	-	1.5	0.5	-	2.0	18.9	4.8	0.5	5.3
2/2+2/1	905	905	-	-	-	5.1	3.4	-	8.5 (4.5+4.0)	33.9 (34.2:33.6)	7.6	3.4	11.0
2/3	430	430	-	-	-	2.4	1.8	-	4.2	35.3	6.6	1.8	8.4
2/4	433	433	-	-	-	2.4	1.9	-	4.3	35.7	6.6	1.9	8.5
3/1	121	121	121	0	0	0.2	0.2	-	0.3	9.9	0.9	0.2	1.1
4/2+4/1	1411	1411	-	-	-	4.8	3.4	-	8.3 (5.1+3.1)	21.1 (22.1:19.6)	12.3	3.4	15.7
4/3	556	556	-	-	-	1.6	0.7	-	2.3	15.2	6.5	0.7	7.2
5/1	566	566	-	-	-	0.3	0.0	-	0.3	1.6	0.8	0.0	0.8
5/2	443	443	-	-	-	0.0	0.0	-	0.0	0.2	0.1	0.0	0.1
5/3	434	434	-	-	-	0.0	0.0	-	0.0	0.1	0.1	0.0	0.1
6/1	934	934	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	812	812	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/3	816	816	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	934	934	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	812	812	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/3	379	379	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	215	215	-	-	-	0.4	0.0	-	0.4	6.5	2.8	0.0	2.8
8/2	222	222	-	-	-	0.4	0.0	-	0.4	6.1	2.9	0.0	2.9
9/1	479	479	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	822	822	-	-	-	0.0	0.0	-	0.0	0.1	0.2	0.0	0.2
10/2	659	659	-	-	-	0.3	0.8	-	1.1	5.8	0.9	0.8	1.7

Full Input Data And Results

11/1	322	322	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	243	243	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	1250	1250	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	556	556	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	314	314	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	1055	1055	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/3	556	556	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

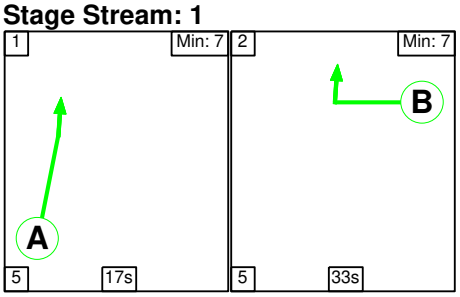
C1	Stream: 1 PRC for Signalled Lanes (%):	42.2	Total Delay for Signalled Lanes (pcuHr):	5.64	Cycle Time (s): 60
C1	Stream: 2 PRC for Signalled Lanes (%):	2.6	Total Delay for Signalled Lanes (pcuHr):	11.37	Cycle Time (s): 60
C1	Stream: 3 PRC for Signalled Lanes (%):	2.4	Total Delay for Signalled Lanes (pcuHr):	18.12	Cycle Time (s): 60
	PRC Over All Lanes (%):	2.4	Total Delay Over All Lanes(pcuHr):	35.47	

Full Input Data And Results

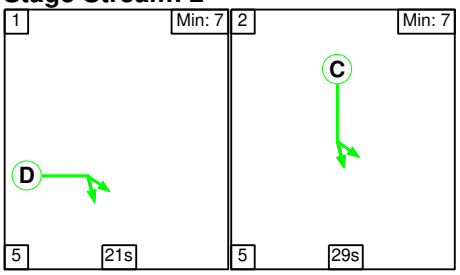
Scenario 2: '2031 ArdleyEast6 AM' (FG2: 'ArdleyEast6 AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

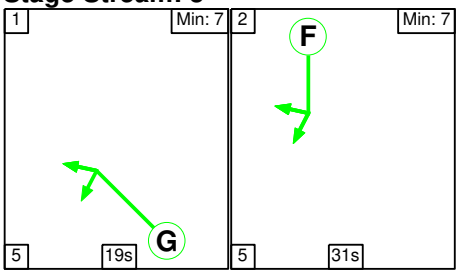
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	17	33
Change Point	0	22

Stage Stream: 2

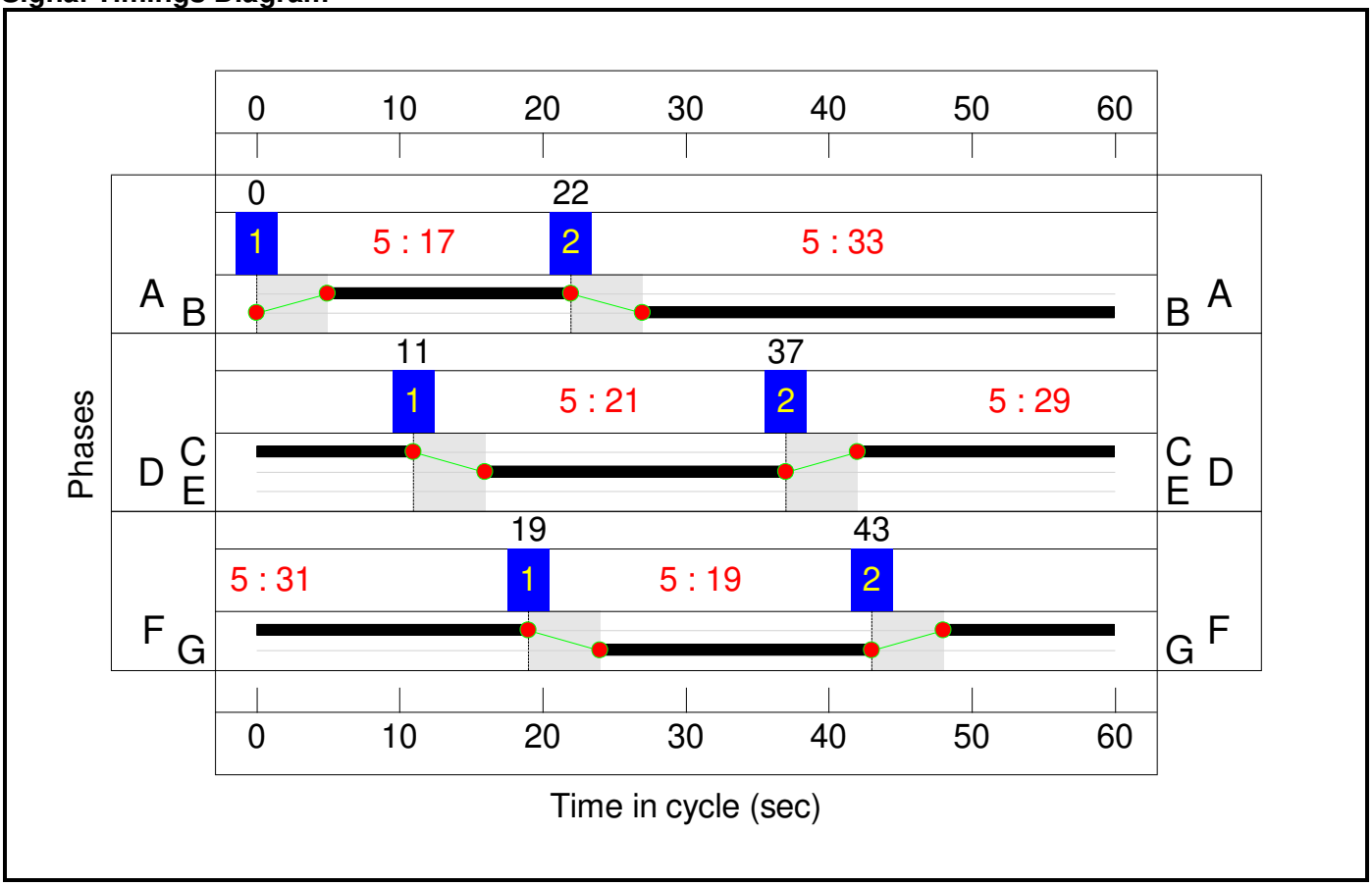
Stage	1	2
Duration	21	29
Change Point	11	37

Stage Stream: 3

Stage	1	2
Duration	19	31
Change Point	19	43

Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ardley East Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.3%**
Ardley East	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.3%**
1/2+1/1	Ahead	U	1	N/A	A		1	17	-	754	1980:1980	594+594	63.5 : 63.5%
1/3	Ahead	U	1	N/A	A		1	17	-	383	1980	594	64.5%
2/2+2/1	Ahead Left	U	3	N/A	G		1	19	-	934	1916:1886	617+542	80.6 : 80.6%
2/3	Ahead	U	3	N/A	G		1	19	-	466	1916	639	73.0%
2/4	Ahead	U	3	N/A	G		1	19	-	466	1916	639	73.0%
3/1	Left U-Turn	O	N/A	N/A	-		-	-	-	121	1900	481	25.1%
4/2+4/1	Left Ahead	U	2	N/A	C		1	29	-	1385	1900:1900	950+694	84.2 : 84.3%
4/3	Ahead	U	2	N/A	C		1	29	-	533	1900	950	56.1%
5/1	Right	U	1	N/A	B		1	33	-	594	1850	1048	56.7%
5/2	Right	U	1	N/A	B		1	33	-	469	1850	1048	44.7%
5/3	Right	U	1	N/A	B		1	33	-	470	1850	1048	44.8%
6/1	Ahead	U	N/A	N/A	-		-	-	-	971	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	846	Inf	Inf	0.0%
6/3	Ahead Right	U	N/A	N/A	-		-	-	-	853	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	971	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	846	Inf	Inf	0.0%
7/3		U	N/A	N/A	-		-	-	-	422	Inf	Inf	0.0%
8/1	Ahead Right	U	2	N/A	D		1	21	-	216	1850	678	31.8%
8/2	Right	U	2	N/A	D		1	21	-	215	1850	678	31.7%
9/1		U	N/A	N/A	-		-	-	-	479	Inf	Inf	0.0%
10/1	Ahead	U	3	N/A	F		1	31	-	777	1850	987	78.8%
10/2	Right Ahead	U	3	N/A	F		1	31	-	637	1850	987	64.6%
11/1		U	N/A	N/A	-		-	-	-	329	Inf	Inf	0.0%

Full Input Data And Results

11/2		U	N/A	N/A	-		-	-	-	248	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	1214	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	533	Inf	Inf	0.0%
13/1	Ahead	U	N/A	N/A	-		-	-	-	322	Inf	Inf	0.0%
13/2	Ahead Ahead2	U	N/A	N/A	-		-	-	-	1015	Inf	Inf	0.0%
13/3	Ahead	U	N/A	N/A	-		-	-	-	533	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ardley East Roundabout	**-**	**-**	**121**	**0**	**0**	**22.4**	**10.8**	**0.0**	**33.2**	**-**	**-**	**-**	**-**
Ardley East	**-**	**-**	**121**	**0**	**0**	**22.4**	**10.8**	**0.0**	**33.2**	**-**	**-**	**-**	**-**
1/2+1/1	754	754	-	-	-	3.8	0.9	-	4.7 (2.3+2.3)	22.3 (22.3:22.3)	5.3	0.9	6.2
1/3	383	383	-	-	-	1.9	0.9	-	2.8	26.7	5.5	0.9	6.4
2/2+2/1	934	934	-	-	-	4.6	2.0	-	6.6 (3.6+3.1)	25.5 (25.9:25.2)	7.5	2.0	9.5
2/3	466	466	-	-	-	2.3	1.3	-	3.6	27.9	6.7	1.3	8.1
2/4	466	466	-	-	-	2.3	1.3	-	3.6	27.9	6.7	1.3	8.1
3/1	121	121	121	0	0	0.1	0.2	-	0.3	9.1	0.9	0.2	1.0
4/2+4/1	1385	1385	-	-	-	4.6	2.6	-	7.3 (4.4+2.9)	18.9 (19.8:17.6)	11.3	2.6	14.0
4/3	533	533	-	-	-	1.5	0.6	-	2.2	14.7	6.1	0.6	6.7
5/1	594	594	-	-	-	0.2	0.0	-	0.2	1.4	0.8	0.0	0.8
5/2	469	469	-	-	-	0.0	0.0	-	0.0	0.1	0.1	0.0	0.1
5/3	470	470	-	-	-	0.0	0.0	-	0.0	0.1	0.1	0.0	0.1
6/1	971	971	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	846	846	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/3	853	853	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	971	971	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	846	846	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/3	422	422	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	216	216	-	-	-	0.2	0.0	-	0.2	4.0	2.2	0.0	2.2
8/2	215	215	-	-	-	0.3	0.0	-	0.3	4.3	2.2	0.0	2.2
9/1	479	479	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	777	777	-	-	-	0.1	0.0	-	0.1	0.2	0.3	0.0	0.3
10/2	637	637	-	-	-	0.4	0.9	-	1.3	7.2	1.7	0.9	2.7

Full Input Data And Results

11/1	329	329	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	248	248	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	1214	1214	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	533	533	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	322	322	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	1015	1015	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/3	533	533	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

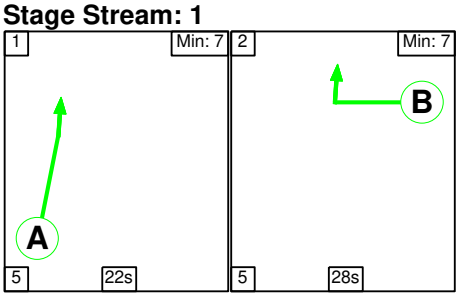
C1	Stream: 1 PRC for Signalled Lanes (%):	39.6	Total Delay for Signalled Lanes (pcuHr):	7.76	Cycle Time (s): 60
C1	Stream: 2 PRC for Signalled Lanes (%):	6.8	Total Delay for Signalled Lanes (pcuHr):	9.94	Cycle Time (s): 60
C1	Stream: 3 PRC for Signalled Lanes (%):	11.7	Total Delay for Signalled Lanes (pcuHr):	15.17	Cycle Time (s): 60
	PRC Over All Lanes (%):	6.8	Total Delay Over All Lanes(pcuHr):	33.18	

Full Input Data And Results

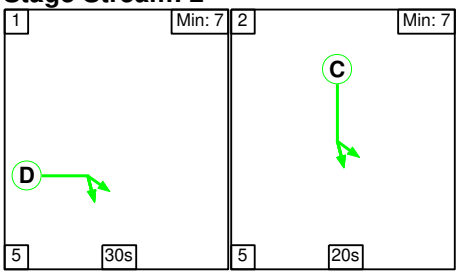
Scenario 3: '2031 ArdleyEast6 PM' (FG3: 'ArdleyEast PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

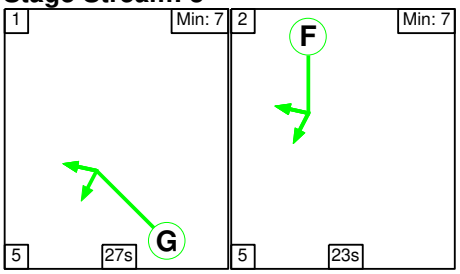
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	22	28
Change Point	0	27

Stage Stream: 2

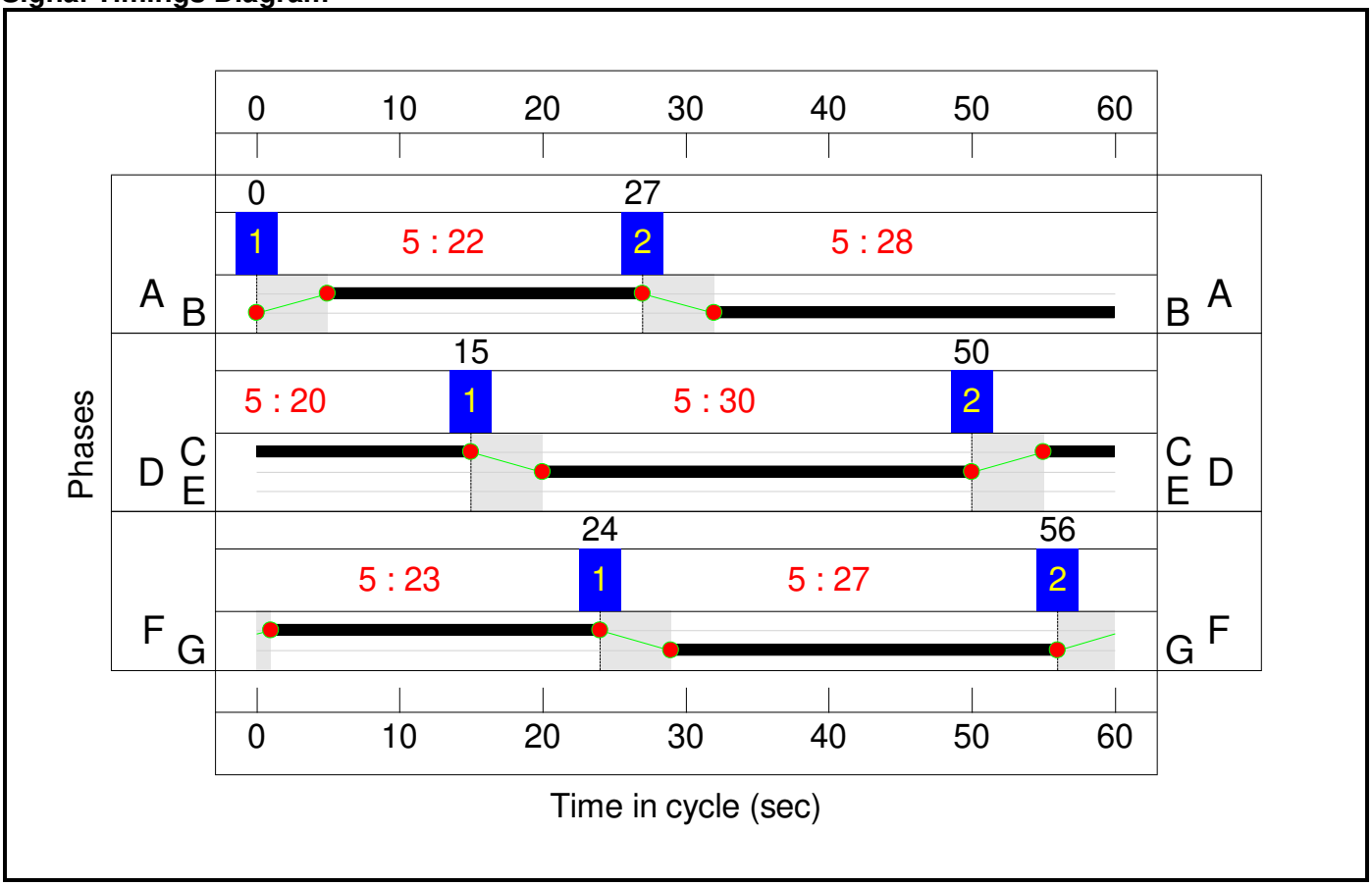
Stage	1	2
Duration	30	20
Change Point	15	50

Stage Stream: 3

Stage	1	2
Duration	27	23
Change Point	24	56

Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ardley East Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**83.0%**
Ardley East	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**83.0%**
1/2+1/1	Ahead	U	1	N/A	A		1	22	-	1141	1980:1980	759+759	75.2 : 75.1%
1/3	Ahead	U	1	N/A	A		1	22	-	537	1980	759	70.8%
2/2+2/1	Ahead Left	U	3	N/A	G		1	27	-	937	1916:1886	797+359	81.0 : 81.0%
2/3	Ahead	U	3	N/A	G		1	27	-	668	1916	894	74.7%
2/4	Ahead	U	3	N/A	G		1	27	-	668	1916	894	74.7%
3/1	Left U-Turn	O	N/A	N/A	-		-	-	-	197	1900	568	34.7%
4/2+4/1	Left Ahead	U	2	N/A	C		1	20	-	882	1900:1900	665+492	79.1 : 72.4%
4/3	Ahead	U	2	N/A	C		1	20	-	314	1900	665	47.2%
5/1	Right	U	1	N/A	B		1	28	-	690	1850	894	77.2%
5/2	Right	U	1	N/A	B		1	28	-	699	1850	894	78.2%
5/3	Right	U	1	N/A	B		1	28	-	699	1850	894	78.2%
6/1	Ahead	U	N/A	N/A	-		-	-	-	1260	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	1270	Inf	Inf	0.0%
6/3	Ahead Right	U	N/A	N/A	-		-	-	-	1236	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1260	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	1270	Inf	Inf	0.0%
7/3		U	N/A	N/A	-		-	-	-	625	Inf	Inf	0.0%
8/1	Ahead Right	U	2	N/A	D		1	30	-	284	1850	956	29.7%
8/2	Right	U	2	N/A	D		1	30	-	327	1850	956	34.2%
9/1		U	N/A	N/A	-		-	-	-	240	Inf	Inf	0.0%
10/1	Ahead	U	3	N/A	F		1	23	-	614	1850	740	83.0%
10/2	Right Ahead	U	3	N/A	F		1	23	-	420	1850	740	56.8%
11/1		U	N/A	N/A	-		-	-	-	403	Inf	Inf	0.0%

Full Input Data And Results

11/2		U	N/A	N/A	-		-	-	-	327	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	905	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	314	Inf	Inf	0.0%
13/1	Ahead	U	N/A	N/A	-		-	-	-	400	Inf	Inf	0.0%
13/2	Ahead Ahead2	U	N/A	N/A	-		-	-	-	853	Inf	Inf	0.0%
13/3	Ahead	U	N/A	N/A	-		-	-	-	314	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ardley East Roundabout	**-**	**-**	**197**	**0**	**0**	**23.7**	**10.7**	**0.0**	**34.4**	**-**	**-**	**-**	**-**
Ardley East	**-**	**-**	**197**	**0**	**0**	**23.7**	**10.7**	**0.0**	**34.4**	**-**	**-**	**-**	**-**
1/2+1/1	1141	1141	-	-	-	5.1	1.5	-	6.6 (3.3+3.3)	20.8 (20.8:20.8)	8.1	1.5	9.6
1/3	537	537	-	-	-	2.3	1.2	-	3.5	23.7	7.5	1.2	8.7
2/2+2/1	937	937	-	-	-	3.1	2.1	-	5.2 (3.8+1.5)	20.1 (20.9:18.2)	8.6	2.1	10.7
2/3	668	668	-	-	-	2.4	1.5	-	3.9	21.0	9.1	1.5	10.6
2/4	668	668	-	-	-	2.4	1.5	-	3.9	21.0	9.1	1.5	10.6
3/1	197	197	197	0	0	0.1	0.3	-	0.4	6.9	1.0	0.3	1.2
4/2+4/1	882	882	-	-	-	4.1	1.6	-	5.7 (3.5+2.2)	23.2 (24.0:22.1)	7.7	1.6	9.3
4/3	314	314	-	-	-	1.3	0.4	-	1.8	20.3	4.0	0.4	4.5
5/1	690	690	-	-	-	0.4	0.0	-	0.4	2.2	0.8	0.0	0.8
5/2	699	699	-	-	-	0.3	0.0	-	0.3	1.5	1.3	0.0	1.3
5/3	699	699	-	-	-	0.3	0.0	-	0.3	1.5	1.3	0.0	1.3
6/1	1260	1260	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	1270	1270	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/3	1236	1236	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1260	1260	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	1270	1270	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/3	625	625	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	284	284	-	-	-	0.4	0.0	-	0.4	4.9	3.7	0.0	3.7
8/2	327	327	-	-	-	0.4	0.0	-	0.4	4.7	4.5	0.0	4.5
9/1	240	240	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	614	614	-	-	-	0.5	0.0	-	0.5	2.9	1.8	0.0	1.8
10/2	420	420	-	-	-	0.5	0.7	-	1.1	9.6	2.4	0.7	3.1

Full Input Data And Results

11/1	403	403	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	327	327	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	905	905	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	314	314	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	400	400	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	853	853	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/3	314	314	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1	Stream: 1 PRC for Signalled Lanes (%):	15.1	Total Delay for Signalled Lanes (pcuHr):	11.14	Cycle Time (s): 60
C1	Stream: 2 PRC for Signalled Lanes (%):	13.8	Total Delay for Signalled Lanes (pcuHr):	8.28	Cycle Time (s): 60
C1	Stream: 3 PRC for Signalled Lanes (%):	8.5	Total Delay for Signalled Lanes (pcuHr):	14.61	Cycle Time (s): 60
	PRC Over All Lanes (%):	8.5	Total Delay Over All Lanes(pcuHr):	34.40	

APPENDIX 34

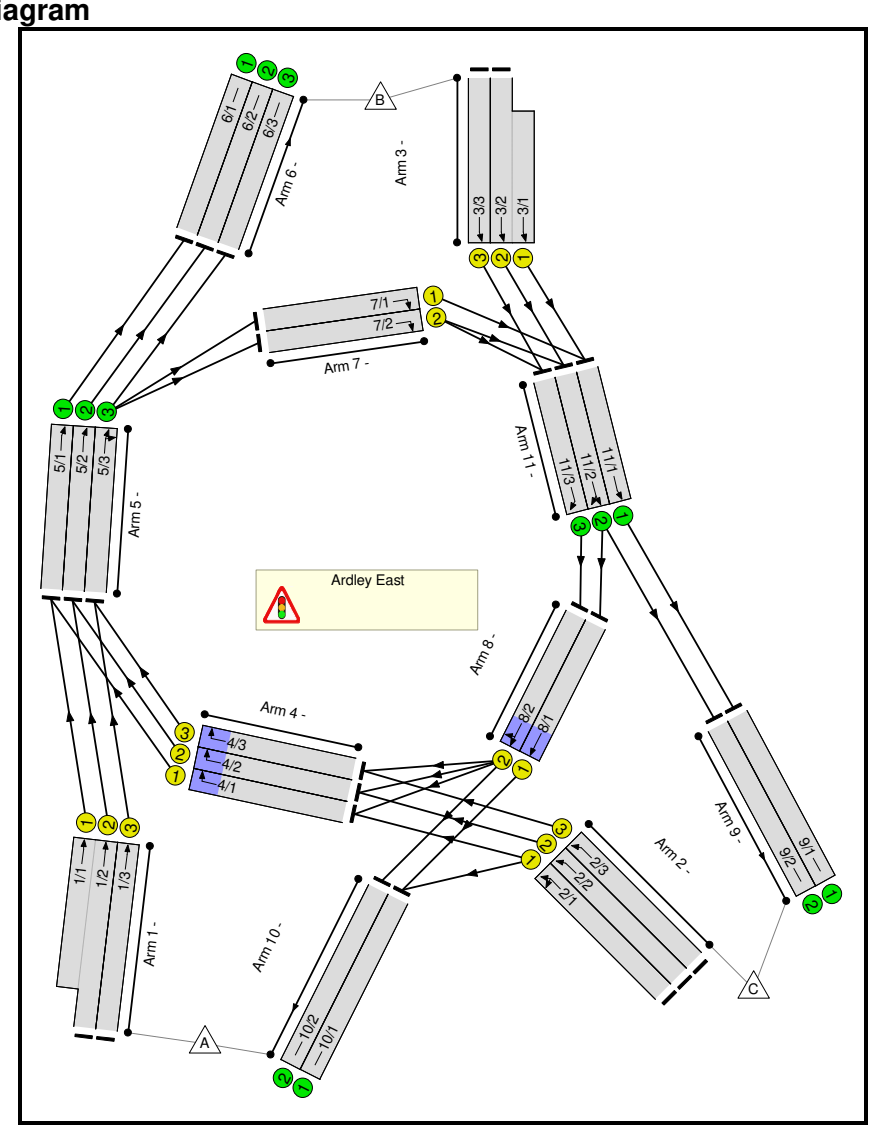
Ardley East Roundabout junction option AE-8 – LinSig results

Full Input Data And Results

User and Project Details

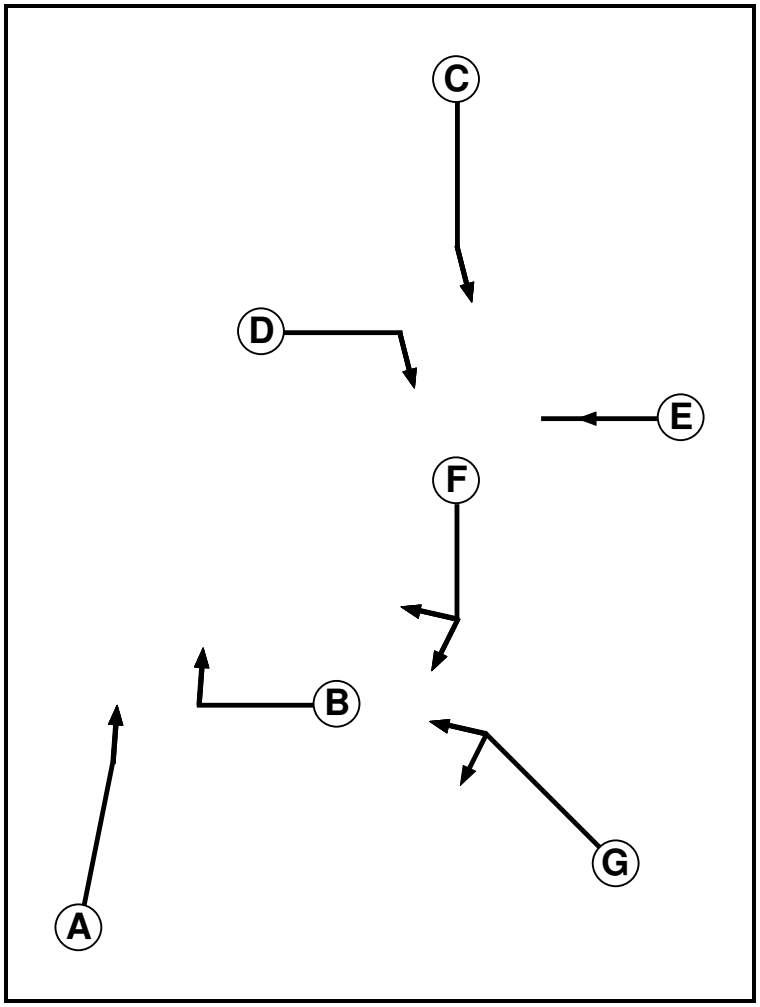
Project:	**OxSRFI**
Title:	**Ardley East Roundabout**
Location:	
Design Layout Ref:	AE-8
Flow Details:	ArdleyEast9_AM ArdleyEast9_PM
Additional detail:	
File name:	2031_DS_M40J10_ArdleyEast_AE8_ArdleyEast9 (Signals Option) - No Ardley Rd Link.lsg3x
Author:	
Company:	ADC Infrastructure Limited
Address:	King Edward Court, Nottingham NG1 3EW

Network Layout Diagram



Full Input Data And Results

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
E	Traffic	2		7	7
F	Traffic	3		7	7
G	Traffic	3		7	7

Full Input Data And Results

Phase Intergreens Matrix

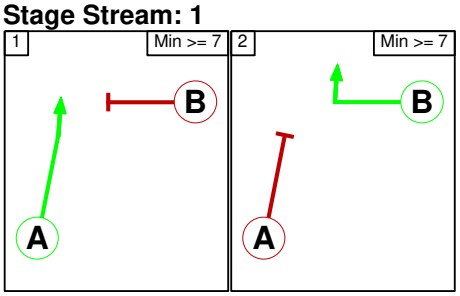
Terminating Phase	Starting Phase A	B	C	D	E	F	G
A		5	-	-	-	-	-
B	5		-	-	-	-	-
C	-	-		5	5	-	-
D	-	-	5		5	-	-
E	-	-	5	5		-	-
F	-	-	-	-	-		5
G	-	-	-	-	-	5	

Phases in Stage

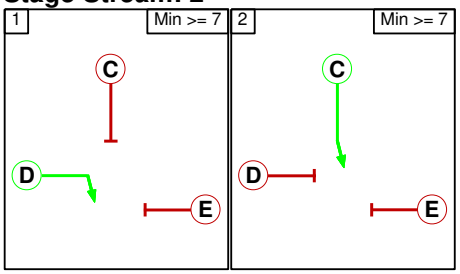
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	D
2	2	C
3	1	G
3	2	F

Stage Diagram

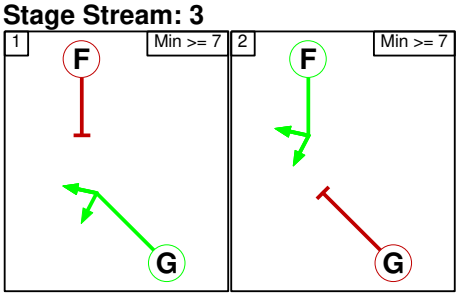
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Full Input Data And Results

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					

Stage Stream: 3

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		5
	2	5	

Stage Stream: 3

	To Stage		
From Stage		1	2
	1		5
	2	5	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Ardley East
There are no Opposed Lanes in this Junction

Full Input Data And Results

Lane Input Data

Junction: Ardley East												
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	U	A	2	3	20.9	Geom	-	3.65	0.00	Y	Arm 5 Ahead	Inf
1/2	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 5 Ahead	Inf
1/3	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 5 Ahead	Inf
2/1	U	G	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Ahead	50.00
											Arm 10 Left	50.00
2/2	U	G	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Ahead	50.00
2/3	U	G	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Ahead	50.00
3/1	U	C	2	3	17.4	User	1900	-	-	-	-	-
3/2	U	C	2	3	60.0	User	1900	-	-	-	-	-
3/3	U	C	2	3	60.0	User	1900	-	-	-	-	-
4/1	U	B	2	3	9.6	User	1850	-	-	-	-	-
4/2	U	B	2	3	9.6	User	1850	-	-	-	-	-
4/3	U	B	2	3	9.6	User	1850	-	-	-	-	-
5/1	U		2	3	10.4	Inf	-	-	-	-	-	-
5/2	U		2	3	10.4	Inf	-	-	-	-	-	-
5/3	U		2	3	10.4	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2	U		2	3	60.0	Inf	-	-	-	-	-	-
6/3	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U	D	2	3	5.2	User	1850	-	-	-	-	-
7/2	U	D	2	3	5.2	User	1850	-	-	-	-	-
8/1	U	F	2	3	7.0	User	1850	-	-	-	-	-
8/2	U	F	2	3	7.0	User	1850	-	-	-	-	-
9/1	U		2	3	60.0	Inf	-	-	-	-	-	-
9/2	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1	U		2	3	60.0	Inf	-	-	-	-	-	-
10/2	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1	U		2	3	8.7	Inf	-	-	-	-	-	-
11/2	U		2	3	8.7	Inf	-	-	-	-	-	-
11/3	U		2	3	8.7	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'ArdleyEast6_AM'	07:45	08:45	01:00	
2: 'ArdleyEast6_PM'	16:30	17:30	01:00	

Scenario 1: '2031 ArdleyEast6 AM' (FG1: 'ArdleyEast6_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	754	232	986
	B	1300	0	298	1598
	C	437	1381	40	1858
	Tot.	1737	2135	570	4442

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 1: 2031 ArdleyEast6 AM
Junction: Ardley East	
1/1 (short)	356
1/2 (with short)	713(In) 357(Out)
1/3	273
2/1	622
2/2	618
2/3	618
3/1 (short)	298
3/2 (with short)	1030(In) 732(Out)
3/3	568
4/1	185
4/2	618
4/3	618
5/1	541
5/2	975
5/3	891
6/1	541
6/2	975
6/3	619
7/1	138
7/2	134
8/1	732
8/2	568
9/1	436
9/2	134
10/1	1169
10/2	568
11/1	436
11/2	866
11/3	568

Full Input Data And Results

Lane Saturation Flows

Junction: Ardley East								
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	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
1/2	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
1/3	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
2/1	3.65	0.00	Y	Arm 4 Ahead	50.00	29.7 %	1922	1922
				Arm 10 Left	50.00	70.3 %		
2/2	3.65	0.00	Y	Arm 4 Ahead	50.00	100.0 %	1922	1922
2/3	3.65	0.00	Y	Arm 4 Ahead	50.00	100.0 %	1922	1922
3/1	This lane uses a directly entered Saturation Flow						1900	1900
3/2	This lane uses a directly entered Saturation Flow						1900	1900
3/3	This lane uses a directly entered Saturation Flow						1900	1900
4/1	This lane uses a directly entered Saturation Flow						1850	1850
4/2	This lane uses a directly entered Saturation Flow						1850	1850
4/3	This lane uses a directly entered Saturation Flow						1850	1850
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
6/3	Infinite Saturation Flow						Inf	Inf
7/1	This lane uses a directly entered Saturation Flow						1850	1850
7/2	This lane uses a directly entered Saturation Flow						1850	1850
8/1	This lane uses a directly entered Saturation Flow						1850	1850
8/2	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
11/3	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2031 ArdleyEast6 PM' (FG2: 'ArdleyEast6_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	1141	401	1542
	B	840	0	259	1099
	C	291	1908	67	2266
	Tot.	1131	3049	727	4907

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: 2031 ArdleyEast6 PM
Junction: Ardley East	
1/1 (short)	551
1/2 (with short)	1101(In) 550(Out)
1/3	441
2/1	759
2/2	754
2/3	753
3/1 (short)	258
3/2 (with short)	771(In) 513(Out)
3/3	328
4/1	468
4/2	754
4/3	753
5/1	1019
5/2	1304
5/3	1194
6/1	1019
6/2	1304
6/3	726
7/1	256
7/2	212
8/1	512
8/2	328
9/1	514
9/2	213
10/1	803
10/2	328
11/1	514
11/2	725
11/3	328

Full Input Data And Results

Lane Saturation Flows

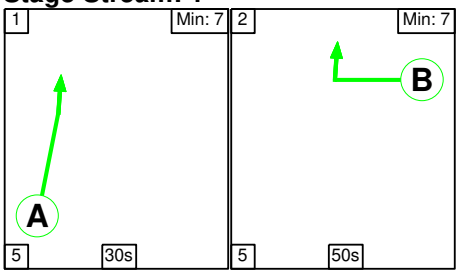
Junction: Ardley East								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
1/2	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
1/3	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
2/1	3.65	0.00	Y	Arm 4 Ahead	50.00	61.7 %	1922	1922
				Arm 10 Left	50.00	38.3 %		
2/2	3.65	0.00	Y	Arm 4 Ahead	50.00	100.0 %	1922	1922
2/3	3.65	0.00	Y	Arm 4 Ahead	50.00	100.0 %	1922	1922
3/1	This lane uses a directly entered Saturation Flow						1900	1900
3/2	This lane uses a directly entered Saturation Flow						1900	1900
3/3	This lane uses a directly entered Saturation Flow						1900	1900
4/1	This lane uses a directly entered Saturation Flow						1850	1850
4/2	This lane uses a directly entered Saturation Flow						1850	1850
4/3	This lane uses a directly entered Saturation Flow						1850	1850
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
6/3	Infinite Saturation Flow						Inf	Inf
7/1	This lane uses a directly entered Saturation Flow						1850	1850
7/2	This lane uses a directly entered Saturation Flow						1850	1850
8/1	This lane uses a directly entered Saturation Flow						1850	1850
8/2	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
11/3	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

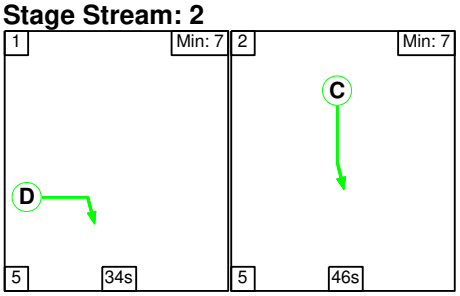
Scenario 1: '2031 ArdleyEast6 AM' (FG1: 'ArdleyEast6_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

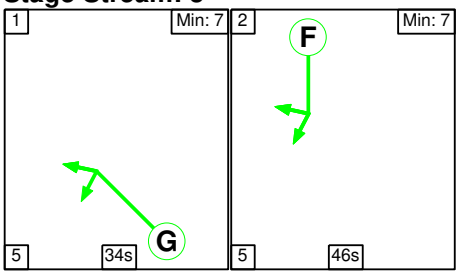
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	30	50
Change Point	0	35

Stage Stream: 2

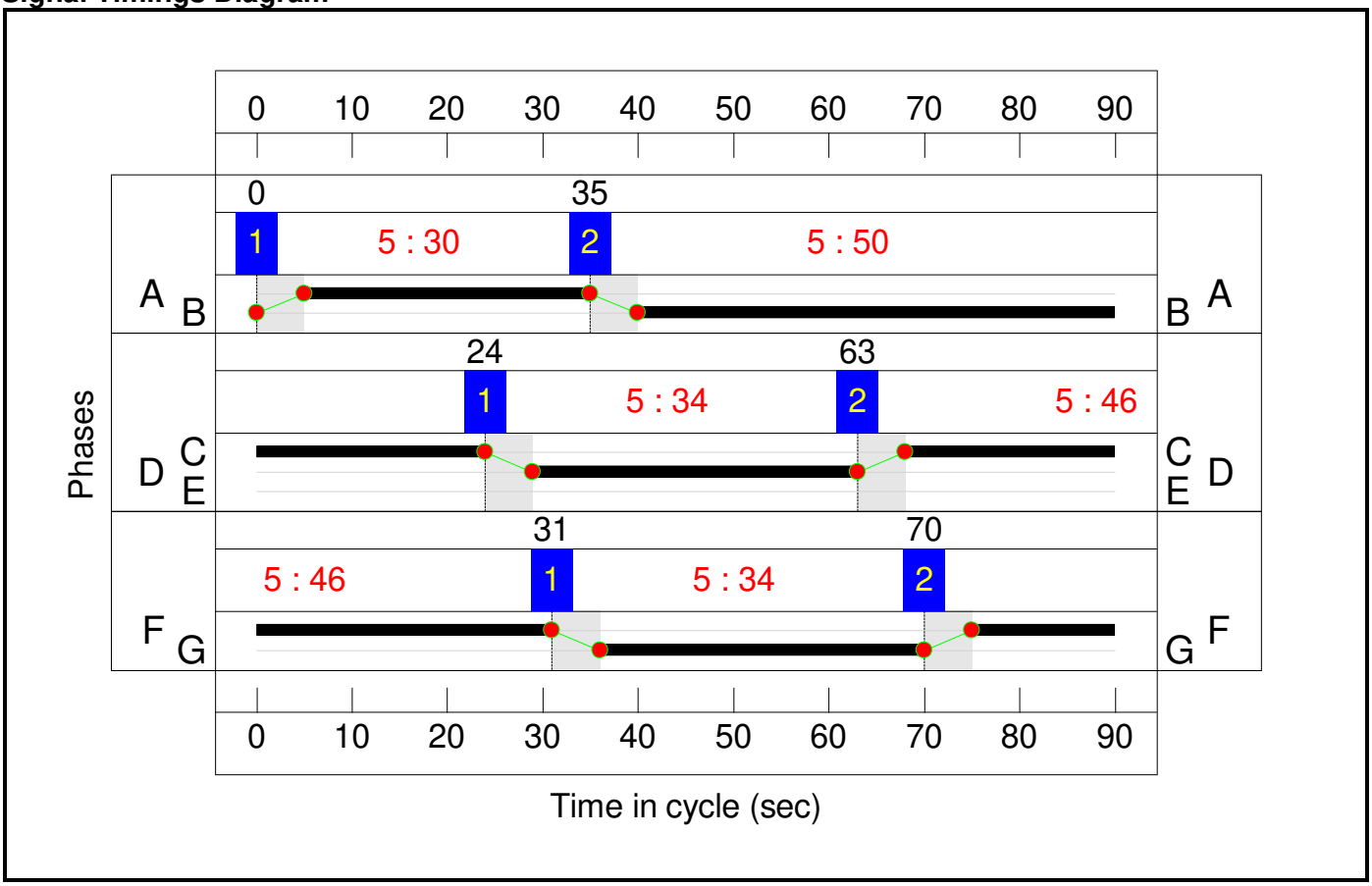
Stage	1	2
Duration	34	46
Change Point	24	63

Stage Stream: 3

Stage	1	2
Duration	34	46
Change Point	31	70

Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ardley East Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**83.2%**
Ardley East	-	-	**N/A**	-	-		-	-	-	-	-	-	**83.2%**
1/2+1/1	Ahead	U	1	N/A	A		1	30	-	713	1980:1980	682+682	52.3 : 52.2%
1/3	Ahead	U	1	N/A	A		1	30	-	273	1980	682	40.0%
2/1	Ahead Left	U	3	N/A	G		1	34	-	622	1922	747	83.2%
2/2	Ahead	U	3	N/A	G		1	34	-	618	1922	747	82.7%
2/3	Ahead	U	3	N/A	G		1	34	-	618	1922	747	82.7%
3/2+3/1	Ahead	U	2	N/A	C		1	46	-	1030	1900:1900	916+373	79.9 : 79.9%
3/3	Ahead	U	2	N/A	C		1	46	-	568	1900	992	57.2%
4/1	Right	U	1	N/A	B		1	50	-	185	1850	1048	17.6%
4/2	Right	U	1	N/A	B		1	50	-	618	1850	1048	59.0%
4/3	Right	U	1	N/A	B		1	50	-	618	1850	1048	59.0%
5/1	Ahead	U	N/A	N/A	-		-	-	-	541	Inf	Inf	0.0%
5/2	Ahead	U	N/A	N/A	-		-	-	-	975	Inf	Inf	0.0%
5/3	Ahead Right	U	N/A	N/A	-		-	-	-	891	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	541	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	975	Inf	Inf	0.0%
6/3		U	N/A	N/A	-		-	-	-	619	Inf	Inf	0.0%
7/1	Right	U	2	N/A	D		1	34	-	138	1850	719	19.2%
7/2	Right	U	2	N/A	D		1	34	-	134	1850	719	18.6%
8/1	Ahead	U	3	N/A	F		1	46	-	732	1850	966	75.8%
8/2	Right Ahead	U	3	N/A	F		1	46	-	568	1850	966	58.8%
9/1		U	N/A	N/A	-		-	-	-	436	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	134	Inf	Inf	0.0%

Full Input Data And Results

10/1		U	N/A	N/A	-		-	-	-	1169	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	568	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	436	Inf	Inf	0.0%
11/2	Ahead Ahead2	U	N/A	N/A	-		-	-	-	866	Inf	Inf	0.0%
11/3	Ahead	U	N/A	N/A	-		-	-	-	568	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ardley East Roundabout	**-**	**-**	**0**	**0**	**0**	**27.3**	**11.2**	**0.0**	**38.5**	**-**	**-**	**-**	**-**
Ardley East	**-**	**-**	**0**	**0**	**0**	**27.3**	**11.2**	**0.0**	**38.5**	**-**	**-**	**-**	**-**
1/2+1/1	713	713	-	-	-	4.7	0.5	-	5.2 (2.6+2.6)	26.3 (26.4:26.3)	7.0	0.5	7.6
1/3	273	273	-	-	-	1.7	0.3	-	2.0	26.8	5.2	0.3	5.5
2/1	622	622	-	-	-	4.3	2.4	-	6.7	38.7	14.0	2.4	16.4
2/2	618	618	-	-	-	4.3	2.3	-	6.6	38.2	13.9	2.3	16.2
2/3	618	618	-	-	-	4.3	2.3	-	6.6	38.2	13.9	2.3	16.2
3/2+3/1	1030	1030	-	-	-	4.4	2.0	-	6.4 (4.8+1.6)	22.2 (23.6:19.0)	14.0	2.0	16.0
3/3	568	568	-	-	-	2.3	0.7	-	3.0	18.9	9.6	0.7	10.3
4/1	185	185	-	-	-	0.0	0.0	-	0.0	0.0	0.1	0.0	0.1
4/2	618	618	-	-	-	0.1	0.0	-	0.1	0.4	0.5	0.0	0.5
4/3	618	618	-	-	-	0.1	0.0	-	0.1	0.4	0.5	0.0	0.5
5/1	541	541	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	975	975	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/3	891	891	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	541	541	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	975	975	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/3	619	619	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	138	138	-	-	-	0.5	0.0	-	0.5	12.0	3.0	0.0	3.0
7/2	134	134	-	-	-	0.5	0.0	-	0.5	13.8	2.7	0.0	2.7
8/1	732	732	-	-	-	0.2	0.0	-	0.2	1.0	0.6	0.0	0.6
8/2	568	568	-	-	-	0.1	0.7	-	0.8	5.3	0.5	0.7	1.2
9/1	436	436	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	134	134	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	1169	1169	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

10/2	568	568	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	436	436	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	866	866	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/3	568	568	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

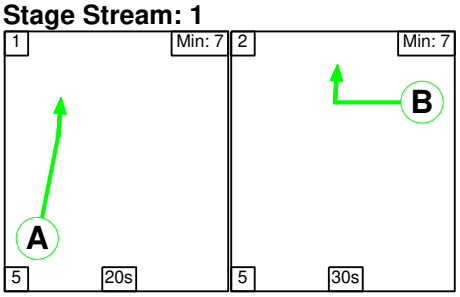
C1	Stream: 1 PRC for Signalled Lanes (%):	52.7	Total Delay for Signalled Lanes (pcuHr):	7.41	Cycle Time (s):	90
C1	Stream: 2 PRC for Signalled Lanes (%):	12.7	Total Delay for Signalled Lanes (pcuHr):	10.32	Cycle Time (s):	90
C1	Stream: 3 PRC for Signalled Lanes (%):	8.2	Total Delay for Signalled Lanes (pcuHr):	20.83	Cycle Time (s):	90
	PRC Over All Lanes (%):	8.2	Total Delay Over All Lanes(pcuHr):	38.55		

Full Input Data And Results

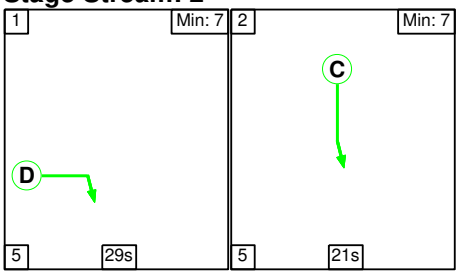
Scenario 2: '2031 ArdleyEast6 PM' (FG2: 'ArdleyEast6_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

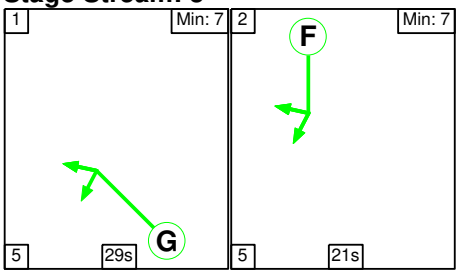
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	20	30
Change Point	0	25

Stage Stream: 2

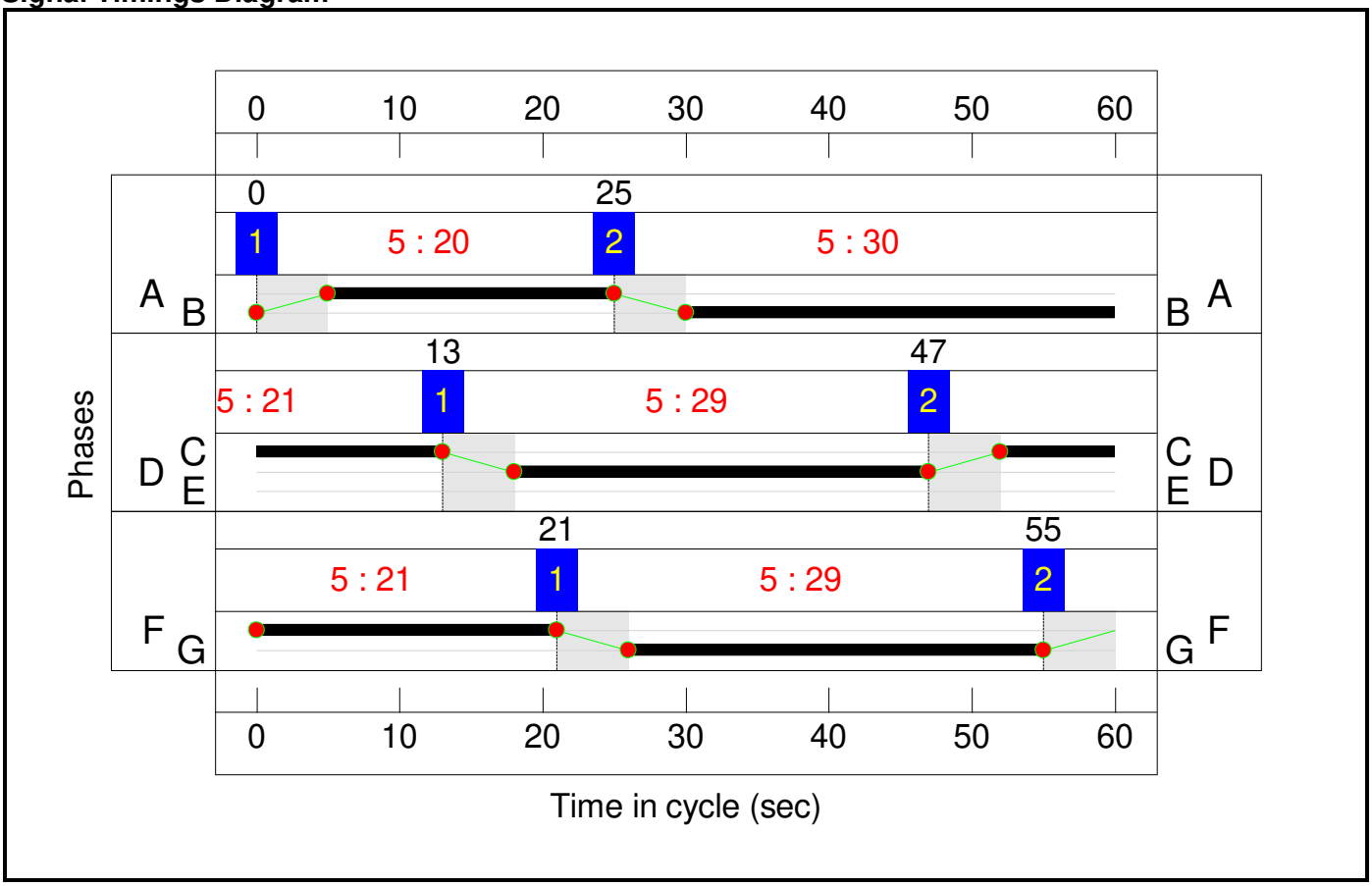
Stage	1	2
Duration	29	21
Change Point	13	47

Stage Stream: 3

Stage	1	2
Duration	29	21
Change Point	21	55

Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ardley East Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**79.5%**
Ardley East	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**79.5%**
1/2+1/1	Ahead	U	1	N/A	A		1	20	-	1101	1980:1980	693+693	79.4 : 79.5%
1/3	Ahead	U	1	N/A	A		1	20	-	441	1980	693	63.6%
2/1	Ahead Left	U	3	N/A	G		1	29	-	759	1922	961	79.0%
2/2	Ahead	U	3	N/A	G		1	29	-	754	1922	961	78.5%
2/3	Ahead	U	3	N/A	G		1	29	-	753	1922	961	78.4%
3/2+3/1	Ahead	U	2	N/A	C		1	21	-	771	1900:1900	697+350	73.6 : 73.6%
3/3	Ahead	U	2	N/A	C		1	21	-	328	1900	697	47.1%
4/1	Right	U	1	N/A	B		1	30	-	468	1850	956	49.0%
4/2	Right	U	1	N/A	B		1	30	-	754	1850	956	78.9%
4/3	Right	U	1	N/A	B		1	30	-	753	1850	956	78.8%
5/1	Ahead	U	N/A	N/A	-		-	-	-	1019	Inf	Inf	0.0%
5/2	Ahead	U	N/A	N/A	-		-	-	-	1304	Inf	Inf	0.0%
5/3	Ahead Right	U	N/A	N/A	-		-	-	-	1194	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	1019	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	1304	Inf	Inf	0.0%
6/3		U	N/A	N/A	-		-	-	-	726	Inf	Inf	0.0%
7/1	Right	U	2	N/A	D		1	29	-	256	1850	925	27.7%
7/2	Right	U	2	N/A	D		1	29	-	212	1850	925	22.9%
8/1	Ahead	U	3	N/A	F		1	21	-	512	1850	678	75.5%
8/2	Right Ahead	U	3	N/A	F		1	21	-	328	1850	678	48.4%
9/1		U	N/A	N/A	-		-	-	-	514	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	213	Inf	Inf	0.0%

Full Input Data And Results

10/1		U	N/A	N/A	-		-	-	-	803	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	328	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	514	Inf	Inf	0.0%
11/2	Ahead Ahead2	U	N/A	N/A	-		-	-	-	725	Inf	Inf	0.0%
11/3	Ahead	U	N/A	N/A	-		-	-	-	328	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ardley East Roundabout	**-**	**-**	**0**	**0**	**0**	**20.9**	**10.5**	**0.0**	**31.4**	**-**	**-**	**-**	**-**
Ardley East	**-**	**-**	**0**	**0**	**0**	**20.9**	**10.5**	**0.0**	**31.4**	**-**	**-**	**-**	**-**
1/2+1/1	1101	1101	-	-	-	5.4	1.9	-	7.3 (3.6+3.6)	23.8 (23.8:23.8)	8.3	1.9	10.2
1/3	441	441	-	-	-	2.0	0.9	-	2.9	23.4	6.1	0.9	7.0
2/1	759	759	-	-	-	2.6	1.8	-	4.5	21.1	10.3	1.8	12.2
2/2	754	754	-	-	-	2.6	1.8	-	4.4	20.9	10.3	1.8	12.1
2/3	753	753	-	-	-	2.6	1.8	-	4.4	20.8	10.2	1.8	12.0
3/2+3/1	771	771	-	-	-	3.3	1.4	-	4.7 (3.3+1.5)	22.1 (22.9:20.4)	7.4	1.4	8.8
3/3	328	328	-	-	-	1.3	0.4	-	1.8	19.4	4.1	0.4	4.5
4/1	468	468	-	-	-	0.0	0.0	-	0.0	0.1	0.2	0.0	0.2
4/2	754	754	-	-	-	0.1	0.0	-	0.1	0.5	0.4	0.0	0.4
4/3	753	753	-	-	-	0.1	0.0	-	0.1	0.5	0.4	0.0	0.4
5/1	1019	1019	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	1304	1304	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/3	1194	1194	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1019	1019	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	1304	1304	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/3	726	726	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	256	256	-	-	-	0.2	0.0	-	0.2	2.8	3.3	0.0	3.3
7/2	212	212	-	-	-	0.3	0.0	-	0.3	5.5	2.3	0.0	2.3
8/1	512	512	-	-	-	0.2	0.0	-	0.2	1.6	0.9	0.0	0.9
8/2	328	328	-	-	-	0.1	0.5	-	0.6	6.5	0.9	0.5	1.3
9/1	514	514	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	213	213	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	803	803	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

10/2	328	328	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	514	514	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	725	725	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/3	328	328	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1	Stream: 1 PRC for Signalled Lanes (%):	13.2	Total Delay for Signalled Lanes (pcuHr):	10.38	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	22.2	Total Delay for Signalled Lanes (pcuHr):	7.02	Cycle Time (s):	60
C1	Stream: 3 PRC for Signalled Lanes (%):	14.0	Total Delay for Signalled Lanes (pcuHr):	14.01	Cycle Time (s):	60
	PRC Over All Lanes (%):	13.2	Total Delay Over All Lanes(pcuHr):	31.41		

APPENDIX 35

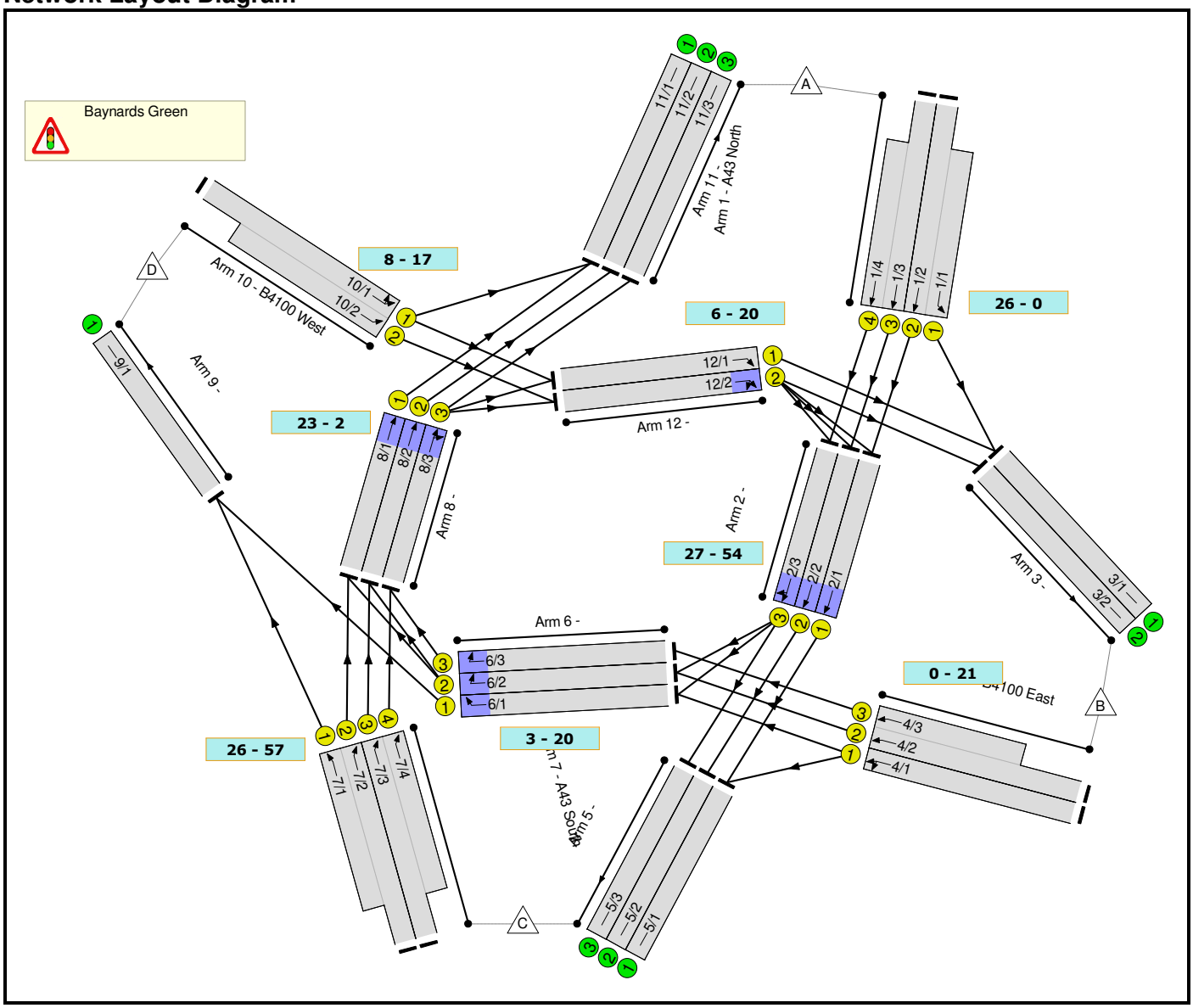
Baynards Green Roundabout mitigation – LinSig results

Full Input Data And Results

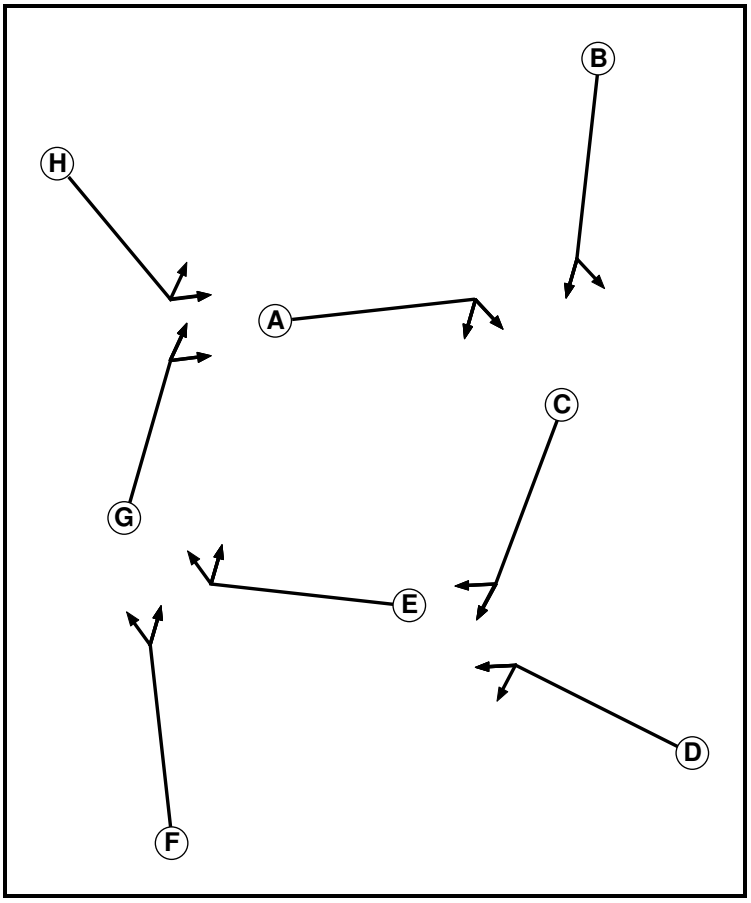
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Baynards Green Mitigation scheme**
Location:	
Additional detail:	
File name:	210406 Baynards Gn - OxSRFI mitigation.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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
E	Traffic	3		7	7
F	Traffic	3		7	7
G	Traffic	4		7	7
H	Traffic	4		7	7

Phase Intergreens Matrix

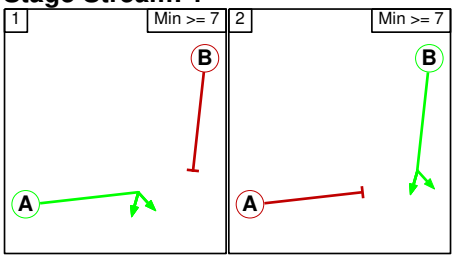
		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A		6	-	-	-	-	-	-
	B	6		-	-	-	-	-	-
	C	-	-		6	-	-	-	-
	D	-	-	6		-	-	-	-
	E	-	-	-	-		6	-	-
	F	-	-	-	-	6		-	-
	G	-	-	-	-	-	-		6
	H	-	-	-	-	-	-	6	

Phases in Stage

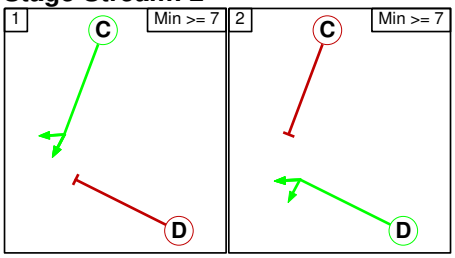
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F
4	1	G
4	2	H

Stage Diagram

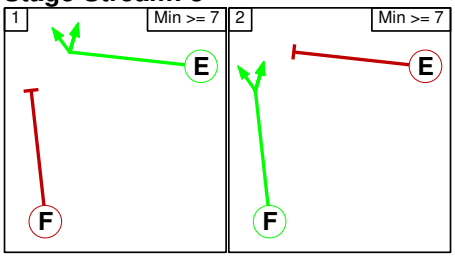
Stage Stream: 1



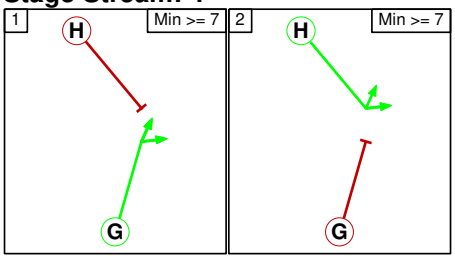
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



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					

Stage Stream: 3

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

Stage Stream: 4

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		6
	2	6	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		6
	2	6	

Stage Stream: 3

	To Stage		
From Stage		1	2
	1		6
	2	6	

Stage Stream: 4

	To Stage		
From Stage		1	2
	1		6
	2	6	

Lane Input Data

Junction: Baynards Green												
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 (A43 North)	U	B	2	3	20.9	Geom	-	3.65	0.00	Y	Arm 3 Left	50.00
1/2 (A43 North)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 2 Ahead	50.00
1/3 (A43 North)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 2 Ahead	50.00
1/4 (A43 North)	U	B	2	3	24.3	Geom	-	3.65	0.00	Y	Arm 2 Ahead	50.00
2/1	U	C	2	3	9.6	User	1850	-	-	-	-	-
2/2	U	C	2	3	9.6	User	1850	-	-	-	-	-
2/3	U	C	2	3	9.6	User	1850	-	-	-	-	-
3/1	U		2	3	60.0	Inf	-	-	-	-	-	-
3/2	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1 (B4100 East)	U	D	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Left	30.00
											Arm 6 Ahead	Inf
4/2 (B4100 East)	U	D	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 6 Ahead	Inf
4/3 (B4100 East)	U	D	2	3	10.4	Geom	-	3.50	0.00	Y	Arm 6 Ahead	50.00
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
5/3	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U	E	2	3	11.3	User	1800	-	-	-	-	-
6/2	U	E	2	3	11.3	User	1800	-	-	-	-	-
6/3	U	E	2	3	11.3	User	1850	-	-	-	-	-
7/1 (A43 South)	U	F	2	3	12.2	Geom	-	3.65	0.00	Y	Arm 9 Ahead	50.00
7/2 (A43 South)	U	F	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 8 Ahead	50.00
7/3 (A43 South)	U	F	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 8 Ahead	50.00
7/4 (A43 South)	U	F	2	3	22.6	Geom	-	3.65	0.00	Y	Arm 8 Ahead	50.00
8/1	U	G	2	3	12.2	User	1850	-	-	-	-	-
8/2	U	G	2	3	12.2	User	1850	-	-	-	-	-

8/3	U	G	2	3	12.2	User	1850	-	-	-	-	-
9/1	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (B4100 West)	U	H	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 11 Left	30.00
											Arm 12 Ahead	40.00
10/2 (B4100 West)	U	H	2	3	22.6	Geom	-	3.50	0.00	Y	Arm 12 Ahead	40.00
11/1	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2	U		2	3	60.0	Inf	-	-	-	-	-	-
11/3	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1	U	A	2	3	11.3	User	1800	-	-	-	-	-
12/2	U	A	2	3	11.3	User	1800	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Baynards1_AM'	07:45	08:45	01:00	
3: 'Baynards1_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Do Something - AM Peak' (FG1: 'Baynards1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	446	2516	70	3032
	B	350	0	212	306	868
	C	1587	287	0	125	1999
	D	72	296	123	1	492
	Tot.	2009	1029	2851	502	6391

Traffic Lane Flows

Lane	Scenario 1: 2031 Do Something - AM Peak
Junction: Baynards Green	
1/1 (short)	446
1/2 (with short)	1322(In) 876(Out)
1/3 (with short)	1710(In) 862(Out)
1/4 (short)	848
2/1	905
2/2	903
2/3	902
3/1	778
3/2	251
4/1	518
4/2 (with short)	350(In) 235(Out)
4/3 (short)	115
5/1	1117
5/2	903
5/3	831
6/1	377
6/2	235
6/3	115
7/1 (short)	125
7/2 (with short)	704(In) 579(Out)
7/3 (with short)	1295(In) 648(Out)
7/4 (short)	647
8/1	699
8/2	763
8/3	762
9/1	502
10/1 (with short)	492(In) 252(Out)
10/2 (short)	240
11/1	771
11/2	763
11/3	475
12/1	332
12/2	375

Lane Saturation Flows

Junction: Baynards Green

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 (A43 North)	3.65	0.00	Y	Arm 3 Left	50.00	100.0 %	1922	1922
1/2 (A43 North)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/3 (A43 North)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/4 (A43 North)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
2/1	This lane uses a directly entered Saturation Flow						1850	1850
2/2	This lane uses a directly entered Saturation Flow						1850	1850
2/3	This lane uses a directly entered Saturation Flow						1850	1850
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1 (B4100 East)	3.50	0.00	Y	Arm 5 Left Arm 6 Ahead	30.00 Inf	40.9 % 59.1 %	1926	1926
4/2 (B4100 East)	3.50	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1965	1965
4/3 (B4100 East)	3.50	0.00	Y	Arm 6 Ahead	50.00	100.0 %	1908	1908
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf
6/1	This lane uses a directly entered Saturation Flow						1800	1800
6/2	This lane uses a directly entered Saturation Flow						1800	1800
6/3	This lane uses a directly entered Saturation Flow						1850	1850
7/1 (A43 South)	3.65	0.00	Y	Arm 9 Ahead	50.00	100.0 %	1922	1922
7/2 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
7/3 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
7/4 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
8/1	This lane uses a directly entered Saturation Flow						1850	1850
8/2	This lane uses a directly entered Saturation Flow						1850	1850
8/3	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
10/1 (B4100 West)	3.50	0.00	Y	Arm 11 Left Arm 12 Ahead	30.00 40.00	28.6 % 71.4 %	1887	1887
10/2 (B4100 West)	3.50	0.00	Y	Arm 12 Ahead	40.00	100.0 %	1894	1894
11/1	Infinite Saturation Flow						Inf	Inf

11/2	Infinite Saturation Flow	Inf	Inf
11/3	Infinite Saturation Flow	Inf	Inf
12/1	This lane uses a directly entered Saturation Flow	1800	1800
12/2	This lane uses a directly entered Saturation Flow	1800	1800

Scenario 2: '2031 Do Something - PM Peak' (FG3: 'Baynards1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	467	1435	45	1947
	B	637	0	240	372	1249
	C	2473	230	0	90	2793
	D	37	244	47	3	331
	Tot.	3147	941	1722	510	6320

Traffic Lane Flows

Lane	Scenario 2: 2031 Do Something - PM Peak
Junction: Baynards Green	
1/1 (short)	467
1/2 (with short)	967(In) 500(Out)
1/3 (with short)	980(In) 492(Out)
1/4 (short)	488
2/1	514
2/2	509
2/3	507
3/1	717
3/2	224
4/1	612
4/2 (with short)	637(In) 424(Out)
4/3 (short)	213
5/1	754
5/2	509
5/3	459
6/1	420
6/2	424
6/3	213
7/1 (short)	90
7/2 (with short)	993(In) 903(Out)
7/3 (with short)	1800(In) 882(Out)
7/4 (short)	918
8/1	1113
8/2	1096
8/3	1131
9/1	510
10/1 (with short)	331(In) 170(Out)
10/2 (short)	161
11/1	1150
11/2	1096
11/3	901
12/1	250
12/2	274

Lane Saturation Flows

Junction: Baynards Green

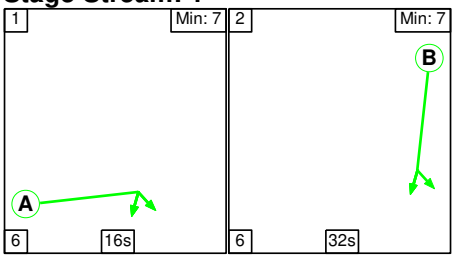
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A43 North)	3.65	0.00	Y	Arm 3 Left	50.00	100.0 %	1922	1922
1/2 (A43 North)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/3 (A43 North)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/4 (A43 North)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
2/1	This lane uses a directly entered Saturation Flow						1850	1850
2/2	This lane uses a directly entered Saturation Flow						1850	1850
2/3	This lane uses a directly entered Saturation Flow						1850	1850
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1 (B4100 East)	3.50	0.00	Y	Arm 5 Left Arm 6 Ahead	30.00 Inf	39.2 % 60.8 %	1927	1927
4/2 (B4100 East)	3.50	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1965	1965
4/3 (B4100 East)	3.50	0.00	Y	Arm 6 Ahead	50.00	100.0 %	1908	1908
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf
6/1	This lane uses a directly entered Saturation Flow						1800	1800
6/2	This lane uses a directly entered Saturation Flow						1800	1800
6/3	This lane uses a directly entered Saturation Flow						1850	1850
7/1 (A43 South)	3.65	0.00	Y	Arm 9 Ahead	50.00	100.0 %	1922	1922
7/2 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
7/3 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
7/4 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1922	1922
8/1	This lane uses a directly entered Saturation Flow						1850	1850
8/2	This lane uses a directly entered Saturation Flow						1850	1850
8/3	This lane uses a directly entered Saturation Flow						1850	1850
9/1	Infinite Saturation Flow						Inf	Inf
10/1 (B4100 West)	3.50	0.00	Y	Arm 11 Left Arm 12 Ahead	30.00 40.00	21.8 % 78.2 %	1889	1889
10/2 (B4100 West)	3.50	0.00	Y	Arm 12 Ahead	40.00	100.0 %	1894	1894
11/1	Infinite Saturation Flow						Inf	Inf

11/2	Infinite Saturation Flow	Inf	Inf
11/3	Infinite Saturation Flow	Inf	Inf
12/1	This lane uses a directly entered Saturation Flow	1800	1800
12/2	This lane uses a directly entered Saturation Flow	1800	1800

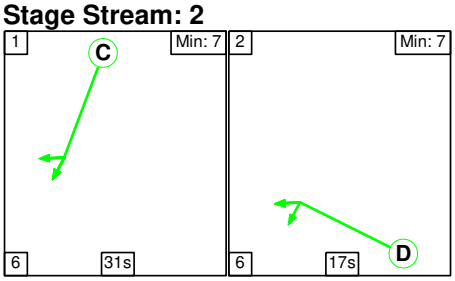
Scenario 1: '2031 Do Something - AM Peak' (FG1: 'Baynards1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

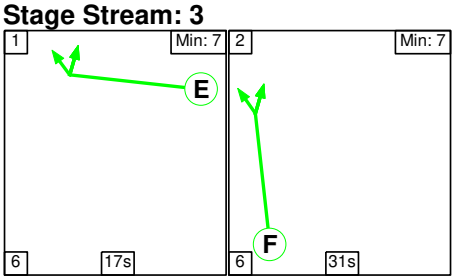
Stage Stream: 1



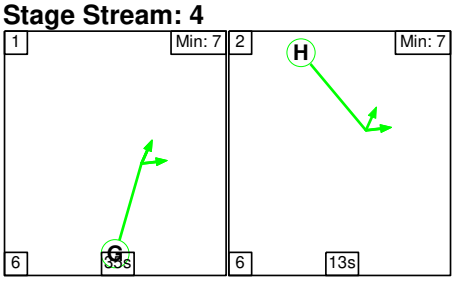
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	16	32
Change Point	0	22

Stage Stream: 2

Stage	1	2
Duration	31	17
Change Point	23	0

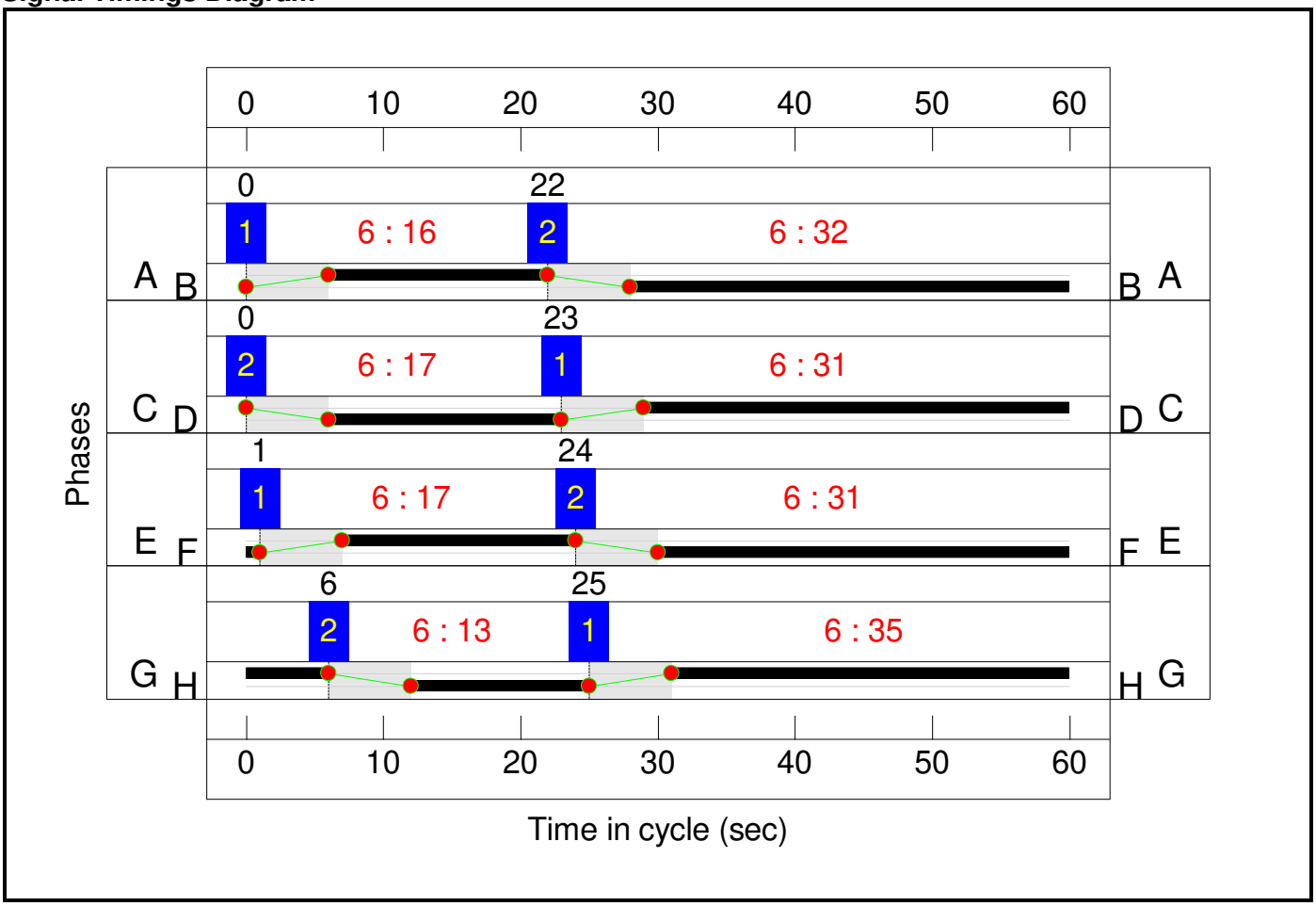
Stage Stream: 3

Stage	1	2
Duration	17	31
Change Point	1	24

Stage Stream: 4

Stage	1	2
Duration	35	13
Change Point	25	6

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: Baynards Green Mitigation scheme	-	-	**N/A**	-	-		-	-	-	-	-	-	**91.7%**
Baynards Green	-	-	**N/A**	-	-		-	-	-	-	-	-	**91.7%**
1/2+1/1	A43 North Ahead Left	U	1	N/A	B		1	32	-	1322	1922:1922	1057+561	82.9 : 79.5%
1/3+1/4	A43 North Ahead	U	1	N/A	B		1	32	-	1710	1922:1922	969+953	89.0 : 89.0%
2/1	Ahead	U	2	N/A	C		1	31	-	905	1850	987	91.7%
2/2	Ahead	U	2	N/A	C		1	31	-	903	1850	987	91.5%
2/3	Ahead Right	U	2	N/A	C		1	31	-	902	1850	987	91.4%
4/1	B4100 East Left Ahead	U	2	N/A	D		1	17	-	518	1926	578	89.7%
4/2+4/3	B4100 East Ahead	U	2	N/A	D		1	17	-	350	1965:1908	590+288	39.9 : 39.9%
6/1	Right	U	3	N/A	E		1	17	-	377	1800	540	69.8%
6/2	Right	U	3	N/A	E		1	17	-	235	1800	540	43.5%
6/3	Right	U	3	N/A	E		1	17	-	115	1850	555	20.7%
7/2+7/1	A43 South Ahead Ahead2	U	3	N/A	F		1	31	-	704	1922:1922	991+214	58.4 : 58.4%
7/3+7/4	A43 South Ahead	U	3	N/A	F		1	31	-	1295	1922:1922	962+960	67.4 : 67.4%
8/1	Ahead	U	4	N/A	G		1	35	-	699	1850	1110	63.0%
8/2	Ahead	U	4	N/A	G		1	35	-	763	1850	1110	68.7%
8/3	Ahead Right	U	4	N/A	G		1	35	-	762	1850	1110	68.6%
10/1+10/2	B4100 West Left Ahead	U	4	N/A	H		1	13	-	492	1887:1894	440+442	57.2 : 54.3%
12/1	Right	U	1	N/A	A		1	16	-	332	1800	510	65.1%
12/2	Right Right2	U	1	N/A	A		1	16	-	375	1800	510	73.5%

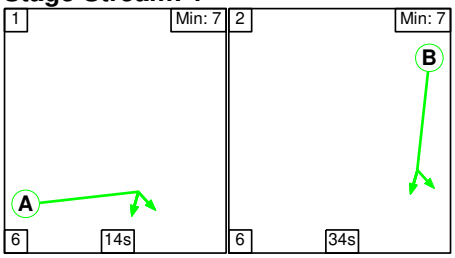
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Baynards Green Mitigation scheme	**-**	**-**	**0**	**0**	**0**	**27.7**	**12.6**	**0.0**	**40.3**	**-**	**-**	**-**	**-**
Baynards Green	**-**	**-**	**0**	**0**	**0**	**27.7**	**12.6**	**0.0**	**40.3**	**-**	**-**	**-**	**-**
1/2+1/1	1322	1322	-	-	-	3.7	2.2	-	5.9	16.1	11.9	2.2	14.1
1/3+1/4	1710	1710	-	-	-	5.2	3.9	-	9.1	19.1	11.5	3.9	15.4
2/1	905	905	-	-	-	0.6	0.0	-	0.6	2.4	1.5	0.0	1.5
2/2	903	903	-	-	-	0.7	0.0	-	0.7	2.7	1.6	0.0	1.6
2/3	902	902	-	-	-	0.8	0.0	-	0.8	3.1	1.8	0.0	1.8
4/1	518	518	-	-	-	2.9	3.8	-	6.7	46.8	8.2	3.8	12.0
4/2+4/3	350	350	-	-	-	1.6	0.3	-	1.9	19.8	3.1	0.3	3.4
6/1	377	377	-	-	-	0.6	0.0	-	0.6	6.0	1.5	0.0	1.5
6/2	235	235	-	-	-	0.1	0.0	-	0.1	2.3	0.2	0.0	0.2
6/3	115	115	-	-	-	0.1	0.0	-	0.1	2.1	0.1	0.0	0.1
7/2+7/1	704	704	-	-	-	1.7	0.7	-	2.4	12.5	6.4	0.7	7.1
7/3+7/4	1295	1295	-	-	-	3.5	1.0	-	4.6	12.7	7.6	1.0	8.6
8/1	699	699	-	-	-	0.5	0.0	-	0.5	2.4	2.0	0.0	2.0
8/2	763	763	-	-	-	0.4	0.0	-	0.4	2.1	1.9	0.0	1.9
8/3	762	762	-	-	-	0.5	0.0	-	0.5	2.5	1.9	0.0	1.9
10/1+10/2	492	492	-	-	-	2.8	0.6	-	3.4	24.9	3.7	0.6	4.3
12/1	332	332	-	-	-	1.0	0.0	-	1.0	10.6	2.9	0.0	2.9
12/2	375	375	-	-	-	1.0	0.0	-	1.0	9.5	2.7	0.0	2.7

C1 Stream: 1 PRC for Signalled Lanes (%):	1.2	Total Delay for Signalled Lanes (pcuHr):	16.96	Cycle Time (s):	60
C1 Stream: 2 PRC for Signalled Lanes (%):	-1.9	Total Delay for Signalled Lanes (pcuHr):	10.69	Cycle Time (s):	60
C1 Stream: 3 PRC for Signalled Lanes (%):	28.9	Total Delay for Signalled Lanes (pcuHr):	7.87	Cycle Time (s):	60
C1 Stream: 4 PRC for Signalled Lanes (%):	30.9	Total Delay for Signalled Lanes (pcuHr):	4.83	Cycle Time (s):	60
PRC Over All Lanes (%):	-1.9	Total Delay Over All Lanes(pcuHr):	40.35		

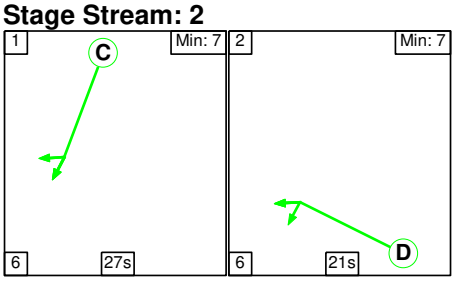
Scenario 2: '2031 Do Something - PM Peak' (FG3: 'Baynards1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

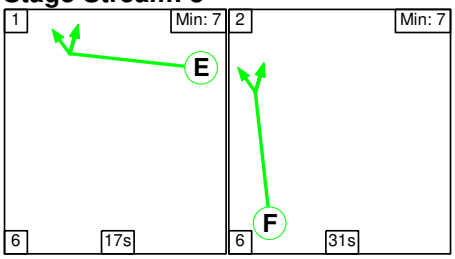
Stage Stream: 1



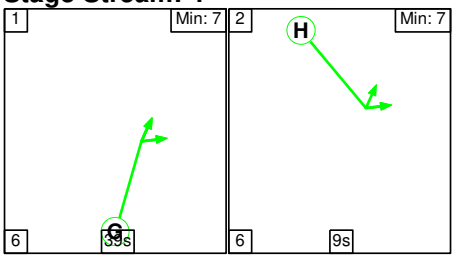
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	14	34
Change Point	0	20

Stage Stream: 2

Stage	1	2
Duration	27	21
Change Point	21	54

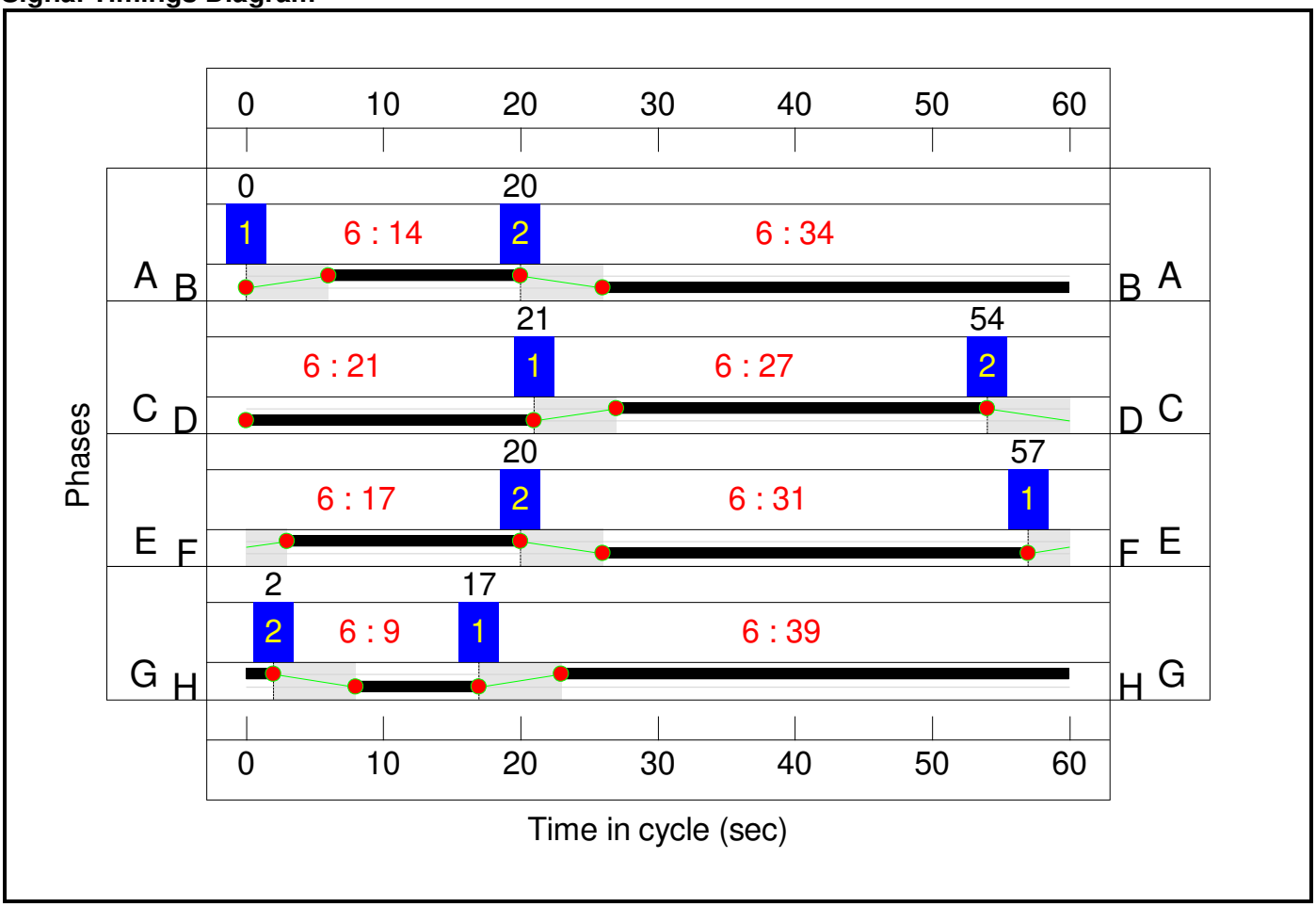
Stage Stream: 3

Stage	1	2
Duration	17	31
Change Point	57	20

Stage Stream: 4

Stage	1	2
Duration	39	9
Change Point	17	2

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: Baynards Green Mitigation scheme	-	-	**N/A**	-	-		-	-	-	-	-	-	**93.7%**
Baynards Green	-	-	**N/A**	-	-		-	-	-	-	-	-	**93.7%**
1/2+1/1	A43 North Ahead Left	U	1	N/A	B		1	34	-	967	1922:1922	994+928	50.3 : 50.3%
1/3+1/4	A43 North Ahead	U	1	N/A	B		1	34	-	980	1922:1922	965+957	51.0 : 51.0%
2/1	Ahead	U	2	N/A	C		1	27	-	514	1850	863	59.5%
2/2	Ahead	U	2	N/A	C		1	27	-	509	1850	863	59.0%
2/3	Ahead Right	U	2	N/A	C		1	27	-	507	1850	863	58.7%
4/1	B4100 East Left Ahead	U	2	N/A	D		1	21	-	612	1927	707	86.6%
4/2+4/3	B4100 East Ahead	U	2	N/A	D		1	21	-	637	1965:1908	704+354	60.2 : 60.2%
6/1	Right	U	3	N/A	E		1	17	-	420	1800	540	77.8%
6/2	Right	U	3	N/A	E		1	17	-	424	1800	540	78.5%
6/3	Right	U	3	N/A	E		1	17	-	213	1850	555	38.4%
7/2+7/1	A43 South Ahead Ahead2	U	3	N/A	F		1	31	-	993	1922:1922	1018+101	88.7 : 88.7%
7/3+7/4	A43 South Ahead	U	3	N/A	F		1	31	-	1800	1922:1922	942+980	93.7 : 93.7%
8/1	Ahead	U	4	N/A	G		1	39	-	1113	1850	1233	90.2%
8/2	Ahead	U	4	N/A	G		1	39	-	1096	1850	1233	88.9%
8/3	Ahead Right	U	4	N/A	G		1	39	-	1131	1850	1233	91.7%
10/1+10/2	B4100 West Left Ahead	U	4	N/A	H		1	9	-	331	1889:1894	315+316	54.0 : 51.0%
12/1	Right	U	1	N/A	A		1	14	-	250	1800	450	55.6%
12/2	Right Right2	U	1	N/A	A		1	14	-	274	1800	450	60.9%

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: Baynards Green Mitigation scheme	**-**	**-**	**0**	**0**	**0**	**28.0**	**15.7**	**0.0**	**43.8**	**-**	**-**	**-**	**-**
Baynards Green	**-**	**-**	**0**	**0**	**0**	**28.0**	**15.7**	**0.0**	**43.8**	**-**	**-**	**-**	**-**
1/2+1/1	967	967	-	-	-	1.9	0.5	-	2.4	8.8	4.6	0.5	5.1
1/3+1/4	980	980	-	-	-	1.9	0.5	-	2.4	8.9	4.5	0.5	5.0
2/1	514	514	-	-	-	0.7	0.0	-	0.7	5.1	1.6	0.0	1.6
2/2	509	509	-	-	-	0.7	0.0	-	0.7	5.1	1.7	0.0	1.7
2/3	507	507	-	-	-	0.7	0.0	-	0.7	5.2	1.7	0.0	1.7
4/1	612	612	-	-	-	3.0	3.0	-	6.0	35.5	9.3	3.0	12.4
4/2+4/3	637	637	-	-	-	2.6	0.8	-	3.4	19.0	5.7	0.8	6.4
6/1	420	420	-	-	-	0.8	0.0	-	0.8	6.8	1.8	0.0	1.8
6/2	424	424	-	-	-	0.5	0.0	-	0.5	3.9	0.6	0.0	0.6
6/3	213	213	-	-	-	0.2	0.0	-	0.2	3.4	0.3	0.0	0.3
7/2+7/1	993	993	-	-	-	3.3	3.7	-	7.0	25.3	13.0	3.7	16.8
7/3+7/4	1800	1800	-	-	-	6.1	6.7	-	12.8	25.6	13.5	6.7	20.2
8/1	1113	1113	-	-	-	0.7	0.0	-	0.7	2.3	3.5	0.0	3.5
8/2	1096	1096	-	-	-	0.7	0.0	-	0.7	2.3	3.6	0.0	3.6
8/3	1131	1131	-	-	-	0.9	0.0	-	0.9	2.9	3.6	0.0	3.6
10/1+10/2	331	331	-	-	-	2.1	0.6	-	2.7	28.8	2.5	0.6	3.1
12/1	250	250	-	-	-	0.6	0.0	-	0.6	8.4	2.0	0.0	2.0
12/2	274	274	-	-	-	0.6	0.0	-	0.6	7.5	1.9	0.0	1.9

C1 Stream: 1 PRC for Signalled Lanes (%):	47.8	Total Delay for Signalled Lanes (pcuHr):	5.95	Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%):	3.9	Total Delay for Signalled Lanes (pcuHr):	11.59	Cycle Time (s): 60
C1 Stream: 3 PRC for Signalled Lanes (%):	-4.1	Total Delay for Signalled Lanes (pcuHr):	21.23	Cycle Time (s): 60
C1 Stream: 4 PRC for Signalled Lanes (%):	-1.9	Total Delay for Signalled Lanes (pcuHr):	4.98	Cycle Time (s): 60
PRC Over All Lanes (%):	-4.1	Total Delay Over All Lanes(pcuHr):	43.76	

APPENDIX 36

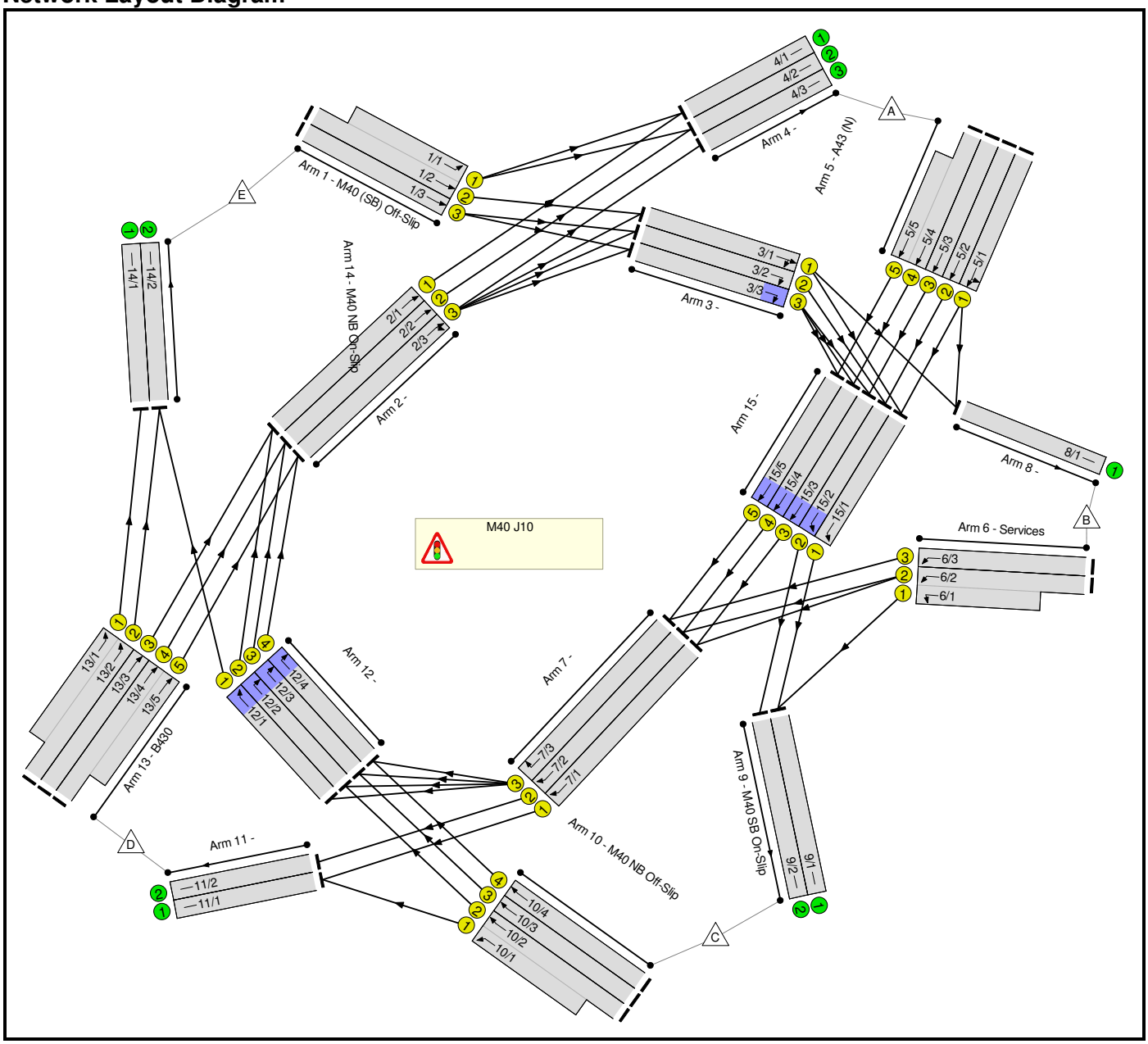
Single, large grade-separated gyratory – LinSig results

Full Input Data And Results

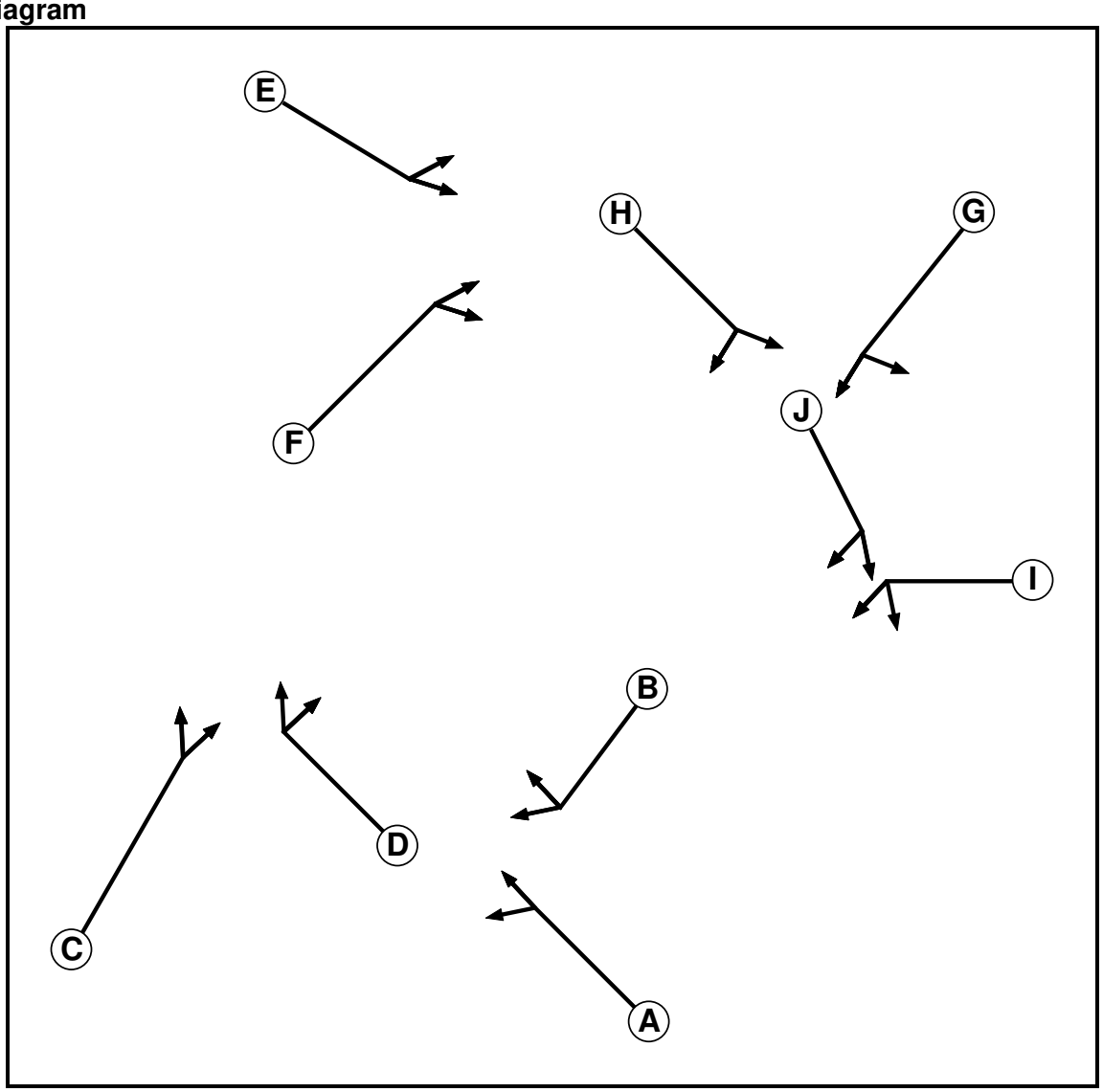
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Single grade-seperated roundabout**
Location:	
Additional detail:	
File name:	210607 M4J10 two bridge roundabout.lsg3x
Author:	[redacted]
Company:	ADC Infrastrcture
Address:	

Network Layout Diagram



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
E	Traffic	3		7	7
F	Traffic	3		7	7
G	Traffic	4		7	7
H	Traffic	4		7	7
I	Traffic	5		7	7
J	Traffic	5		7	7

Phase Intergreens Matrix

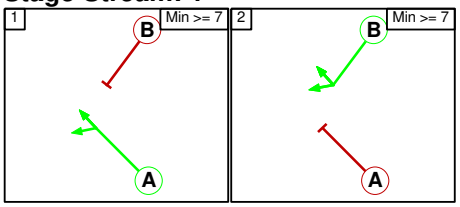
		Starting Phase									
		A	B	C	D	E	F	G	H	I	J
Terminating Phase	A		6	-	-	-	-	-	-	-	-
	B	6		-	-	-	-	-	-	-	-
	C	-	-		6	-	-	-	-	-	-
	D	-	-	6		-	-	-	-	-	-
	E	-	-	-	-		6	-	-	-	-
	F	-	-	-	-	6		-	-	-	-
	G	-	-	-	-	-	-		6	-	-
	H	-	-	-	-	-	-	6		-	-
	I	-	-	-	-	-	-	-	-		6
	J	-	-	-	-	-	-	-	-	6	

Phases in Stage

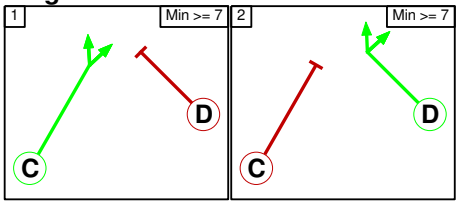
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F
4	1	G
4	2	H
5	1	I
5	2	J

Stage Diagram

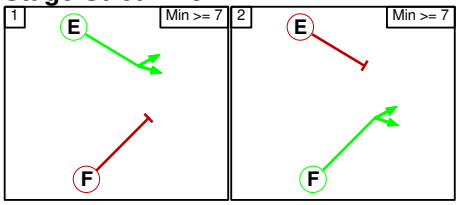
Stage Stream: 1



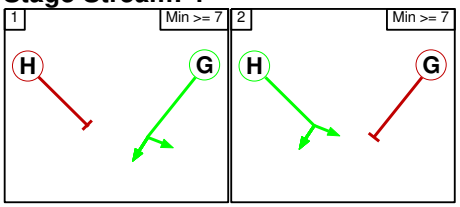
Stage Stream: 2



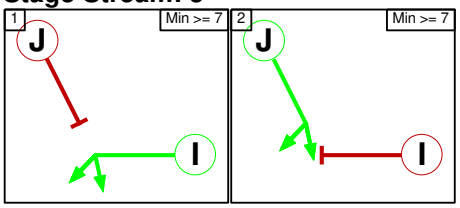
Stage Stream: 3



Stage Stream: 4



Stage Stream: 5



Prohibited Stage Change

Stage Stream: 1

	To Stage		
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

	To Stage		
		1	2
From Stage	1		6
	2	6	

Stage Stream: 3

	To Stage		
		1	2
From Stage	1		6
	2	6	

Stage Stream: 4

	To Stage		
		1	2
From Stage	1		6
	2	6	

Stage Stream: 5

	To Stage		
		1	2
From Stage	1		6
	2	6	

Lane Input Data

Junction: M40 J10												
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 (M40 (SB) Off-Slip)	U	E	2	3	17.4	Geom	-	3.65	0.00	Y	Arm 4 Left	Inf
1/2 (M40 (SB) Off-Slip)	U	E	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 3 Ahead	Inf
1/3 (M40 (SB) Off-Slip)	U	E	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 3 Ahead	Inf
2/1	U	F	2	3	31.3	User	1850	-	-	-	-	-
2/2	U	F	2	3	31.3	User	1850	-	-	-	-	-
2/3	U	F	2	3	31.3	User	1850	-	-	-	-	-
3/1	U	H	2	3	13.0	User	1850	-	-	-	-	-
3/2	U	H	2	3	13.0	User	1850	-	-	-	-	-
3/3	U	H	2	3	13.0	User	1850	-	-	-	-	-
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
4/2	U		2	3	60.0	Inf	-	-	-	-	-	-
4/3	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (A43 (N))	U	G	2	3	60.0	User	1850	-	-	-	-	-
5/2 (A43 (N))	U	G	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 15 Ahead	Inf
5/3 (A43 (N))	U	G	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 15 Ahead	Inf
5/4 (A43 (N))	U	G	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 15 Ahead	Inf
5/5 (A43 (N))	U	G	2	3	17.4	Geom	-	3.65	0.00	Y	Arm 15 Ahead	Inf
6/1 (Services)	U	I	2	3	10.0	Geom	-	3.65	0.00	Y	Arm 9 Left	30.00
6/2 (Services)	U	I	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 7 Left	Inf
6/3 (Services)	U	I	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 7 Left	50.00
7/1	U	B	2	3	13.9	User	1850	-	-	-	-	-
7/2	U	B	2	3	13.9	User	1850	-	-	-	-	-
7/3	U	B	2	3	13.9	User	1850	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-
9/1 (M40 SB On-Slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
9/2 (M40 SB On-Slip)	U		2	3	60.0	Inf	-	-	-	-	-	-

10/1 (M40 NB Off-Slip)	U	A	2	3	17.4	Geom	-	3.65	0.00	Y	Arm 11 Left	40.00
10/2 (M40 NB Off-Slip)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 12 Ahead	Inf
10/3 (M40 NB Off-Slip)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 12 Ahead	Inf
10/4 (M40 NB Off-Slip)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 12 Ahead	Inf
11/1	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1	U	D	2	3	19.1	User	1850	-	-	-	-	-
12/2	U	D	2	3	19.1	User	1850	-	-	-	-	-
12/3	U	D	2	3	19.1	User	1850	-	-	-	-	-
12/4	U	D	2	3	19.1	User	1850	-	-	-	-	-
13/1 (B430)	U	C	2	3	10.4	Geom	-	3.50	0.00	Y	Arm 14 Ahead	Inf
13/2 (B430)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 14 Ahead	Inf
13/3 (B430)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 2 Ahead	Inf
13/4 (B430)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 2 Ahead	Inf
13/5 (B430)	U	C	2	3	20.9	Geom	-	3.50	0.00	Y	Arm 2 Ahead	Inf
14/1 (M40 NB On-Slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
14/2 (M40 NB On-Slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
15/1	U	J	2	3	7.0	User	1850	-	-	-	-	-
15/2	U	J	2	3	7.0	User	1850	-	-	-	-	-
15/3	U	J	2	3	7.0	User	1850	-	-	-	-	-
15/4	U	J	2	3	7.0	User	1850	-	-	-	-	-
15/5	U	J	2	3	7.0	User	1850	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
5: '2031 do some AM'	07:45	08:45	01:00	
6: '2031 do some PM'	16:30	17:30	01:00	

Scenario 1: '2031 do something AM' (FG5: '2031 do some AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	124	1605	858	264	2851
	B	85	0	295	57	145	582
	C	1169	211	40	446	0	1866
	D	408	28	242	0	391	1069
	E	337	219	0	506	13	1075
	Tot.	1999	582	2182	1867	813	7443

Traffic Lane Flows

Lane	Scenario 1: 2031 do something AM
Junction: M40 J10	
1/1 (short)	337
1/2 (with short)	556(In) 219(Out)
1/3	519
2/1	686
2/2	721
2/3	776
3/1	458
3/2	282
3/3	519
4/1	855
4/2	889
4/3	255
5/1	839
5/2	890
5/3	397
5/4 (with short)	725(In) 461(Out)
5/5 (short)	264
6/1 (short)	295
6/2 (with short)	352(In) 57(Out)
6/3	230
7/1	678
7/2	743
7/3	507
8/1	582
9/1	1010
9/2	1172
10/1 (short)	446
10/2 (with short)	940(In) 494(Out)
10/3	463
10/4	463
11/1	1124
11/2	743
12/1	422
12/2	495
12/3	505

12/4	505
13/1 (short)	196
13/2 (with short)	391(In) 195(Out)
13/3	191
13/4 (with short)	487(In) 216(Out)
13/5 (short)	271
14/1	196
14/2	617
15/1	715
15/2	1172
15/3	648
15/4	716
15/5	277

Lane Saturation Flows

Junction: M40 J10

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 (M40 (SB) Off-Slip)	3.65	0.00	Y	Arm 4 Left	Inf	100.0 %	1980	1980
1/2 (M40 (SB) Off-Slip)	3.65	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1980	1980
1/3 (M40 (SB) Off-Slip)	3.65	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1980	1980
2/1	This lane uses a directly entered Saturation Flow						1850	1850
2/2	This lane uses a directly entered Saturation Flow						1850	1850
2/3	This lane uses a directly entered Saturation Flow						1850	1850
3/1	This lane uses a directly entered Saturation Flow						1850	1850
3/2	This lane uses a directly entered Saturation Flow						1850	1850
3/3	This lane uses a directly entered Saturation Flow						1850	1850
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
4/3	Infinite Saturation Flow						Inf	Inf
5/1 (A43 (N) Lane 1)	This lane uses a directly entered Saturation Flow						1850	1850
5/2 (A43 (N))	3.50	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1965	1965
5/3 (A43 (N))	3.50	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1965	1965
5/4 (A43 (N))	3.50	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1965	1965
5/5 (A43 (N))	3.65	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1980	1980
6/1 (Services)	3.65	0.00	Y	Arm 9 Left	30.00	100.0 %	1886	1886
6/2 (Services)	3.50	0.00	Y	Arm 7 Left	Inf	100.0 %	1965	1965
6/3 (Services)	3.50	0.00	Y	Arm 7 Left	50.00	100.0 %	1908	1908
7/1	This lane uses a directly entered Saturation Flow						1850	1850
7/2	This lane uses a directly entered Saturation Flow						1850	1850
7/3	This lane uses a directly entered Saturation Flow						1850	1850
8/1	Infinite Saturation Flow						Inf	Inf
9/1 (M40 SB On-Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (M40 SB On-Slip Lane 2)	Infinite Saturation Flow						Inf	Inf
10/1 (M40 NB Off-Slip)	3.65	0.00	Y	Arm 11 Left	40.00	100.0 %	1908	1908
10/2 (M40 NB Off-Slip)	3.65	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1980	1980

10/3 (M40 NB Off-Slip)	3.65	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1980	1980
10/4 (M40 NB Off-Slip)	3.65	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1980	1980
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	This lane uses a directly entered Saturation Flow						1850	1850
12/2	This lane uses a directly entered Saturation Flow						1850	1850
12/3	This lane uses a directly entered Saturation Flow						1850	1850
12/4	This lane uses a directly entered Saturation Flow						1850	1850
13/1 (B430)	3.50	0.00	Y	Arm 14 Ahead	Inf	100.0 %	1965	1965
13/2 (B430)	3.50	0.00	Y	Arm 14 Ahead	Inf	100.0 %	1965	1965
13/3 (B430)	3.50	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1965	1965
13/4 (B430)	3.50	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1965	1965
13/5 (B430)	3.50	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1965	1965
14/1 (M40 NB On-Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
14/2 (M40 NB On-Slip Lane 2)	Infinite Saturation Flow						Inf	Inf
15/1	This lane uses a directly entered Saturation Flow						1850	1850
15/2	This lane uses a directly entered Saturation Flow						1850	1850
15/3	This lane uses a directly entered Saturation Flow						1850	1850
15/4	This lane uses a directly entered Saturation Flow						1850	1850
15/5	This lane uses a directly entered Saturation Flow						1850	1850

Scenario 2: '2031do something PM' (FG6: '2031 do some PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	107	939	405	271	1722
	B	129	0	258	17	196	600
	C	1657	248	67	301	0	2273
	D	689	20	405	0	427	1541
	E	318	229	0	362	18	927
	Tot.	2793	604	1669	1085	912	7063

Traffic Lane Flows

Lane	Scenario 2: 2031do something PM
Junction: M40 J10	
1/1 (short)	318
1/2 (with short)	547(In) 229(Out)
1/3	380
2/1	1071
2/2	1078
2/3	1066
3/1	650
3/2	319
3/3	380
4/1	1230
4/2	1237
4/3	326
5/1	517
5/2	529
5/3	153
5/4 (with short)	523(In) 252(Out)
5/5 (short)	271
6/1 (short)	258
6/2 (with short)	275(In) 17(Out)
6/3	325
7/1	364
7/2	420
7/3	614
8/1	604
9/1	821
9/2	848
10/1 (short)	301
10/2 (with short)	992(In) 691(Out)
10/3	648
10/4	633
11/1	665
11/2	420
12/1	485
12/2	742
12/3	722

12/4	637
13/1 (short)	214
13/2 (with short)	427(In) 213(Out)
13/3	329
13/4 (with short)	785(In) 356(Out)
13/5 (short)	429
14/1	214
14/2	698
15/1	563
15/2	848
15/3	348
15/4	419
15/5	289

Lane Saturation Flows

Junction: M40 J10

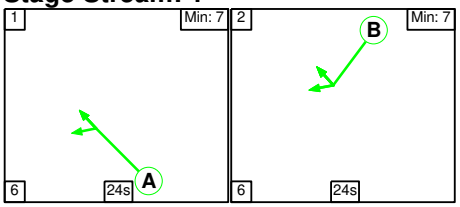
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (M40 (SB) Off-Slip)	3.65	0.00	Y	Arm 4 Left	Inf	100.0 %	1980	1980
1/2 (M40 (SB) Off-Slip)	3.65	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1980	1980
1/3 (M40 (SB) Off-Slip)	3.65	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1980	1980
2/1	This lane uses a directly entered Saturation Flow						1850	1850
2/2	This lane uses a directly entered Saturation Flow						1850	1850
2/3	This lane uses a directly entered Saturation Flow						1850	1850
3/1	This lane uses a directly entered Saturation Flow						1850	1850
3/2	This lane uses a directly entered Saturation Flow						1850	1850
3/3	This lane uses a directly entered Saturation Flow						1850	1850
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
4/3	Infinite Saturation Flow						Inf	Inf
5/1 (A43 (N) Lane 1)	This lane uses a directly entered Saturation Flow						1850	1850
5/2 (A43 (N))	3.50	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1965	1965
5/3 (A43 (N))	3.50	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1965	1965
5/4 (A43 (N))	3.50	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1965	1965
5/5 (A43 (N))	3.65	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1980	1980
6/1 (Services)	3.65	0.00	Y	Arm 9 Left	30.00	100.0 %	1886	1886
6/2 (Services)	3.50	0.00	Y	Arm 7 Left	Inf	100.0 %	1965	1965
6/3 (Services)	3.50	0.00	Y	Arm 7 Left	50.00	100.0 %	1908	1908
7/1	This lane uses a directly entered Saturation Flow						1850	1850
7/2	This lane uses a directly entered Saturation Flow						1850	1850
7/3	This lane uses a directly entered Saturation Flow						1850	1850
8/1	Infinite Saturation Flow						Inf	Inf
9/1 (M40 SB On-Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (M40 SB On-Slip Lane 2)	Infinite Saturation Flow						Inf	Inf
10/1 (M40 NB Off-Slip)	3.65	0.00	Y	Arm 11 Left	40.00	100.0 %	1908	1908
10/2 (M40 NB Off-Slip)	3.65	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1980	1980

10/3 (M40 NB Off-Slip)	3.65	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1980	1980
10/4 (M40 NB Off-Slip)	3.65	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1980	1980
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	This lane uses a directly entered Saturation Flow						1850	1850
12/2	This lane uses a directly entered Saturation Flow						1850	1850
12/3	This lane uses a directly entered Saturation Flow						1850	1850
12/4	This lane uses a directly entered Saturation Flow						1850	1850
13/1 (B430)	3.50	0.00	Y	Arm 14 Ahead	Inf	100.0 %	1965	1965
13/2 (B430)	3.50	0.00	Y	Arm 14 Ahead	Inf	100.0 %	1965	1965
13/3 (B430)	3.50	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1965	1965
13/4 (B430)	3.50	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1965	1965
13/5 (B430)	3.50	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1965	1965
14/1 (M40 NB On-Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
14/2 (M40 NB On-Slip Lane 2)	Infinite Saturation Flow						Inf	Inf
15/1	This lane uses a directly entered Saturation Flow						1850	1850
15/2	This lane uses a directly entered Saturation Flow						1850	1850
15/3	This lane uses a directly entered Saturation Flow						1850	1850
15/4	This lane uses a directly entered Saturation Flow						1850	1850
15/5	This lane uses a directly entered Saturation Flow						1850	1850

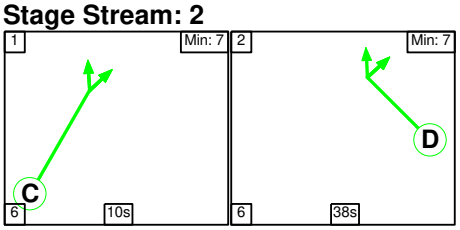
Scenario 1: '2031 do something AM' (FG5: '2031 do some AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

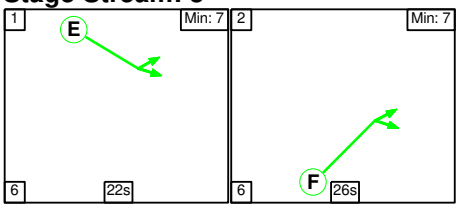
Stage Stream: 1



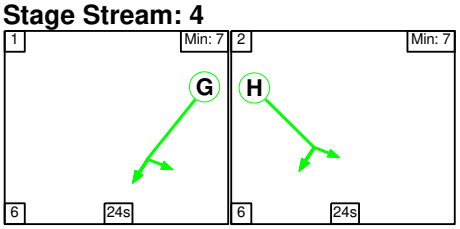
Stage Stream: 2



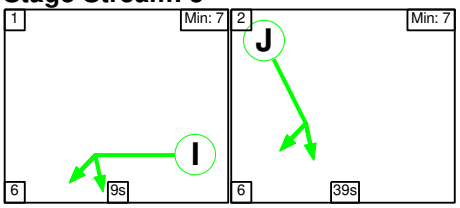
Stage Stream: 3



Stage Stream: 4



Stage Stream: 5



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	24	24
Change Point	0	30

Stage Stream: 2

Stage	1	2
Duration	10	38
Change Point	21	37

Stage Stream: 3

Stage	1	2
Duration	22	26
Change Point	0	28

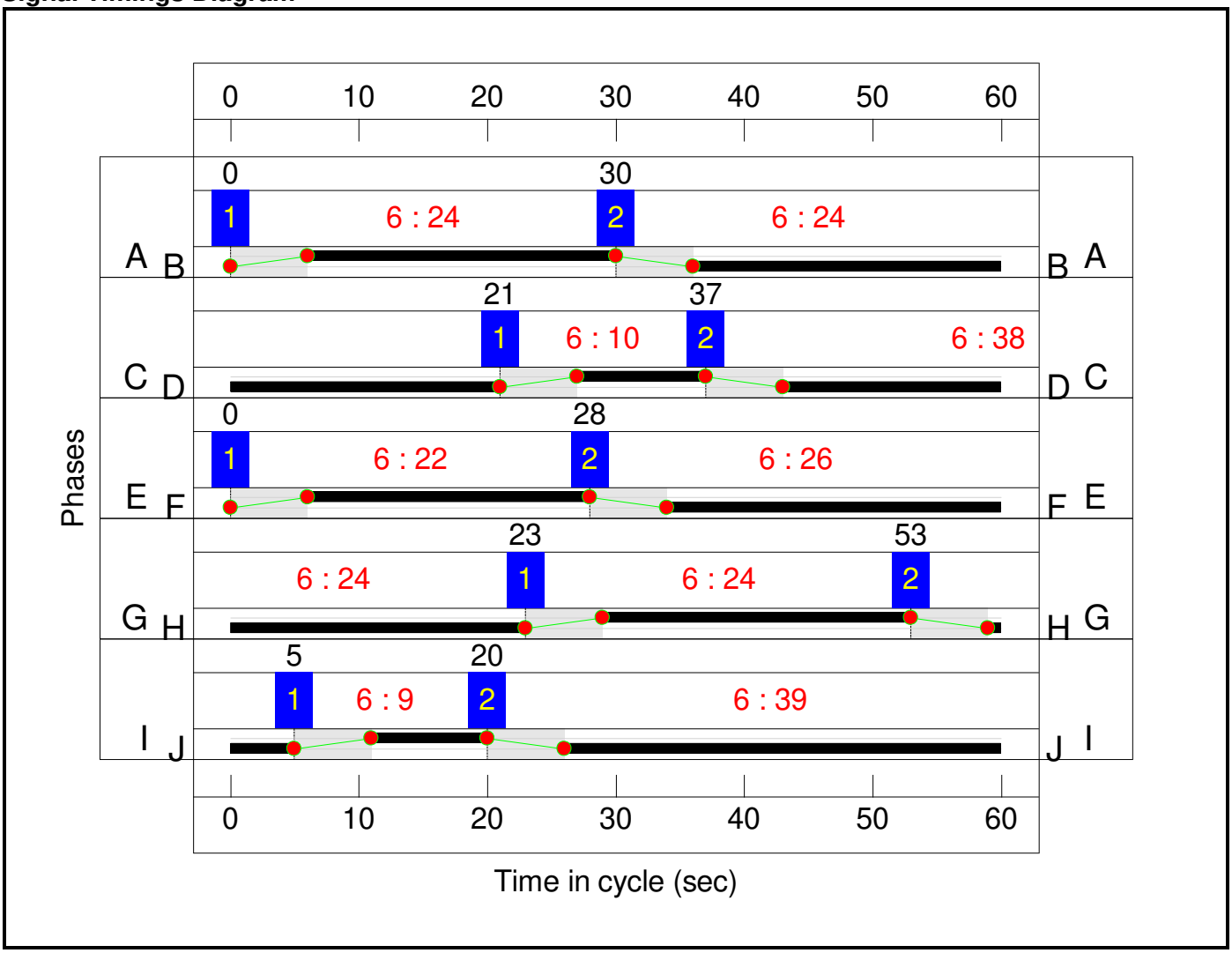
Stage Stream: 4

Stage	1	2
Duration	24	24
Change Point	23	53

Stage Stream: 5

Stage	1	2
Duration	9	39
Change Point	5	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: Single grade-seperated roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**108.8%**
M40 J10	-	-	**N/A**	-	-		-	-	-	-	-	-	**108.8%**
1/2+1/1	M40 (SB) Off-Slip Ahead Left	U	3	N/A	E		1	22	-	556	1980:1980	493+759	44.4 : 44.4%
1/3	M40 (SB) Off-Slip Ahead	U	3	N/A	E		1	22	-	519	1980	759	68.4%
2/1	Ahead	U	3	N/A	F		1	26	-	686	1850	833	82.4%
2/2	Ahead	U	3	N/A	F		1	26	-	721	1850	833	86.6%
2/3	Right Ahead	U	3	N/A	F		1	26	-	776	1850	833	93.2%
3/1	Ahead Right	U	4	N/A	H		1	24	-	458	1850	771	59.4%
3/2	Right	U	4	N/A	H		1	24	-	282	1850	771	36.6%
3/3	Right	U	4	N/A	H		1	24	-	519	1850	771	67.3%
5/1	A43 (N) Left Ahead	U	4	N/A	G		1	24	-	839	1850	771	108.8%
5/2	A43 (N) Ahead	U	4	N/A	G		1	24	-	890	1965	819	108.7%
5/3	A43 (N) Ahead	U	4	N/A	G		1	24	-	397	1965	819	48.5%
5/4+5/5	A43 (N) Ahead	U	4	N/A	G		1	24	-	725	1965:1980	819+469	56.3 : 56.3%
6/2+6/1	Services Left Left2	U	5	N/A	I		1	9	-	352	1965:1886	61+314	93.8 : 93.8%
6/3	Services Left	U	5	N/A	I		1	9	-	230	1908	318	72.3%
7/1	Ahead	U	1	N/A	B		1	24	-	678	1850	771	88.0%
7/2	Ahead	U	1	N/A	B		1	24	-	743	1850	771	96.4%
7/3	Right	U	1	N/A	B		1	24	-	507	1850	771	65.8%
10/2+10/1	M40 NB Off-Slip Left Ahead	U	1	N/A	A		1	24	-	940	1980:1908	825+795	59.9 : 56.1%
10/3	M40 NB Off-Slip Ahead	U	1	N/A	A		1	24	-	463	1980	825	56.1%

10/4	M40 NB Off-Slip Ahead	U	1	N/A	A		1	24	-	463	1980	825	56.1%
12/1	Ahead	U	2	N/A	D		1	38	-	422	1850	1203	35.1%
12/2	Right	U	2	N/A	D		1	38	-	495	1850	1203	41.2%
12/3	Right	U	2	N/A	D		1	38	-	505	1850	1203	42.0%
12/4	Right	U	2	N/A	D		1	38	-	505	1850	1203	42.0%
13/2+13/1	B430 Ahead	U	2	N/A	C		1	10	-	391	1965:1965	360+360	54.1 : 54.4%
13/3	B430 Ahead	U	2	N/A	C		1	10	-	191	1965	360	53.0%
13/4+13/5	B430 Ahead	U	2	N/A	C		1	10	-	487	1965:1965	360+360	60.0 : 75.2%
15/1	Ahead	U	5	N/A	J		1	39	-	715	1850	1233	53.3%
15/2	Ahead	U	5	N/A	J		1	39	-	1172	1850	1233	89.3%
15/3	Ahead	U	5	N/A	J		1	39	-	648	1850	1233	52.5%
15/4	Ahead	U	5	N/A	J		1	39	-	716	1850	1233	58.1%
15/5	Ahead	U	5	N/A	J		1	39	-	277	1850	1233	22.5%

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: Single grade-seperated roundabout	**-**	**-**	**0**	**0**	**0**	**57.6**	**93.7**	**0.0**	**151.3**	**-**	**-**	**-**	**-**
M40 J10	**-**	**-**	**0**	**0**	**0**	**57.6**	**93.7**	**0.0**	**151.3**	**-**	**-**	**-**	**-**
1/2+1/1	556	556	-	-	-	2.1	0.4	-	2.5 (0.9+1.5)	16.0 (15.4:16.3)	4.1	0.4	4.5
1/3	519	519	-	-	-	2.2	1.1	-	3.3	22.9	7.2	1.1	8.3
2/1	686	686	-	-	-	1.7	0.0	-	1.7	8.9	8.6	0.0	8.6
2/2	721	721	-	-	-	1.9	0.0	-	1.9	9.3	9.3	0.0	9.3
2/3	776	776	-	-	-	2.0	0.0	-	2.0	9.1	10.4	0.0	10.4
3/1	458	458	-	-	-	1.2	0.0	-	1.2	9.1	4.5	0.0	4.5
3/2	282	282	-	-	-	0.7	0.0	-	0.7	9.1	4.7	0.0	4.7
3/3	519	519	-	-	-	1.5	0.0	-	1.5	10.2	2.7	0.0	2.7
5/1	839	771	-	-	-	5.7	39.4	-	45.1	193.7	15.3	39.4	54.7
5/2	890	819	-	-	-	6.0	41.0	-	47.1	190.5	16.2	41.0	57.3
5/3	397	397	-	-	-	1.4	0.5	-	1.9	17.1	4.7	0.5	5.2
5/4+5/5	725	725	-	-	-	2.6	0.6	-	3.2 (2.1+1.1)	16.0 (16.5:15.0)	5.8	0.6	6.4
6/2+6/1	352	352	-	-	-	2.4	5.2	-	7.6 (1.2+6.4)	77.8 (75.2:78.3)	4.8	5.2	10.1
6/3	230	230	-	-	-	1.5	1.3	-	2.8	43.6	3.6	1.3	4.8
7/1	678	678	-	-	-	1.9	0.0	-	1.9	10.1	10.9	0.0	10.9
7/2	743	743	-	-	-	2.1	0.0	-	2.1	10.0	12.2	0.0	12.2
7/3	507	507	-	-	-	1.8	0.0	-	1.8	12.6	7.7	0.0	7.7
10/2+10/1	940	940	-	-	-	3.5	0.7	-	4.2 (2.2+2.0)	16.1 (16.2:16.0)	6.3	0.7	7.0
10/3	463	463	-	-	-	1.7	0.6	-	2.4	18.3	5.8	0.6	6.4
10/4	463	463	-	-	-	1.7	0.6	-	2.4	18.3	5.8	0.6	6.4
12/1	422	422	-	-	-	0.0	0.0	-	0.0	0.0	0.1	0.0	0.1
12/2	495	495	-	-	-	1.2	0.0	-	1.2	8.8	3.9	0.0	3.9

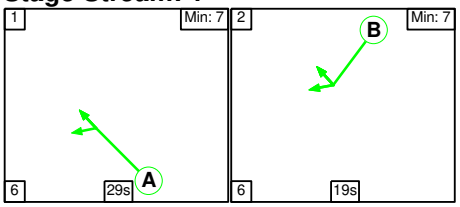
12/3	505	505	-	-	-	1.0	0.0	-	1.0	7.4	3.9	0.0	3.9
12/4	505	505	-	-	-	1.0	0.0	-	1.0	7.4	3.9	0.0	3.9
13/2+13/1	391	391	-	-	-	2.4	0.6	-	3.0 (1.5+1.5)	27.7 (27.7:27.7)	2.9	0.6	3.5
13/3	191	191	-	-	-	1.2	0.6	-	1.7	32.7	2.9	0.6	3.4
13/4+13/5	487	487	-	-	-	3.1	1.0	-	4.1 (1.8+2.3)	30.5 (30.1:30.9)	4.2	1.0	5.2
15/1	657	657	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	1101	1101	-	-	-	1.0	0.0	-	1.0	3.1	3.5	0.0	3.5
15/3	648	648	-	-	-	0.5	0.0	-	0.5	2.9	3.9	0.0	3.9
15/4	716	716	-	-	-	0.6	0.0	-	0.6	2.8	3.9	0.0	3.9
15/5	277	277	-	-	-	0.0	0.0	-	0.0	0.2	0.2	0.0	0.2

C1	Stream: 1 PRC for Signalled Lanes (%):	-7.1	Total Delay for Signalled Lanes (pcuHr):	14.67	Cycle Time (s): 60
C1	Stream: 2 PRC for Signalled Lanes (%):	19.6	Total Delay for Signalled Lanes (pcuHr):	12.17	Cycle Time (s): 60
C1	Stream: 3 PRC for Signalled Lanes (%):	-3.6	Total Delay for Signalled Lanes (pcuHr):	11.29	Cycle Time (s): 60
C1	Stream: 4 PRC for Signalled Lanes (%):	-20.9	Total Delay for Signalled Lanes (pcuHr):	100.68	Cycle Time (s): 60
C1	Stream: 5 PRC for Signalled Lanes (%):	-4.3	Total Delay for Signalled Lanes (pcuHr):	12.47	Cycle Time (s): 60
	PRC Over All Lanes (%):	-20.9	Total Delay Over All Lanes(pcuHr):	151.27	

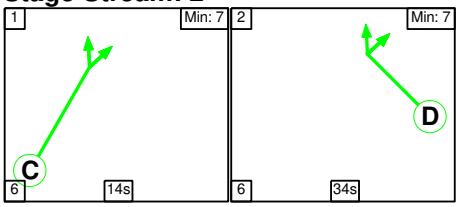
Scenario 2: '2031do something PM' (FG6: '2031 do some PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

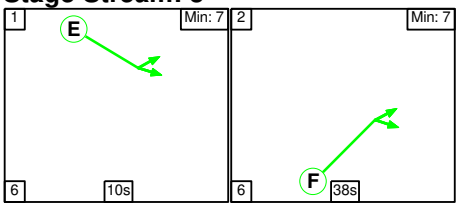
Stage Stream: 1



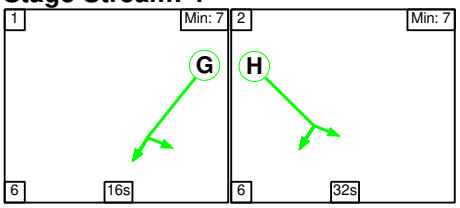
Stage Stream: 2



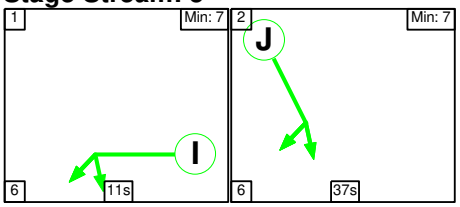
Stage Stream: 3



Stage Stream: 4



Stage Stream: 5



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	29	19
Change Point	0	35

Stage Stream: 2

Stage	1	2
Duration	14	34
Change Point	27	47

Stage Stream: 3

Stage	1	2
Duration	10	38
Change Point	55	11

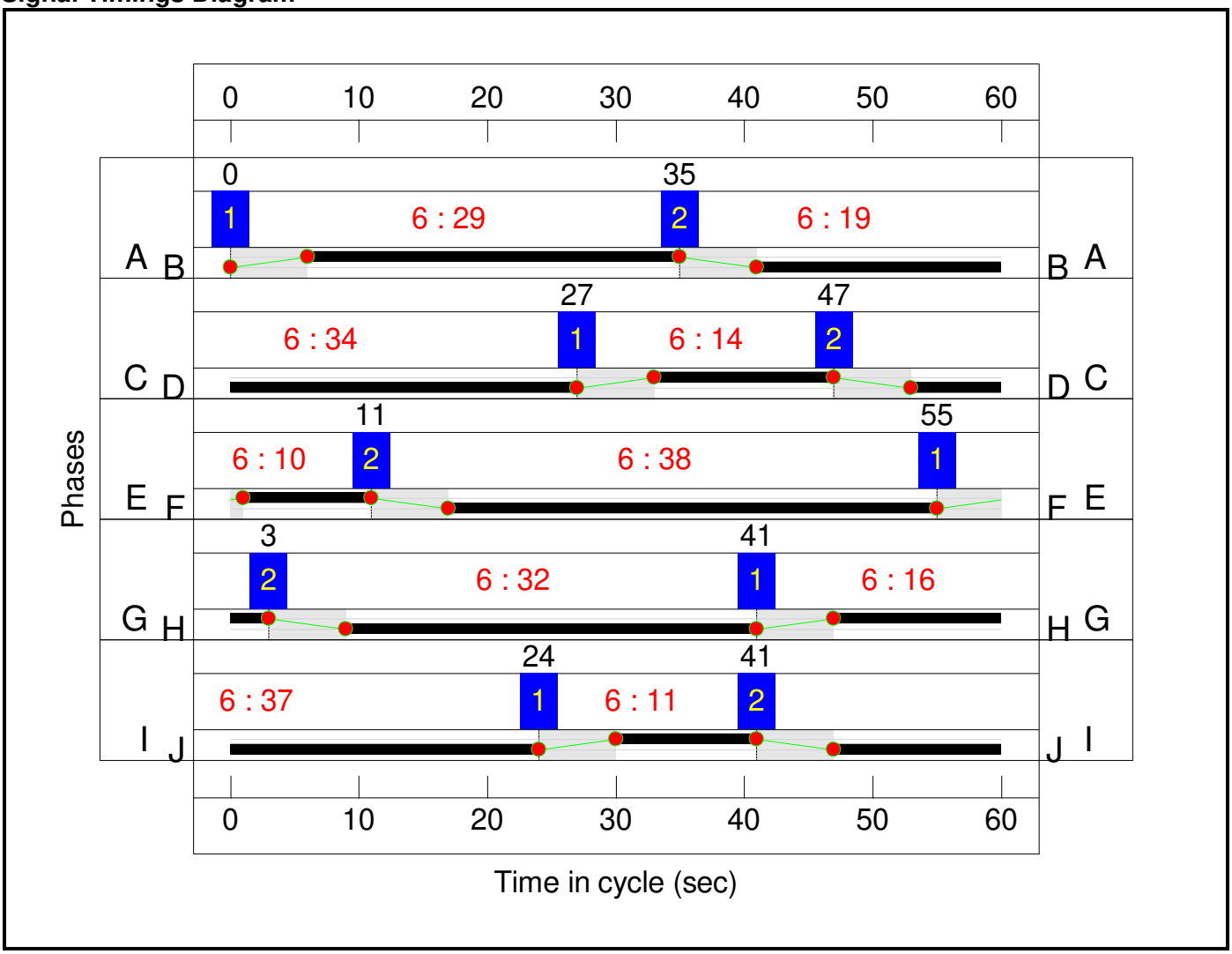
Stage Stream: 4

Stage	1	2
Duration	16	32
Change Point	41	3

Stage Stream: 5

Stage	1	2
Duration	11	37
Change Point	24	41

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: Single grade-seperated roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**104.7%**
M40 J10	-	-	**N/A**	-	-		-	-	-	-	-	-	**104.7%**
1/2+1/1	M40 (SB) Off-Slip Ahead Left	U	3	N/A	E		1	10	-	547	1980:1980	363+363	63.1 : 87.6%
1/3	M40 (SB) Off-Slip Ahead	U	3	N/A	E		1	10	-	380	1980	363	104.7%
2/1	Ahead	U	3	N/A	F		1	38	-	1071	1850	1203	89.1%
2/2	Ahead	U	3	N/A	F		1	38	-	1078	1850	1203	89.6%
2/3	Right Ahead	U	3	N/A	F		1	38	-	1066	1850	1203	88.6%
3/1	Ahead Right	U	4	N/A	H		1	32	-	650	1850	1018	63.9%
3/2	Right	U	4	N/A	H		1	32	-	319	1850	1018	31.4%
3/3	Right	U	4	N/A	H		1	32	-	380	1850	1018	35.7%
5/1	A43 (N) Left Ahead	U	4	N/A	G		1	16	-	517	1850	524	98.6%
5/2	A43 (N) Ahead	U	4	N/A	G		1	16	-	529	1965	557	95.0%
5/3	A43 (N) Ahead	U	4	N/A	G		1	16	-	153	1965	557	27.5%
5/4+5/5	A43 (N) Ahead	U	4	N/A	G		1	16	-	523	1965:1980	557+561	45.3 : 48.3%
6/2+6/1	Services Left Left2	U	5	N/A	I		1	11	-	275	1965:1886	25+377	68.4 : 68.4%
6/3	Services Left	U	5	N/A	I		1	11	-	325	1908	382	85.2%
7/1	Ahead	U	1	N/A	B		1	19	-	364	1850	617	57.6%
7/2	Ahead	U	1	N/A	B		1	19	-	420	1850	617	66.9%
7/3	Right	U	1	N/A	B		1	19	-	614	1850	617	99.4%
10/2+10/1	M40 NB Off-Slip Left Ahead	U	1	N/A	A		1	29	-	992	1980:1908	990+431	69.8 : 69.8%
10/3	M40 NB Off-Slip Ahead	U	1	N/A	A		1	29	-	648	1980	990	65.5%

10/4	M40 NB Off-Slip Ahead	U	1	N/A	A		1	29	-	633	1980	990	63.9%
12/1	Ahead	U	2	N/A	D		1	34	-	485	1850	1079	44.9%
12/2	Right	U	2	N/A	D		1	34	-	742	1850	1079	68.8%
12/3	Right	U	2	N/A	D		1	34	-	722	1850	1079	66.9%
12/4	Right	U	2	N/A	D		1	34	-	637	1850	1079	59.0%
13/2+13/1	B430 Ahead	U	2	N/A	C		1	14	-	427	1965:1965	491+491	43.4 : 43.6%
13/3	B430 Ahead	U	2	N/A	C		1	14	-	329	1965	491	67.0%
13/4+13/5	B430 Ahead	U	2	N/A	C		1	14	-	785	1965:1965	491+491	72.5 : 87.3%
15/1	Ahead	U	5	N/A	J		1	37	-	563	1850	1172	48.1%
15/2	Ahead	U	5	N/A	J		1	37	-	848	1850	1172	72.4%
15/3	Ahead	U	5	N/A	J		1	37	-	348	1850	1172	29.0%
15/4	Ahead	U	5	N/A	J		1	37	-	419	1850	1172	35.1%
15/5	Ahead	U	5	N/A	J		1	37	-	289	1850	1172	24.6%

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: Single grade-seperated roundabout	**-**	**-**	**0**	**0**	**0**	**52.9**	**43.2**	**0.0**	**96.1**	**-**	**-**	**-**	**-**
M40 J10	**-**	**-**	**0**	**0**	**0**	**52.9**	**43.2**	**0.0**	**96.1**	**-**	**-**	**-**	**-**
1/2+1/1	547	547	-	-	-	3.5	1.5	-	5.0 (2.1+3.0)	33.2 (32.5:33.7)	5.1	1.5	6.6
1/3	380	363	-	-	-	3.1	14.9	-	18.0	170.5	6.6	14.9	21.5
2/1	1071	1071	-	-	-	1.6	0.0	-	1.6	5.3	12.6	0.0	12.6
2/2	1078	1078	-	-	-	1.6	0.0	-	1.6	5.2	12.4	0.0	12.4
2/3	1066	1066	-	-	-	1.5	0.0	-	1.5	5.0	10.9	0.0	10.9
3/1	650	650	-	-	-	1.4	0.0	-	1.4	7.8	6.5	0.0	6.5
3/2	319	319	-	-	-	1.0	0.0	-	1.0	11.7	3.7	0.0	3.7
3/3	363	363	-	-	-	0.2	0.0	-	0.2	1.7	1.0	0.0	1.0
5/1	517	517	-	-	-	3.1	9.7	-	12.8	89.1	8.5	9.7	18.2
5/2	529	529	-	-	-	3.1	6.5	-	9.6	65.3	8.5	6.5	15.0
5/3	153	153	-	-	-	0.7	0.2	-	0.9	21.2	2.0	0.2	2.1
5/4+5/5	523	523	-	-	-	2.6	0.4	-	3.0 (1.4+1.6)	20.8 (20.7:20.9)	3.7	0.4	4.1
6/2+6/1	275	275	-	-	-	1.7	1.1	-	2.8 (0.2+2.6)	36.0 (33.5:36.2)	3.9	1.1	5.0
6/3	325	325	-	-	-	2.1	2.6	-	4.7	52.2	5.1	2.6	7.8
7/1	355	355	-	-	-	1.5	0.0	-	1.5	15.4	3.9	0.0	3.9
7/2	413	413	-	-	-	1.8	0.0	-	1.8	15.5	3.9	0.0	3.9
7/3	613	613	-	-	-	1.8	0.0	-	1.8	10.7	9.8	0.0	9.8
10/2+10/1	992	992	-	-	-	3.0	1.1	-	4.1 (3.0+1.1)	14.9 (15.7:13.1)	8.8	1.1	10.0
10/3	648	648	-	-	-	2.0	0.9	-	2.9	16.4	7.9	0.9	8.9
10/4	633	633	-	-	-	1.9	0.9	-	2.8	16.0	7.7	0.9	8.6
12/1	484	484	-	-	-	0.2	0.0	-	0.2	1.7	4.4	0.0	4.4
12/2	742	742	-	-	-	1.6	0.0	-	1.6	7.8	4.9	0.0	4.9

12/3	722	722	-	-	-	1.3	0.0	-	1.3	6.4	4.4	0.0	4.4
12/4	637	637	-	-	-	1.1	0.0	-	1.1	6.3	3.2	0.0	3.2
13/2+13/1	427	427	-	-	-	2.2	0.4	-	2.6 (1.3+1.3)	22.2 (22.2:22.2)	3.0	0.4	3.4
13/3	329	329	-	-	-	1.9	1.0	-	2.9	31.2	4.9	1.0	5.9
13/4+13/5	785	785	-	-	-	4.6	1.9	-	6.6 (2.9+3.6)	30.1 (29.5:30.5)	6.8	1.9	8.7
15/1	563	563	-	-	-	0.2	0.0	-	0.2	1.5	0.9	0.0	0.9
15/2	848	848	-	-	-	0.5	0.0	-	0.5	2.1	1.7	0.0	1.7
15/3	339	339	-	-	-	0.0	0.0	-	0.0	0.2	0.1	0.0	0.1
15/4	412	412	-	-	-	0.0	0.0	-	0.0	0.2	0.1	0.0	0.1
15/5	288	288	-	-	-	0.0	0.0	-	0.0	0.1	0.1	0.0	0.1

C1	Stream: 1 PRC for Signalled Lanes (%):	-10.5	Total Delay for Signalled Lanes (pcuHr):	15.00	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	3.1	Total Delay for Signalled Lanes (pcuHr):	16.28	Cycle Time (s):	60
C1	Stream: 3 PRC for Signalled Lanes (%):	-16.3	Total Delay for Signalled Lanes (pcuHr):	27.68	Cycle Time (s):	60
C1	Stream: 4 PRC for Signalled Lanes (%):	-9.6	Total Delay for Signalled Lanes (pcuHr):	28.92	Cycle Time (s):	60
C1	Stream: 5 PRC for Signalled Lanes (%):	5.7	Total Delay for Signalled Lanes (pcuHr):	8.25	Cycle Time (s):	60
	PRC Over All Lanes (%):	-16.3	Total Delay Over All Lanes(pcuHr):	96.13		

APPENDIX **37**

Site access roundabout – Arcady results

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
© Copyright TRL Limited, 2019

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 210604 Site Access ARCADY Model - With Bypass.j9
Path: D:\Dropbox (ADC Infrastructure)\!!! ADC Projects\ADC1794 Oxfordshire SRFI\Documents\reports\ADC\M. M40 J10 options\Options Report\7. Site Access
Report generation date: 11/06/2021 16:16:00

»2031 DS - 2031_DS, AM1
»2031 DS - 2031_DS, AM2
»2031 DS - 2031_DS, PM

Summary of junction performance

	AM1				AM2				PM			
	Set ID	Queue (Veh)	Delay (s)	RFC	Set ID	Queue (Veh)	Delay (s)	RFC	Set ID	Queue (Veh)	Delay (s)	RFC
	2031 DS - 2031_DS											
Arm 1	D1	3.7	11.33	0.79	D2	4.0	12.01	0.80	D3	1.3	4.70	0.57
Arm 2		0.1	4.39	0.05		0.1	4.44	0.05		1.4	10.58	0.59
Arm 3		3.6	7.45	0.79		3.1	6.75	0.76		1.5	4.66	0.60

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

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

File summary

File Description

Title	OxSRFI Site Access
Location	
Site number	
Date	24/05/2021
Version	
Status	Preliminary
Identifier	
Client	
Jobnumber	
Enumerator	
Description	

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS	AM1	ONE HOUR	06:30	08:00	15
D2	2031_DS	AM2	ONE HOUR	07:30	09:00	15
D3	2031_DS	PM	ONE HOUR	16:15	17:45	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	2031 DS	100.000

2031 DS - 2031_DS, AM1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	8.39	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	B430 (S)	
2	Site Access	
3	Link Road (N)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.65	9.00	36.7	18.0	70.0	41.4	
2	3.65	4.50	2.2	20.0	70.0	30.6	
3	7.30	9.00	27.2	20.0	70.0	39.0	

Bypass

Arm	Arm has bypass	Bypass utilisation (%)
1		
2	✓	100
3		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.560	2112
2	0.429	1219
3	0.633	2559

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031_DS	AM1	ONE HOUR	06:30	08:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		✓	1092	100.000
2		✓	256	100.000
3		✓	1610	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	394	698
	2	42	0	214
	3	929	681	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	0	7
	2	0	0	74
	3	3	25	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1	0.79	11.33	3.7	B
2	0.05	4.39	0.1	A
3	0.79	7.45	3.6	A

Main Results for each time segment

06:30 - 06:45

Arm	Total Demand (Veh/hr)	Bypass demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	822	0	511	1678	0.490	818	1.0	4.167	A
2	312	161	523	978	0.032	31	0.0	3.801	A
3	1212	0	31	2263	0.536	1208	1.1	3.397	A

06:45 - 07:00

Arm	Total Demand (Veh/hr)	Bypass demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	982	0	611	1611	0.609	979	1.5	5.675	A
2	373	192	626	931	0.041	38	0.0	4.028	A
3	1447	0	38	2260	0.641	1445	1.8	4.405	A

07:00 - 07:15

Arm	Total Demand (Veh/hr)	Bypass demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	1202	0	747	1520	0.791	1194	3.6	10.774	B
2	457	236	763	868	0.053	46	0.1	4.379	A
3	1773	0	46	2255	0.786	1765	3.5	7.251	A

07:15 - 07:30

Arm	Total Demand (Veh/hr)	Bypass demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	1202	0	750	1518	0.792	1202	3.7	11.333	B
2	457	236	768	866	0.053	46	0.1	4.391	A
3	1773	0	46	2255	0.786	1772	3.6	7.449	A

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Bypass demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	982	0	615	1608	0.610	990	1.6	5.900	A
2	373	192	633	928	0.041	38	0.0	4.045	A
3	1447	0	38	2260	0.641	1455	1.8	4.512	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Bypass demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	822	0	514	1676	0.490	825	1.0	4.239	A
2	312	161	527	977	0.032	32	0.0	3.811	A
3	1212	0	32	2263	0.536	1215	1.2	3.441	A

2031 DS - 2031_DS, AM2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	8.30	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2031_DS	AM2	ONE HOUR	07:30	09:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		✓	1107	100.000
2		✓	256	100.000
3		✓	1537	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	394	713
	2	42	0	214
	3	856	681	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	0	7
	2	0	0	74
	3	5	25	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1	0.80	12.01	4.0	B
2	0.05	4.44	0.1	A
3	0.76	6.75	3.1	A

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Bypass demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	833	0	511	1677	0.497	829	1.0	4.231	A
2	312	161	534	973	0.033	31	0.0	3.824	A
3	1157	0	31	2233	0.518	1153	1.1	3.317	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Bypass demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	995	0	611	1609	0.618	993	1.6	5.815	A
2	373	192	639	924	0.041	38	0.0	4.060	A
3	1382	0	38	2230	0.620	1380	1.6	4.223	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Bypass demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	1219	0	747	1518	0.803	1210	3.8	11.354	B
2	457	236	779	860	0.054	46	0.1	4.424	A
3	1692	0	46	2225	0.761	1686	3.1	6.611	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Bypass demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	1219	0	750	1517	0.804	1218	4.0	12.013	B
2	457	236	785	857	0.054	46	0.1	4.437	A
3	1692	0	46	2225	0.761	1692	3.1	6.749	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Bypass demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	995	0	615	1607	0.619	1004	1.7	6.062	A
2	373	192	647	921	0.041	38	0.0	4.078	A
3	1382	0	38	2230	0.620	1388	1.6	4.306	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Bypass demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	833	0	514	1675	0.498	836	1.0	4.306	A
2	312	161	538	971	0.033	32	0.0	3.835	A
3	1157	0	32	2233	0.518	1159	1.1	3.359	A

2031 DS - 2031_DS, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	6.92	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2031_DS	PM	ONE HOUR	16:15	17:45	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		✓	914	100.000
2		✓	1181	100.000
3		✓	1043	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	130	784
	2	452	0	729
	3	719	324	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	0	3
	2	0	0	20
	3	3	49	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1	0.57	4.70	1.3	A
2	0.59	10.58	1.4	B
3	0.60	4.66	1.5	A

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (Veh/hr)	Bypass demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	688	0	243	1865	0.369	686	0.6	3.046	A
2	997	549	588	959	0.355	338	0.5	5.779	A
3	785	0	338	2006	0.391	783	0.6	2.935	A

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Bypass demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	822	0	291	1826	0.450	821	0.8	3.577	A
2	1190	655	704	908	0.448	405	0.8	7.149	A
3	938	0	405	1970	0.476	937	0.9	3.481	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Bypass demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	1006	0	356	1773	0.567	1004	1.3	4.670	A
2	1458	803	862	838	0.594	495	1.4	10.415	B
3	1148	0	495	1921	0.598	1146	1.5	4.630	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Bypass demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	1006	0	357	1773	0.568	1006	1.3	4.696	A
2	1458	803	863	838	0.594	498	1.4	10.582	B
3	1148	0	498	1920	0.598	1148	1.5	4.665	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Bypass demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	822	0	292	1825	0.450	824	0.8	3.599	A
2	1190	655	706	907	0.448	409	0.8	7.264	A
3	938	0	409	1968	0.476	940	0.9	3.510	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Bypass demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	688	0	244	1864	0.369	689	0.6	3.067	A
2	997	549	591	958	0.355	341	0.6	5.852	A
3	785	0	341	2005	0.392	786	0.6	2.959	A

APPENDIX 16

TN6: M40 JUNCTION 10 OPTIONS REPORT 'TRAFFIC FLOW DERIVATIONS'

OXFORDSHIRE RAILFREIGHT INTERCHANGE LIMITED

TECHNICAL NOTE 6: M40 J10 OPTIONS REPORT – TRAFFIC FLOW DERIVATION

ADC Infrastructure Limited
King Edward Court
King Edward Street
Nottingham
NG1 1EW

www.ADCinfrastructure.com

project number: ADC1794				report reference: ADC1794-RP-N
version	date	lead author	reviewer	comments
1		[redacted]		internal draft
2	11/06/2021			for issue to Transport Working Group

CONTENTS

1.0 INTRODUCTION 3

2.0 REFERENCE CASE TRAFFIC FLOWS 4

Introduction 4
B430/Ardley Road junction 6
Highway network 8
Baynard's Green Roundabout 8
Padbury Roundabout 8
Cherwell Roundabout 8
Ardley Roundabout 8

3.0 DO SOMETHING TRAFFIC FLOWS 10

Introduction 10
Trip distribution – light vehicle trips 10
Trip distribution – HGV trips 10
Highway network 12
Baynard's Green roundabout 12
Padbury Roundabout 12
Cherwell Roundabout 13
Ardley Roundabout 13
Proposed Ardley East 14
Proposed site access junction 15
Strategic Option 3 – large grade separated roundabout 15

APPENDICES

Appendix A 2031 Reference Case O/D Traffic Flow Matrices
Appendix B 2031 Reference Case Traffic Flow Diagrams
Appendix C 2031 Do Something O/D Traffic Flow Matrices
Appendix D 2031 Do Something Traffic Flow Diagrams

1.0 INTRODUCTION

1.1 ADC Infrastructure Limited are appointed by Oxfordshire Railfreight Interchange Ltd (the Applicant) to assess the transport and infrastructure requirements of a Nationally Significant Infrastructure Project (NSIP), that being a proposed Strategic Rail Freight Interchange in Oxfordshire, to be known as Oxfordshire Strategic Rail Freight Interchange (OxSRFI).

1.2 Technical Note 5 'M40 Junction 10 Options Report'[1] has been produced to identify and assess a long list of interventions to be considered at M40 Junction 10 that could be implemented by the OxSRFI scheme to mitigate the impact of the OxSRFI development at M40 Junction 10.

1.3 This Technical Note has been produced to calculate the traffic flow demands used in the Technical Note 5. It therefore should be read in conjunction with Technical Note 5 and is structured as follows:

- Section 2 presents the 2031 Reference Case traffic flows used in the Options Report.
- Section 3 presents the 2031 Do something (with OxSRFI development) traffic flows used in the Options Report.

1.4 It should be noted that the final assessment traffic flows for use in the Transport Assessment will be agreed with Highways England and Oxfordshire County Council, and are expected to be based on the outputs from the Bicester Transport Model.

[1] Technical Note 5 – M40 Junction 10 Options Report, ADC1794-RP-M-V2, ADC Infrastructure Ltd, June 2021

2.0 REFERENCE CASE TRAFFIC FLOWS

Introduction

2.1 Highways England commissioned AECOM to carry out traffic impact analyses of a set of proposed interventions at Junction 10 of the M40[2]. As part of that work AECOM have developed a VISSIM model of the junction complex. That traffic impact analysis assessed the benefit of a number of proposed improvement schemes on the overall performance of the junction complex using 2026, 2031 and 2036 flows, including the committed Heyford Park development flows.

2.2 The proposed improvement schemes considered were designed to provide additional capacity at the key junctions listed below:

- Baynard's Green roundabout
- Padbury junction
- Ardley roundabout

2.3 The proposed schemes were combined in five different scenarios to assess which combination provided the better results for the overall junction operation. The modelling parameters used in the AECOM assessments are presented in the table below.

Name	Scheme	2026	2031	2036
Reference Case	-	✓	✓	✓
Do-minimum	-	✓	✓	✓
Do Something 1	(1) Baynard's Green Roundabout	✓	✓	✓
Do Something 2	(2) Padbury Roundabout	✓		
Do Something 3	(1+2) Baynard's Green & Padbury Roundabouts	✓	✓	✓
Do Something 4	(1+2+3) Baynard's Green & Padbury & Ardley Roundabouts	✓	✓	✓
Do Something 5	(1+3) Baynard's Green & Ardley Roundabout	✓	✓	✓

2.4 The 2031 VISSIM demand was developed from strategic model outputs to include for wider reassignment and rerouting impact caused by the Heyford Park development and the proposed interventions.

2.5 As a result of that study, Highways England identified that the improvement schemes at Padbury Roundabout and Baynard's Green Roundabout should be taken forward (the Do Something 3 scenario in the table above). Those improvement schemes will be delivered through a combination of Growth Deal funding and contributions from the Heyford Park development. These two schemes are therefore committed infrastructure.

2.6 Highways England have provided the Applicant with a copy of the approved VISSIM model and the associated demand traffic flows, which are summarised in the below extract from AECOM's TN11.

[2] M40 Junction 10 TN11 rev01, VISSIM Forecast Modelling, AECOM, March 2020

Table 3. Modelling Scenarios – Summary

Name	Flows	Scheme
Reference Case	2026 - Reference Case 2026 2031 - Reference Case 2031 2036 - Reference Case 2031 + Tempro	-
Do minimum	2026 - Do Minimum 2026 2031 - Do Minimum 2031 2036 - Do Minimum 2031 + Tempro	
Do Something 1	2026 - Do Minimum 2026 2031 - Do Something 1 2031 2036 - Do Something 1 2031 + Tempro	(1) Baynard's Green Roundabout
Do Something 2	Do Minimum 2026	(2) Padbury Roundabout
Do Something 3	2026 - Do Minimum 2026 2031 - Do Something 1 2031 2036 - Do Something 1 2031 + Tempro	(1+2) Baynard's Green & Padbury Roundabouts
Do Something 4	2026 - Do Minimum 2026 2031 - Do Something 2 2031 2036 - Do Something 2 2031 + Tempro	(1+2+3) Baynard's Green & Padbury & Ardley Roundabouts
Do Something 5	2026 - Do Minimum 2026 2031 - Do Something 1 2031 2036 - Do Something 1 2031 + Tempro	(1+3) Baynard's Green & Ardley Roundabouts

2.7 Hence, for the purposes of the Options Report, the 2031 Do Something 1 2031 traffic flow demands that are associated with the Do Something 3 scenario were extracted from the VISSIM model. These demand flows include for the traffic reassignment effects associated with the committed mitigation schemes at Baynard's Green and Padbury junctions. For the purposes of the Options Report, these traffic flow demands have been used as the starting point to generate the Reference Case traffic flows for use in the Option Report.

2.8 Accordingly, for the purposes of the Options Report, a 2031 future year has been assessed. Ultimately, the capacity assessment of the SRN will be based on a 2026 opening year in accordance with DfT Circular 02/2013.

2.9 The following morning and evening peak highway hour traffic flow demand sets were extracted from the VISSIM model:

Peak	Reference	Time Period
Morning peak	2031 AM1	0645 to 0745
	2031 AM2	0745 to 0845
Evening peak	2031 PM1	1530 to 1630
	2031 PM2	1630 to 1730

2.10 The 2031 Do Something 3 traffic flows extracted from the M40J10 VISSIM model are presented in **Tables 1 and 2** at **Appendix A** as O/D matrices in accordance with the VISSIM model zone plan that is provided at **Figure 1** below. The traffic flow matrices show that the mainline M40 southbound traffic flows are higher between 0645 to 0745 than between 0745 and 0845 whilst overall, the M40J10 network is busier between 0745 to 0845. Hence for a robust assessment, both morning peak hours (AM1 and AM2) have been assessed within the Options Report. In the evening peak, the total traffic flow on the M40 southbound and across the M40J10 network is higher between the hours of 1630 to 1730 than between 1530 and 1630. Hence only the PM2 traffic flows have been assessed within the Options Report.

B430/Ardley Road junction

2.11 The M40J10 VISSIM model zonal plan is shown in **Figure 1** below. As shown, the VISSIM model does not extend to include the B430/Ardley Road junction.

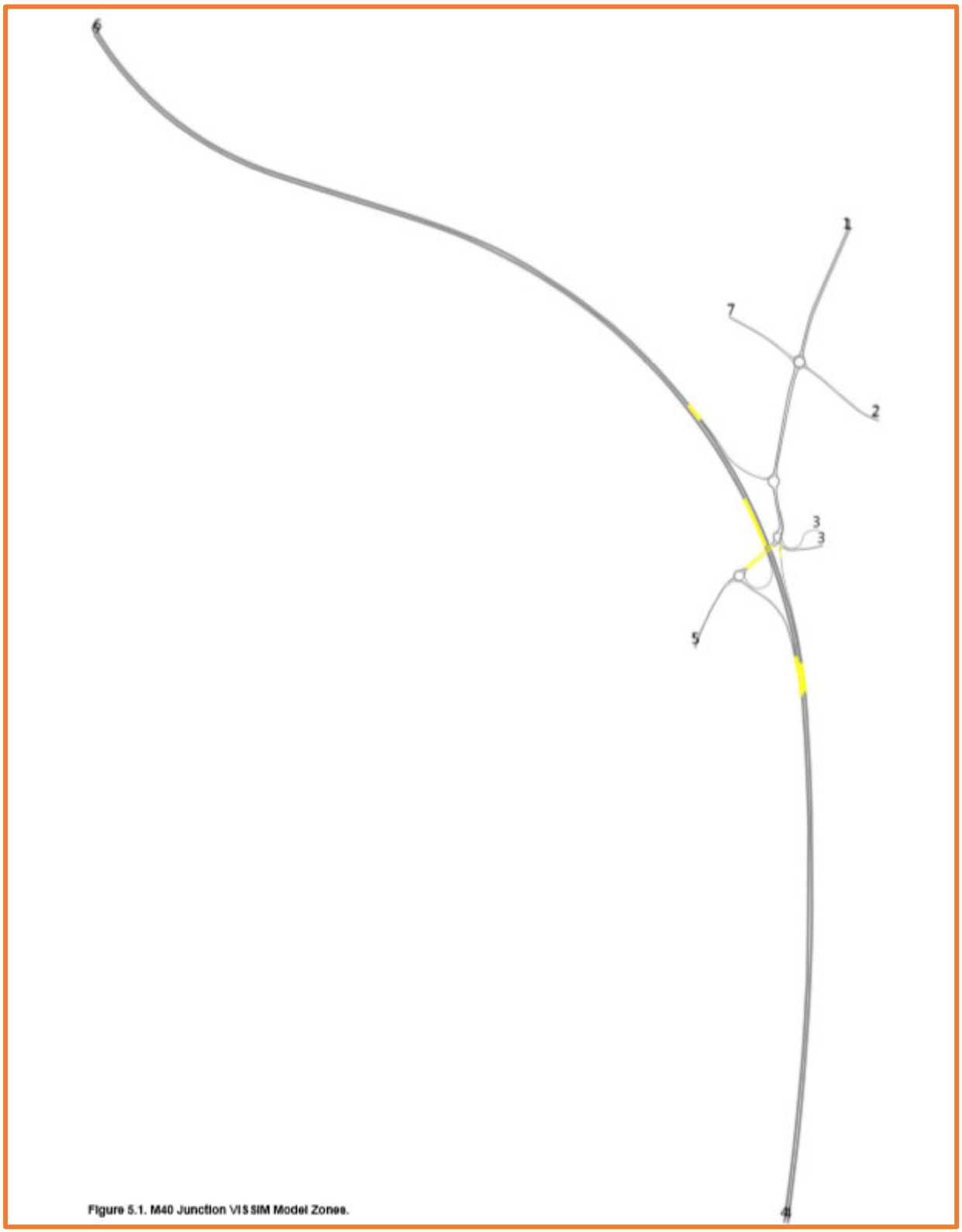


Figure 1: extract of M40J10 VISSIM model zonal plan

2.12 In order to understand the turning proportions at the B430/Ardley Road junction to allow further assessments to be undertaken as part of the OxSRFI development, reference was made to the

Heyford Park Transport Assessment Addendum report that included turning proportions at the Ardley Road junction. Those turning proportions were applied to the Zone 5 traffic within the VISSIM traffic flow demands to create three additional zones (8, 9 and 10) within the traffic flow matrices produced to undertake the capacity assessments within the Options Report. As a result, Zone 5 of the M40J10 VISSIM traffic flow matrix becomes redundant with that traffic split across the new Zones 8, 9 and 10, with Zone 11 being the site access. The updated Zonal plan is shown at **Figure 2**.

2.13 The Ardley Road traffic flow matrices are presented in **Table 3 and 4** at **Appendix A**. Adding in the B430/Ardley Road junction results in additional traffic demands that are not represented in the original VISSIM demand sets. These additional demands are associated with traffic moves to and from Zones 8 and 9 to each and other and to and from Zone 10. The additional traffic demand is shown highlighted with the tables.

2.14 By combining the traffic flow matrices at **Tables 1 and 2** (omitting the now redundant Zone 5) with **Tables 3 and 4**, gives the resultant morning and evening peak 2031 Reference Case traffic flow matrices, including the B430/Ardley Road junction. These are presented in **Table 5 and 6** at **Appendix A**.

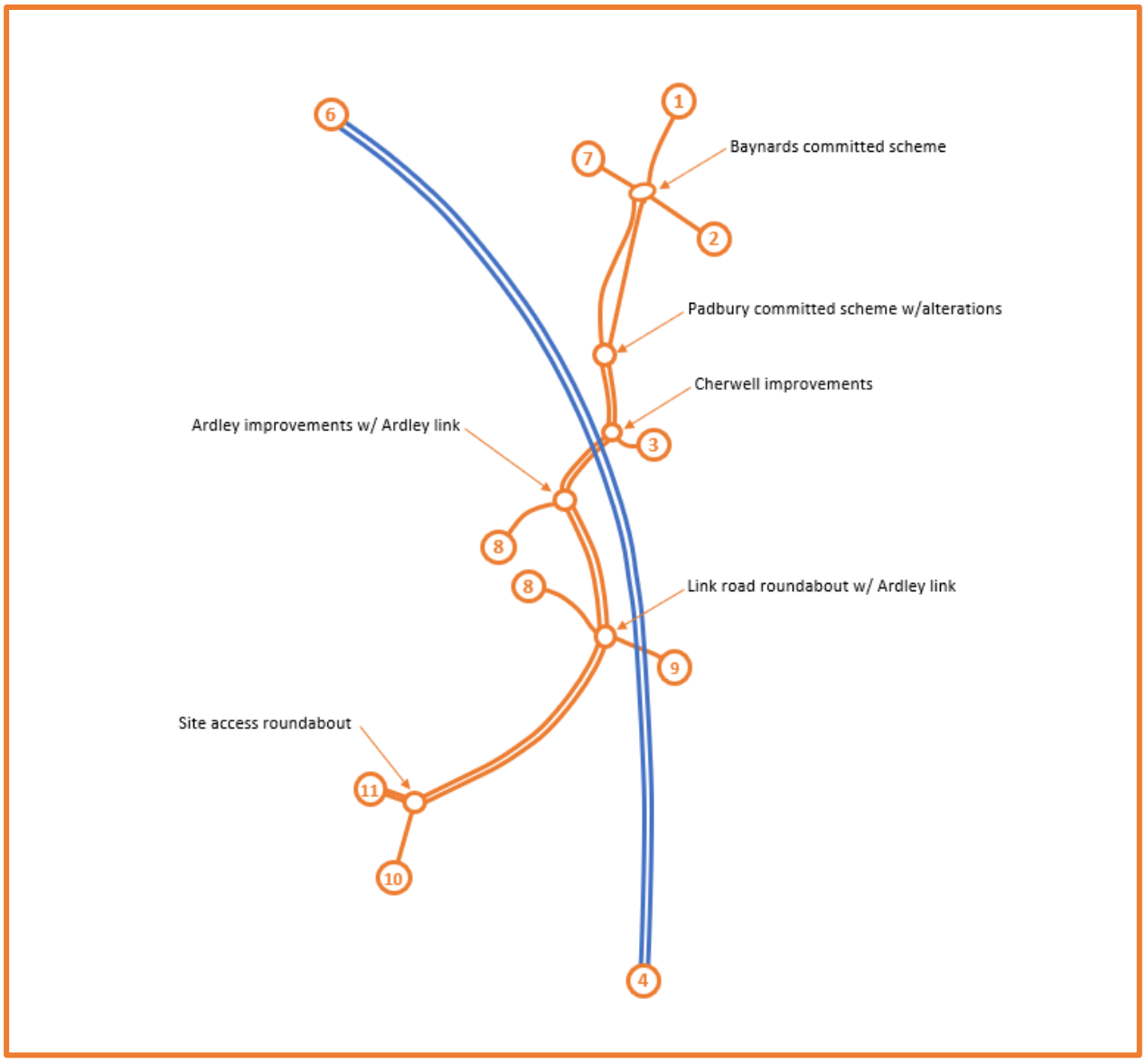


Figure 2: updated zonal plan

Highway network

2.15 The existing M40J10 junction complex includes the following junctions listed in order of north to south on the highway network:

- Baynard's Green Roundabout
- Padbury Roundabout
- Cherwell Roundabout
- Ardley Roundabout

2.16 The traffic flows used to assess the capacity of the existing and committed improvement works at the junctions in the Options Report are presented below. In each case the traffic flow sets are derived from the 2031 Reference Case traffic demand matrices provided at **Tables 5 and 6**.

Baynard's Green Roundabout

2.17 As detailed in the Options Report, the existing Baynard's Green roundabout is a priority controlled four-arm roundabout comprising the A43 (north and south) and the B4100 (east and west). There is a committed improvement scheme of the Baynard's Green roundabout that increases the size of the roundabout and upgrades it to full traffic signal control.

2.18 A single traffic flow set has been produced to assess the capacity of the existing priority controlled roundabout and the committed signal control scheme. The resultant 2031 Reference Case traffic flow set for both the morning and evening peak hours is presented in **Diagrams BaynardsRef1_AM** and **BaynardsRef1_PM** contained in **Appendix B**.

Padbury Roundabout

2.19 The existing Padbury roundabout is a three-arm priority controlled roundabout comprising the A43 (north and south) and the M40J10 southbound off-slip to the west. There is a committed improvement scheme at the Padbury roundabout that proposes to upgrade the junction to full traffic signal control. As part of the improvement, the M40J10 southbound off-slip approach would also be widened to provide a flared left turn lane.

2.20 A single traffic flow set has been produced to assess the capacity of the existing priority controlled roundabout and the committed traffic signal control scheme. The 2031 Reference Case traffic flow set for both the morning and evening peak hours is presented in Diagrams **PadburyRef1** and **PadburyRef1** contained in **Appendix B**.

Cherwell Roundabout

2.21 The existing A43/M40 Cherwell roundabout is a signal controlled junction comprising the A43 (north), Cherwell Valley motorway services (east), the M40 southbound on-slip and the A43 bridge over the M40 carriageway.

2.22 A single traffic flow set has been produced to assess the capacity of the existing junction. The 2031 Reference Case traffic flow set for both the morning and evening peak hours is presented in Diagrams **CherwellRef1_AM** and **CherwellRef1_PM** contained in **Appendix B**.

Ardley Roundabout

2.23 The existing A43/B430/M40 Ardley roundabout is a priority controlled roundabout comprising the A43 (north), M40 northbound on/off slips and the B430.

2.24 A single traffic flow set has been produced to assess the capacity of the existing priority controlled roundabout. The 2031 Reference Case traffic flow set form both the morning and evening peak hours is presented in Diagrams **ArdleyRef1_AM** and **ArdleyRef1_PM** contained in **Appendix B**.

3.0 DO SOMETHING TRAFFIC FLOWS

Introduction

3.1 For the purpose of the Options Report, the 2031 Do Something traffic flows have been derived using the Reference Case traffic flows on to which the OxSRFI development traffic has been added.

Trip generation

3.2 The OxSRFI development vehicle trip generation calculations are contained within Technical Note 3 'Trip Generation'[3] and presented below for ease of reference. These generations are based on the maximum floor space for the B8 warehousing use being set at 6.5 million sqft (603,850 sqm), with up to one third of the warehouses (201,283 sqm) to provide B8 mezzanine floor space use, with capacity to accommodate 12 freight trains per day.

total development peak hour, and daily vehicle trips (no Travel Plan)									
period	light vehicles			heavy vehicles			total vehicles		
	arrive	depart	2-way	arrive	depart	2-way	arrive	depart	2-way
AM peak	903	97	1,000	172	159	331	1,075	256	1,331
PM peak	298	1,038	1,336	157	143	300	455	1,181	1,636
daily	7,929	7,801	15,730	2,459	2,461	4,920	10,388	10,262	20,650

Trip distribution – light vehicle trips

3.3 It is proposed that the Bicester Transport Model (BTM) be used to examine the transport impacts of the proposed OxSRFI scheme. The BTM can calculate a trip distribution for light vehicle trips. It is proposed that this will be used to determine the light vehicle (mostly employee) trip distribution associated with OxSRFI. In this way the assessment will take account of the changes in population densities that are associated with the allocated and committed development in the area.

3.4 However, at this stage the outputs from the BTM are not available. Therefore, to inform the Options Report the light vehicle distribution has been assessed based on the 2011 National Census 'location of usual residence and place of work' journey to work data, as described in Technical Note 1 'New M40 Junction'[4]. The schematic shown at **Figure 3** shows the resultant trip distribution pattern for the light vehicle trips. This was translated to the updated zonal system and the resulting O/D distribution matrix for the OxSRFI light vehicle trips is shown at **Table 7** at **Appendix C**.

Trip distribution – HGV trips

3.5 To appropriately represent the movement of heavy goods vehicles (HGVs) associated with OxSRFI within the BTM, it will be necessary to determine a bespoke HGV trip distribution for the development.

[3] OxSRFI-ADC1794-RP-J-V3 – Technical Note 3: Trip Generation
[4] OxSRFI-ADC1794-RP-G-V3 – Technical Note 1: New M40 Junction

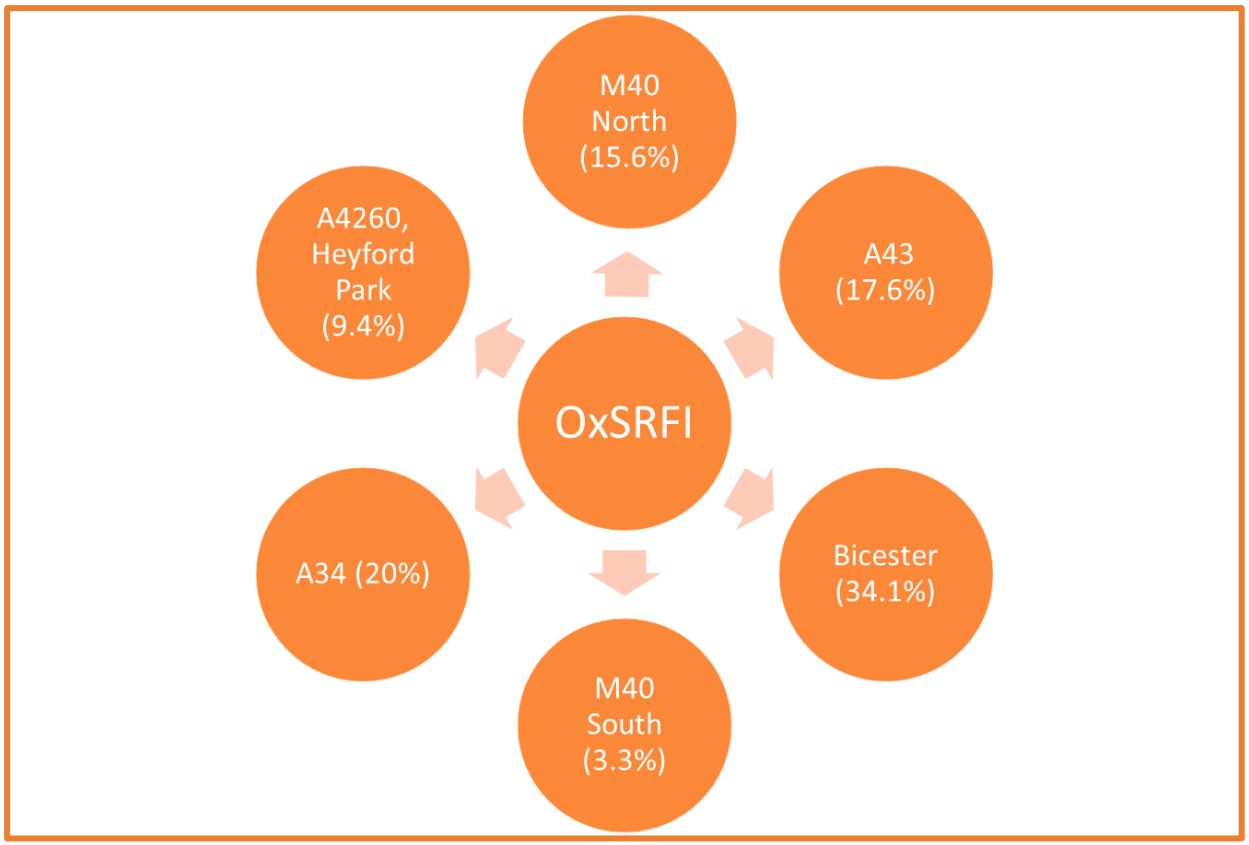


Figure 3: schematic representing the employee (light vehicle) distribution pattern

3.6 Work to agree the HGV distribution is ongoing, and Technical Note 4 'HGV Trip Distribution'[5] presented a methodology to calculate the HGV trip distributions at a regional and national level. Therefore, whilst the HGV distribution has since been refined as part of the ongoing work, and version 3 of Technical Note 4 has been submitted to the Transport Working Group for comment and approval, the distribution within version 2 of Technical Note 4 has been used in the Option Report.

3.7 The heavy vehicle trip distribution pattern was translated to the updated zonal system and the resulting O/D distribution matrix for the OxSRFI HGV trips for the morning and evening peak hours are shown in **Table 7** at **Appendix C**.

Do Something traffic flows

3.8 The resultant OxSRFI development vehicle trip assignment matrices for the morning and evening peak hours are shown at **Table 8** at **Appendix C**.

3.9 The total development vehicle trips in **Table 8** were added to the 2031 Reference Case traffic flows in **Tables 5 and 6**. The resultant 2031 Do Something traffic flows are presented in **Tables 9 and 10** in **Appendix C**.

[5] OxSRFI-ADC1794-RP-K-V2 – Technical Note 4: HGV Trip Distribution

Highway network

3.10 The highway network assessed as part of the Options Report comprises the following junctions:

- Baynard's Green Roundabout
- Padbury Roundabout
- Cherwell Roundabout
- Ardley Roundabout
- Proposed Ardley East junction
- Proposed B430/Site Access roundabout (Principal access)

3.11 For each junction, a number of different layout options have been put forward and assessed to understand what junction type and size are required to accommodate the proposed development. The different highway layout options resulted in 19 strategic options that are presented in the Options Report. Combining the different highway layout options results in traffic routing different ways through the M40J10 network. Hence for some junctions multiple traffic flow sets are required. This is explained below for each junction.

3.12 In addition, strategic option 3 considers the replacement of the Cherwell and Ardley Roundabouts with a single large grade separated junction.

Baynard's Green roundabout

3.13 In all the option testing layouts considered as part of the Options Report, Baynards Green remains a four-arm signal controlled junction and the traffic flows through the junction are not affected by routing options considered at the other junctions. Hence, a single traffic flow set is required to assess the capacity of the options. The 2031 Do Something traffic flow set for the morning and evening peak hours is presented in **Diagrams 1 and 2** respectively contained in **Appendix D**.

Padbury Roundabout

3.14 As part of the option testing, three potential options were considered at the A43 Padbury Roundabout. The first option included the retention of the Highways England committed scheme, whilst the second option considered replacing the roundabout to provide a signal controlled T-junction. A third option was considered that removed the Padbury Roundabout and re-directed the M40 southbound off-slip onto the Cherwell Roundabout, or in the case of strategic option 3 a new single large grade separated roundabout.

3.15 The two options that retain the Padbury junction use the same traffic flow set for assessment as traffic would enter and exit the network from the same location in each option. However, some of the strategic options include a free-flow link from the A43 southbound to the M40 southbound. Hence, a different flow set has been produced for the two route choices available for traffic using the Padbury roundabout (with and without the A43 free-flow link). The different options and corresponding traffic flow set are listed in the table below and shown in **Diagrams 3 to 6** in **Appendix D**.

Strategic Option(s)	Junction option (see Options Report)	Traffic Flow Set
1,4,5,6,7,8	P-1 (without A43 free-flow)	Padbury1_AM Padbury1_PM
10,11,13,14,15,18,19	P-3 (with A43 free-flow)	Padbury2_AM Padbury2_PM

3.16 The strategic options 2, 3, 9, 16 and 17 all include the removal of the A43 Padbury Roundabout and hence no assessment and traffic flow set is required.

3.17 The 2031 do something traffic flows at the Padbury Roundabout were used in the capacity assessments of each highway layout option.

Cherwell Roundabout

3.18 A total of seven different junction layout options were considered at the Cherwell Roundabout within the Options Report. The seven different layout options require 10 different traffic flow sets given the different strategic option layouts at other junctions within the M40J10 arrangement would mean traffic routing through the junction in different ways. The table below lists the different traffic flow sets associated with the different strategic options. The Cherwell Roundabout 2031 do something traffic flows are shown in **Diagrams 7 to 26** at **Appendix D**.

Strategic Option(s)	Junction option (see Options Report)	Traffic Flow Set
1	C-1	Cherwell1_AM Cherwell1_PM
2	C-2	Cherwell2_AM Cherwell2_PM
4,5	C-3	Cherwell3_AM Cherwell3_PM
6,7,8	C-3	Cherwell4_AM Cherwell4_PM
9	C-4	Cherwell5_AM Cherwell5_PM
10,11,13,18,19	C-5	Cherwell6_AM Cherwell6_PM
12	C-6	Cherwell7_AM Cherwell7_PM
14,15	C-7	Cherwell8_AM Cherwell8_PM
16	C-2	Cherwell9_AM Cherwell9_PM
17	C-2	Cherwell10_AM Cherwell10_PM

3.19 The strategic option 3 includes the replacement of the Cherwell Roundabout (and Ardley Roundabout) with a single large grade separated roundabout for which a sperate traffic flow set was generated (see paragraph 3.25).

Ardley Roundabout

3.20 A total of three different junction layout options were considered at the Ardley Roundabout within the Options Report. The three different layout options require 8 different flow set options given the different strategic options within the M4J10 arrangement would mean traffic routing through the junction in different ways. The table below lists the different traffic flow set associated with each junction option. The Ardley roundabout 2031 Do Something traffic flows are shown in **Diagrams 27 to 42** at **Appendix D**.

Strategic Option(s)	Junction option (see Options Report)	Traffic Flow Set
1,2,14,15	A-1	Ardley1_AM Ardley1_PM
4,5	A-1	Ardley2_AM Ardley2_PM
6,7	A-2	Ardley3_AM Ardley3_PM
13,19	A-2	Ardley4_AM Ardley4_PM
8,9	A-3	Ardley5_AM Ardley5_PM
10,11,12,18	A-3	Ardley6_AM Ardley6_PM
16	A-2	Ardley7_AM Ardley7_PM
17	A-3	Ardley8_AM Ardley8_PM

3.21 The strategic option 3 includes the replacement of the Cherwell Roundabout (and Ardley Roundabout) with a single large grade separated roundabout for which a sperate traffic flow set was generated (see paragraph 3.25).

Proposed Ardley East

3.22 A new junction is proposed along the Ardley Bypass that could potentially connect the Ardley Road bridge over the M40 whilst also providing new on and off slips from the M40 south. The junction is referred to as Ardley East within the Options Report. In total eight junction layouts have been considered that include the provision of new slip road and/or Ardley Road connections. The table below lists the nine traffic flow sets associated with the strategic options. The Ardley East 2031 Do Something traffic flows are presented in **Diagram 43 to 60** at **Appendix D**.

Strategic Option(s)	Junction option (see Options Report)	Traffic Flow Set
1,2,3,14,15	AE-1	ArdleyEast1_AM ArdleyEast1_PM
4	AE-3	ArdleyEast2_AM ArdleyEast2_PM
5	AE-4	ArdleyEast3_AM ArdleyEast3_PM
6	AE-5	ArdleyEast4_AM ArdleyEast4_PM
7,8,9	AE-6	ArdleyEast5_AM ArdleyEast5_PM
10,11,12,13	AE-6	ArdleyEast6_AM ArdleyEast6_PM
16	AE-7	ArdleyEast7_AM ArdleyEast7_PM
17	AE-5	ArdleyEast8_AM ArdleyEast8_PM
18,19	AE-8	ArdleyEast9_AM ArdleyEast9_PM

3.23 As noted on strategic options 1, 2 3, 14, 15 rather than providing the Ardley East junction, the Ardley Bypass could be taken over Ardley Road, in which case there would not be a junction and hence no assessment is required of this junction under these sub-options.

Proposed site access junction

3.24 The proposed access junction comprises a 3-arm roundabout with segregated left turn lane for movements from the site to the Ardley Bypass. The access layout remains the same in all strategic options meaning a single traffic flow set is required to assess the capacity of the access junction. The 2031 Do Something traffic flow set for the morning and evening peak hours is presented in **Diagrams 61 and 62** respectively contained in **Appendix D**.

Strategic Option 3 – large grade separated roundabout

3.25 Strategic Option 3 in the Options Report considers the creation of a large grade separated roundabout that would replace the Padbury, Cherwell and Ardley roundabouts. Hence, a single traffic flow set is required to assess the capacity of the Strategic Option 3. The 2031 Do Something traffic flow set for the morning and evening peak hours is presented in **Diagrams 63 and 64** respectively contained in **Appendix D**.

APPENDIX A

2031 REFERENCE CASE O/D TRAFFIC FLOW MATRICES

0645-0745

Lights

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	416	55	1092	671	33	44					2311
2	350	0	0	6	32	149	210					747
3	32	22	0	164	61	64	9					352
4	699	6	173	40	38	2576	34					3566
5	162	20	21	50	0	315	16					584
6	39	241	145	3212	209	14	11					3871
7	36	180	1	68	13	1	0					299
8												0
9												0
10												0
11												0
Total	1318	885	395	4632	1024	3152	324	0	0	0	0	11730

HGVs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	13	13	215	11	7	5					264
2	13	0	0	3	0	4	12					32
3	10	0	0	55	0	24	2					91
4	150	0	28	4	9	400	8					599
5	28	0	3	6	0	7	3					47
6	12	12	37	671	5	1	0					738
7	8	8	0	13	0	0	1					30
8												0
9												0
10												0
11												0
Total	221	33	81	967	25	443	31	0	0	0	0	1801

Total

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	429	68	1307	682	40	49					2575
2	363	0	0	9	32	153	222					779
3	42	22	0	219	61	88	11					443
4	849	6	201	44	47	2976	42					4165
5	190	20	24	56	0	322	19					631
6	51	253	182	3883	214	15	11					4609
7	44	188	1	81	13	1	1					329
8												0
9												0
10												0
11												0
Total	1539	918	476	5599	1049	3595	355	0	0	0	0	13531

HGV%

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0.0%	3.0%	19.1%	16.4%	1.6%	17.5%	10.2%					
2	3.6%	0.0%	0.0%	33.3%	0.0%	2.6%	5.4%					
3	23.8%	0.0%	0.0%	25.1%	0.0%	27.3%	18.2%					
4	17.7%	0.0%	13.9%	9.1%	19.1%	13.4%	19.0%					
5	14.7%	0.0%	12.5%	10.7%	0.0%	2.2%	15.8%					
6	23.5%	4.7%	20.3%	17.3%	2.3%	6.7%	0.0%					
7	18.2%	4.3%	0.0%	16.0%	0.0%	0.0%	100.0%					
8												
9												
10												
11												
Total												

PCUs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	442	81	1522	693	47	54					2839
2	376	0	0	12	32	157	234					811
3	52	22	0	274	61	112	13					534
4	999	6	229	48	56	3376	50					4764
5	218	20	27	62	0	329	22					678
6	63	265	219	4554	219	16	11					5347
7	52	196	1	94	13	1	2					359
8												0
9												0
10												0
11												0
Total	1760	951	557	6566	1074	4038	386	0	0	0	0	15332

0745-0845

Lights

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	402	64	1083	522	76	46					2193
2	318	0	11	10	16	161	288					804
3	46	4	0	195	55	113	1					414
4	856	8	157	36	50	2784	53					3944
5	183	25	28	43	0	296	21					596
6	51	218	151	2844	283	13	10					3570
7	50	252	1	88	11	1	1					404
8												0
9												0
10												0
11												0
Total	1504	909	412	4299	937	3444	420	0	0	0	0	11925

HGVs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	22	24	201	20	6	12					285
2	16	0	0	0	0	7	9					32
3	16	0	0	50	1	16	1					84
4	121	0	27	2	8	307	5					470
5	21	0	0	9	0	11	9					50
6	8	16	34	474	10	0	5					547
7	11	22	0	11	0	0	0					44
8												0
9												0
10												0
11												0
Total	193	60	85	747	39	347	41	0	0	0	0	1512

Total

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	424	88	1284	542	82	58					2478
2	334	0	11	10	16	168	297					836
3	62	4	0	245	56	129	2					498
4	977	8	184	38	58	3091	58					4414
5	204	25	28	52	0	307	30					646
6	59	234	185	3318	293	13	15					4117
7	61	274	1	99	11	1	1					448
8												0
9												0
10												0
11												0
Total	1697	969	497	5046	976	3791	461	0	0	0	0	13437

HGV%

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0.0%	5.2%	27.3%	15.7%	3.7%	7.3%	20.7%					
2	4.8%	0.0%	0.0%	0.0%	0.0%	4.2%	3.0%					
3	25.8%	0.0%	0.0%	20.4%	1.8%	12.4%	50.0%					
4	12.4%	0.0%	14.7%	5.3%	13.8%	9.9%	8.6%					
5	10.3%	0.0%	0.0%	17.3%	0.0%	3.6%	30.0%					
6	13.6%	6.8%	18.4%	14.3%	3.4%	0.0%	33.3%					
7	18.0%	8.0%	0.0%	11.1%	0.0%	0.0%	0.0%					
8												
9												
10												
11												
Total												

PCUs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	446	112	1485	562	88	70					2763
2	350	0	11	10	16	175	306					868
3	78	4	0	295	57	145	3					582
4	1098	8	211	40	66	3398	63					4884
5	225	25	28	61	0	318	39					696
6	67	250	219	3792	303	13	20					4664
7	72	296	1	110	11	1	1					492
8												0
9												0
10												0
11												0
Total	1890	1029	582	5793	1015	4138	502	0	0	0	0	14949

Table 1: 2031 Do Something 3 Traffic Flows - AM Peak

1530-1630

Lights

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	287	73	659	228	62	18					1327
2	464	0	24	8	19	170	300					985
3	77	5	0	214	25	154	0					475
4	1147	6	172	38	58	4017	49					5487
5	246	14	11	13	0	161	10					455
6	50	154	183	3058	177	7	14					3643
7	30	205	0	23	7	1	1					267
8												0
9												0
10												0
11												0
Total	2014	671	463	4013	514	4572	392	0	0	0	0	12639

HGVs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	12	24	99	5	6	8					154
2	10	0	0	2	1	9	12					34
3	29	2	0	46	4	15	0					96
4	217	0	35	6	5	580	5					848
5	11	2	0	7	0	4	1					25
6	6	4	38	350	6	2	4					410
7	5	24	0	4	0	0	3					36
8												0
9												0
10												0
11												0
Total	278	44	97	514	21	616	33	0	0	0	0	1603

Total

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	299	97	758	233	68	26					1481
2	474	0	24	10	20	179	312					1019
3	106	7	0	260	29	169	0					571
4	1364	6	207	44	63	4597	54					6335
5	257	16	11	20	0	165	11					480
6	56	158	221	3408	183	9	18					4053
7	35	229	0	27	7	1	4					303
8												0
9												0
10												0
11												0
Total	2292	715	560	4527	535	5188	425	0	0	0	0	14242

HGV%

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0.0%	4.0%	24.7%	13.1%	2.1%	8.8%	30.8%					
2	2.1%	0.0%	0.0%	20.0%	5.0%	5.0%	3.8%					
3	27.4%	28.6%	0.0%	17.7%	13.8%	8.9%	0.0%					
4	15.9%	0.0%	16.9%	13.6%	7.9%	12.6%	9.3%					
5	4.3%	12.5%	0.0%	35.0%	0.0%	2.4%	9.1%					
6	10.7%	2.5%	17.2%	10.3%	3.3%	22.2%	22.2%					
7	14.3%	10.5%	0.0%	14.8%	0.0%	0.0%	75.0%					
8												
9												
10												
11												
Total												

PCUs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	311	121	857	238	74	34					1635
2	484	0	24	12	21	188	324					1053
3	135	9	0	306	33	184	0					667
4	1581	6	242	50	68	5177	59					7183
5	268	18	11	27	0	169	12					505
6	62	162	259	3758	189	11	22					4463
7	40	253	0	31	7	1	7					339
8												0
9												0
10												0
11												0
Total	2570	759	657	5041	556	5804	458	0	0	0	0	15845

1630-1730

Lights

	1	2	3	4	5	6	7	8	9	10	11	Total
1	2	441	69	734	209	75	25					1555
2	617	0	25	10	13	178	368					1211
3	91	4	0	172	13	136	6					423
4	1333	2	154	67	70	4244	40					5910
5	375	9	14	13	0	206	10					627
6	79	189	165	3174	256	16	22					3901
7	27	220	1	23	9	0	3					283
8												0
9												0
10												0
11												0
Total	2524	865	428	4193	570	4855	474	0	0	0	0	13909

HGVs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	13	6	80	7	5	10					121
2	10	0	0	0	3	4	2					19
3	14	0	0	43	2	30	0					89
4	132	4	47	0	3	447	5					638
5	10	0	3	4	0	4	0					21
6	4	9	32	301	1	1	1					349
7	5	12	0	6	1	0	0					24
8												0
9												0
10												0
11												0
Total	175	38	88	434	17	491	18	0	0	0	0	1261

Total

	1	2	3	4	5	6	7	8	9	10	11	Total
1	2	454	75	814	216	80	35					1676
2	627	0	25	10	16	182	370					1230
3	105	4	0	215	15	166	6					511
4	1465	6	201	67	73	4691	45					6548
5	385	9	17	17	0	210	10					648
6	83	198	197	3475	257	17	23					4250
7	32	232	1	29	10	0	3					307
8												0
9												0
10												0
11												0
Total	2699	903	516	4627	587	5346	492	0	0	0	0	15170

HGV%

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0.0%	2.9%	8.0%	9.8%	3.2%	6.3%	28.6%					
2	1.6%	0.0%	0.0%	0.0%	18.8%	2.2%	0.5%					
3	13.3%	0.0%	0.0%	20.0%	13.3%	18.1%	0.0%					
4	9.0%	66.7%	23.4%	0.0%	4.1%	9.5%	11.1%					
5	2.6%	0.0%	17.6%	23.5%	0.0%	1.9%	0.0%					
6	4.8%	4.5%	16.2%	8.7%	0.4%	5.9%	4.3%					
7	15.6%	5.2%	0.0%	20.7%	10.0%	0.0%	0.0%					
8												
9												
10												
11												
Total												

PCUs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	2	467	81	894	223	85	45					1797
2	637	0	25	10	19	186	372					1249
3	119	4	0	258	17	196	6					600
4	1597	10	248	67	76	5138	50					7186
5	395	9	20	21	0	214	10					669
6	87	207	229	3776	258	18	24					4599
7	37	244	1	35	11	0	3					331
8												0
9												0
10												0
11												0
Total	2874	941	604	5061	604	5837	510	0	0	0	0	16431

Table 2: 2031 Do Something 3 Traffic Flows - PM Peak

0645-0745

Lights

	1	2	3	4	5	6	7	8	9	10		Total
1								11	90	570		671
2								1	4	27		32
3								1	8	52		61
4								1	7	30		38
5												0
6								3	28	178		209
7								0	2	11		13
8	12	1	1	4		20	1	0	189	26		254
9	28	3	4	8		48	3	17	0	10		121
10	122	16	16	38		247	12	48	151	0		650
11												0
Total	162	20	21	50	0	315	16	82	479	904	0	2049

HGVs

	1	2	3	4	5	6	7	8	9	10	11	Total
1								0	0	11		11
2								0	0	0		0
3								0	0	0		0
4								0	0	9		9
5												0
6								0	0	5		5
7								0	0	0		0
8	0	0	0	0		0	0	0	0	0		0
9	0	0	0	0		0	0	0	0	0		0
10	28	0	3	6		7	3	1	0	0		48
11												0
Total	28	0	3	6	0	7	3	1	0	25	0	73

Total

	1	2	3	4	5	6	7	8	9	10	11	Total
1								11	90	581		682
2								1	4	27		32
3								1	8	52		61
4								1	7	39		47
5												0
6								3	28	183		214
7								0	2	11		13
8	12	1	1	4		20	1	0	189	26		254
9	28	3	4	8		48	3	17	0	10		121
10	150	16	19	44		254	15	49	151	0		698
11												0
Total	190	20	24	56	0	322	19	83	479	929	0	2122

HGV%

	1	2	3	4	5	6	7	8	9	10	11	Total
1								0.0%	0.0%	1.9%		
2								0.0%	0.0%	0.0%		
3								0.0%	0.0%	0.0%		
4								0.0%	0.0%	23.1%		
5								0.0%	0.0%	0.0%		
6								0.0%	0.0%	2.7%		
7								0.0%	0.0%	0.0%		
8	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
9	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
10	18.7%	0.0%	15.8%	13.6%	0.0%	2.8%	20.0%	0.0%	0.0%	0.0%		
11												
Total												

PCUs

	1	2	3	4	5	6	7	8	9	10	11	Total
1								11	90	592	0	693
2								1	4	27	0	32
3								1	8	52	0	61
4								1	7	48	0	56
5								0	0	0	0	0
6								3	28	188	0	219
7								0	2	11	0	13
8	12	1	1	4	0	20	1	0	189	26	0	254
9	28	3	4	8	0	48	3	17	0	10	0	121
10	178	16	22	50	0	261	18	50	153	0	0	746
11	0	0	0	0	0	0	0	0	0	0	0	0
Total	218	20	27	62	0	329	22	84	479	954	0	2195

0745-0845

Lights

	1	2	3	4	5	6	7	8	9	10		Total
1								9	77	436		522
2								0	2	14		16
3								1	8	46		55
4								1	8	41		50
5												0
6								6	42	235		283
7								0	2	9		11
8	12	2	2	3		19	1	0	189	26		254
9	30	4	4	7		45	4	17	0	10		121
10	141	19	22	33		232	16	48	151	0		662
11												0
Total	183	25	28	43	0	296	21	82	479	817	0	1974

HGVs

	1	2	3	4	5	6	7	8	9	10	11	Total
1								0	0	20		20
2								0	0	0		0
3								0	0	1		1
4								0	0	8		8
5												0
6								0	0	10		10
7								0	0	0		0
8	0	0	0	0		0	0	0	0	0		0
9	0	0	0	0		0	0	0	0	0		0
10	21	0	0	9		11	9	1	0	0		51
11												0
Total	21	0	0	9	0	11	9	1	0	39	0	90

Total

	1	2	3	4	5	6	7	8	9	10	11	Total
1								9	77	456		542
2								0	2	14		16
3								1	8	47		56
4								1	8	49		58
5												0
6								6	42	245		293
7								0	2	9		11
8	12	2	2	3		19	1	0	189	26		254
9	30	4	4	7		45	4	17	0	10		121
10	162	19	22	42		243	25	49	151	9		713
11												0
Total	204	25	28	52	0	307	30	83	479	856	0	2064

HGV%

	1	2	3	4	5	6	7	8	9	10	11	Total
1								0.0%	0.0%	4.4%		
2								0.0%	0.0%	0.0%		
3								0.0%	0.0%	2.1%		
4								0.0%	0.0%	16.3%		
5								0.0%	0.0%	0.0%		
6								0.0%	0.0%	4.1%		
7								0.0%	0.0%	0.0%		
8	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
9	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
10	13.0%	0.0%	0.0%	21.4%	0.0%	4.5%	36.0%	2.0%	0.0%	0.0%		
11												
Total												

PCUs

	1	2	3	4	5	6	7	8	9	10	11	Total
1								9	77	476		562
2								0	2	14		16
3								1	8	48		57
4								1	8	57		66
5								0	0	0		0
6								6	42	255		303
7								0	2	9		11
8	12	2	2	3	0	19	1	0	189	26		254
9	30	4	4	7	0	45	4	17	0	10		121
10	183	19	22	51	0	254	34	50	151	0		764
11												0
Total	225	25	28	61	0	318	39	84	479	895	0	2154

Table 3: 2031 Ardley Road Traffic Flows - AM Peak

1530-1630

Lights

	1	2	3	4	5	6	7	8	9	10		Total
1								12	24	192		228
2								1	2	16		19
3								1	3	21		25
4								3	6	49		58
5												0
6								10	19	148		177
7								0	1	6		7
8	12	1	1	1		7	1	0	50	123		196
9	48	3	2	4		30	2	20	0	88		197
10	186	10	8	8		124	7	111	136	0		590
11												0
Total	246	14	11	13	0	161	10	158	241	643	0	1497

HGVs

	1	2	3	4	5	6	7	8	9	10	11	Total
1								0	0	5		5
2								0	0	1		1
3								0	0	4		4
4								0	0	5		5
5												0
6								0	0	6		6
7								0	0	0		0
8	0	0	0	0		0	0	0	0	2		2
9	0	0	0	0		0	0	0	0	0		0
10	11	2	0	7		4	1	1	0	0		26
11												0
Total	11	2	0	7	0	4	1	1	0	23	0	49

Total

	1	2	3	4	5	6	7	8	9	10	11	Total
1								12	24	197		233
2								1	2	17		20
3								1	3	25		29
4								3	6	54		63
5												0
6								10	19	154		183
7								0	1	6		7
8	12	1	1	1		7	1	0	50	125		198
9	48	3	2	4		30	2	20	0	88		197
10	197	12	8	15		128	8	112	136	0		616
11												0
Total	257	16	11	20	0	165	11	159	241	666	0	1546

HGV%

	1	2	3	4	5	6	7	8	9	10	11	Total
1								0.0%	0.0%	2.5%		
2								0.0%	0.0%	5.9%		
3								0.0%	0.0%	16.0%		
4								0.0%	0.0%	9.3%		
5												
6								0.0%	0.0%	3.9%		
7								0.0%	0.0%	0.0%		
8	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%		
9	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%		
10	5.6%	16.7%	0.0%	46.7%		3.1%	12.5%	0.0%	0.0%	0.0%		
11												
Total												

PCUs

	1	2	3	4	5	6	7	8	9	10	11	Total
1								12	24	202		238
2								1	2	18		21
3								1	3	29		33
4								3	6	59		68
5												
6								10	19	160		189
7								0	1	6		7
8	12	1	1	1		7	1	0	50	127		200
9	48	3	2	4		30	2	20	0	88		197
10	208	14	8	22		132	9	113	136	0		642
11												0
Total	268	18	11	27		169	12	160	241	689	0	1595

1630-1730

Lights

	1	2	3	4	5	6	7	8	9	10		Total
1								10	20	179		209
2								1	1	11		13
3								1	1	11		13
4								3	7	60		70
5												0
6								12	24	220		256
7								0	1	8		9
8	14	0	1	1		7	0	0	50	123		196
9	53	1	2	3		29	1	20	0	88		197
10	308	8	11	9		170	9	111	136	0		762
11												0
Total	375	9	14	13	0	206	10	158	240	700	0	1725

HGVs

	1	2	3	4	5	6	7	8	9	10	11	Total
1								0	0	7		7
2								0	0	3		3
3								0	0	2		2
4								0	0	3		3
5												0
6								0	0	1		1
7								0	0	1		1
8	0	0	0	0		0	0	0	0	2		2
9	0	0	0	0		0	0	0	0	0		0
10	10	0	3	4		4	0	1	0	0		22
11												0
Total	10	0	3	4	0	4	0	1	0	19	0	41

Total

	1	2	3	4	5	6	7	8	9	10	11	Total
1								10	20	186		216
2								1	1	14		16
3								1	1	13		15
4								3	7	63		73
5												0
6								12	24	221		257
7								0	1	9		10
8	14	0	1	1		7	0	0	50	125		198
9	53	1	2	3		29	1	20	0	88		197
10	318	8	14	13		174	9	112	136	0		784
11												0
Total	385	9	17	17	0	210	10	159	240	719	0	1766

HGV%

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	3.8%	0.0%	
2	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	21.4%	0.0%	
3	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	15.4%	0.0%	
4	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	4.8%	0.0%	
5												
6	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.5%	0.0%	
7	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	11.1%	0.0%	
8	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	
9	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
10	3.1%	0.0%	21.4%	30.8%		2.3%	0.0%	0.9%	0.0%	0.0%	0.0%	
11	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Total												

PCUs

	1	2	3	4	5	6	7	8	9	10	11	Total
1								10	20	193		223
2								1	1	17		19
3								1	1	15		17
4								3	7	66		76
5												
6								12	24	222		258
7								0	1	10		11
8	14	0	1	1		7	0	0	50	127		200
9	53	1	2	3		29	1	20	0	88		197
10	328	8	17	17		178	9	113	136	0		806
11												0
Total	395	9	20	21		214	10	160	240	738	0	1807

Table 4: 2031 Ardley Road Traffic Flows - PM Peak

0645-0745

Lights

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	416	55	1092		33	44	11	90	570		2311
2	350	0	0	6		149	210	1	4	27		747
3	32	22	0	164		64	9	1	8	52		352
4	699	6	173	40		2576	34	1	7	30		3566
5												0
6	39	241	145	3212		14	11	3	28	178		3871
7	36	180	1	68		1	0	0	2	11		299
8	12	1	1	4		20	1	0	189	26		254
9	28	3	4	8		48	3	17	0	10		121
10	122	16	16	38		247	12	48	151	0		650
11												0
Total	1318	885	395	4632	0	3152	324	82	479	904	0	12171

HGVs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	13	13	215		7	5	0	0	11		264
2	13	0	0	3		4	12	0	0	0		32
3	10	0	0	55		24	2	0	0	0		91
4	150	0	28	4		400	8	0	0	9		599
5												0
6	12	12	37	671		1	0	0	0	5		738
7	8	8	0	13		0	1	0	0	0		30
8	0	0	0	0		0	0	0	0	0		0
9	0	0	0	0		0	0	0	0	0		0
10	28	0	3	6		7	3	1	0	0		48
11												0
Total	221	33	81	967	0	443	31	1	0	25	0	1802

Total

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	429	68	1307		40	49	11	90	581		2575
2	363	0	0	9		153	222	1	4	27		779
3	42	22	0	219		88	11	1	8	52		443
4	849	6	201	44		2976	42	1	7	39		4165
5												0
6	51	253	182	3883		15	11	3	28	183		4609
7	44	188	1	81		1	1	0	2	11		329
8	12	1	1	4		20	1	0	189	26		254
9	28	3	4	8		48	3	17	0	10		121
10	150	16	19	44		254	15	49	151	0		698
11												0
Total	1539	918	476	5599	0	3595	355	83	479	929	0	13973

HGV%

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0.0%	3.0%	19.1%	16.4%		17.5%	10.2%	0.0%	0.0%	1.9%		
2	3.6%	0.0%	0.0%	33.3%		2.6%	5.4%	0.0%	0.0%	0.0%		
3	23.8%	0.0%	0.0%	25.1%		27.3%	18.2%	0.0%	0.0%	0.0%		
4	17.7%	0.0%	13.9%	9.1%		13.4%	19.0%	0.0%	0.0%	23.1%		
5												
6	23.5%	4.7%	20.3%	17.3%		6.7%	0.0%	0.0%	0.0%	2.7%		
7	18.2%	4.3%	0.0%	16.0%		0.0%	100.0%	0.0%	0.0%	0.0%		
8	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%		
9	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%		
10	18.7%	0.0%	15.8%	13.6%		2.8%	20.0%	0.0%	0.0%	0.0%		
11												
Total												

PCUs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	442	81	1522		47	54	11	90	592		2839
2	376	0	0	12		157	234	1	4	27		811
3	52	22	0	274		112	13	1	8	52		534
4	999	6	229	48		3376	50	1	7	48		4764
5												0
6	63	265	219	4554		16	11	3	28	188		5347
7	52	196	1	94		1	2	0	2	11		359
8	12	1	1	4		20	1	0	189	26		254
9	28	3	4	8		48	3	17	0	10		121
10	178	16	22	50		261	18	50	151	0		746
11												0
Total	1760	951	557	6566	0	4038	386	84	479	954	0	15775

0745-0845

Lights

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	402	64	1083		76	46	9	77	436		2193
2	318	0	11	10		161	288	0	2	14		804
3	46	4	0	195		113	1	1	8	46		414
4	856	8	157	36		2784	53	1	8	41		3944
5												0
6	51	218	151	2844		13	10	6	42	235		3570
7	50	252	1	88		1	1	0	2	9		404
8	12	2	2	3		19	1	0	189	26		254
9	30	4	4	7		45	4	17	0	10		121
10	141	19	22	33		232	16	48	151	0		662
11												0
Total	1504	909	412	4299	0	3444	420	82	479	817	0	12366

HGVs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	22	24	201		6	12	0	0	20		285
2	16	0	0	0		7	9	0	0	0		32
3	16	0	0	50		16	1	0	0	1		84
4	121	0	27	2		307	5	0	0	8		470
5												0
6	8	16	34	474		0	5	0	0	10		547
7	11	22	0	11		0	0	0	0	0		44
8	0	0	0	0		0	0	0	0	0		0
9	0	0	0	0		0	0	0	0	0		0
10	21	0	0	9		11	9	1	0	0		51
11												0
Total	193	60	85	747	0	347	41	1	0	39	0	1513

Total

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	424	88	1284		82	58	9	77	456		2478
2	334	0	11	10		168	297	0	2	14		836
3	62	4	0	245		129	2	1	8	47		498
4	977	8	184	38		3091	58	1	8	49		4414
5												0
6	59	234	185	3318		13	15	6	42	245		4117
7	61	274	1	99		1	1	0	2	9		448
8	12	2	2	3		19	1	0	189	26		254
9	30	4	4	7		45	4	17	0	10		121
10	162	19	22	42		243	25	49	151	0		713
11												0
Total	1697	969	497	5046	0	3791	461	83	479	856	0	13879

HGV%

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0.0%	5.2%	27.3%	15.7%		7.3%	20.7%	0.0%	0.0%	4.4%		
2	4.8%	0.0%	0.0%	0.0%		4.2%	3.0%	0.0%	0.0%	0.0%		
3	25.8%	0.0%	0.0%	20.4%		12.4%	50.0%	0.0%	0.0%	2.1%		
4	12.4%	0.0%	14.7%	5.3%		9.9%	8.6%	0.0%	0.0%	16.3%		
5												
6	13.6%	6.8%	18.4%	14.3%		0.0%	33.3%	0.0%	0.0%	4.1%		
7	18.0%	8.0%	0.0%	11.1%		0.0%	0.0%	0.0%	0.0%	0.0%		
8	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%		
9	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%		
10	13.0%	0.0%	0.0%	21.4%		4.5%	36.0%	0.0%	0.0%	0.0%		
11												
Total												

PCUs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	446	112	1485		88	70	9	77	476		2763
2	350	0	11	10		175	306	0	2	14		868
3	78	4	0	295		145	3	1	8	48		582
4	1098	8	211	40		3398	63	1	8	57		4884
5												0
6	67	250	219	3792		13	20	6	42	255		4664
7	72	296	1	110		1	1	0	2	9		492
8	12	2	2	3		19	1	0	189	26		254
9	30	4	4	7		45	4	17	0	10		121
10	183	19	22	51		254	34	50	151	0		764
11												0
Total	1890	1029	582	5793	0	4138	502	84	479	895	0	15392

Table 5: 2031 Reference Case Traffic Flows - AM Peak

1530-1630

Lights

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	287	73	659		62	18	12	24	192		1327
2	464	0	24	8		170	300	1	2	16		985
3	77	5	0	214		154	0	1	3	21		475
4	1147	6	172	38		4017	49	3	6	49		5487
5												0
6	50	154	183	3058		7	14	10	19	148		3643
7	30	205	0	23		1	1	0	1	6		267
8	12	1	1	1		7	1	0	50	123		196
9	48	3	2	4		30	2	20	0	88		197
10	186	10	8	8		124	7	111	136	0		590
11												0
Total	2014	671	463	4013	0	4572	392	158	241	643	0	13167

HGVs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	12	24	99		6	8	0	0	5		154
2	10	0	0	2		9	12	0	0	1		34
3	29	2	0	46		15	0	0	0	4		96
4	217	0	35	6		580	5	0	0	5		848
5												0
6	6	4	38	350		2	4	0	0	6		410
7	5	24	0	4		0	3	0	0	0		36
8	0	0	0	0		0	0	0	0	2		2
9	0	0	0	0		0	0	0	0	0		0
10	11	2	0	7		4	1	1	0	0		26
11												0
Total	278	44	97	514	0	616	33	1	0	23	0	1606

Total

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	299	97	758		68	26	12	24	197		1481
2	474	0	24	10		179	312	1	2	17		1019
3	106	7	0	260		169	0	1	3	25		571
4	1364	6	207	44		4597	54	3	6	54		6335
5												0
6	56	158	221	3408		9	18	10	19	154		4053
7	35	229	0	27		1	4	0	1	6		303
8	12	1	1	1		7	1	0	50	125		198
9	48	3	2	4		30	2	20	0	88		197
10	197	12	8	15		128	8	112	136	0		616
11												0
Total	2292	715	560	4527	0	5188	425	159	241	666	0	14773

HGV%

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0.0%	4.0%	24.7%	13.1%		8.8%	30.8%	0.0%	0.0%	2.5%		
2	2.1%	0.0%	0.0%	20.0%		5.0%	3.8%	0.0%	0.0%	5.9%		
3	27.4%	28.6%	0.0%	17.7%		8.9%	0.0%	0.0%	0.0%	16.0%		
4	15.9%	0.0%	16.9%	13.6%		12.6%	9.3%	0.0%	0.0%	9.3%		
5												
6	10.7%	2.5%	17.2%	10.3%		22.2%	22.2%	0.0%	0.0%	3.9%		
7	14.3%	10.5%	0.0%	14.8%		0.0%	75.0%	0.0%	0.0%	0.0%		
8	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%		
9	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%		
10	5.6%	16.7%	0.0%	46.7%		3.1%	12.5%	0.0%	0.0%	0.0%		
11												
Total												

PCUs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	311	121	857		74	34	12	24	202		1635
2	484	0	24	12		188	324	1	2	18		1053
3	135	9	0	306		184	0	1	3	29		667
4	1581	6	242	50		S177	59	3	6	59		7183
5												0
6	62	162	259	3758		11	22	10	19	160		4463
7	40	253	0	31		1	7	0	1	6		339
8	12	1	1	1		7	1	0	50	127		200
9	48	3	2	4		30	2	20	0	88		197
10	208	14	8	22		132	9	113	136	0		642
11												0
Total	2570	759	657	5041	0	5804	458	160	241	689	0	16379

1630-1730

Lights

	1	2	3	4	5	6	7	8	9	10	11	Total
1	2	441	69	734		75	25	10	20	179		1555
2	617	0	25	10		178	368	1	1	11		1211
3	91	4	0	172		136	6	1	1	11		422
4	1333	2	154	67		4244	40	3	7	60		5910
5												0
6	79	189	165	3174		16	22	12	24	220		3901
7	27	220	1	23		0	3	0	1	8		283
8	14	0	1	1		7	0	0	50	123		196
9	53	1	2	3		29	1	20	0	88		197
10	308	8	11	9		170	9	111	136	0		762
11												0
Total	2524	865	428	4193	0	4855	474	158	240	700	0	14437

HGVs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	13	6	80		5	10	0	0	7		121
2	10	0	0	0		4	2	0	0	3		19
3	14	0	0	43		30	0	0	0	2		89
4	132	4	47	0		447	5	0	0	3		638
5												0
6	4	9	32	301		1	1	0	0	1		349
7	5	12	0	6		0	0	0	0	1		24
8	0	0	0	0		0	0	0	0	2		2
9	0	0	0	0		0	0	0	0	0		0
10	10	0	3	4		4	0	1	0	0		22
11												0
Total	175	38	88	434	0	491	18	1	0	19	0	1264

Total

	1	2	3	4	5	6	7	8	9	10	11	Total
1	2	454	75	814		80	35	10	20	186		1676
2	627	0	25	10		182	370	1	1	14		1230
3	105	4	0	215		166	6	1	1	13		511
4	1465	6	201	67		4691	45	3	7	63		6548
5												0
6	83	198	197	3475		17	23	12	24	221		4250
7	32	232	1	29		0	3	0	1	9		307
8	14	0	1	1		7	0	0	50	125		198
9	53	1	2	3		29	1	20	0	88		197
10	318	8	14	13		174	9	112	136	0		784
11												0
Total	2699	903	516	4627	0	5346	492	159	240	719	0	15701

HGV%

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0.0%	2.9%	8.0%	9.8%		6.3%	28.6%	0.0%	0.0%	3.8%		
2	1.6%	0.0%	0.0%	0.0%		2.2%	0.5%	0.0%	0.0%	21.4%		
3	13.3%	0.0%	0.0%	20.0%		18.1%	0.0%	0.0%	0.0%	15.4%		
4	9.0%	66.7%	23.4%	0.0%		9.5%	11.1%	0.0%	0.0%	4.8%		
5												
6	4.8%	4.5%	16.2%	8.7%		5.9%	4.3%	0.0%	0.0%	0.5%		
7	15.6%	5.2%	0.0%	20.7%		0.0%	0.0%	0.0%	0.0%	11.1%		
8	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%		
9	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%		
10	3.1%	0.0%	21.4%	30.8%		2.3%	0.0%	0.0%	0.0%	0.0%		
11												
Total												

PCUs

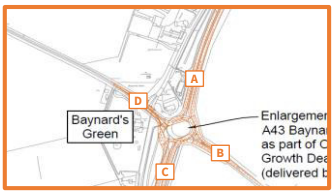
	1	2	3	4	5	6	7	8	9	10	11	Total
1	2	467	81	894		85	45	10	20	193		1797
2	637	0	25	10		186	372	1	1	17		1249
3	119	4	0	258		196	6	1	1	15		600
4	1597	10	248	67		S138	50	3	7	66		7186
5												0
6	87	207	229	3776		18	24	12	24	222		4599
7	37	244	1	35		0	3	0	1	10		331
8	14	0	1	1		7	0	0	50	127		200
9	53	1	2	3		29	1	20	0	88		197
10	328	8	17	17		178	9	113	136	0		806
11												0
Total	2874	941	604	5061	0	5837	510	160	240	738	0	16965

Table 6: 2031 Reference Case Traffic Flows - PM Peak

APPENDIX B

2031 REFERENCE CASE TRAFFIC FLOW DIAGRAMS

M40 J10: Baynards Green Roundabout



Traffic Flow Set: BaynardsRef1_AM

0645-0745

Lights

	A	B	C	D	Total
A	0	416	1851	44	**2311**
B	350	0	187	210	**747**
C	932	289	0	70	**1291**
D	36	180	83	0	**299**
Total	**1318**	**885**	**2121**	**324**	**4648**

HGVs

	A	B	C	D	Total
A	0	13	246	5	**264**
B	13	0	7	12	**32**
C	200	12	0	13	**225**
D	8	8	13	1	**30**
Total	**221**	**33**	**266**	**31**	**551**

Total Vehs

	A	B	C	D	Total
A	0	429	2097	49	**2575**
B	363	0	194	222	**779**
C	1132	301	0	83	**1516**
D	44	188	96	1	**329**
Total	**1539**	**918**	**2387**	**355**	**5199**

HGV%

	A	B	C	D	Total
A	0.0%	3.0%	11.7%	10.2%	
B	3.6%	0.0%	3.6%	5.4%	
C	17.7%	4.0%	0.0%	15.7%	
D	18.2%	4.3%	13.5%	100%	
Total					

0745-0845

Lights

	A	B	C	D	Total
A	0	402	1745	46	**2193**
B	318	0	198	288	**804**
C	1136	255	0	85	**1476**
D	50	252	101	1	**404**
Total	**1504**	**909**	**2044**	**420**	**4877**

HGVs

	A	B	C	D	Total
A	0	22	251	12	**285**
B	16	0	7	9	**32**
C	166	16	0	20	**202**
D	11	22	11	0	**44**
Total	**193**	**60**	**269**	**41**	**563**

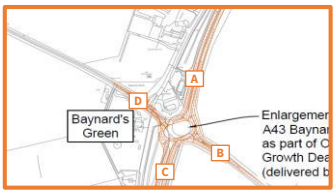
Total Vehs

	A	B	C	D	Total
A	0	424	1996	58	**2478**
B	334	0	205	297	**836**
C	1302	271	0	105	**1678**
D	61	274	112	1	**448**
Total	**1697**	**969**	**2313**	**461**	**5440**

HGV%

	A	B	C	D	Total
A	0.0%	5.2%	12.6%	20.7%	
B	4.8%	0.0%	3.4%	3.0%	
C	12.7%	5.9%	0.0%	19.0%	
D	18.0%	8.0%	9.8%	0.0%	
Total					

M40 J10: Baynards Green Roundabout



Traffic Flow Set: BaynardsRef1_PM

1530-1630

Lights					
	A	B	C	D	Total
A	0	287	1022	18	**1327**
B	464	0	221	300	**985**
C	1520	179	0	73	**1772**
D	30	205	31	1	**267**
Total	**2014**	**671**	**1274**	**392**	**4351**

HGVs					
	A	B	C	D	Total
A	0	12	134	8	**154**
B	10	0	12	12	**34**
C	263	8	0	10	**281**
D	5	24	4	3	**36**
Total	**278**	**44**	**150**	**33**	**505**

Total Vehs					
	A	B	C	D	Total
A	0	299	1156	26	**1481**
B	474	0	233	312	**1019**
C	1783	187	0	83	**2053**
D	35	229	35	4	**303**
Total	**2292**	**715**	**1424**	**425**	**4856**

HGV%					
	A	B	C	D	Total
A	0.0%	4.0%	11.6%	30.8%	
B	2.1%	0.0%	5.2%	3.8%	
C	14.8%	4.3%	0.0%	12.0%	
D	14.3%	10.5%	11.4%	75.0%	
Total					

1630-1730

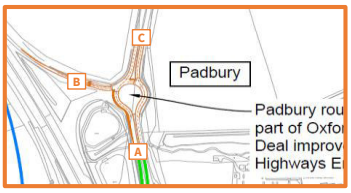
Lights					
	A	B	C	D	Total
A	2	441	1087	25	**1555**
B	617	0	226	368	**1211**
C	1878	204	0	78	**2160**
D	27	220	33	3	**283**
Total	**2524**	**865**	**1346**	**474**	**5209**

HGVs					
	A	B	C	D	Total
A	0	13	98	10	**121**
B	10	0	7	2	**19**
C	160	13	0	6	**179**
D	5	12	7	0	**24**
Total	**175**	**38**	**112**	**18**	**343**

Total Vehs					
	A	B	C	D	Total
A	2	454	1185	35	**1676**
B	627	0	233	370	**1230**
C	2038	217	0	84	**2339**
D	32	232	40	3	**307**
Total	**2699**	**903**	**1458**	**492**	**5552**

HGV%					
	A	B	C	D	Total
A	0.0%	2.9%	8.3%	28.6%	
B	1.6%	0.0%	3.0%	0.5%	
C	7.9%	6.0%	0.0%	7.1%	
D	15.6%	5.2%	17.5%	0.0%	
Total					

M40 J10: Padbury Roundabout



Traffic Flow Set: **PadburyRef1_AM**

0645-0745

Lights				
	A	B	C	Total
A	0	0	1000	**1000**
B	368	0	291	**659**
C	2121	0	0	**2121**
Total	**2489**	**0**	**1291**	**3780**

HGVs				
	A	B	C	Total
A	0	0	201	**201**
B	43	0	24	**67**
C	266	0	0	**266**
Total	**309**	**0**	**225**	**534**

Total Vehs				
	A	B	C	Total
A	0	0	1201	**1201**
B	411	0	315	**726**
C	2387	0	0	**2387**
Total	**2798**	**0**	**1516**	**4314**

HGV%				
	A	B	C	Total
A	0.0%	0.0%	16.7%	
B	10.5%	0.0%	7.6%	
C	11.1%	0.0%	0.0%	
Total				

0745-0845

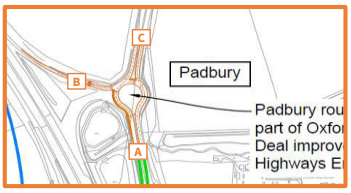
Lights				
	A	B	C	Total
A	0	0	1197	**1197**
B	447	0	279	**726**
C	2044	0	0	**2044**
Total	**2491**	**0**	**1476**	**3967**

HGVs				
	A	B	C	Total
A	0	0	173	**173**
B	44	0	29	**73**
C	269	0	0	**269**
Total	**313**	**0**	**202**	**515**

Total Vehs				
	A	B	C	Total
A	0	0	1370	**1370**
B	491	0	308	**799**
C	2313	0	0	**2313**
Total	**2804**	**0**	**1678**	**4482**

HGV%				
	A	B	C	Total
A	0.0%	0.0%	12.6%	
B	9.0%	0.0%	9.4%	
C	11.6%	0.0%	0.0%	
Total				

M40 J10: Padbury Roundabout



Traffic Flow Set: **PadburyRef1_PM**

1530-1630

Lights				
	A	B	C	Total
A	0	0	1554	**1554**
B	367	0	218	**585**
C	1274	0	0	**1274**
Total	**1641**	**0**	**1772**	**3413**

HGVs				
	A	B	C	Total
A	0	0	267	**267**
B	46	0	14	**60**
C	150	0	0	**150**
Total	**196**	**0**	**281**	**477**

Total Vehs				
	A	B	C	Total
A	0	0	1821	**1821**
B	413	0	232	**645**
C	1424	0	0	**1424**
Total	**1837**	**0**	**2053**	**3890**

HGV%				
	A	B	C	Total
A	0.0%	0.0%	14.7%	
B	11.1%	0.0%	6.0%	
C	10.5%	0.0%	0.0%	
Total				

1630-1730

Lights				
	A	B	C	Total
A	0	0	1870	**1870**
B	437	0	290	**727**
C	1346	0	0	**1346**
Total	**1783**	**0**	**2160**	**3943**

HGVs				
	A	B	C	Total
A	0	0	165	**165**
B	34	0	14	**48**
C	112	0	0	**112**
Total	**146**	**0**	**179**	**325**

Total Vehs				
	A	B	C	Total
A	0	0	2035	**2035**
B	471	0	304	**775**
C	1458	0	0	**1458**
Total	**1929**	**0**	**2339**	**4268**

HGV%				
	A	B	C	Total
A	0.0%	0.0%	8.1%	
B	7.2%	0.0%	4.6%	
C	7.7%	0.0%	0.0%	
Total				



M40 J10: Cherwell Roundabout

ADC INFRASTRUCTURE

Traffic Flow Set: CherwellRef1_AM

0645-0745

Lights

	A	B	C	D	Total
A	0	201	1166	1122	**2489**
B	63	0	164	125	**352**
C					**0**
D	937	194	90	0	**1221**
Total	**1000**	**395**	**1420**	**1247**	**4062**

HGVs

	A	B	C	D	Total
A	0	50	231	22	**303**
B	12	0	55	24	**91**
C					**0**
D	189	31	10	0	**230**
Total	**201**	**81**	**296**	**46**	**624**

Total Vehs

	A	B	C	D	Total
A	0	251	1397	1144	**2792**
B	75	0	219	149	**443**
C	0	0	0	0	**0**
D	1126	225	100	0	**1451**
Total	**1201**	**476**	**1716**	**1293**	**4686**

HGV%

	A	B	C	D	Total
A	0.0%	19.9%	16.5%	1.9%	
B	16.0%	0.0%	25.1%	16.1%	
C	0.0%	0.0%	0.0%	0.0%	
D	16.8%	13.8%	10.0%	0.0%	
Total					

0745-0845

Lights

	A	B	C	D	Total
A	0	227	1181	1083	**2491**
B	51	0	195	168	**414**
C					**0**
D	1146	185	79	0	**1410**
Total	**1197**	**412**	**1455**	**1251**	**4315**

HGVs

	A	B	C	D	Total
A	0	58	212	43	**313**
B	17	0	50	17	**84**
C					**0**
D	156	27	11	0	**194**
Total	**173**	**85**	**273**	**60**	**591**

Total Vehs

	A	B	C	D	Total
A	0	285	1393	1126	**2804**
B	68	0	245	185	**498**
C	0	0	0	0	**0**
D	1302	212	90	0	**1604**
Total	**1370**	**497**	**1728**	**1311**	**4906**

HGV%

	A	B	C	D	Total
A	0.0%	20.4%	15.2%	3.8%	
B	25.0%	0.0%	20.4%	9.2%	
C	0.0%	0.0%	0.0%	0.0%	
D	12.0%	12.7%	12.2%	0.0%	
Total					



M40 J10: Cherwell Roundabout

ADC INFRASTRUCTURE

Traffic Flow Set: CherwellRef1_PM

1530-1630

Lights

	A	B	C	D	Total
A	0	280	690	671	**1641**
B	82	0	214	179	**475**
C					**0**
D	1472	183	51	0	**1706**
Total	**1554**	**463**	**955**	**850**	**3822**

HGVs

	A	B	C	D	Total
A	0	62	105	21	**188**
B	31	0	46	19	**96**
C					**0**
D	236	35	13	0	**284**
Total	**267**	**97**	**164**	**40**	**568**

Total Vehs

	A	B	C	D	Total
A	0	342	795	692	**1829**
B	113	0	260	198	**571**
C	0	0	0	0	**0**
D	1708	218	64	0	**1990**
Total	**1821**	**560**	**1119**	**890**	**4390**

HGV%

	A	B	C	D	Total
A	0.0%	18.1%	13.2%	3.0%	
B	27.4%	0.0%	17.7%	9.6%	
C	0.0%	0.0%	0.0%	0.0%	
D	13.8%	16.1%	20.3%	0.0%	
Total					

1630-1730

Lights

	A	B	C	D	Total
A	0	260	767	756	**1783**
B	101	0	172	149	**422**
C					**0**
D	1769	168	80	0	**2017**
Total	**1870**	**428**	**1019**	**905**	**4222**

HGVs

	A	B	C	D	Total
A	0	38	86	22	**146**
B	14	0	43	32	**89**
C					**0**
D	151	50	4	0	**205**
Total	**165**	**88**	**133**	**54**	**440**

Total Vehs

	A	B	C	D	Total
A	0	298	853	778	**1929**
B	115	0	215	181	**511**
C	0	0	0	0	**0**
D	1920	218	84	0	**2222**
Total	**2035**	**516**	**1152**	**959**	**4662**

HGV%

	A	B	C	D	Total
A	0.0%	12.8%	10.1%	2.8%	
B	12.2%	0.0%	20.0%	17.7%	
C	0.0%	0.0%	0.0%	0.0%	
D	7.9%	22.9%	4.8%	0.0%	
Total					

M40 J10: Padbury Roundabout



Traffic Flow Set: ArdleyRef1_AM

0645-0745

Lights				
	A	B	C	Total
A	0	269	315	**584**
B	986	0	261	**1247**
C	38	952	0	**990**
Total	**1024**	**1221**	**576**	**2821**

HGVs				
	A	B	C	Total
A	0	40	7	**47**
B	16	0	36	**52**
C	9	190	0	**199**
Total	**25**	**230**	**43**	**298**

Total Vehs				
	A	B	C	Total
A	0	309	322	**631**
B	1002	0	297	**1299**
C	47	1142	0	**1189**
Total	**1049**	**1451**	**619**	**3119**

HGV%				
	A	B	C	Total
A	0.0%	12.9%	2.2%	
B	1.6%	0.0%	12.1%	
C	19.1%	16.6%	0.0%	
Total				

0745-0845

Lights				
	A	B	C	Total
A	0	300	296	**596**
B	887	0	364	**1251**
C	50	1110	0	**1160**
Total	**937**	**1410**	**660**	**3007**

HGVs				
	A	B	C	Total
A	0	39	11	**50**
B	31	0	29	**60**
C	8	155	0	**163**
Total	**39**	**194**	**40**	**273**

Total Vehs				
	A	B	C	Total
A	0	339	307	**646**
B	918	0	393	**1311**
C	58	1265	0	**1323**
Total	**976**	**1604**	**700**	**3280**

HGV%				
	A	B	C	Total
A	0.0%	11.5%	3.6%	
B	3.4%	0.0%	7.4%	
C	13.8%	12.3%	0.0%	
Total				

M40 J10: Padbury Roundabout



Traffic Flow Set: ArdleyRef1_PM

1530-1630

Lights				
	A	B	C	Total
A	0	294	161	**455**
B	456	0	394	**850**
C	58	1412	0	**1470**
Total	**514**	**1706**	**555**	**2775**

HGVs				
	A	B	C	Total
A	0	21	4	**25**
B	16	0	32	**48**
C	5	263	0	**268**
Total	**21**	**284**	**36**	**341**

Total Vehs				
	A	B	C	Total
A	0	315	165	**480**
B	472	0	426	**898**
C	63	1675	0	**1738**
Total	**535**	**1990**	**591**	**3116**

HGV%				
	A	B	C	Total
A	0.0%	6.7%	2.4%	
B	3.4%	0.0%	7.5%	
C	7.9%	15.7%	0.0%	
Total				

1630-1730

Lights				
	A	B	C	Total
A	0	421	206	**627**
B	500	0	405	**905**
C	70	1596	0	**1666**
Total	**570**	**2017**	**611**	**3198**

HGVs				
	A	B	C	Total
A	0	17	4	**21**
B	14	0	40	**54**
C	3	188	0	**191**
Total	**17**	**205**	**44**	**266**

Total Vehs				
	A	B	C	Total
A	0	438	210	**648**
B	514	0	445	**959**
C	73	1784	0	**1857**
Total	**587**	**2222**	**655**	**3464**

HGV%				
	A	B	C	Total
A	0.0%	3.9%	1.9%	
B	2.7%	0.0%	9.0%	
C	4.1%	10.5%	0.0%	
Total				

APPENDIX C

2031 DO SOMETHING O/D TRAFFIC FLOW MATRICES

Dev	Lights												
		1	2	3	4	5	6	7	8	9	10	11	Total
	1											17.6%	
	2											0.0%	
	3											0.0%	
	4											23.3%	
	5												
	6											15.6%	
	7											0.0%	
	8											0.0%	
	9											0.0%	
	10											43.5%	
	11	17.6%	0.0%	0.0%	23.3%		15.6%	0.0%	0.0%	0.0%	43.5%		100%
	Total											100%	

	HGVs												
	1	2	3	4	5	6	7	8	9	10	11	Total
1											32.1%	
2											0.0%	
3											0.0%	
4											49.5%	
5												
6											18.1%	
7											0.0%	
8											0.0%	
9											0.0%	
10											0.3%	
11	32.1%	0.0%	0.0%	49.5%		18.1%	0.0%	0.0%	0.0%	0.3%		100%
Total											100%	

Table 7: Trip Distribution Pattern

AM Peak

Lights

	1	2	3	4	5	6	7	8	9	10	11	Total
1											159	
2											0	
3											0	
4											210	
5												
6											141	
7											0	
8											0	
9											0	
10											393	
11	17	0	0	23		15	0	0	0	42	0	97
Total											903	

HGVs

	1	2	3	4	5	6	7	8	9	10	11	Total
1											55	
2											0	
3											0	
4											85	
5												
6											31	
7											0	
8											0	
9											0	
10											1	
11	51	0	0	79		29	0	0	0	0	0	159
Total											172	

PM Peak

Lights

	1	2	3	4	5	6	7	8	9	10	11	Total
1											52	
2											0	
3											0	
4											69	
5												
6											46	
7											0	
8											0	
9											0	
10											130	
11	183	0	0	242		161	0	0	0	452	0	1038
Total											297	

HGVs

	1	2	3	4	5	6	7	8	9	10	11	Total
1											50	
2											0	
3											0	
4											78	
5												
6											29	
7											0	
8											0	
9											0	
10											0	
11	46	0	0	71		26	0	0	0	0	0	143
Total											157	

Table 8: Total Development Vehicle Trips

0645-0745

Lights

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	416	55	1092		33	44	11	90	570	159	2470
2	350	0	0	6		149	210	1	4	27	0	747
3	32	22	0	164		64	9	1	8	52	0	352
4	699	6	173	40		2576	34	1	7	30	210	3776
5												
6	39	241	145	3212		14	11	3	28	178	141	4012
7	36	180	1	68		1	0	0	2	11	0	299
8	12	1	1	4		20	1	0	189	26	0	254
9	28	3	4	8		48	3	17	0	10	0	121
10	122	16	16	38		247	12	48	151	0	393	1043
11	17	0	0	23		15	0	0	0	42	0	97
Total	1335	885	395	4655		3167	324	82	479	946	903	13171

HGVs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	13	13	215		7	5	0	0	11	55	319
2	13	0	0	3		4	12	0	0	0	0	32
3	10	0	0	55		24	2	0	0	0	0	91
4	150	0	28	4		400	8	0	0	9	85	684
5												
6	12	12	37	671		1	0	0	0	5	31	769
7	8	8	0	13		0	1	0	0	0	0	30
8	0	0	0	0		0	0	0	0	0	0	0
9	0	0	0	0		0	0	0	0	0	0	0
10	28	0	3	6		7	3	1	0	0	1	49
11	51	0	0	79		29	0	0	0	0	0	159
Total	272	33	81	1046		472	31	1	0	25	172	2133

Total

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	429	68	1307		40	49	11	90	581	214	2789
2	363	0	0	9		153	222	1	4	27	0	779
3	42	22	0	219		88	11	1	8	52	0	443
4	849	6	201	44		2976	42	1	7	39	295	4460
5												
6	51	253	182	3883		15	11	3	28	183	172	4781
7	44	188	1	81		1	1	0	2	11	0	329
8	12	1	1	4		20	1	0	189	26	0	254
9	28	3	4	8		48	3	17	0	10	0	121
10	150	16	19	44		254	15	49	151	0	394	1092
11	68	0	0	102		44	0	0	0	42	0	256
Total	1607	918	476	5701	0	3639	355	83	479	971	1075	15304

HGV%

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0.0%	3.0%	19.1%	16.4%		17.5%	10.2%	0.0%	0.0%	1.9%	25.7%	
2	3.6%	0.0%	0.0%	33.3%		2.6%	5.4%	0.0%	0.0%	0.0%	0.0%	
3	23.8%	0.0%	0.0%	25.1%		27.3%	18.2%	0.0%	0.0%	0.0%	0.0%	
4	17.7%	0.0%	13.9%	9.1%		13.4%	19.0%	0.0%	0.0%	23.1%	28.8%	
5												
6	23.5%	4.7%	20.3%	17.3%		6.7%	0.0%	0.0%	0.0%	2.7%	18.0%	
7	18.2%	4.3%	0.0%	16.0%		0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	
8	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
9	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
10	18.7%	0.0%	15.8%	13.6%		2.8%	20.0%	0.0%	0.0%	0.0%	0.3%	
11	75.0%	0.0%	0.0%	77.5%		65.9%	0.0%	0.0%	0.0%	0.0%	0.0%	
Total												

PCUs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	442	81	1522		47	54	11	90	592	269	3108
2	376	0	0	12		157	234	1	4	27	0	811
3	52	22	0	274		112	13	1	8	52	0	534
4	999	6	229	48		3376	50	1	7	48	380	5144
5												
6	63	265	219	4554		16	11	3	28	188	203	5550
7	52	196	1	94		1	2	0	2	11	0	359
8	12	1	1	4		20	1	0	189	26	0	254
9	28	3	4	8		48	3	17	0	10	0	121
10	178	16	22	50		261	18	50	151	0	395	1141
11	119	0	0	181		73	0	0	0	42	0	415
Total	1879	951	557	6747	0	4111	386	84	479	996	1247	17437

0745-0845

Lights

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	402	64	1083		76	46	9	77	436	159	2352
2	318	0	11	10		161	288	0	2	14	0	804
3	46	4	0	195		113	1	1	8	46	0	414
4	856	8	157	36		2784	53	1	8	41	210	4154
5												
6	51	218	151	2844		13	10	6	42	235	141	3711
7	50	252	1	88		1	1	0	2	9	0	404
8	12	2	2	3		19	1	0	189	26	0	254
9	30	4	4	7		45	4	17	0	10	0	121
10	141	19	22	33		232	16	48	151	0	393	1055
11	17	0	0	23		15	0	0	0	42	0	97
Total	1521	909	412	4322		3459	420	82	479	859	903	13366

HGVs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	22	24	201		6	12	0	0	20	55	340
2	16	0	0	0		7	9	0	0	0	0	32
3	16	0	0	50		16	1	0	0	1	0	84
4	121	0	27	2		307	5	0	0	8	85	555
5												
6	8	16	34	474		0	5	0	0	10	31	578
7	11	22	0	11		0	0	0	0	0	0	44
8	0	0	0	0		0	0	0	0	0	0	0
9	0	0	0	0		0	0	0	0	0	0	0
10	21	0	0	9		11	9	1	0	0	1	52
11	51	0	0	79		29	0	0	0	0	0	159
Total	244	60	85	826		376	41	1	0	39	172	1844

Total

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	424	88	1284		82	58	9	77	456	214	2692
2	334	0	11	10		168	297	0	2	14	0	836
3	62	4	0	245		129	2	1	8	47	0	498
4	977	8	184	38		3091	58	1	8	49	295	4709
5												
6	59	234	185	3318		13	15	6	42	245	172	4289
7	61	274	1	99		1	1	0	2	9	0	448
8	12	2	2	3		19	1	0	189	26	0	254
9	30	4	4	7		45	4	17	0	10	0	121
10	162	19	22	42		243	25	49	151	0	394	1107
11	68	0	0	102		44	0	0	0	42	0	256
Total	1765	969	497	5148		3835	461	83	479	898	1075	15210

HGV%

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0.0%	5.2%	27.3%	15.7%		7.3%	20.7%	0.0%	0.0%	4.4%	25.7%	
2	4.8%	0.0%	0.0%	0.0%		4.2%	3.0%	0.0%	0.0%	0.0%	0.0%	
3	25.8%	0.0%	0.0%	20.4%		12.4%	50.0%	0.0%	0.0%	2.1%	0.0%	
4	12.4%	0.0%	14.7%	5.3%		9.9%	8.6%	0.0%	0.0%	16.3%	28.8%	
5												
6	13.6%	6.8%	18.4%	14.3%		0.0%	33.3%	0.0%	0.0%	4.1%	18.0%	
7	18.0%	8.0%	0.0%	11.1%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
8	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
9	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
10	13.0%	0.0%	0.0%	21.4%		4.5%	36.0%	0.0%	0.0%	0.0%	0.3%	
11	75.0%	0.0%	0.0%	77.5%		65.9%	0.0%	0.0%	0.0%	0.0%	0.0%	
Total												

PCUs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	446	112	1485		88	70	9	77	476	269	3032
2	350	0	11	10		175	306	0	2	14	0	868
3	78	4	0	295		145	3	1	8	48	0	582
4	1098	8	211	40		3398	63	1	8	57	380	5264
5												0
6	67	250	219	3792		13	20	6	42	255	203	4867
7	72	296	1	110		1	1	0	2	9	0	492
8	12	2	2	3		19	1	0	189	26	0	254
9	30	4	4	7		45	4	17	0	10	0	121
10	183	19	22	51		254	34	50	151	0	395	1159
11	119	0	0	181		73	0	0	0	42	0	415
Total	2009	1029	582	5974		4211	502	84	479	937	1247	17054

Table 9: 2031 Do Something Traffic Flows - AM Peak

1530-1630

Lights

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	287	73	659		62	18	12	24	192	52	1379
2	464	0	24	8		170	300	1	2	16	0	985
3	77	5	0	214		154	0	1	3	21	0	475
4	1147	6	172	38		4017	49	3	6	49	69	5556
5												
6	50	154	183	3058		7	14	10	19	148	46	3689
7	30	205	0	23		1	1	0	1	6	0	267
8	12	1	1	1		7	1	0	50	123	0	196
9	48	3	2	4		30	2	20	0	88	0	197
10	186	10	8	8		124	7	111	136	0	130	720
11	183	0	0	242		161	0	0	0	452	0	1038
Total	2197	671	463	4255		4733	392	158	241	1095	297	14502

HGVs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	12	24	99		6	8	0	0	5	55	209
2	10	0	0	2		9	12	0	0	1	0	34
3	29	2	0	46		15	0	0	0	4	0	96
4	217	0	35	6		580	5	0	0	5	85	933
5												
6	6	4	38	350		2	4	0	0	6	31	441
7	5	24	0	4		0	3	0	0	0	0	36
8	0	0	0	0		0	0	0	0	2	0	2
9	0	0	0	0		0	0	0	0	0	0	0
10	11	2	0	7		4	1	1	0	0	1	27
11	51	0	0	79		29	0	0	0	0	0	159
Total	329	44	97	593		645	33	1	0	23	172	1937

Total

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	299	97	758		68	26	12	24	197	107	1588
2	474	0	24	10		179	312	1	2	17	0	1019
3	106	7	0	260		169	0	1	3	25	0	571
4	1364	6	207	44		4597	54	3	6	54	154	6489
5												
6	56	158	221	3408		9	18	10	19	154	77	4130
7	35	229	0	27		1	4	0	1	6	0	303
8	12	1	1	1		7	1	0	50	125	0	198
9	48	3	2	4		30	2	20	0	88	0	197
10	197	12	8	15		128	8	112	136	0	131	747
11	234	0	0	321		190	0	0	0	452	0	1197
Total	2526	715	560	4848	0	5378	425	159	241	1118	469	16439

HGV%

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0.0%	4.0%	24.7%	13.1%		8.8%	30.8%	0.0%	0.0%	2.5%	51.4%	
2	2.1%	0.0%	0.0%	20.0%		5.0%	3.8%	0.0%	0.0%	5.9%	0.0%	
3	27.4%	28.6%	0.0%	17.7%		8.9%	0.0%	0.0%	0.0%	16.0%	0.0%	
4	15.9%	0.0%	16.9%	13.6%		12.6%	9.3%	0.0%	0.0%	9.3%	55.2%	
5												
6	10.7%	2.5%	17.2%	10.3%		22.2%	22.2%	0.0%	0.0%	3.9%	40.3%	
7	14.3%	10.5%	0.0%	14.8%		0.0%	75.0%	0.0%	0.0%	0.0%	0.0%	
8	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
9	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
10	5.6%	16.7%	0.0%	46.7%		3.1%	12.5%	0.0%	0.0%	0.0%	0.8%	
11	21.8%	0.0%	0.0%	24.6%		15.3%	0.0%	0.0%	0.0%	0.0%	0.0%	
Total												

PCUs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	311	121	857		74	34	12	24	202	162	1797
2	484	0	24	12		188	324	1	2	18	0	1053
3	135	9	0	306		184	0	1	3	29	0	667
4	1581	6	242	50		5177	59	3	6	59	239	7422
5												
6	62	162	259	3758		11	22	10	19	160	108	4571
7	40	253	0	31		1	7	0	1	6	0	339
8	12	1	1	1		7	1	0	50	127	0	200
9	48	3	2	4		30	2	20	0	88	0	197
10	208	14	8	22		132	9	113	136	0	132	774
11	285	0	0	400		219	0	0	0	452	0	1356
Total	2855	759	657	5441	0	6023	458	160	241	1141	641	18376

1630-1730

Lights

	1	2	3	4	5	6	7	8	9	10	11	Total
1	2	441	69	734		75	25	10	20	179	52	1607
2	617	0	25	10		178	368	1	1	11	0	1211
3	91	4	0	172		136	6	1	1	11	0	422
4	1333	2	154	67		4244	40	3	7	60	69	5979
5												
6	79	189	165	3174		16	22	12	24	220	46	3947
7	27	220	1	23		0	3	0	1	8	0	283
8	14	0	1	1		7	0	0	50	123	0	196
9	53	1	2	3		29	1	20	0	88	0	197
10	308	8	11	9		170	9	111	136	0	130	892
11	183	0	0	242		161	0	0	0	452	0	1038
Total	2707	865	428	4435		5016	474	158	240	1152	297	15772

HGVs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	13	6	80		5	10	0	0	7	50	171
2	10	0	0	0		4	2	0	0	3	0	19
3	14	0	0	43		30	0	0	0	2	0	89
4	132	4	47	0		447	5	0	0	3	78	716
5												
6	4	9	32	301		1	1	0	0	1	29	378
7	5	12	0	6		0	0	0	0	1	0	24
8	0	0	0	0		0	0	0	0	2	0	2
9	0	0	0	0		0	0	0	0	0	0	0
10	10	0	3	4		4	0	1	0	0	0	22
11	46	0	0	71		26	0	0	0	0	0	143
Total	221	38	88	505		517	18	1	0	19	157	1564

Total

	1	2	3	4	5	6	7	8	9	10	11	Total
1	2	454	75	814		80	35	10	20	186	102	1778
2	627	0	25	10		182	370	1	1	14	0	1230
3	105	4	0	215		166	6	1	1	13	0	511
4	1465	6	201	67		4691	45	3	7	63	147	6695
5												
6	83	198	197	3475		17	23	12	24	221	75	4325
7	32	232	1	29		0	3	0	1	9	0	307
8	14	0	1	1		7	0	0	50	125	0	198
9	53	1	2	3		29	1	20	0	88	0	197
10	318	8	14	13		174	9	112	136	0	130	914
11	229	0	0	313		187	0	0	0	452	0	1181
Total	2928	903	516	4940		5533	492	159	240	1171	454	17336

HGV%

	1	2	3	4	5	6	7	8	9	10	11	Total
1	0.0%	2.9%	8.0%	9.8%		6.3%	28.6%	0.0%	0.0%	3.8%	49.0%	
2	1.6%	0.0%	0.0%	0.0%		2.2%	0.5%	0.0%	0.0%	21.4%	0.0%	
3	13.3%	0.0%	0.0%	20.0%		18.1%	0.0%	0.0%	0.0%	15.4%	0.0%	
4	9.0%	66.7%	23.4%	0.0%		9.5%	11.1%	0.0%	0.0%	4.8%	53.1%	
5												
6	4.8%	4.5%	16.2%	8.7%		5.9%	4.3%	0.0%	0.0%	0.5%	38.7%	
7	15.6%	5.2%	0.0%	20.7%		0.0%	0.0%	0.0%	0.0%	11.1%	0.0%	
8	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
9	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
10	3.1%	0.0%	21.4%	30.8%		2.3%	0.0%	0.0%	0.0%	0.0%	0.0%	
11	20.1%	0.0%	0.0%	22.7%		13.9%	0.0%	0.0%	0.0%	0.0%	0.0%	
Total												

PCUs

	1	2	3	4	5	6	7	8	9	10	11	Total
1	2	467	81	894		85	45	10	20	193	152	1949
2	637	0	25	10		186	372	1	1	17	0	1249
3	119	4	0	258		196	6	1	1	15	0	600
4	1597	10	248	67		5138	50	3	7	66	225	7411
5												0
6	87	207	229	3776		18	24	12	24	222	104	4703
7	37	244	1	35		0	3	0	1	10	0	331
8	14	0	1	1		7	0	0	50	127	0	200
9	53	1	2	3		29	1	20	0	88	0	197
10	328	8	17	17		178	9	113	136	0	130	936
11	275	0	0	384		213	0	0	0	452	0	1324
Total	3149	941	604	5445		6050	510	160	240	1190	611	18900

Table 10: 2031 Do Something Traffic Flows - PM Peak

APPENDIX D

2031 DO SOMETHING TRAFFIC FLOW DIAGRAMS

M40 J10: Baynards Green Roundabout

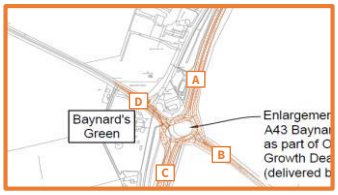


Diagram No: 1
Traffic Flow Set: Baynards1_AM
Strategic Options: All

0645-0745

Lights

	A	B	C	D	Total
A	0	416	2010	44	**2470**
B	350	0	187	210	**747**
C	949	289	0	70	**1308**
D	36	180	83	0	**299**
Total	**1335**	**885**	**2280**	**324**	**4824**

HGVs

	A	B	C	D	Total
A	0	13	301	5	**319**
B	13	0	7	12	**32**
C	251	12	0	13	**276**
D	8	8	13	1	**30**
Total	**272**	**33**	**321**	**31**	**657**

Total Vehs

	A	B	C	D	Total
A	0	429	2311	49	**2789**
B	363	0	194	222	**779**
C	1200	301	0	83	**1584**
D	44	188	96	1	**329**
Total	**1607**	**918**	**2601**	**355**	**5481**

HGV%

	A	B	C	D	Total
A	0.0%	3.0%	13.0%	10.2%	
B	3.6%	0.0%	3.6%	5.4%	
C	20.9%	4.0%	0.0%	15.7%	
D	18.2%	4.3%	13.5%	100%	
Total					

PCUs

	A	B	C	D	Total
A	0	442	2612	54	**3108**
B	0	0	201	234	**435**
C	1451	313	0	96	**1860**
D	52	196	109	2	**359**
Total	**1503**	**951**	**2922**	**386**	**5762**

0745-0845

Lights

	A	B	C	D	Total
A	0	402	1904	46	**2352**
B	318	0	198	288	**804**
C	1153	255	0	85	**1493**
D	50	252	101	1	**404**
Total	**1521**	**909**	**2203**	**420**	**5053**

HGVs

	A	B	C	D	Total
A	0	22	306	12	**340**
B	16	0	7	9	**32**
C	217	16	0	20	**253**
D	11	22	11	0	**44**
Total	**244**	**60**	**324**	**41**	**669**

Total Vehs

	A	B	C	D	Total
A	0	424	2210	58	**2692**
B	334	0	205	297	**836**
C	1370	271	0	105	**1746**
D	61	274	112	1	**448**
Total	**1765**	**969**	**2527**	**461**	**5722**

HGV%

	A	B	C	D	Total
A	0.0%	5.2%	13.8%	20.7%	
B	4.8%	0.0%	3.4%	3.0%	
C	15.8%	5.9%	0.0%	19.0%	
D	18.0%	8.0%	9.8%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	446	2516	70	**3032**
B	350	0	212	306	**868**
C	1587	287	0	125	**1999**
D	72	296	123	1	**492**
Total	**2009**	**1029**	**2851**	**502**	**6391**

M40 J10: Baynards Green Roundabout

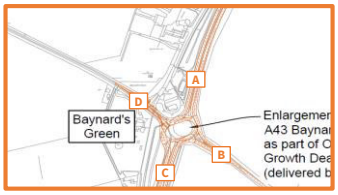


Diagram No: 2
Traffic Flow Set: Baynards1_PM
Strategic Options: All

1530-1630

Lights

	A	B	C	D	Total
A	0	287	1074	18	**1379**
B	464	0	221	300	**985**
C	1703	179	0	73	**1955**
D	30	205	31	1	**267**
Total	**2197**	**671**	**1326**	**392**	**4586**

HGVs

	A	B	C	D	Total
A	0	12	189	8	**209**
B	10	0	12	12	**34**
C	314	8	0	10	**332**
D	5	24	4	3	**36**
Total	**329**	**44**	**205**	**33**	**611**

Total Vehs

	A	B	C	D	Total
A	0	299	1263	26	**1588**
B	474	0	233	312	**1019**
C	2017	187	0	83	**2287**
D	35	229	35	4	**303**
Total	**2526**	**715**	**1531**	**425**	**5197**

HGV%

	A	B	C	D	Total
A	0.0%	4.0%	15.0%	30.8%	
B	2.1%	0.0%	5.2%	3.8%	
C	15.6%	4.3%	0.0%	12.0%	
D	14.3%	10.5%	11.4%	75.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	311	1452	34	**1797**
B	0	0	245	324	**569**
C	2331	195	0	93	**2619**
D	40	253	39	7	**339**
Total	**2371**	**759**	**1736**	**458**	**5324**

1630-1730

Lights

	A	B	C	D	Total
A	2	441	1139	25	**1607**
B	617	0	226	368	**1211**
C	2061	204	0	78	**2343**
D	27	220	33	3	**283**
Total	**2707**	**865**	**1398**	**474**	**5444**

HGVs

	A	B	C	D	Total
A	0	13	148	10	**171**
B	10	0	7	2	**19**
C	206	13	0	6	**225**
D	5	12	7	0	**24**
Total	**221**	**38**	**162**	**18**	**439**

Total Vehs

	A	B	C	D	Total
A	2	454	1287	35	**1778**
B	627	0	233	370	**1230**
C	2267	217	0	84	**2568**
D	32	232	40	3	**307**
Total	**2928**	**903**	**1560**	**492**	**5883**

HGV%

	A	B	C	D	Total
A	0.0%	2.9%	11.5%	28.6%	
B	1.6%	0.0%	3.0%	0.5%	
C	9.1%	6.0%	0.0%	7.1%	
D	15.6%	5.2%	17.5%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	2	467	1435	45	**1949**
B	637	0	240	372	**1249**
C	2473	230	0	90	**2793**
D	37	244	47	3	**331**
Total	**3149**	**941**	**1722**	**510**	**6322**

M40 J10: Padbury Roundabout

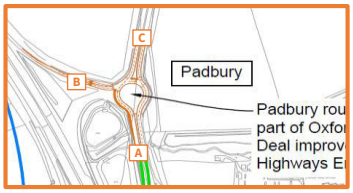


Diagram No: 3
Traffic Flow Set: Padbury1_AM
Strategic Options: 1,4,5,6,7,8

0645-0745

Lights				
	A	B	C	Total
A	0	0	1017	**1017**
B	509	0	291	**800**
C	2280	0	0	**2280**
Total	**2789**	**0**	**1308**	**4097**

HGVs				
	A	B	C	Total
A	0	0	252	**252**
B	74	0	24	**98**
C	321	0	0	**321**
Total	**395**	**0**	**276**	**671**

Total Vehs				
	A	B	C	Total
A	0	0	1269	**1269**
B	583	0	315	**898**
C	2601	0	0	**2601**
Total	**3184**	**0**	**1584**	**4768**

HGV%				
	A	B	C	Total
A	0.0%	0.0%	19.9%	
B	12.7%	0.0%	7.6%	
C	12.3%	0.0%	0.0%	
Total				

PCUs				
	A	B	C	Total
A	0	0	1521	**1521**
B	657	0	339	**996**
C	2922	0	0	**2922**
Total	**3579**	**0**	**1860**	**5439**

0745-0845

Lights				
	A	B	C	Total
A	0	0	1214	**1214**
B	588	0	279	**867**
C	2203	0	0	**2203**
Total	**2791**	**0**	**1493**	**4284**

HGVs				
	A	B	C	Total
A	0	0	224	**224**
B	75	0	29	**104**
C	324	0	0	**324**
Total	**399**	**0**	**253**	**652**

Total Vehs				
	A	B	C	Total
A	0	0	1438	**1438**
B	663	0	308	**971**
C	2527	0	0	**2527**
Total	**3190**	**0**	**1746**	**4936**

HGV%				
	A	B	C	Total
A	0.0%	0.0%	15.6%	
B	11.3%	0.0%	9.4%	
C	12.8%	0.0%	0.0%	
Total				

PCUs				
	A	B	C	Total
A	0	0	1662	**1662**
B	738	0	337	**1075**
C	2851	0	0	**2851**
Total	**3589**	**0**	**1999**	**5588**

M40 J10: Padbury Roundabout

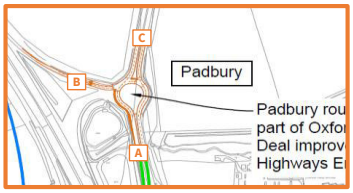


Diagram No: 4
Traffic Flow Set: Padbury1_PM
Strategic Options: 1,4,5,6,7,8

1530-1630

Lights				
	A	B	C	Total
A	0	0	1737	**1737**
B	413	0	218	**631**
C	1326	0	0	**1326**
Total	**1739**	**0**	**1955**	**3694**

HGVs				
	A	B	C	Total
A	0	0	318	**318**
B	77	0	14	**91**
C	205	0	0	**205**
Total	**282**	**0**	**332**	**614**

Total Vehs				
	A	B	C	Total
A	0	0	2055	**2055**
B	490	0	232	**722**
C	1531	0	0	**1531**
Total	**2021**	**0**	**2287**	**4308**

HGV%				
	A	B	C	Total
A	0.0%	0.0%	15.5%	
B	15.7%	0.0%	6.0%	
C	13.4%	0.0%	0.0%	
Total				

PCUs				
	A	B	C	Total
A	0	0	2373	**2373**
B	567	0	246	**813**
C	1736	0	0	**1736**
Total	**2303**	**0**	**2619**	**4922**

1630-1730

Lights				
	A	B	C	Total
A	0	0	2053	**2053**
B	483	0	290	**773**
C	1398	0	0	**1398**
Total	**1881**	**0**	**2343**	**4224**

HGVs				
	A	B	C	Total
A	0	0	211	**211**
B	63	0	14	**77**
C	162	0	0	**162**
Total	**225**	**0**	**225**	**450**

Total Vehs				
	A	B	C	Total
A	0	0	2264	**2264**
B	546	0	304	**850**
C	1560	0	0	**1560**
Total	**2106**	**0**	**2568**	**4674**

HGV%				
	A	B	C	Total
A	0.0%	0.0%	9.3%	
B	11.5%	0.0%	4.6%	
C	10.4%	0.0%	0.0%	
Total				

PCUs				
	A	B	C	Total
A	0	0	2475	**2475**
B	609	0	318	**927**
C	1722	0	0	**1722**
Total	**2331**	**0**	**2793**	**5124**

M40 J10: Padbury Roundabout

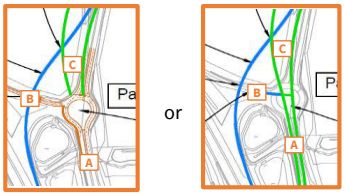


Diagram No: 5
Traffic Flow Set: Padbury2_AM
Strategic Options: 10,11,13,14,15,18,19

0645-0745

Lights				
	A	B	C	Total
A	0	0	1017	**1017**
B	509	0	291	**800**
C	1114	0	0	**1114**
Total	**1623**	**0**	**1308**	**2931**

HGVs				
	A	B	C	Total
A	0	0	252	**252**
B	74	0	24	**98**
C	90	0	0	**90**
Total	**164**	**0**	**276**	**440**

Total Vehs				
	A	B	C	Total
A	0	0	1269	**1269**
B	583	0	315	**898**
C	1204	0	0	**1204**
Total	**1787**	**0**	**1584**	**3371**

HGV%				
	A	B	C	Total
A	0.0%	0.0%	19.9%	
B	12.7%	0.0%	7.6%	
C	7.5%	0.0%	0.0%	
Total				

PCUs				
	A	B	C	Total
A	0	0	1521	**1521**
B	657	0	339	**996**
C	1294	0	0	**1294**
Total	**1951**	**0**	**1860**	**3811**

0745-0845

Lights				
	A	B	C	Total
A	0	0	1214	**1214**
B	588	0	279	**867**
C	1022	0	0	**1022**
Total	**1610**	**0**	**1493**	**3103**

HGVs				
	A	B	C	Total
A	0	0	224	**224**
B	75	0	29	**104**
C	112	0	0	**112**
Total	**187**	**0**	**253**	**440**

Total Vehs				
	A	B	C	Total
A	0	0	1438	**1438**
B	663	0	308	**971**
C	1134	0	0	**1134**
Total	**1797**	**0**	**1746**	**3543**

HGV%				
	A	B	C	Total
A	0.0%	0.0%	15.6%	
B	11.3%	0.0%	9.4%	
C	9.9%	0.0%	0.0%	
Total				

PCUs				
	A	B	C	Total
A	0	0	1662	**1662**
B	738	0	337	**1075**
C	1246	0	0	**1246**
Total	**1984**	**0**	**1999**	**3983**

M40 J10: Padbury Roundabout

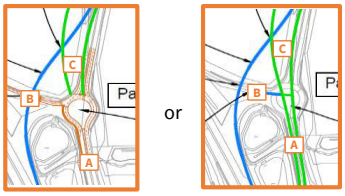


Diagram No: 6
Traffic Flow Set: Padbury2_PM
Strategic Options: 10,11,13,14,15,18,19

1530-1630

Lights

	A	B	C	Total
A	0	0	1737	**1737**
B	413	0	218	**631**
C	636	0	0	**636**
Total	**1049**	**0**	**1955**	**3004**

HGVs

	A	B	C	Total
A	0	0	318	**318**
B	77	0	14	**91**
C	100	0	0	**100**
Total	**177**	**0**	**332**	**509**

Total Vehs

	A	B	C	Total
A	0	0	2055	**2055**
B	490	0	232	**722**
C	736	0	0	**736**
Total	**1226**	**0**	**2287**	**3513**

HGV%

	A	B	C	Total
A	0.0%	0.0%	15.5%	
B	15.7%	0.0%	6.0%	
C	13.6%	0.0%	0.0%	
Total				

PCUs

	A	B	C	Total
A	0	0	2373	**2373**
B	567	0	246	**813**
C	836	0	0	**836**
Total	**1403**	**0**	**2619**	**4022**

1630-1730

Lights

	A	B	C	Total
A	0	0	2053	**2053**
B	483	0	290	**773**
C	631	0	0	**631**
Total	**1114**	**0**	**2343**	**3457**

HGVs

	A	B	C	Total
A	0	0	211	**211**
B	63	0	14	**77**
C	76	0	0	**76**
Total	**139**	**0**	**225**	**364**

Total Vehs

	A	B	C	Total
A	0	0	2264	**2264**
B	546	0	304	**850**
C	707	0	0	**707**
Total	**1253**	**0**	**2568**	**3821**

HGV%

	A	B	C	Total
A	0.0%	0.0%	9.3%	
B	11.5%	0.0%	4.6%	
C	10.7%	0.0%	0.0%	
Total				

PCUs

	A	B	C	Total
A	0	0	2475	**2475**
B	609	0	318	**927**
C	783	0	0	**783**
Total	**1392**	**0**	**2793**	**4185**

M40 J10: Cherwell Roundabout

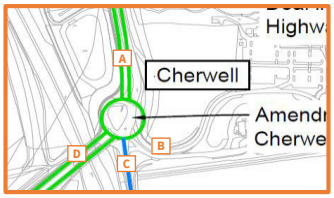


Diagram No: 7
Traffic Flow Set: Cherwell1_AM
Strategic Options: 1

0645-0745

Lights

	A	B	C	D	Total
A	0	201	1166	1422	**2789**
B	63	0	164	125	**352**
C	0	0	0	0	**0**
D	954	194	113	0	**1261**
Total	**1017**	**395**	**1443**	**1547**	**4402**

HGVs

	A	B	C	D	Total
A	0	50	231	143	**424**
B	12	0	55	24	**91**
C	0	0	0	0	**0**
D	240	31	89	0	**360**
Total	**252**	**81**	**375**	**167**	**875**

Total Vehs

	A	B	C	D	Total
A	0	251	1397	1565	**3213**
B	75	0	219	149	**443**
C	0	0	0	0	**0**
D	1194	225	202	0	**1621**
Total	**1269**	**476**	**1818**	**1714**	**5277**

HGV%

	A	B	C	D	Total
A	0.0%	19.9%	16.5%	9.1%	
B	16.0%	0.0%	25.1%	16.1%	
C	0.0%	0.0%	0.0%	0.0%	
D	20.1%	13.8%	44.1%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	301	1628	1708	**3637**
B	87	0	274	173	**534**
C	0	0	0	0	**0**
D	1434	256	291	0	**1981**
Total	**1521**	**557**	**2193**	**1881**	**6152**

0745-0845

Lights

	A	B	C	D	Total
A	0	227	1181	1383	**2791**
B	51	0	195	168	**414**
C	0	0	0	0	**0**
D	1163	185	102	0	**1450**
Total	**1214**	**412**	**1478**	**1551**	**4655**

HGVs

	A	B	C	D	Total
A	0	58	212	129	**399**
B	17	0	50	17	**84**
C	0	0	0	0	**0**
D	207	27	90	0	**324**
Total	**224**	**85**	**352**	**146**	**807**

Total Vehs

	A	B	C	D	Total
A	0	285	1393	1512	**3190**
B	68	0	245	185	**498**
C	0	0	0	0	**0**
D	1370	212	192	0	**1774**
Total	**1438**	**497**	**1830**	**1697**	**5462**

HGV%

	A	B	C	D	Total
A	0.0%	20.4%	15.2%	8.5%	
B	25.0%	0.0%	20.4%	9.2%	
C	0.0%	0.0%	0.0%	0.0%	
D	15.1%	12.7%	46.9%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	343	1605	1641	**3589**
B	85	0	295	202	**582**
C	0	0	0	0	**0**
D	1577	239	282	0	**2098**
Total	**1662**	**582**	**2182**	**1843**	**6269**

M40 J10: Cherwell Roundabout

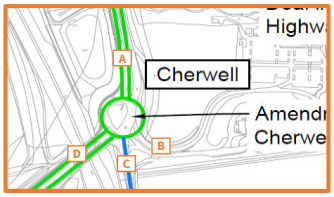


Diagram No: 8
Traffic Flow Set: Cherwell1_PM
Strategic Options: 1

1530-1630

Lights

	A	B	C	D	Total
A	0	280	690	769	**1739**
B	82	0	214	179	**475**
C	0	0	0	0	**0**
D	1655	183	293	0	**2131**
Total	**1737**	**463**	**1197**	**948**	**4345**

HGVs

	A	B	C	D	Total
A	0	62	105	114	**281**
B	31	0	46	19	**96**
C	0	0	0	0	**0**
D	287	35	92	0	**414**
Total	**318**	**97**	**243**	**133**	**791**

Total Vehs

	A	B	C	D	Total
A	0	342	795	883	**2020**
B	113	0	260	198	**571**
C	0	0	0	0	**0**
D	1942	218	385	0	**2545**
Total	**2055**	**560**	**1440**	**1081**	**5136**

HGV%

	A	B	C	D	Total
A	0.0%	18.1%	13.2%	12.9%	
B	27.4%	0.0%	17.7%	9.6%	
C	0.0%	0.0%	0.0%	0.0%	
D	14.8%	16.1%	23.9%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	404	900	997	**2301**
B	144	0	306	217	**667**
C	0	0	0	0	**0**
D	2229	253	477	0	**2959**
Total	**2373**	**657**	**1683**	**1214**	**5927**

1630-1730

Lights

	A	B	C	D	Total
A	0	260	767	854	**1881**
B	101	0	172	149	**422**
C	0	0	0	0	**0**
D	1952	168	322	0	**2442**
Total	**2053**	**428**	**1261**	**1003**	**4745**

HGVs

	A	B	C	D	Total
A	0	38	86	101	**225**
B	14	0	43	32	**89**
C	0	0	0	0	**0**
D	197	50	75	0	**322**
Total	**211**	**88**	**204**	**133**	**636**

Total Vehs

	A	B	C	D	Total
A	0	298	853	955	**2106**
B	115	0	215	181	**511**
C	0	0	0	0	**0**
D	2149	218	397	0	**2764**
Total	**2264**	**516**	**1465**	**1136**	**5381**

HGV%

	A	B	C	D	Total
A	0.0%	12.8%	10.1%	10.6%	
B	12.2%	0.0%	20.0%	17.7%	
C	0.0%	0.0%	0.0%	0.0%	
D	9.2%	22.9%	18.9%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	336	939	1056	**2331**
B	129	0	258	213	**600**
C	0	0	0	0	**0**
D	2346	268	472	0	**3086**
Total	**2475**	**604**	**1669**	**1269**	**6017**

M40 J10: Cherwell Roundabout

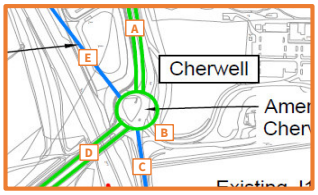


Diagram No: 9
Traffic Flow Set: Cherwell2_AM
Strategic Options: 2

0645-0745

Lights

	A	B	C	D	E	Total
A	0	56	1166	1058	0	**2280**
B	63	0	164	125	0	**352**
C	0	0	0	0	0	**0**
D	954	194	113	0	0	**1261**
E	291	145	0	364	0	**800**
Total	**1308**	**395**	**1443**	**1547**	**0**	**4693**

HGVs

	A	B	C	D	E	Total
A	0	13	231	77	0	**321**
B	12	0	55	24	0	**91**
C	0	0	0	0	0	**0**
D	240	31	89	0	0	**360**
E	24	37	0	37	0	**98**
Total	**276**	**81**	**375**	**138**	**0**	**870**

Total Vehs

	A	B	C	D	E	Total
A	0	69	1397	1135	0	**2601**
B	75	0	219	149	0	**443**
C	0	0	0	0	0	**0**
D	1194	225	202	0	0	**1621**
E	315	182	0	401	0	**898**
Total	**1584**	**476**	**1818**	**1685**	**0**	**5563**

HGV%

	A	B	C	D	E	Total
A	0.0%	18.8%	16.5%	6.8%	0.0%	
B	16.0%	0.0%	25.1%	16.1%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	20.1%	13.8%	44.1%	0.0%	0.0%	
E	7.6%	20.3%	0.0%	9.2%	0.0%	
Total						

0745-0845

Lights

	A	B	C	D	E	Total
A	0	76	1181	946	0	**2203**
B	51	0	195	168	0	**414**
C	0	0	0	0	0	**0**
D	1163	185	102	0	0	**1450**
E	279	151	0	437	0	**867**
Total	**1493**	**412**	**1478**	**1551**	**0**	**4934**

HGVs

	A	B	C	D	E	Total
A	0	24	212	88	0	**324**
B	17	0	50	17	0	**84**
C	0	0	0	0	0	**0**
D	207	27	90	0	0	**324**
E	29	34	0	41	0	**104**
Total	**253**	**85**	**352**	**146**	**0**	**836**

Total Vehs

	A	B	C	D	E	Total
A	0	100	1393	1034	0	**2527**
B	68	0	245	185	0	**498**
C	0	0	0	0	0	**0**
D	1370	212	192	0	0	**1774**
E	308	185	0	478	0	**971**
Total	**1746**	**497**	**1830**	**1697**	**0**	**5770**

HGV%

	A	B	C	D	E	Total
A	0.0%	24.0%	15.2%	8.5%	0.0%	
B	25.0%	0.0%	20.4%	9.2%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	15.1%	12.7%	46.9%	0.0%	0.0%	
E	9.4%	18.4%	0.0%	8.6%	0.0%	
Total						

M40 J10: Cherwell Roundabout

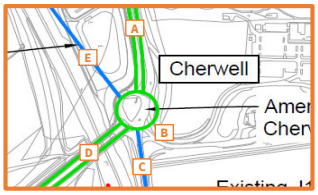


Diagram No: 10
Traffic Flow Set: Cherwell2_PM
Strategic Options: 2

1530-1630

Lights

	A	B	C	D	E	Total
A	0	97	690	539	0	**1326**
B	82	0	214	179	0	**475**
C	0	0	0	0	0	**0**
D	1655	183	293	0	0	**2131**
E	218	183	0	230	0	**631**
Total	**1955**	**463**	**1197**	**948**	**0**	**4563**

HGVs

	A	B	C	D	E	Total
A	0	24	105	76	0	**205**
B	31	0	46	19	0	**96**
C	0	0	0	0	0	**0**
D	287	35	92	0	0	**414**
E	14	38	0	39	0	**91**
Total	**332**	**97**	**243**	**134**	**0**	**806**

Total Vehs

	A	B	C	D	E	Total
A	0	121	795	615	0	**1531**
B	113	0	260	198	0	**571**
C	0	0	0	0	0	**0**
D	1942	218	385	0	0	**2545**
E	232	221	0	269	0	**722**
Total	**2287**	**560**	**1440**	**1082**	**0**	**5369**

HGV%

	A	B	C	D	E	Total
A	0.0%	19.8%	13.2%	12.4%	0.0%	
B	27.4%	0.0%	17.7%	9.6%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	14.8%	16.1%	23.9%	0.0%	0.0%	
E	6.0%	17.2%	0.0%	14.5%	0.0%	
Total						

1630-1730

Lights

	A	B	C	D	E	Total
A	0	95	767	536	0	**1398**
B	101	0	172	149	0	**422**
C	0	0	0	0	0	**0**
D	1952	168	322	0	0	**2442**
E	290	165	0	318	0	**773**
Total	**2343**	**428**	**1261**	**1003**	**0**	**5035**

HGVs

	A	B	C	D	E	Total
A	0	6	86	70	0	**162**
B	14	0	43	32	0	**89**
C	0	0	0	0	0	**0**
D	197	50	75	0	0	**322**
E	14	32	0	31	0	**77**
Total	**225**	**88**	**204**	**133**	**0**	**650**

Total Vehs

	A	B	C	D	E	Total
A	0	101	853	606	0	**1560**
B	115	0	215	181	0	**511**
C	0	0	0	0	0	**0**
D	2149	218	397	0	0	**2764**
E	304	197	0	349	0	**850**
Total	**2568**	**516**	**1465**	**1136**	**0**	**5685**

HGV%

	A	B	C	D	E	Total
A	0.0%	5.9%	10.1%	11.6%	0.0%	
B	12.2%	0.0%	20.0%	17.7%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	9.2%	22.9%	18.9%	0.0%	0.0%	
E	4.6%	16.2%	0.0%	8.9%	0.0%	
Total						

M40 J10: Cherwell Roundabout

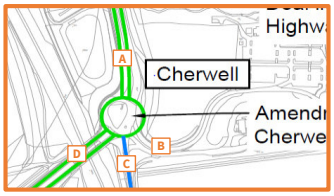


Diagram No: 11
Traffic Flow Set: Cherwell3_AM
Strategic Options: 4,5

0645-0745

Lights

	A	B	C	D	Total
A	0	201	1166	1422	**2789**
B	63	0	164	125	**352**
C	0	0	0	0	**0**
D	954	194	40	0	**1188**
Total	**1017**	**395**	**1370**	**1547**	**4329**

HGVs

	A	B	C	D	Total
A	0	50	231	143	**424**
B	12	0	55	24	**91**
C	0	0	0	0	**0**
D	240	31	4	0	**275**
Total	**252**	**81**	**290**	**167**	**790**

Total Vehs

	A	B	C	D	Total
A	0	251	1397	1565	**3213**
B	75	0	219	149	**443**
C	0	0	0	0	**0**
D	1194	225	44	0	**1463**
Total	**1269**	**476**	**1660**	**1714**	**5119**

HGV%

	A	B	C	D	Total
A	0.0%	19.9%	16.5%	9.1%	
B	16.0%	0.0%	25.1%	16.1%	
C	0.0%	0.0%	0.0%	0.0%	
D	20.1%	13.8%	9.1%	0.0%	
Total					

0745-0845

Lights

	A	B	C	D	Total
A	0	227	1181	1383	**2791**
B	51	0	195	168	**414**
C	0	0	0	0	**0**
D	1163	185	36	0	**1384**
Total	**1214**	**412**	**1412**	**1551**	**4589**

HGVs

	A	B	C	D	Total
A	0	58	212	129	**399**
B	17	0	50	17	**84**
C	0	0	0	0	**0**
D	207	27	2	0	**236**
Total	**224**	**85**	**264**	**146**	**719**

Total Vehs

	A	B	C	D	Total
A	0	285	1393	1512	**3190**
B	68	0	245	185	**498**
C	0	0	0	0	**0**
D	1370	212	38	0	**1620**
Total	**1438**	**497**	**1676**	**1697**	**5308**

HGV%

	A	B	C	D	Total
A	0.0%	20.4%	15.2%	8.5%	
B	25.0%	0.0%	20.4%	9.2%	
C	0.0%	0.0%	0.0%	0.0%	
D	15.1%	12.7%	5.3%	0.0%	
Total					

M40 J10: Cherwell Roundabout

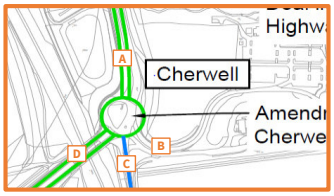


Diagram No: 12
Traffic Flow Set: Cherwell3_PM
Strategic Options: 4,5

1530-1630

Lights

	A	B	C	D	Total
A	0	280	690	769	**1739**
B	82	0	214	179	**475**
C	0	0	0	0	**0**
D	1655	183	38	0	**1876**
Total	**1737**	**463**	**942**	**948**	**4090**

HGVs

	A	B	C	D	Total
A	0	62	105	114	**281**
B	31	0	46	19	**96**
C	0	0	0	0	**0**
D	287	35	6	0	**328**
Total	**318**	**97**	**157**	**133**	**705**

Total Vehs

	A	B	C	D	Total
A	0	342	795	883	**2020**
B	113	0	260	198	**571**
C	0	0	0	0	**0**
D	1942	218	44	0	**2204**
Total	**2055**	**560**	**1099**	**1081**	**4795**

HGV%

	A	B	C	D	Total
A	0.0%	18.1%	13.2%	12.9%	
B	27.4%	0.0%	17.7%	9.6%	
C	0.0%	0.0%	0.0%	0.0%	
D	14.8%	16.1%	13.6%	0.0%	
Total					

1630-1730

Lights

	A	B	C	D	Total
A	0	260	767	854	**1881**
B	101	0	172	149	**422**
C	0	0	0	0	**0**
D	1952	168	67	0	**2187**
Total	**2053**	**428**	**1006**	**1003**	**4490**

HGVs

	A	B	C	D	Total
A	0	38	86	101	**225**
B	14	0	43	32	**89**
C	0	0	0	0	**0**
D	197	50	0	0	**247**
Total	**211**	**88**	**129**	**133**	**561**

Total Vehs

	A	B	C	D	Total
A	0	298	853	955	**2106**
B	115	0	215	181	**511**
C	0	0	0	0	**0**
D	2149	218	67	0	**2434**
Total	**2264**	**516**	**1135**	**1136**	**5051**

HGV%

	A	B	C	D	Total
A	0.0%	12.8%	10.1%	10.6%	
B	12.2%	0.0%	20.0%	17.7%	
C	0.0%	0.0%	0.0%	0.0%	
D	9.2%	22.9%	0.0%	0.0%	
Total					

M40 J10: Cherwell Roundabout

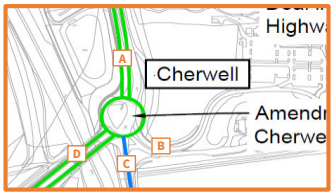


Diagram No: 13
Traffic Flow Set: Cherwell4_AM
Strategic Options: 6,7,8

0645-0745

Lights

	A	B	C	D	Total
A	0	201	1166	1422	**2789**
B	63	0	164	125	**352**
C	0	0	0	0	**0**
D	954	194	0	0	**1148**
Total	**1017**	**395**	**1330**	**1547**	**4289**

HGVs

	A	B	C	D	Total
A	0	50	231	143	**424**
B	12	0	55	24	**91**
C	0	0	0	0	**0**
D	240	31	0	0	**271**
Total	**252**	**81**	**286**	**167**	**786**

Total Vehs

	A	B	C	D	Total
A	0	251	1397	1565	**3213**
B	75	0	219	149	**443**
C	0	0	0	0	**0**
D	1194	225	0	0	**1419**
Total	**1269**	**476**	**1616**	**1714**	**5075**

HGV%

	A	B	C	D	Total
A	0.0%	19.9%	16.5%	9.1%	
B	16.0%	0.0%	25.1%	16.1%	
C	0.0%	0.0%	0.0%	0.0%	
D	20.1%	13.8%	0.0%	0.0%	
Total					

0745-0845

Lights

	A	B	C	D	Total
A	0	227	1181	1383	**2791**
B	51	0	195	168	**414**
C	0	0	0	0	**0**
D	1163	185	0	0	**1348**
Total	**1214**	**412**	**1376**	**1551**	**4553**

HGVs

	A	B	C	D	Total
A	0	58	212	129	**399**
B	17	0	50	17	**84**
C	0	0	0	0	**0**
D	207	27	0	0	**234**
Total	**224**	**85**	**262**	**146**	**717**

Total Vehs

	A	B	C	D	Total
A	0	285	1393	1512	**3190**
B	68	0	245	185	**498**
C	0	0	0	0	**0**
D	1370	212	0	0	**1582**
Total	**1438**	**497**	**1638**	**1697**	**5270**

HGV%

	A	B	C	D	Total
A	0.0%	20.4%	15.2%	8.5%	
B	25.0%	0.0%	20.4%	9.2%	
C	0.0%	0.0%	0.0%	0.0%	
D	15.1%	12.7%	0.0%	0.0%	
Total					

M40 J10: Cherwell Roundabout

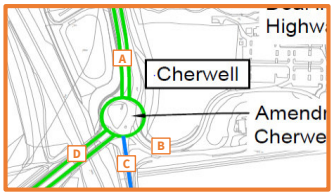


Diagram No: 14
Traffic Flow Set: Cherwell4_PM
Strategic Options: 6,7,8

1530-1630

Lights

	A	B	C	D	Total
A	0	280	690	769	**1739**
B	82	0	214	179	**475**
C	0	0	0	0	**0**
D	1655	183	0	0	**1838**
Total	**1737**	**463**	**904**	**948**	**4052**

HGVs

	A	B	C	D	Total
A	0	62	105	114	**281**
B	31	0	46	19	**96**
C	0	0	0	0	**0**
D	287	35	0	0	**322**
Total	**318**	**97**	**151**	**133**	**699**

Total Vehs

	A	B	C	D	Total
A	0	342	795	883	**2020**
B	113	0	260	198	**571**
C	0	0	0	0	**0**
D	1942	218	0	0	**2160**
Total	**2055**	**560**	**1055**	**1081**	**4751**

HGV%

	A	B	C	D	Total
A	0.0%	18.1%	13.2%	12.9%	
B	27.4%	0.0%	17.7%	9.6%	
C	0.0%	0.0%	0.0%	0.0%	
D	14.8%	16.1%	0.0%	0.0%	
Total					

1630-1730

Lights

	A	B	C	D	Total
A	0	260	767	854	**1881**
B	101	0	172	149	**422**
C	0	0	0	0	**0**
D	1952	168	0	0	**2120**
Total	**2053**	**428**	**939**	**1003**	**4423**

HGVs

	A	B	C	D	Total
A	0	38	86	101	**225**
B	14	0	43	32	**89**
C	0	0	0	0	**0**
D	197	50	0	0	**247**
Total	**211**	**88**	**129**	**133**	**561**

Total Vehs

	A	B	C	D	Total
A	0	298	853	955	**2106**
B	115	0	215	181	**511**
C	0	0	0	0	**0**
D	2149	218	0	0	**2367**
Total	**2264**	**516**	**1068**	**1136**	**4984**

HGV%

	A	B	C	D	Total
A	0.0%	12.8%	10.1%	10.6%	
B	12.2%	0.0%	20.0%	17.7%	
C	0.0%	0.0%	0.0%	0.0%	
D	9.2%	22.9%	0.0%	0.0%	
Total					

M40 J10: Cherwell Roundabout

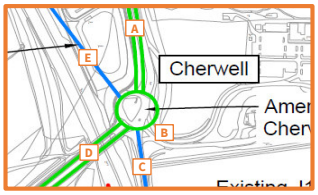


Diagram No: 15
Traffic Flow Set: Cherwell5_AM
Strategic Options: 9

0645-0745

Lights

	A	B	C	D	E	Total
A	0	56	1166	1058	0	**2280**
B	63	0	164	125	0	**352**
C	0	0	0	0	0	**0**
D	954	194	0	0	0	**1148**
E	291	145	0	364	0	**800**
Total	**1308**	**395**	**1330**	**1547**	**0**	**4580**

HGVs

	A	B	C	D	E	Total
A	0	13	231	77	0	**321**
B	12	0	55	24	0	**91**
C	0	0	0	0	0	**0**
D	240	31	0	0	0	**271**
E	24	37	0	37	0	**98**
Total	**276**	**81**	**286**	**138**	**0**	**781**

Total Vehs

	A	B	C	D	E	Total
A	0	69	1397	1135	0	**2601**
B	75	0	219	149	0	**443**
C	0	0	0	0	0	**0**
D	1194	225	0	0	0	**1419**
E	315	182	0	401	0	**898**
Total	**1584**	**476**	**1616**	**1685**	**0**	**5361**

HGV%

	A	B	C	D	E	Total
A	0.0%	18.8%	16.5%	6.8%	0.0%	
B	16.0%	0.0%	25.1%	16.1%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	20.1%	13.8%	0.0%	0.0%	0.0%	
E	7.6%	20.3%	0.0%	9.2%	0.0%	
Total						

0745-0845

Lights

	A	B	C	D	E	Total
A	0	76	1181	946	0	**2203**
B	51	0	195	168	0	**414**
C	0	0	0	0	0	**0**
D	1163	185	0	0	0	**1348**
E	279	151	0	437	0	**867**
Total	**1493**	**412**	**1376**	**1551**	**0**	**4832**

HGVs

	A	B	C	D	E	Total
A	0	24	212	88	0	**324**
B	17	0	50	17	0	**84**
C	0	0	0	0	0	**0**
D	207	27	0	0	0	**234**
E	29	34	0	41	0	**104**
Total	**253**	**85**	**262**	**146**	**0**	**746**

Total Vehs

	A	B	C	D	E	Total
A	0	100	1393	1034	0	**2527**
B	68	0	245	185	0	**498**
C	0	0	0	0	0	**0**
D	1370	212	0	0	0	**1582**
E	308	185	0	478	0	**971**
Total	**1746**	**497**	**1638**	**1697**	**0**	**5578**

HGV%

	A	B	C	D	E	Total
A	0.0%	24.0%	15.2%	8.5%	0.0%	
B	25.0%	0.0%	20.4%	9.2%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	15.1%	12.7%	0.0%	0.0%	0.0%	
E	9.4%	18.4%	0.0%	8.6%	0.0%	
Total						

M40 J10: Cherwell Roundabout

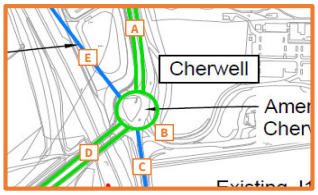


Diagram No: 16
Traffic Flow Set: Cherwell5_PM
Strategic Options: 9

1530-1630

Lights

	A	B	C	D	E	Total
A	0	97	690	539	0	**1326**
B	82	0	214	179	0	**475**
C	0	0	0	0	0	**0**
D	1655	183	0	0	0	**1838**
E	218	183	0	230	0	**631**
Total	**1955**	**463**	**904**	**948**	**0**	**4270**

HGVs

	A	B	C	D	E	Total
A	0	24	105	76	0	**205**
B	31	0	46	19	0	**96**
C	0	0	0	0	0	**0**
D	287	35	0	0	0	**322**
E	14	38	0	39	0	**91**
Total	**332**	**97**	**151**	**134**	**0**	**714**

Total Vehs

	A	B	C	D	E	Total
A	0	121	795	615	0	**1531**
B	113	0	260	198	0	**571**
C	0	0	0	0	0	**0**
D	1942	218	0	0	0	**2160**
E	232	221	0	269	0	**722**
Total	**2287**	**560**	**1055**	**1082**	**0**	**4984**

HGV%

	A	B	C	D	E	Total
A	0.0%	19.8%	13.2%	12.4%	0.0%	
B	27.4%	0.0%	17.7%	9.6%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	14.8%	16.1%	0.0%	0.0%	0.0%	
E	6.0%	17.2%	0.0%	14.5%	0.0%	
Total						

1630-1730

Lights

	A	B	C	D	E	Total
A	0	95	767	536	0	**1398**
B	101	0	172	149	0	**422**
C	0	0	0	0	0	**0**
D	1952	168	0	0	0	**2120**
E	290	165	0	318	0	**773**
Total	**2343**	**428**	**939**	**1003**	**0**	**4713**

HGVs

	A	B	C	D	E	Total
A	0	6	86	70	0	**162**
B	14	0	43	32	0	**89**
C	0	0	0	0	0	**0**
D	197	50	0	0	0	**247**
E	14	32	0	31	0	**77**
Total	**225**	**88**	**129**	**133**	**0**	**575**

Total Vehs

	A	B	C	D	E	Total
A	0	101	853	606	0	**1560**
B	115	0	215	181	0	**511**
C	0	0	0	0	0	**0**
D	2149	218	0	0	0	**2367**
E	304	197	0	349	0	**850**
Total	**2568**	**516**	**1068**	**1136**	**0**	**5288**

HGV%

	A	B	C	D	E	Total
A	0.0%	5.9%	10.1%	11.6%	0.0%	
B	12.2%	0.0%	20.0%	17.7%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	9.2%	22.9%	0.0%	0.0%	0.0%	
E	4.6%	16.2%	0.0%	8.9%	0.0%	
Total						

M40 J10: Cherwell Roundabout

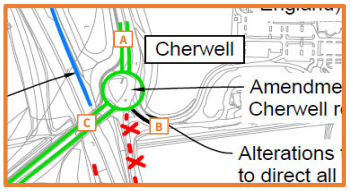


Diagram No: 17
Traffic Flow Set: Cherwell6_AM
Strategic Options: 10,11,13,18,19

0645-0745

Lights				
	A	B	C	Total
A	0	201	1422	**1623**
B	63	0	289	**352**
C	954	194	0	**1148**
Total	**1017**	**395**	**1711**	**3123**

HGVs				
	A	B	C	Total
A	0	50	114	**164**
B	12	0	79	**91**
C	240	31		**271**
Total	**252**	**81**	**193**	**526**

Total Vehs				
	A	B	C	Total
A	0	251	1536	**1787**
B	75	0	368	**443**
C	1194	225	0	**1419**
Total	**1269**	**476**	**1904**	**3649**

HGV%				
	A	B	C	Total
A	0.0%	19.9%	7.4%	
B	16.0%	0.0%	21.5%	
C	20.1%	13.8%	0.0%	
Total				

PCUs				
	A	B	C	Total
A	0	301	1650	**1951**
B	87	0	447	**534**
C	1434	256	0	**1690**
Total	**1521**	**557**	**2097**	**4175**

0745-0845

Lights				
	A	B	C	Total
A	0	227	1383	**1610**
B	51	0	363	**414**
C	1163	185	0	**1348**
Total	**1214**	**412**	**1746**	**3372**

HGVs				
	A	B	C	Total
A	0	58	129	**187**
B	17	0	67	**84**
C	207	27	0	**234**
Total	**224**	**85**	**196**	**505**

Total Vehs				
	A	B	C	Total
A	0	285	1512	**1797**
B	68	0	430	**498**
C	1370	212	0	**1582**
Total	**1438**	**497**	**1942**	**3877**

HGV%				
	A	B	C	Total
A	0.0%	20.4%	8.5%	
B	25.0%	0.0%	15.6%	
C	15.1%	12.7%	0.0%	
Total				

PCUs				
	A	B	C	Total
A	0	343	1641	**1984**
B	85	0	497	**582**
C	1577	239	0	**1816**
Total	**1662**	**582**	**2138**	**4382**

M40 J10: Cherwell Roundabout

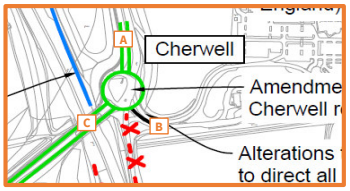


Diagram No: 18
Traffic Flow Set: Cherwell6_PM
Strategic Options: 10,11,13,18,19

1530-1630

Lights				
	A	B	C	Total
A	0	280	769	**1049**
B	82	0	393	**475**
C	1655	183	0	**1838**
Total	**1737**	**463**	**1162**	**3362**

HGVs				
	A	B	C	Total
A	0	62	115	**177**
B	31	0	65	**96**
C	287	35		**322**
Total	**318**	**97**	**180**	**595**

Total Vehs				
	A	B	C	Total
A	0	342	884	**1226**
B	113	0	458	**571**
C	1942	218	0	**2160**
Total	**2055**	**560**	**1342**	**3957**

HGV%				
	A	B	C	Total
A	0.0%	18.1%	13.0%	
B	27.4%	0.0%	14.2%	
C	14.8%	16.1%	0.0%	
Total				

PCUs				
	A	B	C	Total
A	0	404	999	**1403**
B	144	0	523	**667**
C	2229	253	0	**2482**
Total	**2373**	**657**	**1522**	**4552**

1630-1730

Lights				
	A	B	C	Total
A	0	260	854	**1114**
B	101	0	321	**422**
C	1952	168	0	**2120**
Total	**2053**	**428**	**1175**	**3656**

HGVs				
	A	B	C	Total
A	0	38	101	**139**
B	14	0	75	**89**
C	197	50	0	**247**
Total	**211**	**88**	**176**	**475**

Total Vehs				
	A	B	C	Total
A	0	298	955	**1253**
B	115	0	396	**511**
C	2149	218	0	**2367**
Total	**2264**	**516**	**1351**	**4131**

HGV%				
	A	B	C	Total
A	0.0%	12.8%	10.6%	
B	12.2%	0.0%	18.9%	
C	9.2%	22.9%	0.0%	
Total				

PCUs				
	A	B	C	Total
A	0	336	1056	**1392**
B	129	0	471	**600**
C	2346	268	0	**2614**
Total	**2475**	**604**	**1527**	**4606**

M40 J10: Cherwell Roundabout

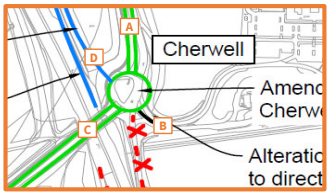


Diagram No: 19
Traffic Flow Set: Cherwell7_AM
Strategic Options: 12

0645-0745

Lights

	A	B	C	D	Total
A	0	56	1058	0	**1114**
B	63	0	289	0	**352**
C	954	194	0	0	**1148**
D	291	145	364	0	**800**
Total	**1308**	**395**	**1711**	**0**	**3414**

HGVs

	A	B	C	D	Total
A	0	13	77	0	**90**
B	12	0	79	0	**91**
C	240	31	0	0	**271**
D	24	37	37	0	**98**
Total	**276**	**81**	**193**	**0**	**550**

Total Vehs

	A	B	C	D	Total
A	0	69	1135	0	**1204**
B	75	0	368	0	**443**
C	1194	225	0	0	**1419**
D	315	182	401	0	**898**
Total	**1584**	**476**	**1904**	**0**	**3964**

HGV%

	A	B	C	D	Total
A	0.0%	18.8%	6.8%	0.0%	
B	16.0%	0.0%	21.5%	0.0%	
C	20.1%	13.8%	0.0%	0.0%	
D	7.6%	20.3%	9.2%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	82	1212	0	**1294**
B	87	0	447	0	**534**
C	1434	256	0	0	**1690**
D	339	219	438	0	**996**
Total	**1860**	**557**	**2097**	**0**	**4514**

0745-0845

Lights

	A	B	C	D	Total
A	0	76	946	0	**1022**
B	51	0	363	0	**414**
C	1163	185	0	0	**1348**
D	279	151	437	0	**867**
Total	**1493**	**412**	**1746**	**0**	**3651**

HGVs

	A	B	C	D	Total
A	0	24	88	0	**112**
B	17	0	67	0	**84**
C	207	27	0	0	**234**
D	29	34	41	0	**104**
Total	**253**	**85**	**196**	**0**	**534**

Total Vehs

	A	B	C	D	Total
A	0	100	1034	0	**1134**
B	68	0	430	0	**498**
C	1370	212	0	0	**1582**
D	308	185	478	0	**971**
Total	**1746**	**497**	**1942**	**0**	**4185**

HGV%

	A	B	C	D	Total
A	0.0%	24.0%	8.5%	0.0%	
B	25.0%	0.0%	15.6%	0.0%	
C	15.1%	12.7%	0.0%	0.0%	
D	9.4%	18.4%	8.6%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	124	1122	0	**1246**
B	85	0	497	0	**582**
C	1577	239	0	0	**1816**
D	337	219	519	0	**1075**
Total	**1999**	**582**	**2138**	**0**	**4719**

M40 J10: Cherwell Roundabout

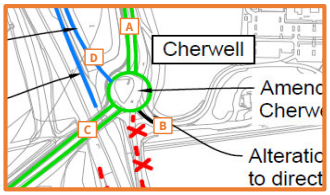


Diagram No: 20
Traffic Flow Set: Cherwell7_PM
Strategic Options: 12

1530-1630

Lights					
	A	B	C	D	Total
A	0	97	539	0	**636**
B	82	0	393	0	**475**
C	1655	183	0	0	**1838**
D	218	183	230	0	**631**
Total	**1955**	**463**	**1162**	**0**	**3580**

HGVs					
	A	B	C	D	Total
A	0	24	76	0	**100**
B	31	0	65	0	**96**
C	287	35	0	0	**322**
D	14	38	39	0	**91**
Total	**332**	**97**	**180**	**0**	**609**

Total Vehs					
	A	B	C	D	Total
A	0	121	615	0	**736**
B	113	0	458	0	**571**
C	1942	218	0	0	**2160**
D	232	221	269	0	**722**
Total	**2287**	**560**	**1342**	**0**	**4189**

HGV%					
	A	B	C	D	Total
A	0.0%	19.8%	12.4%	0.0%	
B	27.4%	0.0%	14.2%	0.0%	
C	14.8%	16.1%	0.0%	0.0%	
D	6.0%	17.2%	14.5%	0.0%	
Total					

PCUs					
	A	B	C	D	Total
A	0	145	691	0	**836**
B	144	0	523	0	**667**
C	2229	253	0	0	**2482**
D	246	259	308	0	**813**
Total	**2619**	**657**	**1522**	**0**	**4798**

1630-1730

Lights					
	A	B	C	D	Total
A	0	95	536	0	**631**
B	101	0	321	0	**422**
C	1952	168	0	0	**2120**
D	290	165	318	0	**773**
Total	**2343**	**428**	**1175**	**0**	**3946**

HGVs					
	A	B	C	D	Total
A	0	6	70	0	**76**
B	14	0	75	0	**89**
C	197	50	0	0	**247**
D	14	32	31	0	**77**
Total	**225**	**88**	**176**	**0**	**489**

Total Vehs					
	A	B	C	D	Total
A	0	101	606	0	**707**
B	115	0	396	0	**511**
C	2149	218	0	0	**2367**
D	304	197	349	0	**850**
Total	**2568**	**516**	**1351**	**0**	**4435**

HGV%					
	A	B	C	D	Total
A	0.0%	5.9%	11.6%	0.0%	
B	12.2%	0.0%	18.9%	0.0%	
C	9.2%	22.9%	0.0%	0.0%	
D	4.6%	16.2%	8.9%	0.0%	
Total					

PCUs					
	A	B	C	D	Total
A	0	101	606	0	**707**
B	115	0	396	0	**511**
C	2149	218	0	0	**2367**
D	304	197	349	0	**850**
Total	**2568**	**516**	**1351**	**0**	**4435**

M40 J10: Cherwell Roundabout

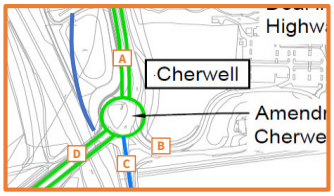


Diagram No: 21
Traffic Flow Set: Cherwell8_AM
Strategic Options: 14,15

0645-0745

Lights

	A	B	C	D	Total
A	0	201	0	1422	**1623**
B	63	0	164	125	**352**
C	0	0	0	0	**0**
D	954	194	113	0	**1261**
Total	**1017**	**395**	**277**	**1547**	**3236**

HGVs

	A	B	C	D	Total
A	0	50	0	143	**193**
B	12	0	55	24	**91**
C	0	0	0	0	**0**
D	240	31	89	0	**360**
Total	**252**	**81**	**144**	**167**	**644**

Total Vehs

	A	B	C	D	Total
A	0	251	0	1565	**1816**
B	75	0	219	149	**443**
C	0	0	0	0	**0**
D	1194	225	202	0	**1621**
Total	**1269**	**476**	**421**	**1714**	**3880**

HGV%

	A	B	C	D	Total
A	0.0%	19.9%	0.0%	9.1%	
B	16.0%	0.0%	25.1%	16.1%	
C	0.0%	0.0%	0.0%	0.0%	
D	20.1%	13.8%	44.1%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	301	0	1708	**2009**
B	87	0	274	173	**534**
C	0	0	0	0	**0**
D	1434	256	291	0	**1981**
Total	**1521**	**557**	**565**	**1881**	**4524**

0745-0845

Lights

	A	B	C	D	Total
A	0	227	0	1383	**1610**
B	51	0	195	168	**414**
C	0	0	0	0	**0**
D	1163	185	102	0	**1450**
Total	**1214**	**412**	**297**	**1551**	**3474**

HGVs

	A	B	C	D	Total
A	0	58	0	129	**187**
B	17	0	50	17	**84**
C	0	0	0	0	**0**
D	207	27	90	0	**324**
Total	**224**	**85**	**140**	**146**	**595**

Total Vehs

	A	B	C	D	Total
A	0	285	0	1512	**1797**
B	68	0	245	185	**498**
C	0	0	0	0	**0**
D	1370	212	192	0	**1774**
Total	**1438**	**497**	**437**	**1697**	**4069**

HGV%

	A	B	C	D	Total
A	0.0%	20.4%	0.0%	8.5%	
B	25.0%	0.0%	20.4%	9.2%	
C	0.0%	0.0%	0.0%	0.0%	
D	15.1%	12.7%	46.9%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	343	0	1641	**1984**
B	85	0	295	202	**582**
C	0	0	0	0	**0**
D	1577	239	282	0	**2098**
Total	**1662**	**582**	**577**	**1843**	**4664**

M40 J10: Cherwell Roundabout

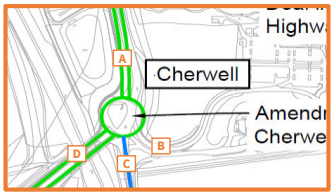


Diagram No: 22
Traffic Flow Set: Cherwell8_PM
Strategic Options: 14,15

1530-1630

Lights

	A	B	C	D	Total
A	0	280	0	769	**1049**
B	82	0	214	179	**475**
C	0	0	0	0	**0**
D	1655	183	293	0	**2131**
Total	**1737**	**463**	**507**	**948**	**3655**

HGVs

	A	B	C	D	Total
A	0	62	0	114	**176**
B	31	0	46	19	**96**
C	0	0	0	0	**0**
D	287	35	92	0	**414**
Total	**318**	**97**	**138**	**133**	**686**

Total Vehs

	A	B	C	D	Total
A	0	342	0	883	**1225**
B	113	0	260	198	**571**
C	0	0	0	0	**0**
D	1942	218	385	0	**2545**
Total	**2055**	**560**	**645**	**1081**	**4341**

HGV%

	A	B	C	D	Total
A	0.0%	18.1%	0.0%	12.9%	
B	27.4%	0.0%	17.7%	9.6%	
C	0.0%	0.0%	0.0%	0.0%	
D	14.8%	16.1%	23.9%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	404	0	997	**1401**
B	144	0	306	217	**667**
C	0	0	0	0	**0**
D	2229	253	477	0	**2959**
Total	**2373**	**657**	**783**	**1214**	**5027**

1630-1730

Lights

	A	B	C	D	Total
A	0	260	0	854	**1114**
B	101	0	172	149	**422**
C	0	0	0	0	**0**
D	1952	168	322	0	**2442**
Total	**2053**	**428**	**494**	**1003**	**3978**

HGVs

	A	B	C	D	Total
A	0	38	0	101	**139**
B	14	0	43	32	**89**
C	0	0	0	0	**0**
D	197	50	75	0	**322**
Total	**211**	**88**	**118**	**133**	**550**

Total Vehs

	A	B	C	D	Total
A	0	298	0	955	**1253**
B	115	0	215	181	**511**
C	0	0	0	0	**0**
D	2149	218	397	0	**2764**
Total	**2264**	**516**	**612**	**1136**	**4528**

HGV%

	A	B	C	D	Total
A	0.0%	12.8%	0.0%	10.6%	
B	12.2%	0.0%	20.0%	17.7%	
C	0.0%	0.0%	0.0%	0.0%	
D	9.2%	22.9%	18.9%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	336	0	1056	**1392**
B	129	0	258	213	**600**
C	0	0	0	0	**0**
D	2346	268	472	0	**3086**
Total	**2475**	**604**	**730**	**1269**	**5078**

M40 J10: Cherwell Roundabout

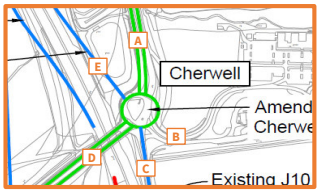


Diagram No: 23
Traffic Flow Set: Cherwell9_AM
Strategic Options: 16

0645-0745

Lights						
	A	B	C	D	E	Total
A	0	56	1166	1058	0	**2280**
B	63	0	164	125	0	**352**
C	0	0	0	0	0	**0**
D	215	194	113	0	0	**522**
E	291	145	0	364	0	**800**
Total	**569**	**395**	**1443**	**1547**	**0**	**3954**

HGVs						
	A	B	C	D	E	Total
A	0	13	231	77	0	**321**
B	12	0	55	24	0	**91**
C	0	0	0	0	0	**0**
D	82	31	89	0	0	**202**
E	24	37	0	37	0	**98**
Total	**118**	**81**	**375**	**138**	**0**	**712**

Total Vehs						
	A	B	C	D	E	Total
A	0	69	1397	1135	0	**2601**
B	75	0	219	149	0	**443**
C	0	0	0	0	0	**0**
D	297	225	202	0	0	**724**
E	315	182	0	401	0	**898**
Total	**687**	**476**	**1818**	**1685**	**0**	**4666**

HGV%						
	A	B	C	D	E	Total
A	0.0%	18.8%	16.5%	6.8%	0.0%	
B	16.0%	0.0%	25.1%	16.1%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	27.6%	13.8%	44.1%	0.0%	0.0%	
E	7.6%	20.3%	0.0%	9.2%	0.0%	
Total						

0745-0845

Lights						
	A	B	C	D	E	Total
A	0	76	1181	946	0	**2203**
B	51	0	195	168	0	**414**
C	0	0	0	0	0	**0**
D	246	185	102	0	0	**533**
E	279	151	0	437	0	**867**
Total	**576**	**412**	**1478**	**1551**	**0**	**4017**

HGVs						
	A	B	C	D	E	Total
A	0	24	212	88	0	**324**
B	17	0	50	17	0	**84**
C	0	0	0	0	0	**0**
D	81	27	90	0	0	**198**
E	29	34	0	41	0	**104**
Total	**127**	**85**	**352**	**146**	**0**	**710**

Total Vehs						
	A	B	C	D	E	Total
A	0	100	1393	1034	0	**2527**
B	68	0	245	185	0	**498**
C	0	0	0	0	0	**0**
D	327	212	192	0	0	**731**
E	308	185	0	478	0	**971**
Total	**703**	**497**	**1830**	**1697**	**0**	**4727**

HGV%						
	A	B	C	D	E	Total
A	0.0%	24.0%	15.2%	8.5%	0.0%	
B	25.0%	0.0%	20.4%	9.2%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	24.8%	12.7%	46.9%	0.0%	0.0%	
E	9.4%	18.4%	0.0%	8.6%	0.0%	
Total						

M40 J10: Cherwell Roundabout

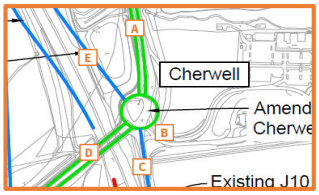


Diagram No: 24
Traffic Flow Set: Cherwell9_PM
Strategic Options: 16

1530-1630

Lights

	A	B	C	D	E	Total
A	0	97	690	539	0	**1326**
B	82	0	214	179	0	**475**
C	0	0	0	0	0	**0**
D	453	183	293	0	0	**929**
E	218	183	0	230	0	**631**
Total	**753**	**463**	**1197**	**948**	**0**	**3361**

HGVs

	A	B	C	D	E	Total
A	0	24	105	76	0	**205**
B	31	0	46	19	0	**96**
C	0	0	0	0	0	**0**
D	65	35	92	0	0	**192**
E	14	38	0	39	0	**91**
Total	**110**	**97**	**243**	**134**	**0**	**584**

Total Vehs

	A	B	C	D	E	Total
A	0	121	795	615	0	**1531**
B	113	0	260	198	0	**571**
C	0	0	0	0	0	**0**
D	518	218	385	0	0	**1121**
E	232	221	0	269	0	**722**
Total	**863**	**560**	**1440**	**1082**	**0**	**3945**

HGV%

	A	B	C	D	E	Total
A	0.0%	19.8%	13.2%	12.4%	0.0%	
B	27.4%	0.0%	17.7%	9.6%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	12.5%	16.1%	23.9%	0.0%	0.0%	
E	6.0%	17.2%	0.0%	14.5%	0.0%	
Total						

1630-1730

Lights

	A	B	C	D	E	Total
A	0	95	767	536	0	**1398**
B	101	0	172	149	0	**422**
C	0	0	0	0	0	**0**
D	577	168	322	0	0	**1067**
E	290	165	0	318	0	**773**
Total	**968**	**428**	**1261**	**1003**	**0**	**3660**

HGVs

	A	B	C	D	E	Total
A	0	6	86	70	0	**162**
B	14	0	43	32	0	**89**
C	0	0	0	0	0	**0**
D	56	50	75	0	0	**181**
E	14	32	0	31	0	**77**
Total	**84**	**88**	**204**	**133**	**0**	**509**

Total Vehs

	A	B	C	D	E	Total
A	0	101	853	606	0	**1560**
B	115	0	215	181	0	**511**
C	0	0	0	0	0	**0**
D	633	218	397	0	0	**1248**
E	304	197	0	349	0	**850**
Total	**1052**	**516**	**1465**	**1136**	**0**	**4169**

HGV%

	A	B	C	D	E	Total
A	0.0%	5.9%	10.1%	11.6%	0.0%	
B	12.2%	0.0%	20.0%	17.7%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	8.8%	22.9%	18.9%	0.0%	0.0%	
E	4.6%	16.2%	0.0%	8.9%	0.0%	
Total						

M40 J10: Cherwell Roundabout

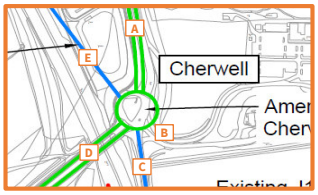


Diagram No: 25
Traffic Flow Set: Cherwell10_AM
Strategic Options: 17

0645-0745

Lights

	A	B	C	D	E	Total
A	0	56	1166	1058	0	**2280**
B	63	0	164	125	0	**352**
C	0	0	0	0	0	**0**
D	215	194	0	0	0	**409**
E	291	145	0	364	0	**800**
Total	**569**	**395**	**1330**	**1547**	**0**	**3841**

HGVs

	A	B	C	D	E	Total
A	0	13	231	77	0	**321**
B	12	0	55	24	0	**91**
C	0	0	0	0	0	**0**
D	82	31	0	0	0	**113**
E	24	37	0	37	0	**98**
Total	**118**	**81**	**286**	**138**	**0**	**623**

Total Vehs

	A	B	C	D	E	Total
A	0	69	1397	1135	0	**2601**
B	75	0	219	149	0	**443**
C	0	0	0	0	0	**0**
D	297	225	0	0	0	**522**
E	315	182	0	401	0	**898**
Total	**687**	**476**	**1616**	**1685**	**0**	**4464**

HGV%

	A	B	C	D	E	Total
A	0.0%	18.8%	16.5%	6.8%	0.0%	
B	16.0%	0.0%	25.1%	16.1%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	27.6%	13.8%	0.0%	0.0%	0.0%	
E	7.6%	20.3%	0.0%	9.2%	0.0%	
Total						

0745-0845

Lights

	A	B	C	D	E	Total
A	0	76	1181	946	0	**2203**
B	51	0	195	168	0	**414**
C	0	0	0	0	0	**0**
D	246	185	0	0	0	**431**
E	279	151	0	437	0	**867**
Total	**576**	**412**	**1376**	**1551**	**0**	**3915**

HGVs

	A	B	C	D	E	Total
A	0	24	212	88	0	**324**
B	17	0	50	17	0	**84**
C	0	0	0	0	0	**0**
D	81	27	0	0	0	**108**
E	29	34	0	41	0	**104**
Total	**127**	**85**	**262**	**146**	**0**	**620**

Total Vehs

	A	B	C	D	E	Total
A	0	100	1393	1034	0	**2527**
B	68	0	245	185	0	**498**
C	0	0	0	0	0	**0**
D	327	212	0	0	0	**539**
E	308	185	0	478	0	**971**
Total	**703**	**497**	**1638**	**1697**	**0**	**4535**

HGV%

	A	B	C	D	E	Total
A	0.0%	24.0%	15.2%	8.5%	0.0%	
B	25.0%	0.0%	20.4%	9.2%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	24.8%	12.7%	0.0%	0.0%	0.0%	
E	9.4%	18.4%	0.0%	8.6%	0.0%	
Total						

M40 J10: Cherwell Roundabout

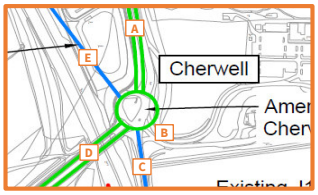


Diagram No: 26
Traffic Flow Set: Cherwell10_PM
Strategic Options: 17

1530-1630

Lights

	A	B	C	D	E	Total
A	0	97	690	539	0	**1326**
B	82	0	214	179	0	**475**
C	0	0	0	0	0	**0**
D	453	183	0	0	0	**636**
E	218	183	0	230	0	**631**
Total	**753**	**463**	**904**	**948**	**0**	**3068**

HGVs

	A	B	C	D	E	Total
A	0	24	105	76	0	**205**
B	31	0	46	19	0	**96**
C	0	0	0	0	0	**0**
D	65	35	0	0	0	**100**
E	14	38	0	39	0	**91**
Total	**110**	**97**	**151**	**134**	**0**	**492**

Total Vehs

	A	B	C	D	E	Total
A	0	121	795	615	0	**1531**
B	113	0	260	198	0	**571**
C	0	0	0	0	0	**0**
D	518	218	0	0	0	**736**
E	232	221	0	269	0	**722**
Total	**863**	**560**	**1055**	**1082**	**0**	**3560**

HGV%

	A	B	C	D	E	Total
A	0.0%	19.8%	13.2%	12.4%	0.0%	
B	27.4%	0.0%	17.7%	9.6%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	12.5%	16.1%	0.0%	0.0%	0.0%	
E	6.0%	17.2%	0.0%	14.5%	0.0%	
Total						

1630-1730

Lights

	A	B	C	D	E	Total
A	0	95	767	536	0	**1398**
B	101	0	172	149	0	**422**
C	0	0	0	0	0	**0**
D	577	168	0	0	0	**745**
E	290	165	0	318	0	**773**
Total	**968**	**428**	**939**	**1003**	**0**	**3338**

HGVs

	A	B	C	D	E	Total
A	0	6	86	70	0	**162**
B	14	0	43	32	0	**89**
C	0	0	0	0	0	**0**
D	56	50	0	0	0	**106**
E	14	32	0	31	0	**77**
Total	**84**	**88**	**129**	**133**	**0**	**434**

Total Vehs

	A	B	C	D	E	Total
A	0	101	853	606	0	**1560**
B	115	0	215	181	0	**511**
C	0	0	0	0	0	**0**
D	633	218	0	0	0	**851**
E	304	197	0	349	0	**850**
Total	**1052**	**516**	**1068**	**1136**	**0**	**3772**

HGV%

	A	B	C	D	E	Total
A	0.0%	5.9%	10.1%	11.6%	0.0%	
B	12.2%	0.0%	20.0%	17.7%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	8.8%	22.9%	0.0%	0.0%	0.0%	
E	4.6%	16.2%	0.0%	8.9%	0.0%	
Total						

M40 J10: Ardley Roundabout

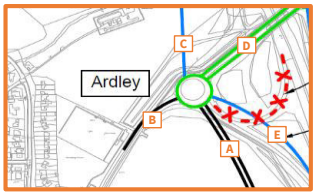


Diagram No: 27
Traffic Flow Set: Ardley1_AM
Strategic Options: 1,2,14,15

0645-0745

Lights

	A	B	C	D	E	Total
A	0	65	310	290	0	665
B	215	0	20	19	0	254
C	0	0	0	0	0	0
D	1270	16	261	0	0	1547
E	247	1	0	952	0	1200
Total	1732	82	591	1261	0	3666

HGVs

	A	B	C	D	E	Total
A	0	1	36	170	0	207
B	0	0	0	0	0	0
C	0	0	0	0	0	0
D	102	0	36	0	0	138
E	94	0	0	190	0	284
Total	196	1	72	360	0	629

Total Vehs

	A	B	C	D	E	Total
A	0	66	346	460	0	872
B	215	0	20	19	0	254
C	0	0	0	0	0	0
D	1372	16	297	0	0	1685
E	341	1	0	1142	0	1484
Total	1928	83	663	1621	0	4295

HGV%

	A	B	C	D	E	Total
A	0.0%	1.5%	10.4%	37.0%	0.0%	
B	0.0%	0.0%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	7.4%	0.0%	12.1%	0.0%	0.0%	
E	27.6%	0.0%	0.0%	16.6%	0.0%	
Total						

PCUs

	A	B	C	D	E	Total
A	0	67	382	630	0	1079
B	215	0	20	19	0	254
C	0	0	0	0	0	0
D	1474	16	333	0	0	1823
E	435	1	0	1332	0	1768
Total	2124	84	735	1981	0	4924

0745-0845

Lights

	A	B	C	D	E	Total
A	0	65	292	320	0	677
B	215	0	19	20	0	254
C	0	0	0	0	0	0
D	1171	16	364	0	0	1551
E	259	1	0	1110	0	1370
Total	1645	82	675	1450	0	3852

HGVs

	A	B	C	D	E	Total
A	0	1	40	169	0	210
B	0	0	0	0	0	0
C	0	0	0	0	0	0
D	117	0	29	0	0	146
E	93	0	0	155	0	248
Total	210	1	69	324	0	604

Total Vehs

	A	B	C	D	E	Total
A	0	66	332	489	0	887
B	215	0	19	20	0	254
C	0	0	0	0	0	0
D	1288	16	393	0	0	1697
E	352	1	0	1265	0	1618
Total	1855	83	744	1774	0	4456

HGV%

	A	B	C	D	E	Total
A	0.0%	1.5%	12.0%	34.6%	0.0%	
B	0.0%	0.0%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	9.1%	0.0%	7.4%	0.0%	0.0%	
E	26.4%	0.0%	0.0%	12.3%	0.0%	
Total						

PCUs

	A	B	C	D	E	Total
A	0	67	372	658	0	1097
B	215	0	19	20	0	254
C	0	0	0	0	0	0
D	1405	16	422	0	0	1843
E	445	1	0	1420	0	1866
Total	2065	84	813	2098	0	5060

M40 J10: Ardley Roundabout

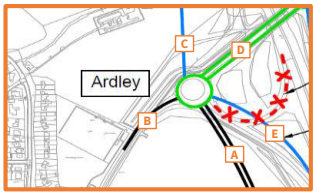


Diagram No: 28
Traffic Flow Set: Ardley1_PM
Strategic Options: 1,2,14,15

1530-1630

Lights

	A	B	C	D	E	Total
A	0	131	315	703	0	1149
B	173	0	7	16	0	196
C	0	0	0	0	0	0
D	530	24	394	0	0	948
E	124	3	0	1412	0	1539
Total	827	158	716	2131	0	3832

HGVs

	A	B	C	D	E	Total
A	0	1	33	151	0	185
B	2	0	0	0	0	2
C	0	0	0	0	0	0
D	102	0	32	0	0	134
E	90	0	0	263	0	353
Total	194	1	65	414	0	674

Total Vehs

	A	B	C	D	E	Total
A	0	132	348	854	0	1334
B	175	0	7	16	0	198
C	0	0	0	0	0	0
D	632	24	426	0	0	1082
E	214	3	0	1675	0	1892
Total	1021	159	781	2545	0	4506

HGV%

	A	B	C	D	E	Total
A	0.0%	0.8%	9.5%	17.7%	0.0%	
B	1.1%	0.0%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	16.1%	0.0%	7.5%	0.0%	0.0%	
E	42.1%	0.0%	0.0%	15.7%	0.0%	
Total						

PCUs

	A	B	C	D	E	Total
A	0	133	381	1005	0	1519
B	177	0	7	16	0	200
C	0	0	0	0	0	0
D	734	24	458	0	0	1216
E	304	3	0	1938	0	2245
Total	1215	160	846	2959	0	5180

1630-1730

Lights

	A	B	C	D	E	Total
A	0	131	360	830	0	1321
B	173	0	7	16	0	196
C	0	0	0	0	0	0
D	574	24	405	0	0	1003
E	136	3	0	1596	0	1735
Total	883	158	772	2442	0	4255

HGVs

	A	B	C	D	E	Total
A	0	1	30	134	0	165
B	2	0	0	0	0	2
C	0	0	0	0	0	0
D	93	0	40	0	0	133
E	81	0	0	188	0	269
Total	176	1	70	322	0	569

Total Vehs

	A	B	C	D	E	Total
A	0	132	390	964	0	1486
B	175	0	7	16	0	198
C	0	0	0	0	0	0
D	667	24	445	0	0	1136
E	217	3	0	1784	0	2004
Total	1059	159	842	2764	0	4824

HGV%

	A	B	C	D	E	Total
A	0.0%	0.8%	7.7%	13.9%	0.0%	
B	1.1%	0.0%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	13.9%	0.0%	9.0%	0.0%	0.0%	
E	37.3%	0.0%	0.0%	10.5%	0.0%	
Total						

PCUs

	A	B	C	D	E	Total
A	0	133	420	1098	0	1651
B	177	0	7	16	0	200
C	0	0	0	0	0	0
D	760	24	485	0	0	1269
E	298	3	0	1972	0	2273
Total	1235	160	912	3086	0	5393

M40 J10: Ardley Roundabout

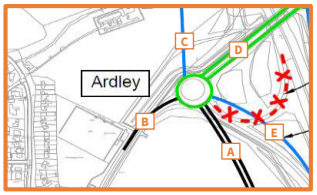


Diagram No: 29
Traffic Flow Set: Ardley2_AM
Strategic Options: 4,5

0645-0745

Lights

	A	B	C	D	E	Total
A	0	65	310	221	0	**596**
B	215	0	20	19	0	**254**
C	0	0	0	0	0	**0**
D	1270	16	261	0	0	**1547**
E	247	1	0	952	0	**1200**
Total	**1732**	**82**	**591**	**1192**	**0**	**3597**

HGVs

	A	B	C	D	E	Total
A	0	1	36	85	0	**122**
B	0	0	0	0	0	**0**
C	0	0	0	0	0	**0**
D	102	0	36	0	0	**138**
E	94	0	0	190	0	**284**
Total	**196**	**1**	**72**	**275**	**0**	**544**

Total Vehs

	A	B	C	D	E	Total
A	0	66	346	306	0	**718**
B	215	0	20	19	0	**254**
C	0	0	0	0	0	**0**
D	1372	16	297	0	0	**1685**
E	341	1	0	1142	0	**1484**
Total	**1928**	**83**	**663**	**1467**	**0**	**4141**

HGV%

	A	B	C	D	E	Total
A	0.0%	1.5%	10.4%	27.8%	0.0%	
B	0.0%	0.0%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	7.4%	0.0%	12.1%	0.0%	0.0%	
E	27.6%	0.0%	0.0%	16.6%	0.0%	
Total						

0745-0845

Lights

	A	B	C	D	E	Total
A	0	65	292	257	0	**614**
B	215	0	19	20	0	**254**
C	0	0	0	0	0	**0**
D	1171	16	364	0	0	**1551**
E	259	1	0	1110	0	**1370**
Total	**1645**	**82**	**675**	**1387**	**0**	**3789**

HGVs

	A	B	C	D	E	Total
A	0	1	40	81	0	**122**
B	0	0	0	0	0	**0**
C	0	0	0	0	0	**0**
D	117	0	29	0	0	**146**
E	93	0	0	155	0	**248**
Total	**210**	**1**	**69**	**236**	**0**	**516**

Total Vehs

	A	B	C	D	E	Total
A	0	66	332	338	0	**736**
B	215	0	19	20	0	**254**
C	0	0	0	0	0	**0**
D	1288	16	393	0	0	**1697**
E	352	1	0	1265	0	**1618**
Total	**1855**	**83**	**744**	**1623**	**0**	**4305**

HGV%

	A	B	C	D	E	Total
A	0.0%	1.5%	12.0%	24.0%	0.0%	
B	0.0%	0.0%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	9.1%	0.0%	7.4%	0.0%	0.0%	
E	26.4%	0.0%	0.0%	12.3%	0.0%	
Total						

M40 J10: Ardley Roundabout

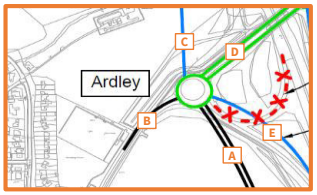


Diagram No: 30
Traffic Flow Set: Ardley2_PM
Strategic Options: 4,5

1530-1630

Lights

	A	B	C	D	E	Total
A	0	131	315	449	0	**895**
B	173	0	7	16	0	**196**
C	0	0	0	0	0	**0**
D	530	24	394	0	0	**948**
E	124	3	0	1412	0	**1539**
Total	**827**	**158**	**716**	**1877**	**0**	**3578**

HGVs

	A	B	C	D	E	Total
A	0	1	33	65	0	**99**
B	2	0	0	0	0	**2**
C	0	0	0	0	0	**0**
D	102	0	32	0	0	**134**
E	90	0	0	263	0	**353**
Total	**194**	**1**	**65**	**328**	**0**	**588**

Total Vehs

	A	B	C	D	E	Total
A	0	132	348	514	0	**994**
B	175	0	7	16	0	**198**
C	0	0	0	0	0	**0**
D	632	24	426	0	0	**1082**
E	214	3	0	1675	0	**1892**
Total	**1021**	**159**	**781**	**2205**	**0**	**4166**

HGV%

	A	B	C	D	E	Total
A	0.0%	0.8%	9.5%	12.6%	0.0%	
B	1.1%	0.0%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	16.1%	0.0%	7.5%	0.0%	0.0%	
E	42.1%	0.0%	0.0%	15.7%	0.0%	
Total						

1630-1730

Lights

	A	B	C	D	E	Total
A	0	131	360	576	0	**1067**
B	173	0	7	16	0	**196**
C	0	0	0	0	0	**0**
D	574	24	405	0	0	**1003**
E	136	3	0	1596	0	**1735**
Total	**883**	**158**	**772**	**2188**	**0**	**4001**

HGVs

	A	B	C	D	E	Total
A	0	1	30	59	0	**90**
B	2	0	0	0	0	**2**
C	0	0	0	0	0	**0**
D	93	0	40	0	0	**133**
E	81	0	0	188	0	**269**
Total	**176**	**1**	**70**	**247**	**0**	**494**

Total Vehs

	A	B	C	D	E	Total
A	0	132	390	635	0	**1157**
B	175	0	7	16	0	**198**
C	0	0	0	0	0	**0**
D	667	24	445	0	0	**1136**
E	217	3	0	1784	0	**2004**
Total	**1059**	**159**	**842**	**2435**	**0**	**4495**

HGV%

	A	B	C	D	E	Total
A	0.0%	0.8%	7.7%	9.3%	0.0%	
B	1.1%	0.0%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	0.0%	
D	13.9%	0.0%	9.0%	0.0%	0.0%	
E	37.3%	0.0%	0.0%	10.5%	0.0%	
Total						

M40 J10: Ardley Roundabout

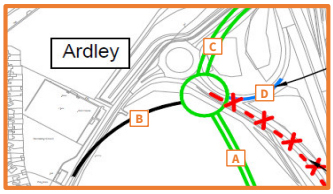


Diagram No: 31
Traffic Flow Set: Ardley3_AM
Strategic Options: 6,7

0645-0745

Lights

	A	B	C	D	Total
A	0	66	1133	310	**1509**
B	219	0	15	20	**254**
C	1270	16	0	261	**1547**
D	0	0	0	0	**0**
Total	**1489**	**82**	**1148**	**591**	**3310**

HGVs

	A	B	C	D	Total
A	0	1	271	36	**308**
B	0	0	0	0	**0**
C	102	0	0	36	**138**
D	0	0	0	0	**0**
Total	**102**	**1**	**271**	**72**	**446**

Total Vehs

	A	B	C	D	Total
A	0	67	1404	346	**1817**
B	219	0	15	20	**254**
C	1372	16	0	297	**1685**
D	0	0	0	0	**0**
Total	**1591**	**83**	**1419**	**663**	**3756**

HGV%

	A	B	C	D	Total
A	0.0%	1.5%	19.3%	10.4%	
B	0.0%	0.0%	0.0%	0.0%	
C	7.4%	0.0%	0.0%	12.1%	
D	0.0%	0.0%	0.0%	0.0%	
Total					

0745-0845

Lights

	A	B	C	D	Total
A	0	66	1331	292	**1689**
B	218	0	17	19	**254**
C	1171	16	0	364	**1551**
D	0	0	0	0	**0**
Total	**1389**	**82**	**1348**	**675**	**3494**

HGVs

	A	B	C	D	Total
A	0	1	234	40	**275**
B	0	0	0	0	**0**
C	117	0	0	29	**146**
D	0	0	0	0	**0**
Total	**117**	**1**	**234**	**69**	**421**

Total Vehs

	A	B	C	D	Total
A	0	67	1565	332	**1964**
B	218	0	17	19	**254**
C	1288	16	0	393	**1697**
D	0	0	0	0	**0**
Total	**1506**	**83**	**1582**	**744**	**3915**

HGV%

	A	B	C	D	Total
A	0.0%	1.5%	15.0%	12.0%	
B	0.0%	0.0%	0.0%	0.0%	
C	9.1%	0.0%	0.0%	7.4%	
D	0.0%	0.0%	0.0%	0.0%	
Total					

M40 J10: Ardley Roundabout

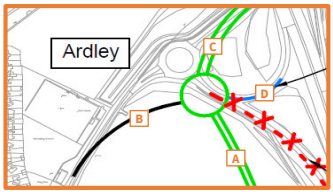


Diagram No: 32
Traffic Flow Set: Ardley3_PM
Strategic Options: 6,7

1530-1630

Lights

	A	B	C	D	Total
A	0	134	1823	315	**2272**
B	174	0	15	7	**196**
C	530	24	0	394	**948**
D	0	0	0	0	**0**
Total	**704**	**158**	**1838**	**716**	**3416**

HGVs

	A	B	C	D	Total
A	0	1	322	33	**356**
B	2	0	0	0	**2**
C	102	0	0	32	**134**
D	0	0	0	0	**0**
Total	**104**	**1**	**322**	**65**	**492**

Total Vehs

	A	B	C	D	Total
A	0	135	2145	348	**2628**
B	176	0	15	7	**198**
C	632	24	0	426	**1082**
D	0	0	0	0	**0**
Total	**808**	**159**	**2160**	**781**	**3908**

HGV%

	A	B	C	D	Total
A	0.0%	0.7%	15.0%	9.5%	
B	1.1%	0.0%	0.0%	0.0%	
C	16.1%	0.0%	0.0%	7.5%	
D	0.0%	0.0%	0.0%	0.0%	
Total					

1630-1730

Lights

	A	B	C	D	Total
A	0	134	2105	360	**2599**
B	174	0	15	7	**196**
C	574	24	0	405	**1003**
D	0	0	0	0	**0**
Total	**748**	**158**	**2120**	**772**	**3798**

HGVs

	A	B	C	D	Total
A	0	1	247	30	**278**
B	2	0	0	0	**2**
C	93	0	0	40	**133**
D	0	0	0	0	**0**
Total	**95**	**1**	**247**	**70**	**413**

Total Vehs

	A	B	C	D	Total
A	0	135	2352	390	**2877**
B	176	0	15	7	**198**
C	667	24	0	445	**1136**
D	0	0	0	0	**0**
Total	**843**	**159**	**2367**	**842**	**4211**

HGV%

	A	B	C	D	Total
A	0.0%	0.7%	10.5%	7.7%	
B	1.1%	0.0%	0.0%	0.0%	
C	13.9%	0.0%	0.0%	9.0%	
D	0.0%	0.0%	0.0%	0.0%	
Total					

M40 J10: Ardley Roundabout

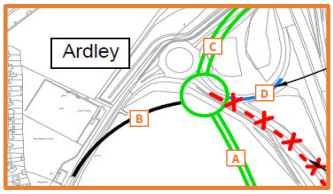


Diagram No: 33
Traffic Flow Set: Ardley4_AM
Strategic Options: 13,19

0645-0745

Lights

	A	B	C	D	Total
A	0	66	1133	310	**1509**
B	219	0	15	20	**254**
C	1434	16	0	261	**1711**
D	0	0	0	0	**0**
Total	**1653**	**82**	**1148**	**591**	**3474**

HGVs

	A	B	C	D	Total
A	0	1	271	36	**308**
B	0	0	0	0	**0**
C	157	0	0	36	**193**
D	0	0	0	0	**0**
Total	**157**	**1**	**271**	**72**	**501**

Total Vehs

	A	B	C	D	Total
A	0	67	1404	346	**1817**
B	219	0	15	20	**254**
C	1591	16	0	297	**1904**
D	0	0	0	0	**0**
Total	**1810**	**83**	**1419**	**663**	**3975**

HGV%

	A	B	C	D	Total
A	0.0%	1.5%	19.3%	10.4%	
B	0.0%	0.0%	0.0%	0.0%	
C	9.9%	0.0%	0.0%	12.1%	
D	0.0%	0.0%	0.0%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	68	1675	382	**2125**
B	219	0	15	20	**254**
C	1748	16	0	333	**2097**
D	0	0	0	0	**0**
Total	**1967**	**84**	**1690**	**735**	**4476**

0745-0845

Lights

	A	B	C	D	Total
A	0	66	1331	292	**1689**
B	218	0	17	19	**254**
C	1366	16	0	364	**1746**
D	0	0	0	0	**0**
Total	**1584**	**82**	**1348**	**675**	**3689**

HGVs

	A	B	C	D	Total
A	0	1	234	40	**275**
B	0	0	0	0	**0**
C	167	0	0	29	**196**
D	0	0	0	0	**0**
Total	**167**	**1**	**234**	**69**	**471**

Total Vehs

	A	B	C	D	Total
A	0	67	1565	332	**1964**
B	218	0	17	19	**254**
C	1533	16	0	393	**1942**
D	0	0	0	0	**0**
Total	**1751**	**83**	**1582**	**744**	**4160**

HGV%

	A	B	C	D	Total
A	0.0%	1.5%	15.0%	12.0%	
B	0.0%	0.0%	0.0%	0.0%	
C	10.9%	0.0%	0.0%	7.4%	
D	0.0%	0.0%	0.0%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	68	1799	372	**2239**
B	218	0	17	19	**254**
C	1700	16	0	422	**2138**
D	0	0	0	0	**0**
Total	**1918**	**84**	**1816**	**813**	**4631**

M40 J10: Ardley Roundabout

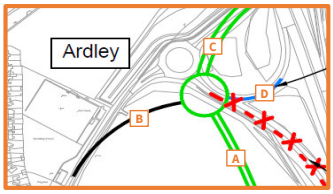


Diagram No: 34
Traffic Flow Set: Ardley4_PM
Strategic Options: 13,19

1530-1630

Lights

	A	B	C	D	Total
A	0	134	1823	315	**2272**
B	174	0	15	7	**196**
C	744	24	0	394	**1162**
D	0	0	0	0	**0**
Total	**918**	**158**	**1838**	**716**	**3630**

HGVs

	A	B	C	D	Total
A	0	1	322	33	**356**
B	2	0	0	0	**2**
C	148	0	0	32	**180**
D	0	0	0	0	**0**
Total	**150**	**1**	**322**	**65**	**538**

Total Vehs

	A	B	C	D	Total
A	0	135	2145	348	**2628**
B	176	0	15	7	**198**
C	892	24	0	426	**1342**
D	0	0	0	0	**0**
Total	**1068**	**159**	**2160**	**781**	**4168**

HGV%

	A	B	C	D	Total
A	0.0%	0.7%	15.0%	9.5%	
B	1.1%	0.0%	0.0%	0.0%	
C	16.6%	0.0%	0.0%	7.5%	
D	0.0%	0.0%	0.0%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	136	2467	381	**2984**
B	178	0	15	7	**200**
C	1040	24	0	458	**1522**
D	0	0	0	0	**0**
Total	**1218**	**160**	**2482**	**846**	**4706**

1630-1730

Lights

	A	B	C	D	Total
A	0	134	2105	360	**2599**
B	174	0	15	7	**196**
C	746	24	0	405	**1175**
D	0	0	0	0	**0**
Total	**920**	**158**	**2120**	**772**	**3970**

HGVs

	A	B	C	D	Total
A	0	1	247	30	**278**
B	2	0	0	0	**2**
C	136	0	0	40	**176**
D	0	0	0	0	**0**
Total	**138**	**1**	**247**	**70**	**456**

Total Vehs

	A	B	C	D	Total
A	0	135	2352	390	**2877**
B	176	0	15	7	**198**
C	882	24	0	445	**1351**
D	0	0	0	0	**0**
Total	**1058**	**159**	**2367**	**842**	**4426**

HGV%

	A	B	C	D	Total
A	0.0%	0.7%	10.5%	7.7%	
B	1.1%	0.0%	0.0%	0.0%	
C	15.4%	0.0%	0.0%	9.0%	
D	0.0%	0.0%	0.0%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	136	2599	420	**3155**
B	178	0	15	7	**200**
C	1018	24	0	485	**1527**
D	0	0	0	0	**0**
Total	**1196**	**160**	**2614**	**912**	**4882**

M40 J10: Ardley Roundabout

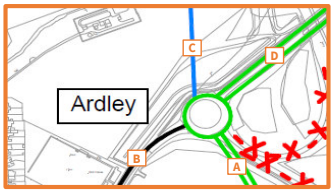


Diagram No: 35
Traffic Flow Set: Ardley5_AM
Strategic Options: 8,9,18

0645-0745

Lights

	A	B	C	D	Total
A	0	66	310	1133	**1509**
B	219	0	20	15	**254**
C	0	0	0	0	**0**
D	1270	16	261	0	**1547**
Total	**1489**	**82**	**591**	**1148**	**3310**

HGVs

	A	B	C	D	Total
A	0	1	36	271	**308**
B	0	0	0	0	**0**
C	0	0	0	0	**0**
D	102	0	36	0	**138**
Total	**102**	**1**	**72**	**271**	**446**

Total Vehs

	A	B	C	D	Total
A	0	67	346	1404	**1817**
B	219	0	20	15	**254**
C	0	0	0	0	**0**
D	1372	16	297	0	**1685**
Total	**1591**	**83**	**663**	**1419**	**3756**

HGV%

	A	B	C	D	Total
A	0.0%	1.5%	10.4%	19.3%	
B	0.0%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	
D	7.4%	0.0%	12.1%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	68	382	1675	**2125**
B	219	0	20	15	**254**
C	0	0	0	0	**0**
D	1474	16	333	0	**1823**
Total	**1693**	**84**	**735**	**1690**	**4202**

0745-0845

Lights

	A	B	C	D	Total
A	0	66	292	1331	**1689**
B	218	0	19	17	**254**
C	0	0	0	0	**0**
D	1171	16	364	0	**1551**
Total	**1389**	**82**	**675**	**1348**	**3494**

HGVs

	A	B	C	D	Total
A	0	1	40	234	**275**
B	0	0	0	0	**0**
C	0	0	0	0	**0**
D	117	0	29	0	**146**
Total	**117**	**1**	**69**	**234**	**421**

Total Vehs

	A	B	C	D	Total
A	0	67	332	1565	**1964**
B	218	0	19	17	**254**
C	0	0	0	0	**0**
D	1288	16	393	0	**1697**
Total	**1506**	**83**	**744**	**1582**	**3915**

HGV%

	A	B	C	D	Total
A	0.0%	1.5%	12.0%	15.0%	
B	0.0%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	
D	9.1%	0.0%	7.4%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	68	372	1799	**2239**
B	218	0	19	17	**254**
C	0	0	0	0	**0**
D	1405	16	422	0	**1843**
Total	**1623**	**84**	**813**	**1816**	**4336**

M40 J10: Ardley Roundabout

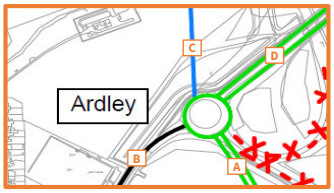


Diagram No: 36
Traffic Flow Set: Ardley5_PM
Strategic Options: 8,9,18

1530-1630

Lights

	A	B	C	D	Total
A	0	134	315	1823	**2272**
B	174	0	7	15	**196**
C	0	0	0	0	**0**
D	530	24	394	0	**948**
Total	**704**	**158**	**716**	**1838**	**3416**

HGVs

	A	B	C	D	Total
A	0	1	33	322	**356**
B	2	0	0	0	**2**
C	0	0	0	0	**0**
D	102	0	32	0	**134**
Total	**104**	**1**	**65**	**322**	**492**

Total Vehs

	A	B	C	D	Total
A	0	135	348	2145	**2628**
B	176	0	7	15	**198**
C	0	0	0	0	**0**
D	632	24	426	0	**1082**
Total	**808**	**159**	**781**	**2160**	**3908**

HGV%

	A	B	C	D	Total
A	0.0%	0.7%	9.5%	15.0%	
B	1.1%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	
D	16.1%	0.0%	7.5%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	136	381	2467	**2984**
B	178	0	7	15	**200**
C	0	0	0	0	**0**
D	734	24	458	0	**1216**
Total	**912**	**160**	**846**	**2482**	**4400**

1630-1730

Lights

	A	B	C	D	Total
A	0	134	360	2105	**2599**
B	174	0	7	15	**196**
C	0	0	0	0	**0**
D	574	24	405	0	**1003**
Total	**748**	**158**	**772**	**2120**	**3798**

HGVs

	A	B	C	D	Total
A	0	1	30	247	**278**
B	2	0	0	0	**2**
C	0	0	0	0	**0**
D	93	0	40	0	**133**
Total	**95**	**1**	**70**	**247**	**413**

Total Vehs

	A	B	C	D	Total
A	0	135	390	2352	**2877**
B	176	0	7	15	**198**
C	0	0	0	0	**0**
D	667	24	445	0	**1136**
Total	**843**	**159**	**842**	**2367**	**4211**

HGV%

	A	B	C	D	Total
A	0.0%	0.7%	7.7%	10.5%	
B	1.1%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	
D	13.9%	0.0%	9.0%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	136	420	2599	**3155**
B	178	0	7	15	**200**
C	0	0	0	0	**0**
D	760	24	485	0	**1269**
Total	**938**	**160**	**912**	**2614**	**4624**

M40 J10: Ardley Roundabout

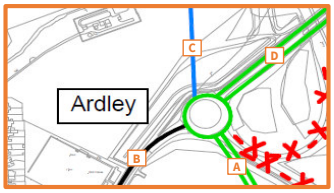


Diagram No: 37
Traffic Flow Set: Ardley6_AM
Strategic Options: 10,11,12

0645-0745

Lights

	A	B	C	D	Total
A	0	66	310	1133	**1509**
B	219	0	20	15	**254**
C	0	0	0	0	**0**
D	1434	16	261	0	**1711**
Total	**1653**	**82**	**591**	**1148**	**3474**

HGVs

	A	B	C	D	Total
A	0	1	36	271	**308**
B	0	0	0	0	**0**
C	0	0	0	0	**0**
D	157	0	36	0	**193**
Total	**157**	**1**	**72**	**271**	**501**

Total Vehs

	A	B	C	D	Total
A	0	67	346	1404	**1817**
B	219	0	20	15	**254**
C	0	0	0	0	**0**
D	1591	16	297	0	**1904**
Total	**1810**	**83**	**663**	**1419**	**3975**

HGV%

	A	B	C	D	Total
A	0.0%	1.5%	10.4%	19.3%	
B	0.0%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	
D	9.9%	0.0%	12.1%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	68	382	1675	**2125**
B	219	0	20	15	**254**
C	0	0	0	0	**0**
D	1748	16	333	0	**2097**
Total	**1967**	**84**	**735**	**1690**	**4476**

0745-0845

Lights

	A	B	C	D	Total
A	0	66	292	1331	**1689**
B	218	0	19	17	**254**
C	0	0	0	0	**0**
D	1366	16	364	0	**1746**
Total	**1584**	**82**	**675**	**1348**	**3689**

HGVs

	A	B	C	D	Total
A	0	1	40	234	**275**
B	0	0	0	0	**0**
C	0	0	0	0	**0**
D	167	0	29	0	**196**
Total	**167**	**1**	**69**	**234**	**471**

Total Vehs

	A	B	C	D	Total
A	0	67	332	1565	**1964**
B	218	0	19	17	**254**
C	0	0	0	0	**0**
D	1533	16	393	0	**1942**
Total	**1751**	**83**	**744**	**1582**	**4160**

HGV%

	A	B	C	D	Total
A	0.0%	1.5%	12.0%	15.0%	
B	0.0%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	
D	10.9%	0.0%	7.4%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	68	372	1799	**2239**
B	218	0	19	17	**254**
C	0	0	0	0	**0**
D	1700	16	422	0	**2138**
Total	**1918**	**84**	**813**	**1816**	**4631**

M40 J10: Ardley Roundabout

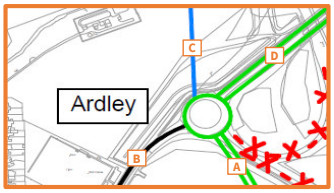


Diagram No: 38
Traffic Flow Set: Ardley6_PM
Strategic Options: 10,11,12

1530-1630

Lights

	A	B	C	D	Total
A	0	134	315	1823	**2272**
B	174	0	7	15	**196**
C	0	0	0	0	**0**
D	744	24	394	0	**1162**
Total	**918**	**158**	**716**	**1838**	**3630**

HGVs

	A	B	C	D	Total
A	0	1	33	322	**356**
B	2	0	0	0	**2**
C	0	0	0	0	**0**
D	148	0	32	0	**180**
Total	**150**	**1**	**65**	**322**	**538**

Total Vehs

	A	B	C	D	Total
A	0	135	348	2145	**2628**
B	176	0	7	15	**198**
C	0	0	0	0	**0**
D	892	24	426	0	**1342**
Total	**1068**	**159**	**781**	**2160**	**4168**

HGV%

	A	B	C	D	Total
A	0.0%	0.7%	9.5%	15.0%	
B	1.1%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	
D	16.6%	0.0%	7.5%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	136	381	2467	**2984**
B	178	0	7	15	**200**
C	0	0	0	0	**0**
D	1040	24	458	0	**1522**
Total	**1218**	**160**	**846**	**2482**	**4706**

1630-1730

Lights

	A	B	C	D	Total
A	0	134	360	2105	**2599**
B	174	0	7	15	**196**
C	0	0	0	0	**0**
D	746	24	405	0	**1175**
Total	**920**	**158**	**772**	**2120**	**3970**

HGVs

	A	B	C	D	Total
A	0	1	30	247	**278**
B	2	0	0	0	**2**
C	0	0	0	0	**0**
D	136	0	40	0	**176**
Total	**138**	**1**	**70**	**247**	**456**

Total Vehs

	A	B	C	D	Total
A	0	135	390	2352	**2877**
B	176	0	7	15	**198**
C	0	0	0	0	**0**
D	882	24	445	0	**1351**
Total	**1058**	**159**	**842**	**2367**	**4426**

HGV%

	A	B	C	D	Total
A	0.0%	0.7%	7.7%	10.5%	
B	1.1%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	
D	15.4%	0.0%	9.0%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	136	420	2599	**3155**
B	178	0	7	15	**200**
C	0	0	0	0	**0**
D	1018	24	485	0	**1527**
Total	**1196**	**160**	**912**	**2614**	**4882**

M40 J10: Ardley Roundabout

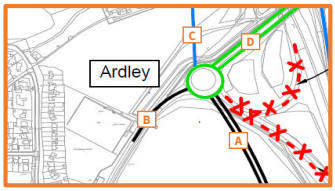


Diagram No: 39
Traffic Flow Set: Ardley7_AM
Strategic Options: 16

0645-0745

Lights

	A	B	C	D	Total
A	0	66	310	503	**879**
B	215	0	20	19	**254**
C	0	0	0	0	**0**
D	1270	16	261	0	**1547**
Total	**1485**	**82**	**591**	**522**	**2680**

HGVs

	A	B	C	D	Total
A	0	1	36	202	**239**
B	0	0	0	0	**0**
C	0	0	0	0	**0**
D	102	0	36	0	**138**
Total	**102**	**1**	**72**	**202**	**377**

Total Vehs

	A	B	C	D	Total
A	0	67	346	705	**1118**
B	215	0	20	19	**254**
C	0	0	0	0	**0**
D	1372	16	297	0	**1685**
Total	**1587**	**83**	**663**	**724**	**3057**

HGV%

	A	B	C	D	Total
A	0.0%	1.5%	10.4%	28.7%	
B	0.0%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	
D	7.4%	0.0%	12.1%	0.0%	
Total					

0745-0845

Lights

	A	B	C	D	Total
A	0	66	292	513	**871**
B	215	0	19	20	**254**
C	0	0	0	0	**0**
D	1171	16	364	0	**1551**
Total	**1386**	**82**	**675**	**533**	**2676**

HGVs

	A	B	C	D	Total
A	0	1	40	198	**239**
B	0	0	0	0	**0**
C	0	0	0	0	**0**
D	117	0	29	0	**146**
Total	**117**	**1**	**69**	**198**	**385**

Total Vehs

	A	B	C	D	Total
A	0	67	332	711	**1110**
B	215	0	19	20	**254**
C	0	0	0	0	**0**
D	1288	16	393	0	**1697**
Total	**1503**	**83**	**744**	**731**	**3061**

HGV%

	A	B	C	D	Total
A	0.0%	1.5%	12.0%	27.8%	
B	0.0%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	
D	9.1%	0.0%	7.4%	0.0%	
Total					

M40 J10: Ardley Roundabout

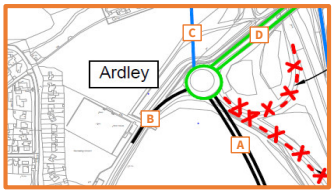


Diagram No: 40
Traffic Flow Set: Ardley7_PM
Strategic Options: 16

1530-1630

Lights

	A	B	C	D	Total
A	0	134	315	913	**1362**
B	173	0	7	16	**196**
C	0	0	0	0	**0**
D	530	24	394	0	**948**
Total	**703**	**158**	**716**	**929**	**2506**

HGVs

	A	B	C	D	Total
A	0	1	33	192	**226**
B	2	0	0	0	**2**
C	0	0	0	0	**0**
D	102	0	32	0	**134**
Total	**104**	**1**	**65**	**192**	**362**

Total Vehs

	A	B	C	D	Total
A	0	135	348	1105	**1588**
B	175	0	7	16	**198**
C	0	0	0	0	**0**
D	632	24	426	0	**1082**
Total	**807**	**159**	**781**	**1121**	**2868**

HGV%

	A	B	C	D	Total
A	0.0%	0.7%	9.5%	17.4%	
B	1.1%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	
D	16.1%	0.0%	7.5%	0.0%	
Total					

1630-1730

Lights

	A	B	C	D	Total
A	0	134	360	1051	**1545**
B	173	0	7	16	**196**
C	0	0	0	0	**0**
D	574	24	405	0	**1003**
Total	**747**	**158**	**772**	**1067**	**2744**

HGVs

	A	B	C	D	Total
A	0	1	30	181	**212**
B	2	0	0	0	**2**
C	0	0	0	0	**0**
D	93	0	40	0	**133**
Total	**95**	**1**	**70**	**181**	**347**

Total Vehs

	A	B	C	D	Total
A	0	135	390	1232	**1757**
B	175	0	7	16	**198**
C	0	0	0	0	**0**
D	667	24	445	0	**1136**
Total	**842**	**159**	**842**	**1248**	**3091**

HGV%

	A	B	C	D	Total
A	0.0%	0.7%	7.7%	14.7%	
B	1.1%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	
D	13.9%	0.0%	9.0%	0.0%	
Total					

M40 J10: Ardley Roundabout

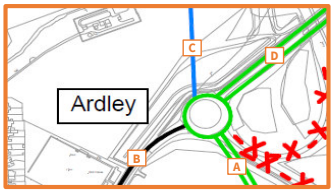


Diagram No: 41
Traffic Flow Set: Ardley8_AM
Strategic Options: 17

0645-0745

Lights

	A	B	C	D	Total
A	0	66	310	221	**597**
B	219	0	20	15	**254**
C	0	0	0	0	**0**
D	1270	16	261	0	**1547**
Total	**1489**	**82**	**591**	**236**	**2398**

HGVs

	A	B	C	D	Total
A	0	1	36	85	**122**
B	0	0	0	0	**0**
C	0	0	0	0	**0**
D	102	0	36	0	**138**
Total	**102**	**1**	**72**	**85**	**260**

Total Vehs

	A	B	C	D	Total
A	0	67	346	306	**719**
B	219	0	20	15	**254**
C	0	0	0	0	**0**
D	1372	16	297	0	**1685**
Total	**1591**	**83**	**663**	**321**	**2658**

HGV%

	A	B	C	D	Total
A	0.0%	1.5%	10.4%	27.8%	
B	0.0%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	
D	7.4%	0.0%	12.1%	0.0%	
Total					

0745-0845

Lights

	A	B	C	D	Total
A	0	66	292	257	**615**
B	218	0	19	17	**254**
C	0	0	0	0	**0**
D	1171	16	364	0	**1551**
Total	**1389**	**82**	**675**	**274**	**2420**

HGVs

	A	B	C	D	Total
A	0	1	40	81	**122**
B	0	0	0	0	**0**
C	0	0	0	0	**0**
D	117	0	29	0	**146**
Total	**117**	**1**	**69**	**81**	**268**

Total Vehs

	A	B	C	D	Total
A	0	67	332	338	**737**
B	218	0	19	17	**254**
C	0	0	0	0	**0**
D	1288	16	393	0	**1697**
Total	**1506**	**83**	**744**	**355**	**2688**

HGV%

	A	B	C	D	Total
A	0.0%	1.5%	12.0%	24.0%	
B	0.0%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	
D	9.1%	0.0%	7.4%	0.0%	
Total					

M40 J10: Ardley Roundabout

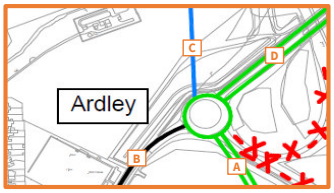


Diagram No: 42
Traffic Flow Set: Ardley8_PM
Strategic Options: 17

1530-1630

Lights

	A	B	C	D	Total
A	0	134	315	449	**898**
B	174	0	7	15	**196**
C	0	0	0	0	**0**
D	530	24	394	0	**948**
Total	**704**	**158**	**716**	**464**	**2042**

HGVs

	A	B	C	D	Total
A	0	1	33	65	**99**
B	2	0	0	0	**2**
C	0	0	0	0	**0**
D	102	0	32	0	**134**
Total	**104**	**1**	**65**	**65**	**235**

Total Vehs

	A	B	C	D	Total
A	0	135	348	514	**997**
B	176	0	7	15	**198**
C	0	0	0	0	**0**
D	632	24	426	0	**1082**
Total	**808**	**159**	**781**	**529**	**2277**

HGV%

	A	B	C	D	Total
A	0.0%	0.7%	9.5%	12.6%	
B	1.1%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	
D	16.1%	0.0%	7.5%	0.0%	
Total					

1630-1730

Lights

	A	B	C	D	Total
A	0	134	360	576	**1070**
B	174	0	7	15	**196**
C	0	0	0	0	**0**
D	574	24	405	0	**1003**
Total	**748**	**158**	**772**	**591**	**2269**

HGVs

	A	B	C	D	Total
A	0	1	30	59	**90**
B	2	0	0	0	**2**
C	0	0	0	0	**0**
D	93	0	40	0	**133**
Total	**95**	**1**	**70**	**59**	**225**

Total Vehs

	A	B	C	D	Total
A	0	135	390	635	**1160**
B	176	0	7	15	**198**
C	0	0	0	0	**0**
D	667	24	445	0	**1136**
Total	**843**	**159**	**842**	**650**	**2494**

HGV%

	A	B	C	D	Total
A	0.0%	0.7%	7.7%	9.3%	
B	1.1%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	
D	13.9%	0.0%	9.0%	0.0%	
Total					

M40 J10: Ardley East Roundabout

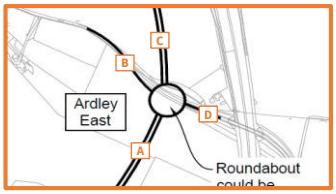


Diagram No: 43
Traffic Flow Set: ArdleyEast1_AM
Strategic Options: 1,2,14,15

0645-0745

Lights

	A	B	C	D	Total
A	0	48	506	151	**705**
B	26	0	39	189	**254**
C	1378	17	0	139	**1534**
D	10	17	94	0	**121**
Total	**1414**	**82**	**639**	**479**	**2614**

HGVs

	A	B	C	D	Total
A	0	1	206	0	**207**
B	0	0	0	0	**0**
C	196	0	0	0	**196**
D	0	0	0	0	**0**
Total	**196**	**1**	**206**	**0**	**403**

Total Vehs

	A	B	C	D	Total
A	0	49	712	151	**912**
B	26	0	39	189	**254**
C	1574	17	0	139	**1730**
D	10	17	94	0	**121**
Total	**1610**	**83**	**845**	**479**	**3017**

HGV%

	A	B	C	D	Total
A	0.0%	2.0%	28.9%	0.0%	
B	0.0%	0.0%	0.0%	0.0%	
C	12.5%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	
Total					

0745-0845

Lights

	A	B	C	D	Total
A	0	48	518	151	**717**
B	26	0	39	189	**254**
C	1291	17	0	139	**1447**
D	10	17	94	0	**121**
Total	**1327**	**82**	**651**	**479**	**2539**

HGVs

	A	B	C	D	Total
A	0	1	209	0	**210**
B	0	0	0	0	**0**
C	210	0	0	0	**210**
D	0	0	0	0	**0**
Total	**210**	**1**	**209**	**0**	**420**

Total Vehs

	A	B	C	D	Total
A	0	49	727	151	**927**
B	26	0	39	189	**254**
C	1501	17	0	139	**1657**
D	10	17	94	0	**121**
Total	**1537**	**83**	**860**	**479**	**2959**

HGV%

	A	B	C	D	Total
A	0.0%	2.0%	28.7%	0.0%	
B	0.0%	0.0%	0.0%	0.0%	
C	14.0%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	
Total					

M40 J10: Ardley East Roundabout

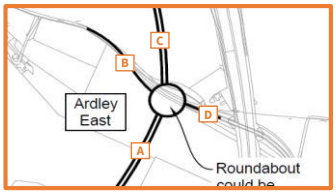


Diagram No: 44
Traffic Flow Set: ArdleyEast1_PM
Strategic Options: 1,2,14,15

1530-1630

Lights

	A	B	C	D	Total
A	0	111	929	136	**1176**
B	123	0	23	50	**196**
C	599	27	0	55	**681**
D	88	20	89	0	**197**
Total	**810**	**158**	**1041**	**241**	**2250**

HGVs

	A	B	C	D	Total
A	0	1	184	0	**185**
B	2	0	0	0	**2**
C	192	0	0	0	**192**
D	0	0	0	0	**0**
Total	**194**	**1**	**184**	**0**	**379**

Total Vehs

	A	B	C	D	Total
A	0	112	1113	136	**1361**
B	125	0	23	50	**198**
C	791	27	0	55	**873**
D	88	20	89	0	**197**
Total	**1004**	**159**	**1225**	**241**	**2629**

HGV%

	A	B	C	D	Total
A	0.0%	0.9%	16.5%	0.0%	
B	1.6%	0.0%	0.0%	0.0%	
C	24.3%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	
Total					

1630-1730

Lights

	A	B	C	D	Total
A	0	111	1101	136	**1348**
B	123	0	23	50	**196**
C	656	27	0	54	**737**
D	88	20	89	0	**197**
Total	**867**	**158**	**1213**	**240**	**2478**

HGVs

	A	B	C	D	Total
A	0	1	164	0	**165**
B	2	0	0	0	**2**
C	174	0	0	0	**174**
D	0	0	0	0	**0**
Total	**176**	**1**	**164**	**0**	**341**

Total Vehs

	A	B	C	D	Total
A	0	112	1265	136	**1513**
B	125	0	23	50	**198**
C	830	27	0	54	**911**
D	88	20	89	0	**197**
Total	**1043**	**159**	**1377**	**240**	**2819**

HGV%

	A	B	C	D	Total
A	0.0%	0.9%	13.0%	0.0%	
B	1.6%	0.0%	0.0%	0.0%	
C	21.0%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	
Total					

M40 J10: Ardley East Roundabout

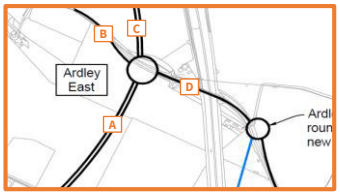


Diagram No: 45
Traffic Flow Set: ArdleyEast2_AM
Strategic Options: 4,5

0645-0745

Lights

	A	B	C	D	Total
A	0	48	445	212	**705**
B	26	0	35	193	**254**
C	1378	17	0	139	**1534**
D	10	17	86	0	**113**
Total	**1414**	**82**	**566**	**544**	**2606**

HGVs

	A	B	C	D	Total
A	0	1	121	85	**207**
B	0	0	0	0	**0**
C	196	0	0	0	**196**
D	0	0	0	0	**0**
Total	**196**	**1**	**121**	**85**	**403**

Total Vehs

	A	B	C	D	Total
A	0	49	566	297	**912**
B	26	0	35	193	**254**
C	1574	17	0	139	**1730**
D	10	17	86	0	**113**
Total	**1610**	**83**	**687**	**629**	**3009**

HGV%

	A	B	C	D	Total
A	0.0%	2.0%	21.4%	28.6%	
B	0.0%	0.0%	0.0%	0.0%	
C	12.5%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	
Total					

0745-0845

Lights

	A	B	C	D	Total
A	0	48	462	207	**717**
B	26	0	36	192	**254**
C	1291	17	0	139	**1447**
D	10	17	87	0	**114**
Total	**1327**	**82**	**585**	**538**	**2532**

HGVs

	A	B	C	D	Total
A	0	1	121	88	**210**
B	0	0	0	0	**0**
C	210	0	0	0	**210**
D	0	0	0	0	**0**
Total	**210**	**1**	**121**	**88**	**420**

Total Vehs

	A	B	C	D	Total
A	0	49	583	295	**927**
B	26	0	36	192	**254**
C	1501	17	0	139	**1657**
D	10	17	87	0	**114**
Total	**1537**	**83**	**706**	**626**	**2952**

HGV%

	A	B	C	D	Total
A	0.0%	2.0%	20.8%	29.8%	
B	0.0%	0.0%	0.0%	0.0%	
C	14.0%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	
Total					

M40 J10: Ardley East Roundabout

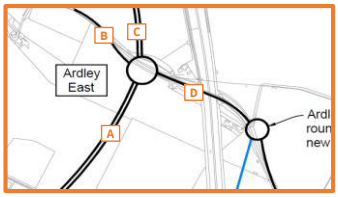


Diagram No: 46
Traffic Flow Set: ArdleyEast2_PM
Strategic Options: 4,5

1530-1630

Lights

	A	B	C	D	Total
A	0	111	679	386	**1176**
B	123	0	22	51	**196**
C	599	27	0	55	**681**
D	88	20	85	0	**193**
Total	**810**	**158**	**786**	**492**	**2246**

HGVs

	A	B	C	D	Total
A	0	1	98	86	**185**
B	2	0	0	0	**2**
C	192	0	0	0	**192**
D	0	0	0	0	**0**
Total	**194**	**1**	**98**	**86**	**379**

Total Vehs

	A	B	C	D	Total
A	0	112	777	472	**1361**
B	125	0	22	51	**198**
C	791	27	0	55	**873**
D	88	20	85	0	**193**
Total	**1004**	**159**	**884**	**578**	**2625**

HGV%

	A	B	C	D	Total
A	0.0%	0.9%	12.6%	18.2%	
B	1.6%	0.0%	0.0%	0.0%	
C	24.3%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	
Total					

1630-1730

Lights

	A	B	C	D	Total
A	0	111	850	387	**1348**
B	123	0	22	51	**196**
C	656	27	0	54	**737**
D	88	20	86	0	**194**
Total	**867**	**158**	**958**	**492**	**2475**

HGVs

	A	B	C	D	Total
A	0	1	89	75	**165**
B	2	0	0	0	**2**
C	174	0	0	0	**174**
D	0	0	0	0	**0**
Total	**176**	**1**	**89**	**75**	**341**

Total Vehs

	A	B	C	D	Total
A	0	112	939	462	**1513**
B	125	0	22	51	**198**
C	830	27	0	54	**911**
D	88	20	86	0	**194**
Total	**1043**	**159**	**1047**	**567**	**2816**

HGV%

	A	B	C	D	Total
A	0.0%	0.9%	9.5%	16.2%	
B	1.6%	0.0%	0.0%	0.0%	
C	21.0%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	
Total					

M40 J10: Ardley East Roundabout

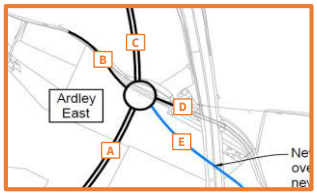


Diagram No: 47
Traffic Flow Set: ArdleyEast3_AM
Strategic Options: 5

0645-0745

Lights						
	A	B	C	D	E	Total
A	0	48	445	151	61	**705**
B	26	0	35	189	4	**254**
C	1378	17	0	139	0	**1534**
D	10	17	86	0	8	**121**
E	0	0	0	0	0	**0**
Total	**1414**	**82**	**566**	**479**	**73**	**2614**

HGVs						
	A	B	C	D	E	Total
A	0	1	121	0	85	**207**
B	0	0	0	0	0	**0**
C	196	0	0	0	0	**196**
D	0	0	0	0	0	**0**
E	0	0	0	0	0	**0**
Total	**196**	**1**	**121**	**0**	**85**	**403**

Total Vehs						
	A	B	C	D	E	Total
A	0	49	566	151	146	**912**
B	26	0	35	189	4	**254**
C	1574	17	0	139	0	**1730**
D	10	17	86	0	8	**121**
E	0	0	0	0	0	**0**
Total	**1610**	**83**	**687**	**479**	**158**	**3017**

HGV%						
	A	B	C	D	E	Total
A	0.0%	2.0%	21.4%	0.0%	58.2%	
B	0.0%	0.0%	0.0%	0.0%	0.0%	
C	12.5%	0.0%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	0.0%	
E	0.0%	0.0%	0.0%	0.0%	0.0%	
Total						

0745-0845

Lights						
	A	B	C	D	E	Total
A	0	48	462	151	56	**717**
B	26	0	36	189	3	**254**
C	1291	17	0	139	0	**1447**
D	10	17	87	0	7	**121**
E	0	0	0	0	0	**0**
Total	**1327**	**82**	**585**	**479**	**66**	**2539**

HGVs						
	A	B	C	D	E	Total
A	0	1	121	0	88	**210**
B	0	0	0	0	0	**0**
C	210	0	0	0	0	**210**
D	0	0	0	0	0	**0**
E	0	0	0	0	0	**0**
Total	**210**	**1**	**121**	**0**	**88**	**420**

Total Vehs						
	A	B	C	D	E	Total
A	0	49	583	151	144	**927**
B	26	0	36	189	3	**254**
C	1501	17	0	139	0	**1657**
D	10	17	87	0	7	**121**
E	0	0	0	0	0	**0**
Total	**1537**	**83**	**706**	**479**	**154**	**2959**

HGV%						
	A	B	C	D	E	Total
A	0.0%	2.0%	20.8%	0.0%	61.1%	
B	0.0%	0.0%	0.0%	0.0%	0.0%	
C	14.0%	0.0%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	0.0%	
E	0.0%	0.0%	0.0%	0.0%	0.0%	
Total						

M40 J10: Ardley East Roundabout

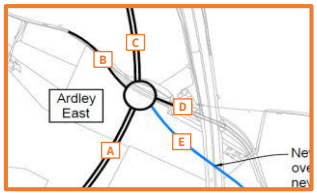


Diagram No: 48
Traffic Flow Set: ArdleyEast3_PM
Strategic Options: 6,7

1530-1630

Lights

	A	B	C	D	E	Total
A	0	111	679	136	250	**1176**
B	123	0	22	50	1	**196**
C	599	27	0	55	0	**681**
D	88	20	85	0	4	**197**
E	0	0	0	0	0	**0**
Total	**810**	**158**	**786**	**241**	**255**	**2250**

HGVs

	A	B	C	D	E	Total
A	0	1	98	0	86	**185**
B	2	0	0	0	0	**2**
C	192	0	0	0	0	**192**
D	0	0	0	0	0	**0**
E	0	0	0	0	0	**0**
Total	**194**	**1**	**98**	**0**	**86**	**379**

Total Vehs

	A	B	C	D	E	Total
A	0	112	777	136	336	**1361**
B	125	0	22	50	1	**198**
C	791	27	0	55	0	**873**
D	88	20	85	0	4	**197**
E	0	0	0	0	0	**0**
Total	**1004**	**159**	**884**	**241**	**341**	**2629**

HGV%

	A	B	C	D	E	Total
A	0.0%	0.9%	12.6%	0.0%	25.6%	
B	1.6%	0.0%	0.0%	0.0%	0.0%	
C	24.3%	0.0%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	0.0%	
E	0.0%	0.0%	0.0%	0.0%	0.0%	
Total						

1630-1730

Lights

	A	B	C	D	E	Total
A	0	111	850	136	251	**1348**
B	123	0	22	50	1	**196**
C	656	27	0	54	0	**737**
D	88	20	86	0	3	**197**
E	0	0	0	0	0	**0**
Total	**867**	**158**	**958**	**240**	**255**	**2478**

HGVs

	A	B	C	D	E	Total
A	0	1	89	0	75	**165**
B	2	0	0	0	0	**2**
C	174	0	0	0	0	**174**
D	0	0	0	0	0	**0**
E	0	0	0	0	0	**0**
Total	**176**	**1**	**89**	**0**	**75**	**341**

Total Vehs

	A	B	C	D	E	Total
A	0	112	939	136	326	**1513**
B	125	0	22	50	1	**198**
C	830	27	0	54	0	**911**
D	88	20	86	0	3	**197**
E	0	0	0	0	0	**0**
Total	**1043**	**159**	**1047**	**240**	**330**	**2819**

HGV%

	A	B	C	D	E	Total
A	0.0%	0.9%	9.5%	0.0%	23.0%	
B	1.6%	0.0%	0.0%	0.0%	0.0%	
C	21.0%	0.0%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	0.0%	
E	0.0%	0.0%	0.0%	0.0%	0.0%	
Total						

M40 J10: Ardley East Roundabout

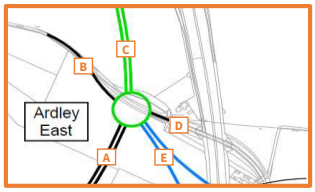


Diagram No: 49
Traffic Flow Set: ArdleyEast4_AM
Strategic Options: 13,19

0645-0745

Lights

	A	B	C	D	E	Total
A	0	48	445	151	61	**705**
B	26	0	35	189	4	**254**
C	1138	16	0	132	0	**1286**
D	10	17	86	0	8	**121**
E	240	1	912	7	40	**1200**
Total	**1414**	**82**	**1478**	**479**	**113**	**3566**

HGVs

	A	B	C	D	E	Total
A	0	1	121	0	85	**207**
B	0	0	0	0	0	**0**
C	102	0	0	0	0	**102**
D	0	0	0	0	0	**0**
E	94	0	186	0	4	**284**
Total	**196**	**1**	**307**	**0**	**89**	**593**

Total Vehs

	A	B	C	D	E	Total
A	0	49	566	151	146	**912**
B	26	0	35	189	4	**254**
C	1240	16	0	132	0	**1388**
D	10	17	86	0	8	**121**
E	334	1	1098	7	44	**1484**
Total	**1610**	**83**	**1785**	**479**	**202**	**4159**

HGV%

	A	B	C	D	E	Total
A	0.0%	2.0%	21.4%	0.0%	58.2%	
B	0.0%	0.0%	0.0%	0.0%	0.0%	
C	8.2%	0.0%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	0.0%	
E	28.1%	0.0%	16.9%	0.0%	9.1%	
Total						

PCUs

	A	B	C	D	E	Total
A	0	50	687	151	231	**1119**
B	26	0	35	189	4	**254**
C	1342	16	0	132	0	**1490**
D	10	17	86	0	8	**121**
E	428	1	1284	7	48	**1768**
Total	**1806**	**84**	**2092**	**479**	**291**	**4752**

0745-0845

Lights

	A	B	C	D	E	Total
A	0	48	462	151	56	**717**
B	26	0	36	189	3	**254**
C	1040	16	0	131	0	**1187**
D	10	17	87	0	7	**121**
E	251	1	1074	8	36	**1370**
Total	**1327**	**82**	**1659**	**479**	**102**	**3649**

HGVs

	A	B	C	D	E	Total
A	0	1	121	0	88	**210**
B	0	0	0	0	0	**0**
C	117	0	0	0	0	**117**
D	0	0	0	0	0	**0**
E	93	0	153	0	2	**248**
Total	**210**	**1**	**274**	**0**	**90**	**575**

Total Vehs

	A	B	C	D	E	Total
A	0	49	583	151	144	**927**
B	26	0	36	189	3	**254**
C	1157	16	0	131	0	**1304**
D	10	17	87	0	7	**121**
E	344	1	1227	8	38	**1618**
Total	**1537**	**83**	**1933**	**479**	**192**	**4224**

HGV%

	A	B	C	D	E	Total
A	0.0%	2.0%	20.8%	0.0%	61.1%	
B	0.0%	0.0%	0.0%	0.0%	0.0%	
C	10.1%	0.0%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	0.0%	
E	27.0%	0.0%	12.5%	0.0%	5.3%	
Total						

PCUs

	A	B	C	D	E	Total
A	0	50	704	151	232	**1137**
B	26	0	36	189	3	**254**
C	1274	16	0	131	0	**1421**
D	10	17	87	0	7	**121**
E	437	1	1380	8	40	**1866**
Total	**1747**	**84**	**2207**	**479**	**282**	**4799**

M40 J10: Ardley East Roundabout

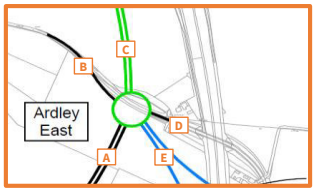


Diagram No: 50
Traffic Flow Set: ArdleyEast4_PM
Strategic Options: 13,19

1530-1630

Lights

	A	B	C	D	E	Total
A	0	111	679	136	250	**1176**
B	123	0	22	50	1	**196**
C	481	24	0	49	0	**554**
D	88	20	85	0	4	**197**
E	118	3	1374	6	38	**1539**
Total	**810**	**158**	**2160**	**241**	**293**	**3662**

HGVs

	A	B	C	D	E	Total
A	0	1	98	0	86	**185**
B	2	0	0	0	0	**2**
C	102	0	0	0	0	**102**
D	0	0	0	0	0	**0**
E	90	0	257	0	6	**353**
Total	**194**	**1**	**355**	**0**	**92**	**642**

Total Vehs

	A	B	C	D	E	Total
A	0	112	777	136	336	**1361**
B	125	0	22	50	1	**198**
C	583	24	0	49	0	**656**
D	88	20	85	0	4	**197**
E	208	3	1631	6	44	**1892**
Total	**1004**	**159**	**2515**	**241**	**385**	**4304**

HGV%

	A	B	C	D	E	Total
A	0.0%	0.9%	12.6%	0.0%	25.6%	
B	1.6%	0.0%	0.0%	0.0%	0.0%	
C	17.5%	0.0%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	0.0%	
E	43.3%	0.0%	15.8%	0.0%	13.6%	
Total						

PCUs

	A	B	C	D	E	Total
A	0	113	875	136	422	**1546**
B	127	0	22	50	1	**200**
C	685	24	0	49	0	**758**
D	88	20	85	0	4	**197**
E	298	3	1888	6	50	**2245**
Total	**1198**	**160**	**2870**	**241**	**477**	**4946**

1630-1730

Lights

	A	B	C	D	E	Total
A	0	111	850	136	251	**1348**
B	123	0	22	50	1	**196**
C	527	24	0	47	0	**598**
D	88	20	86	0	3	**197**
E	129	3	1529	7	67	**1735**
Total	**867**	**158**	**2487**	**240**	**322**	**4074**

HGVs

	A	B	C	D	E	Total
A	0	1	89	0	75	**165**
B	2	0	0	0	0	**2**
C	93	0	0	0	0	**93**
D	0	0	0	0	0	**0**
E	81	0	188	0	0	**269**
Total	**176**	**1**	**277**	**0**	**75**	**529**

Total Vehs

	A	B	C	D	E	Total
A	0	112	939	136	326	**1513**
B	125	0	22	50	1	**198**
C	620	24	0	47	0	**691**
D	88	20	86	0	3	**197**
E	210	3	1717	7	67	**2004**
Total	**1043**	**159**	**2764**	**240**	**397**	**4603**

HGV%

	A	B	C	D	E	Total
A	0.0%	0.9%	9.5%	0.0%	23.0%	
B	1.6%	0.0%	0.0%	0.0%	0.0%	
C	15.0%	0.0%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	0.0%	
E	38.6%	0.0%	10.9%	0.0%	0.0%	
Total						

PCUs

	A	B	C	D	E	Total
A	0	113	1028	136	401	**1678**
B	127	0	22	50	1	**200**
C	713	24	0	47	0	**784**
D	88	20	86	0	3	**197**
E	291	3	1905	7	67	**2273**
Total	**1219**	**160**	**3041**	**240**	**472**	**5132**

M40 J10: Ardley East Roundabout

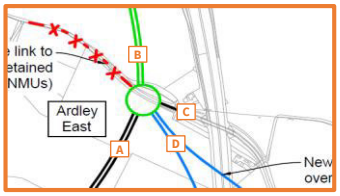


Diagram No: 51
Traffic Flow Set: ArdleyEast5_AM
Strategic Options: 8,9,18

0645-0745

Lights

	A	B	C	D	Total
A	0	493	151	61	**705**
B	1164	0	321	4	**1489**
C	10	103	0	8	**121**
D	240	913	7	40	**1200**
Total	**1414**	**1509**	**479**	**113**	**3515**

HGVs

	A	B	C	D	Total
A	0	122	0	85	**207**
B	102	0	0	0	**102**
C	0	0	0	0	**0**
D	94	186	0	4	**284**
Total	**196**	**308**	**0**	**89**	**593**

Total Vehs

	A	B	C	D	Total
A	0	615	151	146	**912**
B	1266	0	321	4	**1591**
C	10	103	0	8	**121**
D	334	1099	7	44	**1484**
Total	**1610**	**1817**	**479**	**202**	**4108**

HGV%

	A	B	C	D	Total
A	0.0%	19.8%	0.0%	58.2%	
B	8.1%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	
D	28.1%	16.9%	0.0%	9.1%	
Total					

0745-0845

Lights

	A	B	C	D	Total
A	0	510	151	56	**717**
B	1066	0	320	3	**1389**
C	10	104	0	7	**121**
D	251	1075	8	36	**1370**
Total	**1327**	**1689**	**479**	**102**	**3597**

HGVs

	A	B	C	D	Total
A	0	122	0	88	**210**
B	117	0	0	0	**117**
C	0	0	0	0	**0**
D	93	153	0	2	**248**
Total	**210**	**275**	**0**	**90**	**575**

Total Vehs

	A	B	C	D	Total
A	0	632	151	144	**927**
B	1183	0	320	3	**1506**
C	10	104	0	7	**121**
D	344	1228	8	38	**1618**
Total	**1537**	**1964**	**479**	**192**	**4172**

HGV%

	A	B	C	D	Total
A	0.0%	19.3%	0.0%	61.1%	
B	9.9%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	
D	27.0%	12.5%	0.0%	5.3%	
Total					

M40 J10: Ardley East Roundabout

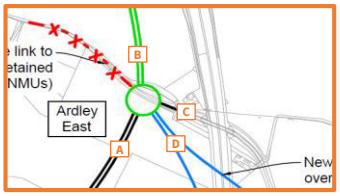


Diagram No: 52
Traffic Flow Set: ArdleyEast5_PM
Strategic Options: 8,9,18

1530-1630

Lights

	A	B	C	D	Total
A	0	790	136	250	**1176**
B	604	0	99	1	**704**
C	88	105	0	4	**197**
D	118	1377	6	38	**1539**
Total	**810**	**2272**	**241**	**293**	**3616**

HGVs

	A	B	C	D	Total
A	0	99	0	86	**185**
B	104	0	0	0	**104**
C	0	0	0	0	**0**
D	90	257	0	6	**353**
Total	**194**	**356**	**0**	**92**	**642**

Total Vehs

	A	B	C	D	Total
A	0	889	136	336	**1361**
B	708	0	99	1	**808**
C	88	105	0	4	**197**
D	208	1634	6	44	**1892**
Total	**1004**	**2628**	**241**	**385**	**4258**

HGV%

	A	B	C	D	Total
A	0.0%	11.1%	0.0%	25.6%	
B	14.7%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	
D	43.3%	15.7%	0.0%	13.6%	
Total					

1630-1730

Lights

	A	B	C	D	Total
A	0	961	136	251	**1348**
B	650	0	97	1	**748**
C	88	106	0	3	**197**
D	129	1532	7	67	**1735**
Total	**867**	**2599**	**240**	**322**	**4028**

HGVs

	A	B	C	D	Total
A	0	90	0	75	**165**
B	95	0	0	0	**95**
C	0	0	0	0	**0**
D	81	188	0	0	**269**
Total	**176**	**278**	**0**	**75**	**529**

Total Vehs

	A	B	C	D	Total
A	0	1051	136	326	**1513**
B	745	0	97	1	**843**
C	88	106	0	3	**197**
D	210	1720	7	67	**2004**
Total	**1043**	**2877**	**240**	**397**	**4557**

HGV%

	A	B	C	D	Total
A	0.0%	8.6%	0.0%	23.0%	
B	12.8%	0.0%	0.0%	0.0%	
C	0.0%	0.0%	0.0%	0.0%	
D	38.6%	10.9%	0.0%	0.0%	
Total					

M40 J10: Ardley East Roundabout

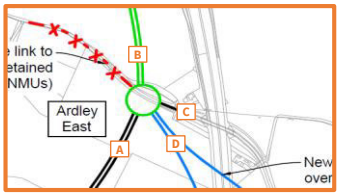


Diagram No: 53
Traffic Flow Set: ArdleyEast6_AM
Strategic Options: 10,11,12

0645-0745

Lights

	A	B	C	D	Total
A	0	493	151	61	**705**
B	1164	0	321	168	**1653**
C	10	103	0	8	**121**
D	240	913	7	40	**1200**
Total	**1414**	**1509**	**479**	**277**	**3679**

HGVs

	A	B	C	D	Total
A	0	122	0	85	**207**
B	102	0	0	55	**157**
C	0	0	0	0	**0**
D	94	186	0	4	**284**
Total	**196**	**308**	**0**	**144**	**648**

Total Vehs

	A	B	C	D	Total
A	0	615	151	146	**912**
B	1266	0	321	223	**1810**
C	10	103	0	8	**121**
D	334	1099	7	44	**1484**
Total	**1610**	**1817**	**479**	**421**	**4327**

HGV%

	A	B	C	D	Total
A	0.0%	19.8%	0.0%	58.2%	
B	8.1%	0.0%	0.0%	24.7%	
C	0.0%	0.0%	0.0%	0.0%	
D	28.1%	16.9%	0.0%	9.1%	
Total					

PCUs

	A	B	C	D	Total
A	0	737	151	231	**1119**
B	1368	0	321	278	**1967**
C	10	103	0	8	**121**
D	428	1285	7	48	**1768**
Total	**1806**	**2125**	**479**	**565**	**4975**

0745-0845

Lights

	A	B	C	D	Total
A	0	510	151	56	**717**
B	1066	0	320	198	**1584**
C	10	104	0	7	**121**
D	251	1075	8	36	**1370**
Total	**1327**	**1689**	**479**	**297**	**3792**

HGVs

	A	B	C	D	Total
A	0	122	0	88	**210**
B	117	0	0	50	**167**
C	0	0	0	0	**0**
D	93	153	0	2	**248**
Total	**210**	**275**	**0**	**140**	**625**

Total Vehs

	A	B	C	D	Total
A	0	632	151	144	**927**
B	1183	0	320	248	**1751**
C	10	104	0	7	**121**
D	344	1228	8	38	**1618**
Total	**1537**	**1964**	**479**	**437**	**4417**

HGV%

	A	B	C	D	Total
A	0.0%	19.3%	0.0%	61.1%	
B	9.9%	0.0%	0.0%	20.2%	
C	0.0%	0.0%	0.0%	0.0%	
D	27.0%	12.5%	0.0%	5.3%	
Total					

PCUs

	A	B	C	D	Total
A	0	754	151	232	**1137**
B	1300	0	320	298	**1918**
C	10	104	0	7	**121**
D	437	1381	8	40	**1866**
Total	**1747**	**2239**	**479**	**577**	**5042**

M40 J10: Ardley East Roundabout

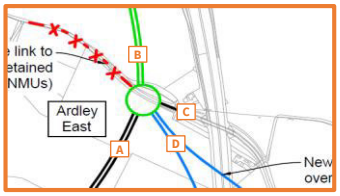


Diagram No: 54
Traffic Flow Set: ArdleyEast6_PM
Strategic Options: 10,11,12

1530-1630

Lights

	A	B	C	D	Total
A	0	790	136	250	**1176**
B	604	0	99	215	**918**
C	88	105	0	4	**197**
D	118	1377	6	38	**1539**
Total	**810**	**2272**	**241**	**507**	**3830**

HGVs

	A	B	C	D	Total
A	0	99	0	86	**185**
B	104	0	0	46	**150**
C	0	0	0	0	**0**
D	90	257	0	6	**353**
Total	**194**	**356**	**0**	**138**	**688**

Total Vehs

	A	B	C	D	Total
A	0	889	136	336	**1361**
B	708	0	99	261	**1068**
C	88	105	0	4	**197**
D	208	1634	6	44	**1892**
Total	**1004**	**2628**	**241**	**645**	**4518**

HGV%

	A	B	C	D	Total
A	0.0%	11.1%	0.0%	25.6%	
B	14.7%	0.0%	0.0%	17.6%	
C	0.0%	0.0%	0.0%	0.0%	
D	43.3%	15.7%	0.0%	13.6%	
Total					

PCUs

	A	B	C	D	Total
A	0	988	136	422	**1546**
B	812	0	99	307	**1218**
C	88	105	0	4	**197**
D	298	1891	6	50	**2245**
Total	**1198**	**2984**	**241**	**783**	**5206**

1630-1730

Lights

	A	B	C	D	Total
A	0	961	136	251	**1348**
B	650	0	97	173	**920**
C	88	106	0	3	**197**
D	129	1532	7	67	**1735**
Total	**867**	**2599**	**240**	**494**	**4200**

HGVs

	A	B	C	D	Total
A	0	90	0	75	**165**
B	95	0	0	43	**138**
C	0	0	0	0	**0**
D	81	188	0	0	**269**
Total	**176**	**278**	**0**	**118**	**572**

Total Vehs

	A	B	C	D	Total
A	0	1051	136	326	**1513**
B	745	0	97	216	**1058**
C	88	106	0	3	**197**
D	210	1720	7	67	**2004**
Total	**1043**	**2877**	**240**	**612**	**4772**

HGV%

	A	B	C	D	Total
A	0.0%	8.6%	0.0%	23.0%	
B	12.8%	0.0%	0.0%	19.9%	
C	0.0%	0.0%	0.0%	0.0%	
D	38.6%	10.9%	0.0%	0.0%	
Total					

PCUs

	A	B	C	D	Total
A	0	1141	136	401	**1678**
B	840	0	97	259	**1196**
C	88	106	0	3	**197**
D	291	1908	7	67	**2273**
Total	**1219**	**3155**	**240**	**730**	**5344**

M40 J10: Ardley East Roundabout

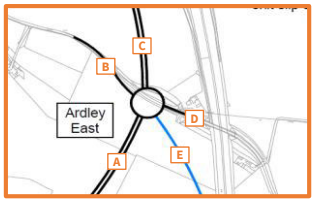


Diagram No: 55
Traffic Flow Set: ArdleyEast7_AM
Strategic Options: 16

0645-0745

Lights						
	A	B	C	D	E	Total
A	0	48	506	151	0	**705**
B	26	0	39	189	0	**254**
C	1138	16	0	132	0	**1286**
D	10	17	94	0	0	**121**
E	240	1	213	7	0	**461**
Total	**1414**	**82**	**852**	**479**	**0**	**2827**

HGVs						
	A	B	C	D	E	Total
A	0	1	206	0	0	**207**
B	0	0	0	0	0	**0**
C	102	0	0	0	0	**102**
D	0	0	0	0	0	**0**
E	94	0	32	0	0	**126**
Total	**196**	**1**	**238**	**0**	**0**	**435**

Total Vehs						
	A	B	C	D	E	Total
A	0	49	712	151	0	**912**
B	26	0	39	189	0	**254**
C	1240	16	0	132	0	**1388**
D	10	17	94	0	0	**121**
E	334	1	245	7	0	**587**
Total	**1610**	**83**	**1090**	**479**	**0**	**3262**

HGV%						
	A	B	C	D	E	Total
A	0.0%	2.0%	28.9%	0.0%	0.0%	
B	0.0%	0.0%	0.0%	0.0%	0.0%	
C	8.2%	0.0%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	0.0%	
E	28.1%	0.0%	13.1%	0.0%	0.0%	
Total						

0745-0845

Lights						
	A	B	C	D	E	Total
A	0	48	518	151	0	**717**
B	26	0	39	189	0	**254**
C	1040	16	0	131	0	**1187**
D	10	17	94	0	0	**121**
E	251	1	193	8	0	**453**
Total	**1327**	**82**	**844**	**479**	**0**	**2732**

HGVs						
	A	B	C	D	E	Total
A	0	1	209	0	0	**210**
B	0	0	0	0	0	**0**
C	117	0	0	0	0	**117**
D	0	0	0	0	0	**0**
E	93	0	29	0	0	**122**
Total	**210**	**1**	**238**	**0**	**0**	**449**

Total Vehs						
	A	B	C	D	E	Total
A	0	49	727	151	0	**927**
B	26	0	39	189	0	**254**
C	1157	16	0	131	0	**1304**
D	10	17	94	0	0	**121**
E	344	1	222	8	0	**575**
Total	**1537**	**83**	**1082**	**479**	**0**	**3181**

HGV%						
	A	B	C	D	E	Total
A	0.0%	2.0%	28.7%	0.0%	0.0%	
B	0.0%	0.0%	0.0%	0.0%	0.0%	
C	10.1%	0.0%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	0.0%	
E	27.0%	0.0%	13.1%	0.0%	0.0%	
Total						

M40 J10: Ardley East Roundabout

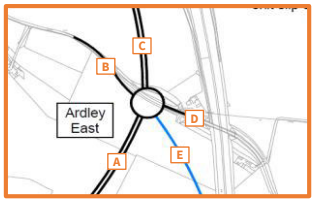


Diagram No: 56
Traffic Flow Set: ArdleyEast7_PM
Strategic Options: 16

1530-1630

Lights

	A	B	C	D	E	Total
A	0	111	929	136	0	**1176**
B	123	0	23	50	0	**196**
C	481	24	0	49	0	**554**
D	88	20	89	0	0	**197**
E	118	3	210	6	0	**337**
Total	**810**	**158**	**1251**	**241**	**0**	**2460**

HGVs

	A	B	C	D	E	Total
A	0	1	184	0	0	**185**
B	2	0	0	0	0	**2**
C	102	0	0	0	0	**102**
D	0	0	0	0	0	**0**
E	90	0	41	0	0	**131**
Total	**194**	**1**	**225**	**0**	**0**	**420**

Total Vehs

	A	B	C	D	E	Total
A	0	112	1113	136	0	**1361**
B	125	0	23	50	0	**198**
C	583	24	0	49	0	**656**
D	88	20	89	0	0	**197**
E	208	3	251	6	0	**468**
Total	**1004**	**159**	**1476**	**241**	**0**	**2880**

HGV%

	A	B	C	D	E	Total
A	0.0%	0.9%	16.5%	0.0%	0.0%	
B	1.6%	0.0%	0.0%	0.0%	0.0%	
C	17.5%	0.0%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	0.0%	
E	43.3%	0.0%	16.3%	0.0%	0.0%	
Total						

1630-1730

Lights

	A	B	C	D	E	Total
A	0	111	1101	136	0	**1348**
B	123	0	23	50	0	**196**
C	527	24	0	47	0	**598**
D	88	20	89	0	0	**197**
E	129	3	221	7	0	**360**
Total	**867**	**158**	**1434**	**240**	**0**	**2699**

HGVs

	A	B	C	D	E	Total
A	0	1	164	0	0	**165**
B	2	0	0	0	0	**2**
C	93	0	0	0	0	**93**
D	0	0	0	0	0	**0**
E	81	0	47	0	0	**128**
Total	**176**	**1**	**211**	**0**	**0**	**388**

Total Vehs

	A	B	C	D	E	Total
A	0	112	1265	136	0	**1513**
B	125	0	23	50	0	**198**
C	620	24	0	47	0	**691**
D	88	20	89	0	0	**197**
E	210	3	268	7	0	**488**
Total	**1043**	**159**	**1645**	**240**	**0**	**3087**

HGV%

	A	B	C	D	E	Total
A	0.0%	0.9%	13.0%	0.0%	0.0%	
B	1.6%	0.0%	0.0%	0.0%	0.0%	
C	15.0%	0.0%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	0.0%	
E	38.6%	0.0%	17.5%	0.0%	0.0%	
Total						

M40 J10: Ardley East Roundabout

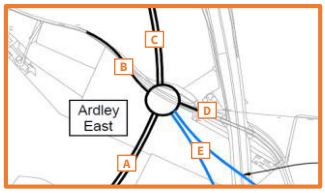


Diagram No: 57
Traffic Flow Set: ArdleyEast8_AM
Strategic Options: 17

0645-0745

Lights						
	A	B	C	D	E	Total
A	0	48	445	151	61	**705**
B	26	0	35	189	4	**254**
C	1138	16	0	132	0	**1286**
D	10	17	86	0	8	**121**
E	240	1	173	7	40	**461**
Total	**1414**	**82**	**739**	**479**	**113**	**2827**

HGVs						
	A	B	C	D	E	Total
A	0	1	121	0	85	**207**
B	0	0	0	0	0	**0**
C	102	0	0	0	0	**102**
D	0	0	0	0	0	**0**
E	94	0	28	0	4	**126**
Total	**196**	**1**	**149**	**0**	**89**	**435**

Total Vehs						
	A	B	C	D	E	Total
A	0	49	566	151	146	**912**
B	26	0	35	189	4	**254**
C	1240	16	0	132	0	**1388**
D	10	17	86	0	8	**121**
E	334	1	201	7	44	**587**
Total	**1610**	**83**	**888**	**479**	**202**	**3262**

HGV%						
	A	B	C	D	E	Total
A	0.0%	2.0%	21.4%	0.0%	58.2%	
B	0.0%	0.0%	0.0%	0.0%	0.0%	
C	8.2%	0.0%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	0.0%	
E	28.1%	0.0%	13.9%	0.0%	9.1%	
Total						

0745-0845

Lights						
	A	B	C	D	E	Total
A	0	48	462	151	56	**717**
B	26	0	36	189	3	**254**
C	1040	16	0	131	0	**1187**
D	10	17	87	0	7	**121**
E	251	1	157	8	36	**453**
Total	**1327**	**82**	**742**	**479**	**102**	**2732**

HGVs						
	A	B	C	D	E	Total
A	0	1	121	0	88	**210**
B	0	0	0	0	0	**0**
C	117	0	0	0	0	**117**
D	0	0	0	0	0	**0**
E	93	0	27	0	2	**122**
Total	**210**	**1**	**148**	**0**	**90**	**449**

Total Vehs						
	A	B	C	D	E	Total
A	0	49	583	151	144	**927**
B	26	0	36	189	3	**254**
C	1157	16	0	131	0	**1304**
D	10	17	87	0	7	**121**
E	344	1	184	8	38	**575**
Total	**1537**	**83**	**890**	**479**	**192**	**3181**

HGV%						
	A	B	C	D	E	Total
A	0.0%	2.0%	20.8%	0.0%	61.1%	
B	0.0%	0.0%	0.0%	0.0%	0.0%	
C	10.1%	0.0%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	0.0%	
E	27.0%	0.0%	14.7%	0.0%	5.3%	
Total						

M40 J10: Ardley East Roundabout

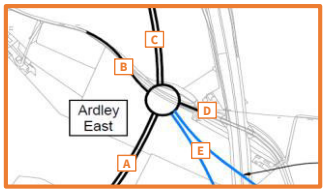


Diagram No: 58
Traffic Flow Set: ArdleyEast8_PM
Strategic Options: 17

1530-1630

Lights

	A	B	C	D	E	Total
A	0	111	679	136	250	**1176**
B	123	0	22	50	1	**196**
C	481	24	0	49	0	**554**
D	88	20	85	0	4	**197**
E	118	3	172	6	38	**337**
Total	**810**	**158**	**958**	**241**	**293**	**2460**

HGVs

	A	B	C	D	E	Total
A	0	1	98	0	86	**185**
B	2	0	0	0	0	**2**
C	102	0	0	0	0	**102**
D	0	0	0	0	0	**0**
E	90	0	35	0	6	**131**
Total	**194**	**1**	**133**	**0**	**92**	**420**

Total Vehs

	A	B	C	D	E	Total
A	0	112	777	136	336	**1361**
B	125	0	22	50	1	**198**
C	583	24	0	49	0	**656**
D	88	20	85	0	4	**197**
E	208	3	207	6	44	**468**
Total	**1004**	**159**	**1091**	**241**	**385**	**2880**

HGV%

	A	B	C	D	E	Total
A	0.0%	0.9%	12.6%	0.0%	25.6%	
B	1.6%	0.0%	0.0%	0.0%	0.0%	
C	17.5%	0.0%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	0.0%	
E	43.3%	0.0%	16.9%	0.0%	13.6%	
Total						

1630-1730

Lights

	A	B	C	D	E	Total
A	0	111	850	136	251	**1348**
B	123	0	22	50	1	**196**
C	527	24	0	47	0	**598**
D	88	20	86	0	3	**197**
E	129	3	154	7	67	**360**
Total	**867**	**158**	**1112**	**240**	**322**	**2699**

HGVs

	A	B	C	D	E	Total
A	0	1	89	0	75	**165**
B	2	0	0	0	0	**2**
C	93	0	0	0	0	**93**
D	0	0	0	0	0	**0**
E	81	0	47	0	0	**128**
Total	**176**	**1**	**136**	**0**	**75**	**388**

Total Vehs

	A	B	C	D	E	Total
A	0	112	939	136	326	**1513**
B	125	0	22	50	1	**198**
C	620	24	0	47	0	**691**
D	88	20	86	0	3	**197**
E	210	3	201	7	67	**488**
Total	**1043**	**159**	**1248**	**240**	**397**	**3087**

HGV%

	A	B	C	D	E	Total
A	0.0%	0.9%	9.5%	0.0%	23.0%	
B	1.6%	0.0%	0.0%	0.0%	0.0%	
C	15.0%	0.0%	0.0%	0.0%	0.0%	
D	0.0%	0.0%	0.0%	0.0%	0.0%	
E	38.6%	0.0%	23.4%	0.0%	0.0%	
Total						

M40 J10: Ardley East Roundabout

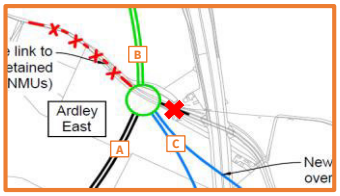


Diagram No: 59
Traffic Flow Set: ArdleyEast9_AM
Strategic Options: 10, 11, 13, 14, 15, 18, 19

0645-0745

Lights				
	A	B	C	Total
A	0	493	61	**554**
B	1164	0	168	**1332**
C	240	913	40	**1193**
Total	**1404**	**1406**	**269**	**3079**

HGVs				
	A	B	C	Total
A	0	122	85	**207**
B	102	0	55	**157**
C	94	186	4	**284**
Total	**196**	**308**	**144**	**648**

Total Vehs				
	A	B	C	Total
A	0	615	146	**761**
B	1266	0	223	**1489**
C	334	1099	44	**1477**
Total	**1600**	**1714**	**413**	**3727**

HGV%				
	A	B	C	Total
A	0.0%	19.8%	58.2%	
B	8.1%	0.0%	24.7%	
C	28.1%	16.9%	9.1%	
Total				

PCUs				
	A	B	C	Total
A	0	737	231	**968**
B	1368	0	278	**1646**
C	428	1285	48	**1761**
Total	**1796**	**2022**	**557**	**4375**

0745-0845

Lights				
	A	B	C	Total
A	0	510	56	**566**
B	1066	0	198	**1264**
C	251	1075	36	**1362**
Total	**1317**	**1585**	**290**	**3192**

HGVs				
	A	B	C	Total
A	0	122	88	**210**
B	117	0	50	**167**
C	93	153	2	**248**
Total	**210**	**275**	**140**	**625**

Total Vehs				
	A	B	D	Total
A	0	632	144	**776**
B	1183	0	248	**1431**
D	344	1228	38	**1610**
Total	**1527**	**1860**	**430**	**3817**

HGV%				
	A	B	C	Total
A	0.0%	19.3%	61.1%	
B	9.9%	0.0%	20.2%	
C	27.0%	12.5%	5.3%	
Total				

PCUs				
	A	B	C	Total
A	0	754	232	**986**
B	1300	0	298	**1598**
D	437	1381	40	**1858**
Total	**1737**	**2135**	**570**	**4442**

M40 J10: Ardley East Roundabout

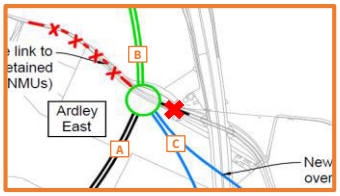


Diagram No: 60
Traffic Flow Set: ArdleyEast9_PM
Strategic Options: 10, 11, 13, 14, 15, 18, 19

1530-1630

Lights				
	A	B	C	Total
A	0	790	250	**1040**
B	604	0	215	**819**
C	118	1377	38	**1533**
Total	**722**	**2167**	**503**	**3392**

HGVs				
	A	B	C	Total
A	0	99	86	**185**
B	104	0	46	**150**
C	90	257	6	**353**
Total	**194**	**356**	**138**	**688**

Total Vehs				
	A	B	C	Total
A	0	889	336	**1225**
B	708	0	261	**969**
C	208	1634	44	**1886**
Total	**916**	**2523**	**641**	**4080**

HGV%				
	A	B	C	Total
A	0.0%	11.1%	25.6%	
B	14.7%	0.0%	17.6%	
C	43.3%	15.7%	13.6%	
Total				

PCUs				
	A	B	C	Total
A	0	988	422	**1410**
B	812	0	307	**1119**
C	298	1891	50	**2239**
Total	**1110**	**2879**	**779**	**4768**

1630-1730

Lights				
	A	B	C	Total
A	0	961	251	**1212**
B	650	0	173	**823**
C	129	1532	67	**1728**
Total	**779**	**2493**	**491**	**3763**

HGVs				
	A	B	C	Total
A	0	90	75	**165**
B	95	0	43	**138**
C	81	188	0	**269**
Total	**176**	**278**	**118**	**572**

Total Vehs				
	A	B	D	Total
A	0	1051	326	**1377**
B	745	0	216	**961**
D	210	1720	67	**1997**
Total	**955**	**2771**	**609**	**4335**

HGV%				
	A	B	C	Total
A	0.0%	8.6%	23.0%	
B	12.8%	0.0%	19.9%	
C	38.6%	10.9%	0.0%	
Total				

PCUs				
	A	B	C	Total
A	0	1141	401	**1542**
B	840	0	259	**1099**
D	291	1908	67	**2266**
Total	**1131**	**3049**	**727**	**4907**

Site Access Roundabout

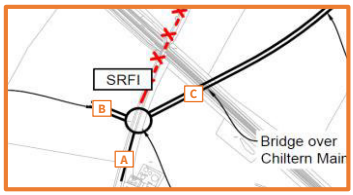


Diagram No: 61
Traffic Flow Set: Site Access_AM
Strategic Options: 10, 11, 13, 14, 15, 18, 19

0645-0745

Lights				
	A	B	C	Total
A	0	393	650	**1043**
B	42	0	55	**97**
C	904	510	0	**1414**
Total	**946**	**903**	**705**	**2554**

HGVs				
	A	B	C	Total
A	0	1	48	**49**
B	0	0	159	**159**
C	25	171	0	**196**
Total	**25**	**172**	**207**	**404**

Total Vehs				
	A	B	C	Total
A	0	394	698	**1092**
B	42	0	214	**256**
C	929	681	0	**1610**
Total	**971**	**1075**	**912**	**2958**

HGV%				
	A	B	C	Total
A	0.0%	0.3%	6.9%	
B	0.0%	0.0%	74.3%	
C	2.7%	25.1%	0.0%	
Total				

PCUs				
	A	B	C	Total
A	0	395	746	**1141**
B	42	0	373	**415**
C	954	852	0	**1806**
Total	**996**	**1247**	**1119**	**3362**

0745-0845

Lights				
	A	B	C	Total
A	0	393	662	**1055**
B	42	0	55	**97**
C	817	510	0	**1327**
Total	**859**	**903**	**717**	**2479**

HGVs				
	A	B	C	Total
A	0	1	51	**52**
B	0	0	159	**159**
C	39	171		**210**
Total	**39**	**172**	**210**	**421**

Total Vehs				
	A	B	C	Total
A	0	394	713	**1107**
B	42	0	214	**256**
C	856	681	0	**1537**
Total	**898**	**1075**	**927**	**2900**

HGV%				
	A	B	C	Total
A	0.0%	0.3%	7.2%	
B	0.0%	0.0%	74.3%	
C	4.6%	25.1%	0.0%	
Total				

PCUs				
	A	B	C	Total
A	0	395	764	**1159**
B	42	0	373	**415**
C	895	852	0	**1747**
Total	**937**	**1247**	**1137**	**3321**

Site Access Roundabout

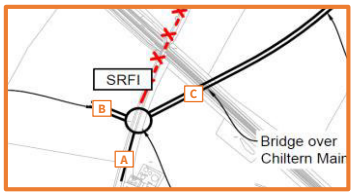


Diagram No: 62
Traffic Flow Set: Site Access_PM
Strategic Options: 10, 11, 13, 14, 15, 18, 19

1530-1730

Lights				
	A	B	C	Total
A	0	130	590	**720**
B	452	0	586	**1038**
C	643	167	0	**810**
Total	**1095**	**297**	**1176**	**2568**

HGVs				
	A	B	C	Total
A	0	1	26	**27**
B	0	0	159	**159**
C	23	171	0	**194**
Total	**23**	**172**	**185**	**380**

Total Vehs				
	A	B	C	Total
A	0	131	616	**747**
B	452	0	745	**1197**
C	666	338	0	**1004**
Total	**1118**	**469**	**1361**	**2948**

HGV%				
	A	B	C	Total
A	0.0%	0.8%	4.2%	
B	0.0%	0.0%	21.3%	
C	3.5%	50.6%	0.0%	
Total				

PCUs				
	A	B	C	Total
A	0	132	642	**774**
B	452	0	904	**1356**
C	689	509	0	**1198**
Total	**1141**	**641**	**1546**	**3328**

1630-1730

Lights				
	A	B	C	Total
A	0	130	762	**892**
B	452	0	586	**1038**
C	700	167	0	**867**
Total	**1152**	**297**	**1348**	**2797**

HGVs				
	A	B	C	Total
A	0	0	22	**22**
B	0	0	143	**143**
C	19	157		**176**
Total	**19**	**157**	**165**	**341**

Total Vehs				
	A	B	C	Total
A	0	130	784	**914**
B	452	0	729	**1181**
C	719	324	0	**1043**
Total	**1171**	**454**	**1513**	**3138**

HGV%				
	A	B	C	Total
A	0.0%	0.0%	2.8%	
B	0.0%	0.0%	19.6%	
C	2.6%	48.5%	0.0%	
Total				

PCUs				
	A	B	C	Total
A	0	130	806	**936**
B	452	0	872	**1324**
C	738	481	0	**1219**
Total	**1190**	**611**	**1678**	**3479**

M40 J10: Large Grade Separated Roundabout

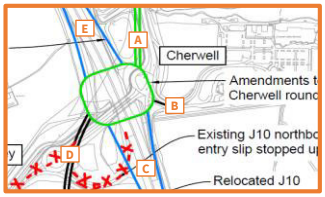


Diagram No: 63
Traffic Flow Set: TwoBridge_AM
Strategic Options: 3

0645-0745

Lights						
	A	B	C	D	E	Total
A	0	56	1166	875	183	**2280**
B	63	0	164	61	64	**352**
C	739	173	40	248	0	**1200**
D	215	21	73	0	330	**639**
E	291	145	0	350	14	**800**
Total	**1308**	**395**	**1443**	**1534**	**591**	**5271**

HGVs						
	A	B	C	D	E	Total
A	0	13	231	66	11	**321**
B	12	0	55	0	24	**91**
C	158	28	4	94	0	**284**
D	215	3	85	0	36	**339**
E	24	37	0	36	1	**98**
Total	**409**	**81**	**375**	**196**	**72**	**1133**

Total Vehs						
	A	B	C	D	E	Total
A	0	69	1397	941	194	**2601**
B	75	0	219	61	88	**443**
C	897	201	44	342	0	**1484**
D	430	24	158	0	366	**978**
E	315	182	0	386	15	**898**
Total	**1717**	**476**	**1818**	**1730**	**663**	**6404**

HGV%						
	A	B	C	D	E	Total
A	0.0%	18.8%	16.5%	7.0%	5.7%	
B	16.0%	0.0%	25.1%	0.0%	27.3%	
C	17.6%	13.9%	9.1%	27.5%	0.0%	
D	50.0%	12.5%	53.8%	0.0%	9.8%	
E	7.6%	20.3%	0.0%	9.3%	6.7%	
Total						

PCUs						
	A	B	C	D	E	Total
A	0	82	1628	1007	205	**2922**
B	87	0	274	61	112	**534**
C	1055	229	48	436	0	**1768**
D	645	27	243	0	402	**1317**
E	339	219	0	422	16	**996**
Total	**2126**	**557**	**2193**	**1926**	**735**	**7537**

0745-0845

Lights						
	A	B	C	D	E	Total
A	0	76	1181	708	238	**2203**
B	51	0	195	55	113	**414**
C	917	157	36	260	0	**1370**
D	246	28	66	0	311	**651**
E	279	151	0	424	13	**867**
Total	**1493**	**412**	**1478**	**1447**	**675**	**5505**

HGVs						
	A	B	C	D	E	Total
A	0	24	212	75	13	**324**
B	17	0	50	1	16	**84**
C	126	27	2	93	0	**248**
D	81	0	88	0	40	**209**
E	29	34	0	41	0	**104**
Total	**253**	**85**	**352**	**210**	**69**	**969**

Total Vehs						
	A	B	C	D	E	Total
A	0	100	1393	783	251	**2527**
B	68	0	245	56	129	**498**
C	1043	184	38	353	0	**1618**
D	327	28	154	0	351	**860**
E	308	185	0	465	13	**971**
Total	**1746**	**497**	**1830**	**1657**	**744**	**6474**

HGV%						
	A	B	C	D	E	Total
A	0.0%	24.0%	15.2%	9.6%	5.2%	
B	25.0%	0.0%	20.4%	1.8%	12.4%	
C	12.1%	14.7%	5.3%	26.3%	0.0%	
D	24.8%	0.0%	57.1%	0.0%	11.4%	
E	9.4%	18.4%	0.0%	8.8%	0.0%	
Total						

PCUs						
	A	B	C	D	E	Total
A	0	124	1605	858	264	**2851**
B	85	0	295	57	145	**582**
C	1169	211	40	446	0	**1866**
D	408	28	242	0	391	**1069**
E	337	219	0	506	13	**1075**
Total	**1999**	**582**	**2182**	**1867**	**813**	**7443**

M40 J10: Large Grade Separated Roundabout

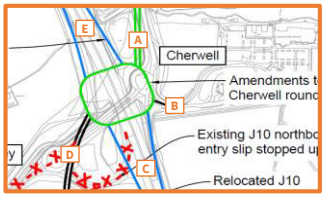


Diagram No: 64
Traffic Flow Set: TwoBridge_PM
Strategic Options: 3

1530-1630

Lights

	A	B	C	D	E	Total
A	0	97	690	306	233	**1326**
B	82	0	214	25	154	**475**
C	1202	172	38	127	0	**1539**
D	453	11	255	0	322	**1041**
E	218	183	0	223	7	**631**
Total	**1955**	**463**	**1197**	**681**	**716**	**5012**

HGVs

	A	B	C	D	E	Total
A	0	24	105	61	15	**205**
B	31	0	46	4	15	**96**
C	222	35	6	90	0	**353**
D	453	0	86	0	33	**572**
E	14	38	0	37	2	**91**
Total	**720**	**97**	**243**	**192**	**65**	**1317**

Total Vehs

	A	B	C	D	E	Total
A	0	121	795	367	248	**1531**
B	113	0	260	29	169	**571**
C	1424	207	44	217	0	**1892**
D	906	11	341	0	355	**1613**
E	232	221	0	260	9	**722**
Total	**2675**	**560**	**1440**	**873**	**781**	**6329**

HGV%

	A	B	C	D	E	Total
A	0.0%	19.8%	13.2%	16.6%	6.0%	
B	27.4%	0.0%	17.7%	13.8%	8.9%	
C	15.6%	16.9%	13.6%	41.5%	0.0%	
D	50.0%	0.0%	25.2%	0.0%	9.3%	
E	6.0%	17.2%	0.0%	14.2%	22.2%	
Total						

PCUs

	A	B	C	D	E	Total
A	0	145	900	428	263	**1736**
B	144	0	306	33	184	**667**
C	1646	242	50	307	0	**2245**
D	1359	11	427	0	388	**2185**
E	246	259	0	297	11	**813**
Total	**3395**	**657**	**1683**	**1065**	**846**	**7646**

1630-1730

Lights

	A	B	C	D	E	Total
A	0	95	767	283	253	**1398**
B	101	0	172	13	136	**422**
C	1375	154	67	139	0	**1735**
D	577	14	255	0	367	**1213**
E	290	165	0	302	16	**773**
Total	**2343**	**428**	**1261**	**737**	**772**	**5541**

HGVs

	A	B	C	D	E	Total
A	0	6	86	61	9	**162**
B	14	0	43	2	30	**89**
C	141	47	0	81	0	**269**
D	56	3	75	0	30	**164**
E	14	32	0	30	1	**77**
Total	**225**	**88**	**204**	**174**	**70**	**761**

Total Vehs

	A	B	C	D	E	Total
A	0	101	853	344	262	**1560**
B	115	0	215	15	166	**511**
C	1516	201	67	220	0	**2004**
D	633	17	330	0	397	**1377**
E	304	197	0	332	17	**850**
Total	**2568**	**516**	**1465**	**911**	**842**	**6302**

HGV%

	A	B	C	D	E	Total
A	0.0%	5.9%	10.1%	17.7%	3.4%	
B	12.2%	0.0%	20.0%	13.3%	18.1%	
C	9.3%	23.4%	0.0%	36.8%	0.0%	
D	8.8%	17.6%	22.7%	0.0%	7.6%	
E	4.6%	16.2%	0.0%	9.0%	5.9%	
Total						

PCUs

	A	B	C	D	E	Total
A	0	107	939	405	271	**1722**
B	129	0	258	17	196	**600**
C	1657	248	67	301	0	**2273**
D	689	20	405	0	427	**1541**
E	318	229	0	362	18	**927**
Total	**2793**	**604**	**1669**	**1085**	**912**	**7063**

APPENDIX 17

TN5 ADDENDUM: M40 J10 OPTIONS REPORT 'RESPONSE TO NATIONAL HIGHWAYS COMMENTS ON OPTIONS 11, 13, 18, AND 19'

OXFORDSHIRE RAILFREIGHT INTERCHANGE LIMITED

TECHNICAL NOTE 5: M40 JUNCTION 10 OPTIONS REPORT ADDENDUM: RESPONSE TO NATIONAL HIGHWAYS INITIAL COMMENTS ON OPTIONS 11, 13, 18 AND 19

ADC Infrastructure Limited
Suite 3a, King Edward Court
King Edward Street
Nottingham
NG1 1EW

www.ADCinfrastructure.com

project number: ADC1794				report reference: ADC1794-RP-M1
version	date	lead author	reviewer(s)	comments
1		[redacted]		internal draft
2	08/10/2021			issue to Transport Working Group

CONTENTS

1.0 INTRODUCTION **3**

2.0 RESPONSE TO NATIONAL HIGHWAYS INITIAL COMMENTS 21 SEPTEMBER 2021 **4**

3.0 RESPONSE TO LINSIG MODEL AUDITS..... **11**

APPENDICES

Appendix A National Highways email response
Appendix B Baynards Green committed scheme LINSIG model audit and revised results
Appendix C Baynards Green mitigation scheme LINSIG model audit and revised results
Appendix D Padbury committed scheme LINSIG model audit and revised results
Appendix E Padbury T-Junction mitigation scheme LINSIG model audit and revised results
Appendix F Cherwell roundabout reference case LINSIG model audit and revised results
Appendix G Cherwell roundabout mitigation (C-5) LINSIG model audit and revised results
Appendix H Ardley roundabout mitigation (A-2) revised results
Appendix I Ardley roundabout mitigation (A-3) revised results
Appendix J Ardley East roundabout option (AE-6) LINSIG model audit and revised results
Appendix K Ardley East roundabout option (AE-6) LINSIG model audit and revised results

1.0 INTRODUCTION

1.1 ADC Infrastructure Ltd and BWB Consulting Ltd are appointed by Oxfordshire Railfreight Interchange Ltd (the Applicant) to assess and design the transport and infrastructure requirements of a Nationally Significant Infrastructure Project (NSIP), that being a proposed Strategic Rail Freight Interchange in Oxfordshire, to be known as Oxfordshire Strategic Rail Freight Interchange (OxSRFI).

1.2 Ensuring good access to the Strategic Road Network (SRN) is a prerequisite for the proposed OxSRFI development. Initial investigations into this, and consultation with Oxfordshire County Council (OCC) and National Highways (formerly Highways England), advanced the access strategy such that it is centred on provision of significant improvements to Junction 10 of the M40 motorway, in combination with a provision of a new bypass for the village of Ardley, a new relief road around the north-east quadrant of the village of Middleton Stoney and a Heyford Park link.

1.3 Technical Note 5[1] (TN5) identified and assessed a long list of potential interventions at M40 Junction 10 that could be implemented by the OxSRFI scheme to mitigate the impact of the OxSRFI development at the junction. A short list of options (Options 11, 13, 18 and 19) was identified to be taken forward for further consideration.

1.4 Following a meeting on the 23 of July 2021, National Highways requested that the option for a large single grade-separated gyratory (Option 3) be given further consideration to examine whether identified capacity constraints could be overcome. Hence, ADC Infrastructure and BWB Consulting jointly prepared and issued Technical Note 8[2] (TN8) which considers in greater detail the opportunity to provide a large single grade-separated gyratory at M40 Junction 10. TN8 concluded that the design team consider that the proposed OxSRFI Options 11, 13, 18 and 19 presented in TN5 offer long-term benefit over a large complex signal controlled multi-lane roundabout.

1.5 National Highways provided initial feedback on the preferred options (Option 11, 13, 18 and 19) presented in TN5 via email on 21 September 2021, including DMRB compliance checks and audits of the LinSig modelling which supports TN5. Attached to the email were a series of audit forms for each of the key junction assessed in TN5. The email and attachments are provided at **Appendix A**.

1.6 National Highways will provide a finalised version of their comments on TN5 in due course. However, it was agreed at Transport Working Group meeting held on 24 September 2021 that to assist National Highways with their ongoing review of TN5, along with TN8, the Applicant would prepare a response to the initial feedback provided by email on 21 September 2021. This document has therefore been prepared to provide that response.

[1] Technical Note 5 – M40 Junction 10 Options Report, report reference ADC1794-RP-M -V3, ADC June 2021.
[2] Technical Note 8 – M40 Junction 10 Options 3A and 3B, report reference ADC1794-RP-Q -V4, ADC October 2021.

2.0 RESPONSE TO NATIONAL HIGHWAYS INTIAL COMMENTS OF 21 SEPTEMBER 2021

2.1 The email from Nation Highways on 21 September 2021 (**Appendix A**) set out their initial feedback and comments on the preferred highway solutions (Options 11, 13, 18 and 19) identified for M40 Junction 10 in TN5. The comments, relating to the principle of the options, the junction arrangements and matters of geometrical compliance with the standards, are reproduced in the table below, which also provides the design team response to each point raised. The National Highways email also provided audits of the LinSig models presented in TN5 and these are discussed in Section 3 of this report.

National Highways comments				Design team response
Item		Drawing number	Comment	
1	General observations	N/A	Large number of junctions are proposed as part of all preferred options. For motorists using the Services at M40 J10, it would mean that will have to negotiate a large number of junctions in order to reach to their destinations.	Options 11, 13, 18 and 19 propose one additional junction when compared to the existing highway layout. The additional junction would only materially affect drivers using the M40 northbound diverge or M40 southbound merge (local access only as A43 to M40 southbound would be provided as a free-flow link). All other movements at the junction would essentially be as existing. However, providing the free-flow link for the large A43 to M40 southbound traffic flow would remove this traffic from two junctions, significantly reducing congestion and improving journey times. Access to Cherwell Valley MSA is considered at paragraphs 7.6 to 7.9 of TN8.
			M40 southbound diverge meets the M40 J10 interchange at signalised T junction. The existing slip road here is single lane and therefore we recommend that the geometry should be checked to ensure compliance with DMRB.	Agreed, we will do this as the design is developed.
			We note that the junction arrangements have not been fully developed and as such are indicative. Therefore, we advise ADC to	The order limits are currently set with sufficient space to permit flexibility in the layout as the design is developed.

National Highways comments				Design team response
Item		Drawing number	Comment	
			consider if the available land is sufficient to modify junctions geometry as required.	
2	Baynards Green Roundabout (options 11, 13, 18 & 19)	OxSRFI-ADC-GEN-XX-SK-CH-SK01	AECOM have not undertaken a detailed review of this layout. As the junction arrangement in this option is signalised, entry curvature is not required. Based on our high-level review, we consider that the design looks feasible with room to adjust if required.	Noted, however, as previously commented we understand that departures for entry path curvature are required. This is the same as for the Growth Deal scheme and we have asked National Highways/Kier for an update on where they are with the departures for that scheme.
3	A43 realigned highway (options 11, 13, 18 & 19)	N/A	No geometric information has been provided as part of the submitted plans, however, the realigned highway appears to be achievable to standards.	Noted and agreed.
4	North facing M40 slip roads (options 11, 13, 18 & 19)	N/A	It is recommended that ADC should confirm that this is a suitable arrangement based on traffic demands from BTM assessments for the proposed development.	Noted and agreed.
5	Junction 10 northbound merge (options 11, 18)	N/A	While no information has been provided, adequate room appears to be available to accommodate the replacement slip road.	Noted and agreed.
6	South facing Junction 10 A43 to M40 southbound free flow link (options 11, 13, 18 & 19)	OxSRFI-BWB-GEN-XX-SK-CH-SK021	We note that this arrangement may cause confusion, as the outside 2 lanes are to M40. Possible alternative is to develop centre lane to go both directions.	The layout is commensurate with a standard diverge, on the basis that the main flow is to the M40 southbound. We can however review this diverge further as the design develops.
			Two lane link road with departures in horizontal alignment R=360m 1 step together with relaxations in transition rate of changes and merge type noted as departure from standard. This may be acceptable as a departure from standard.	Noted, as the design is developed we would have early engagement with National Highways SES to confirm the acceptance of this departure.
			Type B extended merge with lane drop is consistent with 2 lane taper merge.	Noted and agreed.

National Highways comments				Design team response
Item		Drawing number	Comment	
			Visibility splays appear to be achievable. Widening to the slip road bridge is required to achieve desirable minimum visibility.	Noted and agreed.
			Vertical geometry needs modification at nosing but won't have a great impact on the design.	Noted and agreed.
7	Padbury Roundabout (options 11,13, 18 & 19)	OxSRFI-ADC-GEN-XX-SK-CH-SK02	Geometry not detail checked, signalised so entry curvature not required design looks feasible with room to adjust if required. Potential issue with change to signalised T junction form from M40 S/B off slip. Queue lengths may back up to M40. No U turn facility for A43.	Noted but U-turns are readily achievable at Baynard's Green which would be a short detour for errant vehicles. The LinSig modelling presented in Section 3 of this report shows that for a T-junction arrangement, queuing on the southbound diverge slip road would be 6.5 pcus in the morning peak hour and 7.5 pcus in the evening peak hour. Therefore, queue lengths could be easily accommodated on the slip road.
8	Cherwell Roundabout (options 11,13, 18 & 19)	OxSRFI-ADC-GEN-XX-SK-CH-SK03	The geometry of this option has not been checked in detail, however, as the option is signalised entry curvature is not required. The design appears feasible with room to adjust if required.	Noted and agreed. Based on the proposed layout we agree that this is a signal controlled junction and not a signal controlled roundabout.
			We note that this option does not have a U turn facility for A43 / services.	Noted but U-turns are readily achievable at Ardley roundabout which would be a short detour for errant vehicles.
9	Ardley Roundabout (options 13, 19). Options 11 and 18 slight enlargement of existing roundabout	OxSRFI-ADC-GEN-XX-SK-CH-SK20	The geometry of this option has not been checked in detail, however, as the option is signalised entry curvature is not required. The design appears feasible with room to adjust if required.	Noted and agreed. See previous commentary for item 2 regarding entry path curvature.
			We note that the entry path curvature for southwest to north entry does not appear to meet standards as such will need to be considered at future stages.	We will review the entry path curvature as the design is developed.

National Highways comments				Design team response
Item		Drawing number	Comment	
10	Ardley Roundabout slip road loop (options 13, 19)	N/A	Based on a high-level review, the geometry appears to comply with standards, however, the vertical geometry is unknown but we would expect to work as existing.	Noted and agreed.
11	Ardley East Roundabout (options 11, 13, 18 & 19)	OxSRFI-ADC-GEN-XX-SK-CH-SK04	The geometry of this option has not been checked in detail, however, as the option is signalised entry curvature is not required. The design appears feasible with room to adjust if required.	Noted and agreed. See previous commentary for item 2 regarding entry path curvature.
			We note that this option does not allow for a connection to Ardley Village except through link road.	Two of the options (18 and 19) would have no connection to Ardley Road with that being taken over or under the bypass on a bridge, two (11 and 13) would have no connection to Ardley Village (except NMUs) but retain a connection to Bucknell.
12	Ardley East Roundabout (options 18, 19). Options 11 and 13 similar but moved north slightly	OxSRFI-ADC-GEN-XX-SK-CH-SK05	The geometry of this option has not been checked in detail, however, as the option is signalised entry curvature is not required. The design appears feasible with room to adjust if required. We note that this option does not allow for a connection to Ardley Village or Ardley Road to Bucknell except through link road.	As per response to Item 11.
13	Link Road Ardley Roundabout to Ardley Roundabout east	N/A	We note that no information has been provided regarding this but it appears to be achievable to standards.	Noted and agreed.
14	Ardley Road Bridge	N/A	No information provided but appears to be achievable to standards. We note that the vertical alignment on this option may be challenging.	Noted and agreed.
15	South facing M40 slip roads (options 11, 13, 18 & 19) – Junction 10 southbound merge	OxSRFI-BWB-GEN-XX-SK-CH-SK019	Based on the contents of TN5 we note that the traffic flows indicate a requirement for a type E layout with 4 lanes downstream with a lane gain with 2 lanes on the slip road. A permitted change is required (as noted in TN5) to use a two-lane ghost island merge with Auxiliary Lane Type C/E3 Sketch 19 shows a single lane slip road with a type A merge which is not in line with the report. As such we would welcome some clarity.	The table at paragraph 5.26 of TN5 presents the traffic flows that are forecast for the new M40 southbound merge (note that this is local traffic only as the A43 to M40 southbound traffic would use the new free-flow merge). For the preferred options (11, 13, 18 and 19) the merge flows are 377 (AM1) and 399 (AM2) vehicles in the AM

National Highways comments				Design team response
Item		Drawing number	Comment	
				peak hour and 601 in the PM peak hour. When these are input into Figure 3.12b of DMRB CD 122, the appropriate merge is a layout A (taper). Hence this is the arrangement shown on drawing OxSRFI-BWB-GEN-XX-SK-CH-SK019. It is recognised that based on the AM1 flow set, 4 lanes would be required on the M40 mainline. The required lane gain would be at the A43 to M40 southbound free-flow merge and a departure from standard would be required. This is considered in relation to the free-flow link at paragraph 5.11 of TN5. The permitted change relates to the options that would see the upgrading of the existing M40 southbound merge to a two-lane merge.
			In addition, we note that the visibility splays appear to be achievable. With regards to the visibility, we note that widening to the slip road bridge is required to achieve desirable minimum visibility.	Noted and agreed.
			We also note that the length of road is close to that at which it becomes an interchange link which has a higher design speed. The Slip is circa 720m and an interchange link would be required at 750m.	Noted and agreed.
16	South facing M40 slip roads (options 11, 13, 18 & 19) – Junction 10 northbound diverge	OxSRFI-BWB-GEN-XX-SK-CH-SK019	Traffic flows indicate a requirement for a type D layout with 4 lanes upstream with a lane drop to 2 lanes on the slip road. A departure from standard will be required (as noted in TN5) to use a two-lane ghost island diverge Type B1 which appears to be to general geometric standards. We also note that visibility splay will require	Noted and agreed.

National Highways comments				Design team response
Item		Drawing number	Comment	
			widened verges. While it is not shown we consider this to be achievable with the land available.	
17	Link Ardley East Roundabout to OxSRFI principal access Roundabout	N/A	No information provided but appears to be achievable to standards.	Noted and agreed.
18	Options 11 and 18 – drawings	N/A	In addition, we note that Strategic Options 11 and 18, no drawings have been provided. Therefore, it is not clear which models would need to be checked for these options. As such, we would welcome further clarity regarding this.	Except for the Ardley Roundabout, the junction layouts for Options 11 and 18 are the same of the options provided in options 13 and 19, respectively. No drawing was provided at this stage for the Ardley Roundabout under options 11 and 18 as we considered that the layout would be achievable within the land available. Should National Highways wish to pursue either of options 11 and 18, this layout will be developed. As noted at the table at paragraph 6.31 of TN5, no separate assessment of Options 18 and 19 were tested for the Ardley Roundabout as they are a variation on Options 11 and 13 (the difference being the layout of the Ardley East Roundabout). Option 11 was tested (junction option A-3). But we have now updated the modelling for the Ardley Roundabout in line with the comments received on the other junctions and this is presented in Section 3 of this report.
19	Options 13 and 19 LinSig	N/A	Furthermore, for Strategic Option 13 and 19 – we could not find any LinSig models for Ardley roundabout which could match the	As above, Option 19 was not separately tested as it is a variation of Option 13.

National Highways comments				Design team response
Item		Drawing number	Comment	
			provided option drawing layout. As such, we would welcome further information and clarification regarding this	However, Option 13 was tested (junction option A-2). Notwithstanding the above, we have updated the modelling for the Ardley Roundabout in line with the comments received on the other junctions and this is presented in Section 3 of this report.

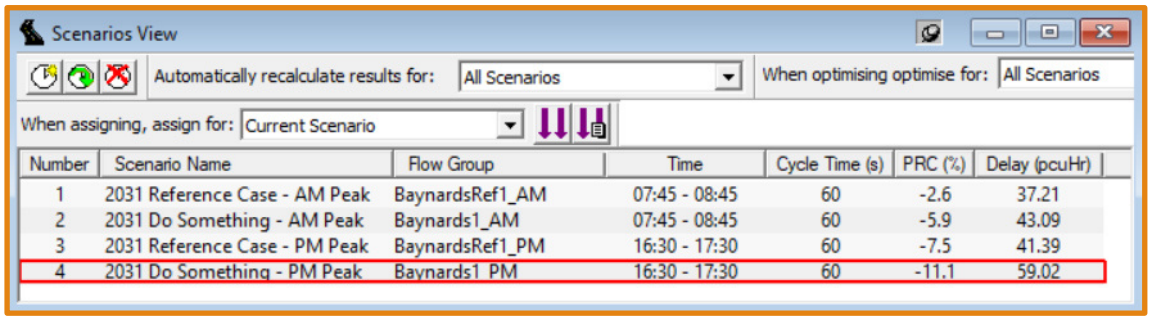
3.0 RESPONSE TO LINSIG MODEL AUDITS

3.1 The email from National Highways on 21 September 2021 (**Appendix A**) provided audit reports of the key LinSig models presented in TN5 in relation to the future baseline and preferred options 11, 13, 18 and 19. The comments provided in these audit reports have been considered and revisions to the LinSig models made were appropriate. The model revisions and implications for the conclusions drawn are discussed in this section.

Baynards Green Roundabout (A43/B4100) – committed scheme

3.2 As discussed in Section 3 of TN5, National Highways have a committed improvement scheme at the Baynards Green roundabout and hence a LinSig model of the committed scheme was prepared and presented in TN5 to establish the future baseline position at the junction. National Highways have audited the committed scheme LinSig model and the audit report is provided at **Appendix B**.

3.3 The issues raised in the Baynards Green committed scheme model audit are largely focused on consistency in the approach to saturation flows. The issues raised have been considered and appropriate amendments to the model have been made. The model changes are logged in the model audit report provided at **Appendix B** for ease of reference. The revised committed scheme model results are also provided at **Appendix B** (the .lsg3x file will be provided via email) and the results are summarised below.



Number	Scenario Name	Flow Group	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2031 Reference Case - AM Peak	BaynardsRef1_AM	07:45 - 08:45	60	-2.6	37.21
2	2031 Do Something - AM Peak	Baynards1_AM	07:45 - 08:45	60	-5.9	43.09
3	2031 Reference Case - PM Peak	BaynardsRef1_PM	16:30 - 17:30	60	-7.5	41.39
4	2031 Do Something - PM Peak	Baynards1_PM	16:30 - 17:30	60	-11.1	59.02

3.4 As shown, the revised model forecasts that for both the 2031 morning and evening peak hours, the junction would operate over capacity in both the Reference Case scenario and the Do Something scenario.

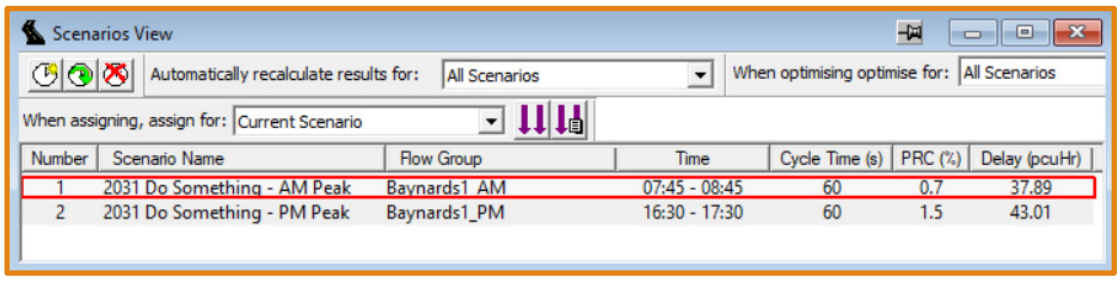
3.5 When compared to the results shown at paragraph 3.8 of TN5, the revised model forecast that the junction would operate better than previously shown. However, the model changes have not altered the conclusion drawn in TN5 that the committed scheme does not have the capacity to accommodate the background and development traffic, and mitigation would be required.

Baynards Green Roundabout – proposed mitigation

3.6 TN5 presented a mitigation scheme at Baynards Green which would provide additional widening on the A43 northbound and southbound approaches, with an additional circulating lane on the at the A43 northbound approach. A LinSig model of the proposed mitigation was prepared and showed that the mitigation would provide a better than nil-detriment improvement when compared to the committed scheme.

3.7 National Highways have not provided an audit of the Baynards Green mitigation LinSig model. However, many of the issues identified for the committed scheme model are also applicable to the mitigation model, which has therefore been updated for consistency.

3.8 The revised mitigation scheme model results are provided at **Appendix C** (the .lsg3x file will be provided via email) and the results are summarised below.



Number	Scenario Name	Flow Group	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2031 Do Something - AM Peak	Baynards1_AM	07:45 - 08:45	60	0.7	37.89
2	2031 Do Something - PM Peak	Baynards1_PM	16:30 - 17:30	60	1.5	43.01

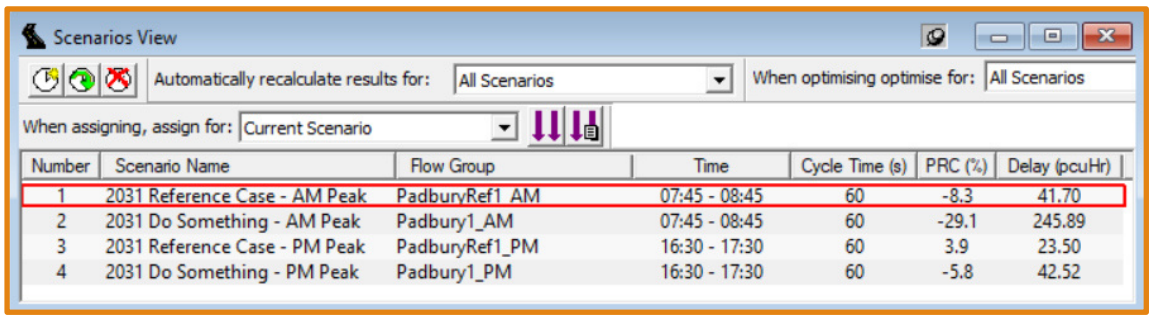
3.9 As shown, the revised model forecasts that for both the 2031 morning and evening peak hours, the junction would operate acceptably with the development in place. The practical reserve capacity (PRC) is positive for both peak hours, indicating that all links are operating less than 90% saturated.

3.10 Therefore, as concluded in TN5, the mitigation proposals would provide a better than nil-detriment improvement when compared to the committed scheme.

Padbury Roundabout (A43/M40 southbound off-slip) – committed scheme

3.11 As discussed in Section 3 of TN5, National Highways have a committed improvement scheme at the Padbury roundabout and hence a LinSig model of the committed scheme was prepared and presented in TN5 to establish the future baseline position at the junction. National Highways have audited the committed scheme LinSig model and the audit report is provided at **Appendix D**.

3.12 The issues raised in the Padbury committed scheme model audit included changes to flare lengths, consistency in the approach to saturation flows and platoon dispersion. The issues raised have been considered and appropriate amendments to the model have been made. The model changes are logged in the model audit report provided at **Appendix D** for ease of reference. The revised committed scheme model results are also provided at **Appendix D** (the .lsg3x file will be provided via email) and the results are summarised below.



Number	Scenario Name	Flow Group	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2031 Reference Case - AM Peak	PadburyRef1_AM	07:45 - 08:45	60	-8.3	41.70
2	2031 Do Something - AM Peak	Padbury1_AM	07:45 - 08:45	60	-29.1	245.89
3	2031 Reference Case - PM Peak	PadburyRef1_PM	16:30 - 17:30	60	3.9	23.50
4	2031 Do Something - PM Peak	Padbury1_PM	16:30 - 17:30	60	-5.8	42.52

3.13 When compared to the results shown at paragraph 3.15 of TN5, the revised model forecast that the junction would operate better in all scenarios than previously shown. In the 2031 morning peak hour the junction is forecast to operate over capacity in both the Reference Case scenario and the Do Something scenario.

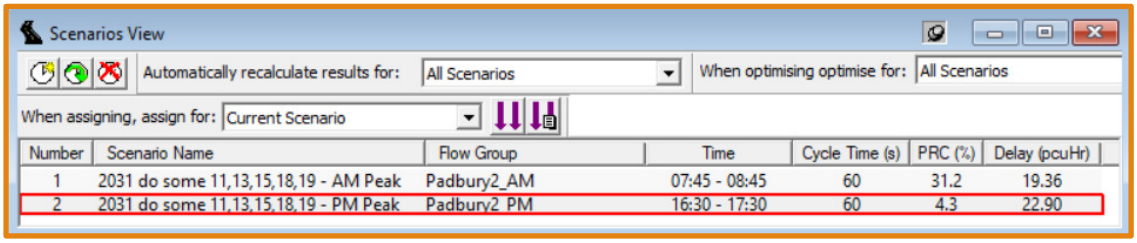
3.14 In the 2031 evening peak hour the results show that the junction would operate within capacity in the Reference Case scenario with a PRC of 3.9%. The addition of the development traffic would force the junction over capacity with a PRC of -5.8% in the Do Something scenario.

3.15 Therefore, as concluded in TN5, the addition of the development traffic exacerbates the congestion issue at the junction in the morning peak hour and would lead to the junction also operating over capacity in the evening peak. Therefore, the junction with the committed improvement does not have the capacity to accommodate the background and development traffic.

Padbury –T-junction mitigation scheme (P-4)

3.16 TN5 considered several options to mitigate the impact of the proposed development at Padbury roundabout, concluding that for strategic options 11, 13, 18 and 19, the most appropriate option was to convert the junction to a traffic signal controlled T-junction. A LinSig model of the proposed T-junction was prepared and showed that it would operate acceptably with PRC of 34.8% and 6.2% in the respective morning and evening peak hours.

3.17 National Highways have audited the committed scheme LinSig model and the audit report is provided at **Appendix E**. The issues raised in the Padbury T-junction scheme model audit included consistency in the approach to saturation flows and changes to some intergreens. The issues raised have been considered and appropriate amendments to the model have been made, as logged in the model audit report provided at **Appendix E**. The revised Padbury T-junction mitigation scheme model results are provided at **Appendix E** (the .lsg3x file will be provided via email) and the results are summarised below.



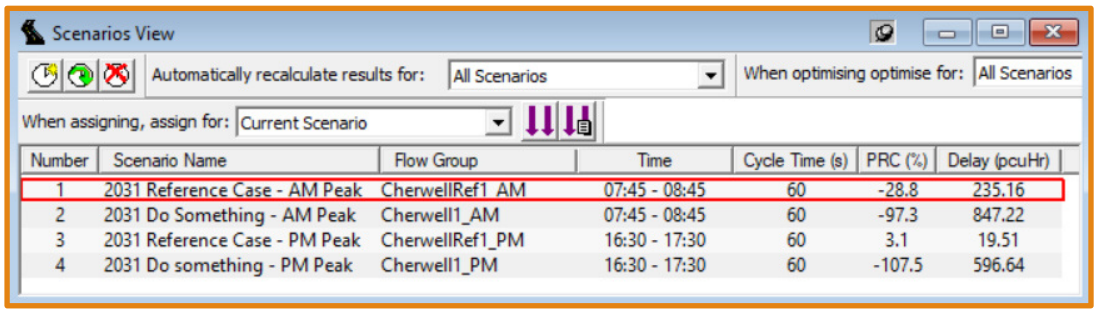
Number	Scenario Name	Flow Group	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2031 do some 11,13,15,18,19 - AM Peak	Padbury2_AM	07:45 - 08:45	60	31.2	19.36
2	2031 do some 11,13,15,18,19 - PM Peak	Padbury2_PM	16:30 - 17:30	60	4.3	22.90

3.18 As shown, the revised model forecasts that for both the 2031 morning and evening peak hours, the junction would operate acceptably with the development in place. Therefore, as concluded in TN5, the proposed mitigation proposal would provide a better than nil-detriment improvement when compared to the committed scheme.

Cherwell Roundabout (A43/MSA/M40 southbound on-slip) – reference case

3.19 The existing Cherwell roundabout was modelled in TN5 to establish the future baseline position at the junction. National Highways have audited the reference case LinSig model and the audit report is provided at **Appendix F**.

3.20 The issues raised in the Cherwell roundabout reference case model audit included changes to short lanes and flare lengths, consistency in the approach to saturation flows and treatment of internal queue limits and random delay. The issues raised have been considered and appropriate amendments to the model have been made, as logged in the model audit report provided at **Appendix F**. The revised reference case model results are also provided at **Appendix F** (the .lsg3x file will be provided via email) and the results are summarised below.



Number	Scenario Name	Flow Group	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2031 Reference Case - AM Peak	CherwellRef1_AM	07:45 - 08:45	60	-28.8	235.16
2	2031 Do Something - AM Peak	Cherwell1_AM	07:45 - 08:45	60	-97.3	847.22
3	2031 Reference Case - PM Peak	CherwellRef1_PM	16:30 - 17:30	60	3.1	19.51
4	2031 Do something - PM Peak	Cherwell1_PM	16:30 - 17:30	60	-107.5	596.64

3.21 When compared to the results shown at paragraph 3.22 of TN5, the revised model forecast that the junction would operate better in all scenarios than previously shown. In the 2031 morning peak hour the junction is forecast to operate over capacity in both the Reference Case scenario and the Do Something scenario.

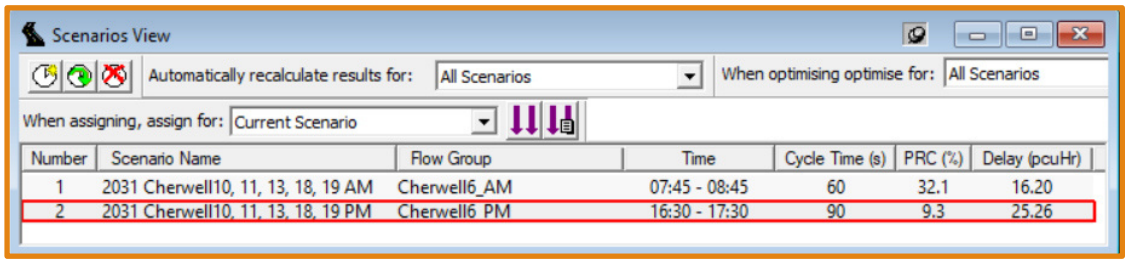
3.22 In the 2031 evening peak hour the results show that the junction would operate within capacity in the Reference Case scenario with a PRC of 3.1%. The addition of the development traffic would force the junction over capacity with a PRC of -107.5% in the Do Something scenario.

3.23 Therefore, as concluded in TN5, the addition of the development traffic exacerbates the congestion issue at the junction in the morning peak hour and would lead to the junction also operating over capacity in the evening peak. Therefore, the junction does not have the capacity to accommodate the background and development traffic.

Cherwell Roundabout – mitigation (C-5)

3.24 TN5 considered several options to mitigate the impact of the proposed development at Cherwell roundabout, concluding that for strategic options 11, 13, 18 and 19, the most appropriate option was to provide a fully signal controlled arrangement, which would effectively form a T-junction arrangement with displaced right-turn movements, as shown on **drawing OxSRFI-ADC-GEN-XX-SK-CH-SK03-S1-P1**. A LinSig model of the proposed mitigation scheme was prepared and showed that it would operate operates acceptably with a PRC of 21.7% in the morning peak hour and a PRC of 5.6% in evening peak hour.

3.25 National Highways have audited the proposed mitigation scheme LinSig model and the audit report is provided at **Appendix G**. The issues raised in the mitigation scheme model audit included changes to a flare length and consistency in the approach to saturation. The issues raised have been considered and appropriate amendments to the model have been made, as logged in the model audit report provided at **Appendix G**. The revised Cherwell mitigation scheme model results are provided at **Appendix G** (the .lsg3x file will be provided via email) and the results are summarised below.



Number	Scenario Name	Flow Group	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2031 Cherwell10, 11, 13, 18, 19 AM	Cherwell6_AM	07:45 - 08:45	60	32.1	16.20
2	2031 Cherwell10, 11, 13, 18, 19 PM	Cherwell6_PM	16:30 - 17:30	90	9.3	25.26

3.26 As shown, the revised model forecasts that for both the 2031 morning and evening peak hours, the junction would operate acceptably with the development in place. Therefore, as concluded

in TN5, the proposed mitigation proposal would provide a better than nil-detriment improvement when compared to the committed scheme.

Ardley Roundabout (A43/M40 northbound off-slip/B430) – reference case

3.27 The existing priority controlled Ardley roundabout was modelled in TN5 using the Arcady module of Junctions 9 to establish the future baseline position at the junction. The results showed that the roundabout is forecast to operate acceptably (i.e. within 0.85 RFC) in the morning peak hour 2031 Reference Case scenario. However, in the 2031 Reference Case evening peak hour scenario the roundabout is forecast to operate over capacity, with the M40 northbound off-slip arm of the roundabout operating with a RFC of 0.99.

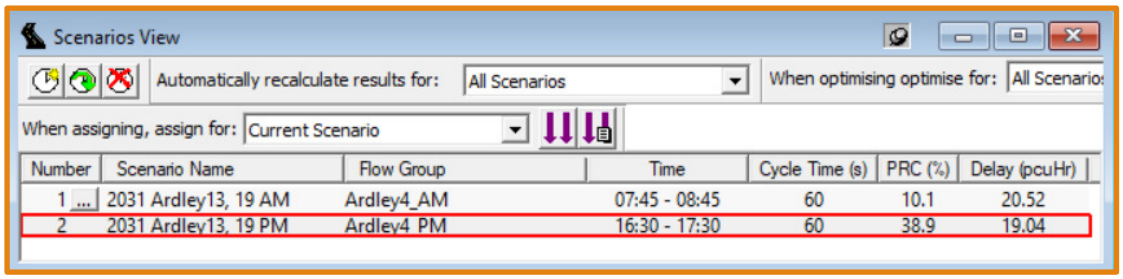
Ardley Roundabout – mitigation (A-2 and A-3)

3.28 TN5 considered several options to mitigate the impact of the proposed development at Ardley roundabout, concluding that for strategic options 11, 13, 18 and 19, the most appropriate option was to provide a fully signal controlled roundabout. Options 11 and 18 (option A-3) would provide a 4-arm roundabout with the M40 northbound merge relocated to the northern side of the roundabout. For options 13 and 19 (option A-2), the roundabout would 3 entry lanes and 4 exit arms, with the M40 northbound merge would remaining as existing, though realigned. LinSig models of both mitigation schemes were prepared. Mitigation option A-3 was shown to operate acceptably with a PRC of 13.3% in the morning peak hour and a PRC of 0.5% in evening peak hour. Mitigation option A-2 was shown to operate acceptably with a PRC of 4.5% in the morning peak hour and a PRC of 25.5% in evening peak hour.

3.29 National Highways have not provided LinSig model audit reports for the Ardley mitigation options. However, so that there is consistency across all option testing modelling, the key issues raised in the model audit reports for the other junctions discussed in this report, primarily consistency in the approach to saturation flows, have also been applied to the Ardley roundabout mitigation option models.

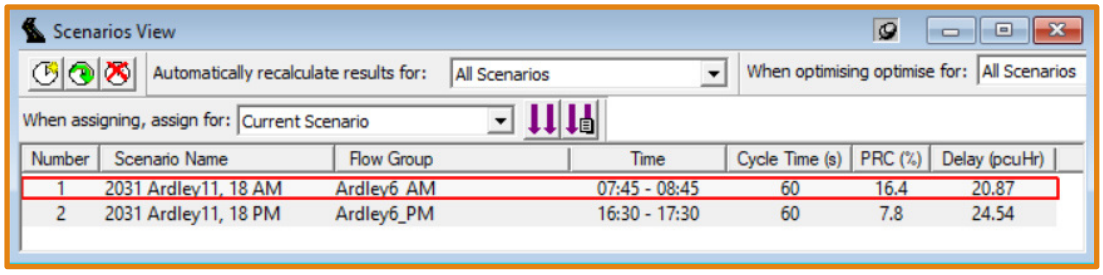
3.30 The revised Ardley mitigation scheme model results are provided at **Appendix H** for A-2 and **Appendix I** for A-3 (the .lsg3x file will be provided via email) and the results are summarised below.

Ardley Roundabout – mitigation A-2



3.31 As shown, the revised model forecasts that for both the 2031 morning and evening peak hours, the A-2 mitigation scheme would operate acceptably with the development in place.

Ardley Roundabout – mitigation A-2



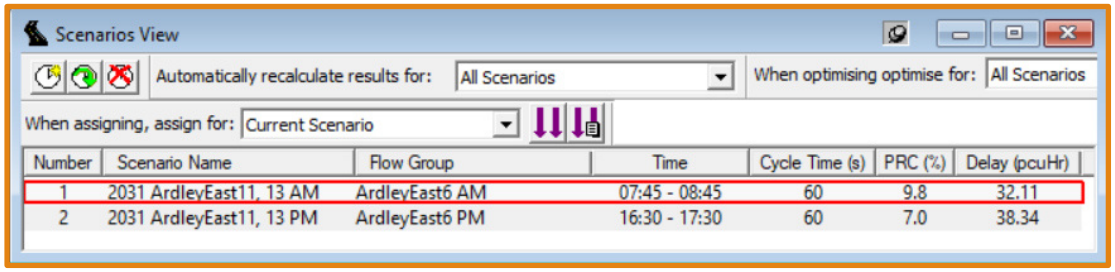
3.32 As shown, the revised model forecasts that for both the 2031 morning and evening peak hours, the A-3 mitigation scheme would operate acceptably with the development in place.

Ardley East Roundabout – proposed options AE-6 and AE-8

3.33 TN5 considered several options for the proposed Ardley East roundabout, with option AE-6 (with a connection to Ardley Road) preferred for strategic options 11 and 13, and option AE-8 (no connection to Ardley Road) preferred for strategic options 18 and 19. LinSig models of both AE-6 and AE-8 Ardley East options were prepared as part of TN5. Option AE-6 was shown to operate acceptably with a PRC of 6.8% in the morning peak hour and a PRC of 8.5% in evening peak hour. Option AE-8 was shown to operate acceptably with a PRC of 8.2% in the morning peak hour and a PRC of 13.2% in evening peak hour.

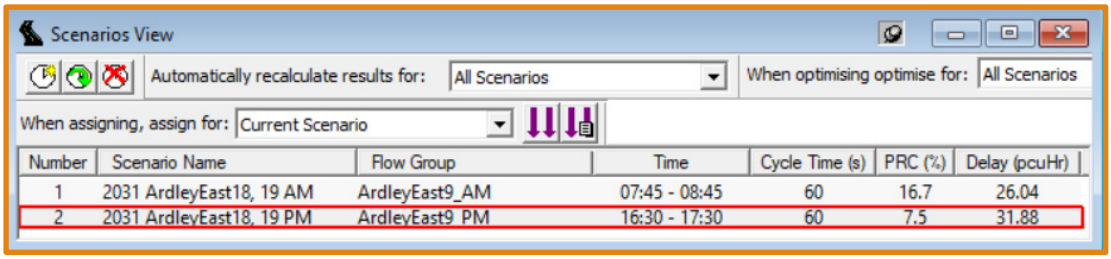
3.34 National Highways have audited the proposed Ardley East roundabout AE-6 and AE-8 LinSig models and the audit reports are provided at **Appendices J and K**, respectively. The issues raised have been considered and appropriate amendments to the model have been made, as logged in the model audit report provided at **Appendices J and K**. The revised Ardley East roundabout AE-6 and AE-8 model results are provided at **Appendices J and K** (the .lsg3x file will be provided via email) and the results are summarised below.

Ardley East Roundabout – mitigation AE-6



3.35 As shown, the revised model forecasts that for both the 2031 morning and evening peak hours, the AE-6 mitigation scheme would operate acceptably with the development in place.

Ardley East Roundabout – mitigation AE-8



3.36 As shown, the revised model forecasts that for both the 2031 morning and evening peak hours, the AE-8 mitigation scheme would operate acceptably with the development in place.

Headroom comparison

3.37 The table at paragraph 4.1 of TN8 provides a comparison between the forecast capacity at the existing M40 Junction 10 (no OxSRFI development) with the forecast capacity at the junction under Options 3A, 3B, 11, 13, 18 and 19 with the OxSRFI development in place.

3.38 This table has been updated below to capture the revised model results presented in this report.

Existing		Option 3A	Option 3B	Option 11/18		Option 13/19	
Cherwell (PRC)	Ardley (RFC)	Total (PRC)	Total (PRC)	Cherwell (PRC)	Ardley (PRC)	Cherwell (PRC)	Ardley (PRC)
-28.8% AM 3.1% PM	81% AM 99% PM	0.8% AM 3.1% PM	-15.3% AM -17.5% PM	32.1% AM 9.3% PM	16.4% AM 7.8% PM	32.1% AM 9.3% PM	10.1% AM 38.9% PM

3.39 As shown in the table above, the existing Cherwell and Ardley junctions would be over capacity in 2031 and would therefore require significant improvement to facilitate background growth to 2031 and the proposed development. The table also demonstrates that even compared to the best-case option for a single grade separated junction, the identified Options 11, 13, 18 and 19 offer headroom to accommodate future growth.

APPENDIX A

NATIONAL HIGHWAYS EMAIL RESPONSE

Mark Higgins

From: [redacted]
Sent: 21 September 2021 17:37
To: [redacted]
[redacted]
Subject: FW: OxSRFI - TN5 'M40 J10 Options Report and TN6 'M40 J10 Options Report - Traffic Flow Derivation' - dwgs
Attachments: 1. LINSIG-210406 Baynards Gn - committed scheme Check Sheet.docx; 2. LINSIG-210407 Padbury - committed scheme Check Sheet.docx; 3. LINSIG-210407 Padbury - P-4 T-junction option Check Sheet.docx; 4. LINSIG-2031_DS_M40J10 _Cherwell_reference case Check Sheet.docx; 5. LINSIG-2031_DS_M40J10_Cherwell - Junction option C-5 Check Sheet.docx; 6. LINSIG-2031_DS_M40J10_ArdleyEast_AE6 _ArdleyEast6 (Signals Option) Check Sheet.docx; 7. LINSIG-2031_DS_M40J10 _ArdleyEast_AE8_ArdleyEast9 (Signals Option) - No Ardley Rd Link Check Sheet.docx

Importance: High

Follow Up Flag: Follow up
Flag Status: Flagged

Hi [redacted]

Aecom have undertaken some DMRB compliance checks and modelling reviews. Currently, the advice to National Highways is subject to quality auditing. However, given that we have a meeting on Friday, I am sending you the attached documents and the comments below which will form the basis of the conversation. A finalised version (technical note) will be forwarded in due course picking this up.

Aecom's advice:

Based on our initial review of the preferred options (Options 11,12,18 and 19) identified as part of TN5, we note that the proposals appear to be feasible and generally to the standard or with enough room to adjust if required. However, as you will appreciate, there may be matters which can only be identified at a later stage when a detailed review is undertaken by our designers and various teams at Highways England. In respect to our high level review of the preferred options, in terms of design we have following comments to make:

General observations

- Large number of junctions are proposed as part of all preferred options. For motorists using the Services at M40 J10, it would mean that will have to negotiate a large number of junctions in order to reach to their destinations.
- M40 southbound diverge meets the M40 J10 interchange at signalised T junction. The existing slip road here is single lane and therefore we recommend that the geometry should be checked to ensure compliance with DMRB.
- We note that the junction arrangements have not been fully developed and as such are indicative. Therefore, we advise ADC to consider if the available land is sufficient to modify junctions geometry as required.

Baynards Green Roundabout (Options 11,13, 18 & 19)
Drawing number: OxSRFI-ADC-GEN-XX-SK-CH-SK01

AECOM have not undertaken a detailed review of this layout. As the junction arrangement in this option is signalised, entry curvature is not required. Based on our high level review, we consider that the design looks feasible with room to adjust if required.

A43 realigned highway (options 11,13, 18 & 19)
No geometric information has been provided as part of the submitted plans, however, the realigned highway appears to be achievable to standards.

North Facing M40 slip roads
Drawing number: NONE PROVIDED
J 10 SB diverge (options 11,13, 18 & 19)
It is recommended that ADC should confirm that this is a suitable arrangement based on traffic demands from BTM assessments for the proposed development.

J 10 northbound merge (options 11, 18)
While no information has been provided, adequate room appears to be available to accommodate the replacement slip road.

South Facing M40 J 10 A43 to M40 southbound free flow link (options 11,13, 18 & 19)
Drawing number: OxSRFI-BWB-GEN-XX-SK-CH-SK021
Based on our review of this drawing, we have following comments to make:

- We note that this arrangement may cause confusion, as the outside 2 lanes are to M40. Possible alternative is to develop centre lane to go both directions
- Two lane link road with departures in horizontal alignment R=360m 1 step together with relaxations in transition rate of changes and merge type noted as departure from standard. This may be acceptable as a departure from standard.
- Type B extended merge with lane drop is consistent with 2 lane taper merge.
- Visibility splays appear to be achievable. Widening to the slip road bridge is required to achieve desirable minimum visibility.
- Vertical geometry needs modification at nosing but won't have a great impact on the design.

Padbury Roundabout (options 11,13, 18 & 19)
Drawing number OxSRFI-ADC-GEN-XX-SK-CH-SK02
Geometry not detail checked ,signalised so entry curvature not required design looks feasible with room to adjust if required.
Potential issue with change to signalised T junction form from M40 S/B off slip. Queue lengths may back up to M40.
No U turn facility for A43

Cherwell Roundabout (options 11,13, 18 & 19)
Drawing number OxSRFI-ADC-GEN-XX-SK-CH-SK03
The geometry of this option has not been checked in detail, however, as the option is signalised entry curvature is not required. The design appears feasible with room to adjust if required. We note that this option does not have a U turn facility for A43 / services.

Ardley Roundabout (options 13, 19) Options 11 and 18 slight enlargement of existing roundabout
Drawing number OxSRFI-ADC-GEN-XX-SK-CH-SK20
The geometry of this option has not been checked in detail, however, as the option is signalised entry curvature is not required. The design appears feasible with room to adjust if required. We note that the entry path curvature for south west to north entry does not appear to meet standards as such will need to be considered at future stages.

Ardley Roundabout Slip Road loop (options 13, 19)
Based on a high level review, the geometry appears to comply with standards, however, the vertical geometry is unknown but we would expect to work as existing.

Ardley East Roundabout (options 11,13, 18 & 19)
Drawing number OxSRFI-ADC-GEN-XX-SK-CH-SK04

The geometry of this option has not been checked in detail, however, as the option is signalised entry curvature is not required. The design appears feasible with room to adjust if required. We note that this option does not allow for a connection to Ardley Village except through link road.

Ardley East Roundabout (options 18, 19) Options 11 and 13 similar but moved north slightly
Drawing number OxSRFI-ADC-GEN-XX-SK-CH-SK05
The geometry of this option has not been checked in detail, however, as the option is signalised entry curvature is not required. The design appears feasible with room to adjust if required. We note that this option does not allow for a connection to Ardley Village or Ardley Road to Bucknell except through link road.

Link Road Ardley Rbt to Ardley Rbt east
We note that no information has been provided regarding this but it appears to be achievable to standards.

Ardley Road Bridge
No information provided but appears to be achievable to standards. We note that the vertical alignment on this option may be challenging.

South Facing M40 slip roads (options 11,13, 18 & 19)
Drawing number OxSRFI-BWB-GEN-XX-SK-CH-SK019
J 10 SB merge
Based on the contents of TN5 we note that the traffic flows indicate a requirement for a type E layout with 4 lanes downstream with a lane gain with 2 lanes on the slip road. A permitted change is required (as noted in TN5) to use a two lane ghost island merge with Auxiliary lane Type C/E3 Sketch 19 shows a single lane slip road with a type A merge which is not in line with the report. As such we would welcome some clarity.

In addition, we note that the visibility splays appear to be achievable. With regards to the visibility, we note that widening to the slip road bridge is required to achieve desirable minimum visibility.

We also note that the length of road is close to that at which it becomes an interchange link which has a higher design speed. The Slip is circa 720m and an interchange link would be required at 750m.

J10 NB diverge
Traffic flows indicate a requirement for a type D layout with 4 lanes upstream with a lane drop to 2 lanes on the slip road. A departure from standard will be required (as noted in TN5) to use a Two lane ghost island diverge Type B1 which appears to be to general geometric standards. We also note that visibility splay will require widened verges. While it is not shown we consider this to be achievable with the land available.

Link Ardley East Rbt to OxSRFI Principal access Roundabout
No information provided but appears to be achievable to standards.

In terms of the LinSig assessments, please see attached check sheets and below comments.

- Baynards Green Rbt LinSig – ADC provided LinSig **App 2** - check file: ‘ 1. LINSIG-210406 Baynards Gn - committed scheme Check Sheet’ as attached applies to preferable **Strategic options 11,13,18&19**.
- Padbury HE scheme layout LinSig – ADC provided **LinSig App3** - check file ‘ 2. LINSIG-210407 Padbury - committed scheme Check Sheet’ as attached applies to existing HE **committed scheme** layout.
- Padbury T junction LinSig – ADC provided LinSig **App13** - check file ‘3. LINSIG-210407 Padbury - P-4 T-junction option Check Sheet’ as attached applies to preferable **Strategic options 11, 13, 18&19**.
- Cherwell rbt existing Layout LinSig – ADC provided LinSig **App4** - check file ‘ 4. LINSIG-2031_DS_M40J10_Cherwell_reference case Check Sheet.docx’ as attached applies to **existing layout**.
- Cherwell option Layout LinSig – ADC provided LinSig **App 18** – check file ‘5. LINSIG-2031_DS_M40J10_Cherwell - Junction option C-5 Check Sheet.docx’ as attached applies to preferable **Strategic options 11, 13, 18&19**.

- Ardley East Rbt for option 11&13 Linsig – ADC provided LinSig **App 33** – check file '6. LINSIG-2031_DS_M40J10_ArdleyEast_AE6_ArdleyEast6 (Signals Option) Check Sheet.docx' as attached applies to preferable **Strategic options 11 & 13**.
- Ardley East Rbt for option 18&19 Linsig – ADC provided LinSig **App 34** – check file '7. LINSIG-2031_DS_M40J10_ArdleyEast_AE8_ArdleyEast9 (Signals Option) - No Ardley Rd Link Check Sheet.docx' as attached applies to preferable **Strategic options 18 & 19**.

In addition, we note that Strategic Options 11 and 18, no drawings have been provided. Therefore, it is not clear which models would need to be checked for these options. As such, we would welcome further clarity regarding this. Furthermore, for Strategic Option 13 and 19 – we could not find any LinSig models for Ardley roundabout which could match the provided option drawing layout. As such, we would welcome further information and clarification regarding this.

Regards

[redacted]

[redacted] | Highways England
Woodlands | Manton Lane | Bedford | MK41 7LW
[redacted]
Web: www.highwaysengland.co.uk

For any planning related matters please email PlanningEE@highwaysengland.co.uk

Follow Highways England East on Twitter

Keep up to date with our roads projects at Highways England East Road Projects

Get live traffic information at http://www.trafficengland.com or download our apps for free by going to the iTunes store or Google Play store

---

From: [redacted]m>
Sent: 12 July 2021 15:17
To: [redacted]
Subject: [EXTERNAL] RE: OxSRFI - TN5 'M40 J10 Options Report and TN6 'M40 J10 Options Report - Traffic Flow Derivation' - dwgs

Thanks for confirming[redacted],

Please find attached the following drawings:

- 210617 Working draft Ardley Bypass junction and M40J10 that contains all the concept drawings in one place (other than the below).
- OxSRFI-ADC-GEN-XX-SK-CH-SK04_ Ardley East Roundabout GA (with link with Ardley Road)-S1-P1

To reiterate, these are for proof of concept and not detailed review. You'll also see that further work is required to bring the individual junction solutions together into an overall scheme.

APPENDIX B

BAYNARDS GREEN COMMITTED SCHEME LINSIG MODEL AUDIT AND REVISED RESULTS

LINSIG V3 Model Checking Report

AECOM

Project: **OXFORDSHIRE SRFI-M40 Junction 10**

Model: **210406 Baynards Gn - committed scheme.lsg3x**

Job No: **xxxxx**

Model Submitted: **16/07/2021**

Corrections Submitted: **Date Submitted**

Modelled By: ADC Infrastructure **Checked by: Weiping Guo** **Approved by:**

This note is to document the checks made to LINSIG models. Once completed this should be filed with the model, or model outputs for future reference.

Results Key

× - Changes required before work is signed off
? – Changes may be required before work is signed off, further work required
✓ - No further changes required before work is signed off

File Checked: Hyperlink to model

Network Information					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
26/07/21	Scenario title(s) entered	✓			
26/07/21	Project name entered	✓			
26/07/21	Modeller details recorded	✓			
26/07/21	Network location details entered	✓			
26/07/21	File name is logical	✓			

Network Setup **Junction Drawings: In report 'OxSRFI-ADC1794-RP-M-V3 'TN5 M40 Junction 10 Options Report' – appendices' Page no.2** **Sat Flow Measurements / Calculations: Hyperlink to Sat Flow Measurements**					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
	Junctions				
26/07/21	Appropriate junctions setup	✓			
26/07/21	Junction info/ signal controllers complete	✓			
26/07/21	Logical arm structure setup	✓			
	Lanes				
26/07/21	Lane setup reflects junction drawings	✓			
26/07/21	Check each lane that is signal controlled	✓			
26/07/21	Lanes matched to controller and phase	✓	.		
26/07/21	Lane length appropriate	✓			
26/07/21	Custom occupancy (if req)	N/A			
	Saturation Flows				
26/07/21	Justified method to derive saturation flows				
26/07/21	Check observed sat flows (if used)	N/A			
26/07/21	Check RR67 sat flows calculations (if used)	x	1. All the entry arm lanes saturation flows were calculated by RR67 methods, however all the lanes were treated as the 'nearside lane'. And the turning radius seemingly are too low that affect the lanes sat flow calculation. Please double check. 2. All the circulatory lanes Sat flow are directly entered. As all the entry arms are using RR67, we recommend the circulatory lanes adopt the same method of calculations. Also the direct entered Sat flow are lower than the entry arms Sat flow which can cause the issues. In general, the downstream lanes sat flow should be equal or greater than the entry lanes Sat flows, unless there is evidence supporting there is 'bottle neck' issues at the downstream.	1. Central lanes and offside lanes have 'nearside lane' de-selected. All turning radii checked and increased where applicable. 2. All circulating lanes have RR67 parameters applied such that all circulating saturation flows are equal or greater than the entry lanes.	
26/07/21	Check external sat flows calculations (if used)				
26/07/21	Check sat flows for any bottleneck links	?	Please check the Aem5 and Arm11. If the A43 has continues 3 lanes, then the current setup is ok. If there are merging to 2 lanes at some point, the Sat flows should setup to limit the flow distribution on the merging lane rather than 'unconstrained' in the current setup.	Sat flow in 'merging' lane introduced to reflect lane assignment.	
	Advanced Lane Settings				
26/07/21	Use of start / end green displacements (if req)	✓			
26/07/21	Use of queue limits on short links (if req)	✓			
26/07/21	Use of weightings for optimiser constraints (if req)	✓			
26/07/21	Use of random delay or queue de-sliver (if req)	X	1pcu De-sliver is applied for most of the circulatory lanes, which seems be too high after review few lanes queue profile. We recommend to optimise the offset between the controller streams to avoid the requirement of the De-sliver setup, and use 0.5pcu figure if necessary.	De-sliver factors removed where possible and a factor of 0.5 pcu used where still required.	

Tel. 0121 262 6795
www.aecom.com

Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

			Another reason of queue de-sliver in the current model is possible due to the lanes Sat flows directly entered for all circulatory lanes are lower than the entry arms RR67 sat flow.		
	Give Ways				
26/07/21	Check each lane that is priority controlled	N/A			
26/07/21	Measurement of max/min flow when giving way	N/A			
26/07/21	Flow when opposing traffic stopped reasonable	N/A			
26/07/21	Measurement of give-way co-efficient	N/A			
26/07/21	Measurement of clear conflict time of opposing traffic	N/A			
26/07/21	Check all controlling movements identified	N/A			
26/07/21	Measurement of storage in front of stop-line	N/A			
26/07/21	Max turns in inter-green reasonable	N/A			
26/07/21	Measurement of non-blocking storage	N/A			
	Lane Connectors				
26/07/21	Lane connectors provided reasonable	✓			
26/07/21	Cruise time reasonable	✓	40km/hr cruise speed is applied for all the link connectors.		
26/07/21	Default platoon dispersion used unless observed	✓	The platoon dispersion is switched off due to the short circulatory lanes.		
	Zones				
26/07/21	Zones match O-D matrix	✓	BaynardsRef1_AM flow matches the flow report page 24; BaynardsRef1_PM flow matches the flow report page 25; Baynards1_AM flow matches the flow report page 38; Baynards1_PM flow matches the flow report page 39.		
	Pedestrians				
26/07/21	Ped crossings represented by ped links (if req)	N/A			
26/07/21	Ped link data correct (if req)	N/A			
26/07/21	Ped connector walk times reasonable (if req)	N/A			
26/07/21	Ped links matched to appropriate phases (if req)	N/A			
26/07/21	Ped zones match ped O-D matrix (if req)	N/A			

Controllers

Controller Specifications: Hyperlink to Controller Specification (if req)
Intergreen Calculations: Hyperlink to Intergreen Calculations (if req)

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
	General Controller Set-up				
26/07/21	Sufficient controllers setup	✓			
26/07/21	Multiple stage streams setup correctly (if req)	✓			
26/07/21	Non-standard filters setup correctly (if req)	N/A			
	Signal Settings				
26/07/21	Check phases for each controller	✓			
26/07/21	Check phase mins/type reasonable	✓			
26/07/21	Check inter-greens calculations/coding	✓			
26/07/21	Stages reasonable	✓			
26/07/21	Phase delays reasonable (if req)	N/A			

Stage Sequences

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
26/07/21	Check stage sequences observed / optimised	✓			
26/07/21	Check stage timings observed / optimised	N/A			

Traffic Counts and Calculations

Traffic Flow Data: Hyperlink to Traffic Flow Data – in report 'OXSRFI-ADC1794-RP-N-V2 'TN6 - M40 J10 OR Traffic Flow Derivation' – bound'
Matrix Calculations: Hyperlink to Matrix Calculations (if required)
Lane Balancing Calculations: Hyperlink to Lane Balancing Calculations (if required)
Site Observations: Hyperlink to Site Flows Observations

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
26/07/21	Suitability of traffic surveys undertaken	N/A			
26/07/21	Are there sufficient site observations	N/A			
26/07/21	Check O-D matrix calculations	✓			
26/07/21	Are lane balancing calculations sufficient / consistent	x	Please check the Arm5 and Arm11. If there are merging to 2 lanes at some point, the Sat flows should setup to limit the flow distribution on the merging lane rather than 'unconstrained' in the current setup.	Sat flow in 'merging' lane introduced to reflect lane assignment.	
26/07/21	Does lane balancing match lining	✓			
26/07/21	Does lane balancing match matrices	✓			

Tel. 0121 262 6795
www.aecom.com

Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

Traffic Flows					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
26/07/21	Traffic & ped flow (if req) groups setup	✓	Multi flow groups setup in the model. Only four flows matrix are used.		
26/07/21	Desired flows match O-D matrices	✓			
26/07/21	Actual flows match desired flows	✓			
26/07/21	Inappropriate routes closed	✓			
26/07/21	Route flows match lane balancing	✓			

Modelling					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
26/07/21	Scenario set up with correct options	✓			
26/07/21	Cycle time appropriate for network control	✓			
26/07/21	Cycle time optimised (if req)	N/A			

Results					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
	Are all values as expected (Demand Flows, Green Times etc)		To be checked after above changes.		
	Deg Sat >100% for existing situation with no modelled suppressed demand?		To be checked after above changes.		
	Deg Sat appropriate? Validated?		To be checked after above changes.		
	Capacity conclusions		To be checked after above changes.		
	If suppressed demand has been modelled, do queues validate?		To be checked after above changes.		
	Queues appropriate?		To be checked after above changes.		
	Queue limits exceeded?		To be checked after above changes.		
	Queuing conclusions (will exit blocking modify these?)		To be checked after above changes.		
	If suppressed demand has been modelled do journey times validate?		To be checked after above changes.		
	Journey time conclusions?		To be checked after above changes.		

Conclusions and Recommendations

Tel. 0121 262 6795
www.aecom.com

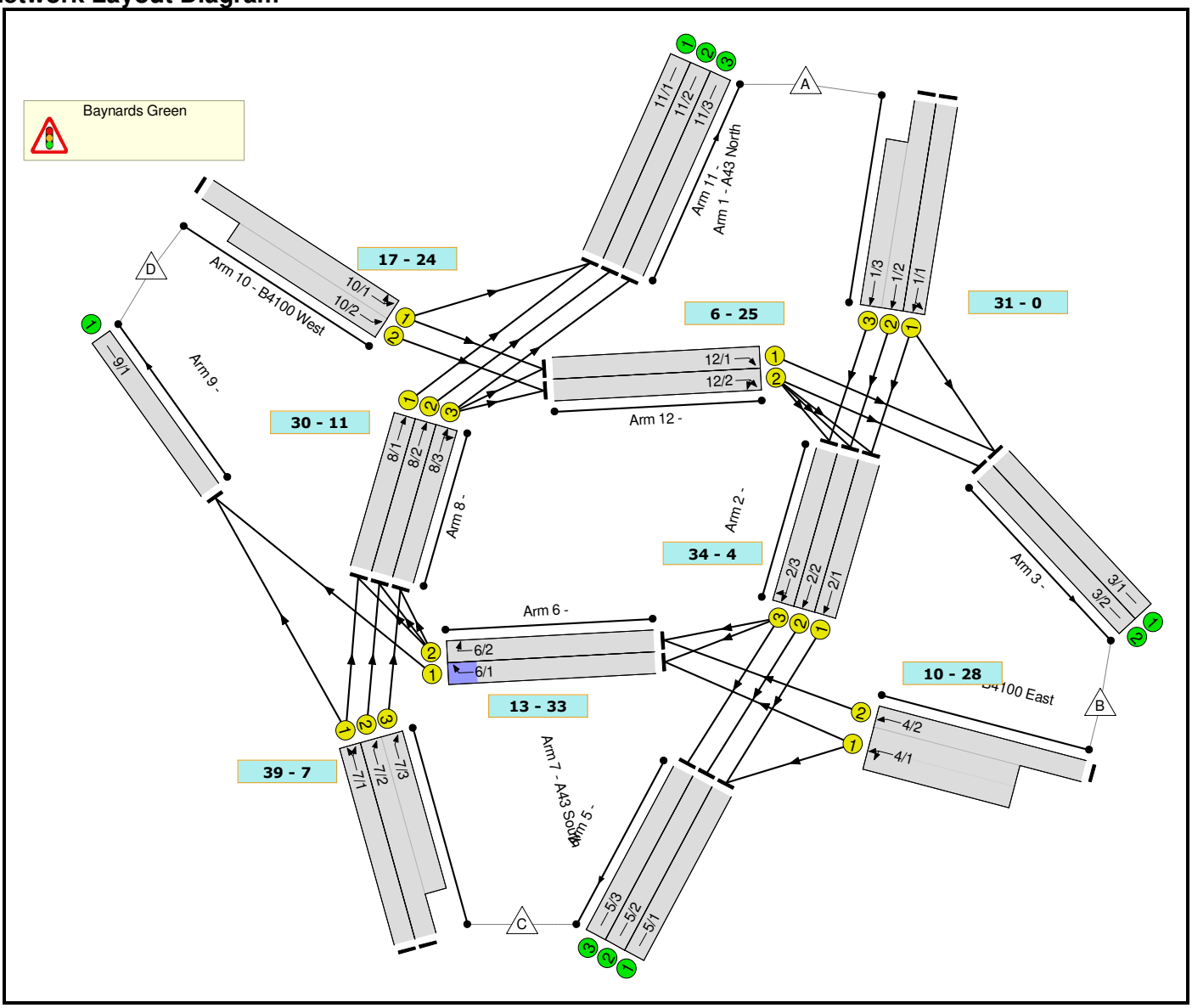
Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

Full Input Data And Results

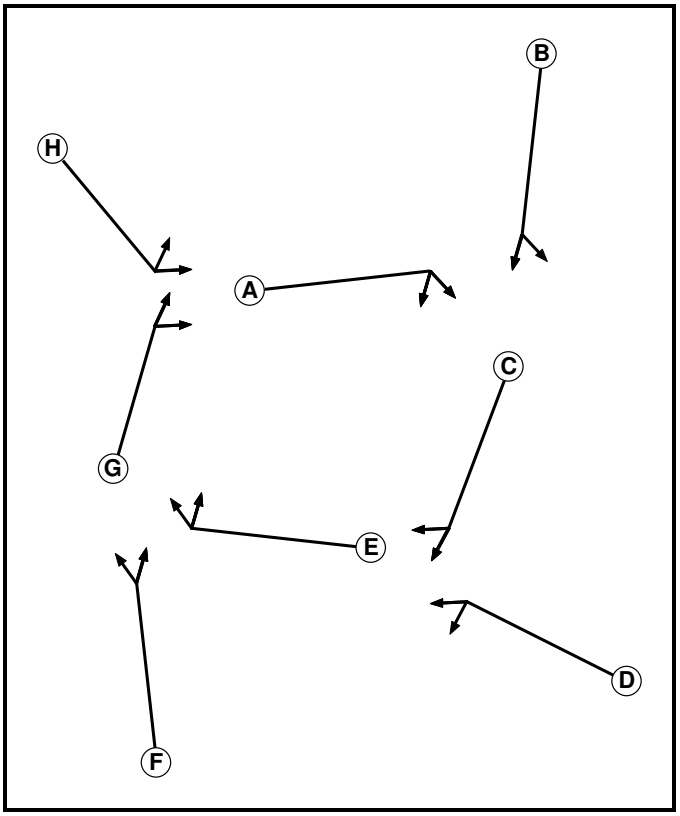
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Baynards Green Committed Scheme**
Location:	
Additional detail:	Revised following comment from Aecom
File name:	211005 Baynards Gn - committed scheme.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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
E	Traffic	3		7	7
F	Traffic	3		7	7
G	Traffic	4		7	7
H	Traffic	4		7	7

Phase Intergreens Matrix

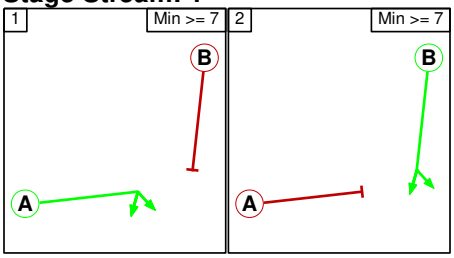
Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H
A		6	-	-	-	-	-	-
B	6		-	-	-	-	-	-
C	-	-		6	-	-	-	-
D	-	-	6		-	-	-	-
E	-	-	-	-		6	-	-
F	-	-	-	-	6		-	-
G	-	-	-	-	-	-		6
H	-	-	-	-	-	-	6	

Phases in Stage

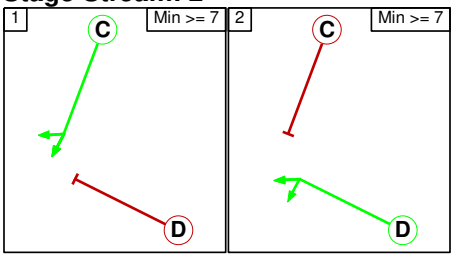
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F
4	1	G
4	2	H

Stage Diagram

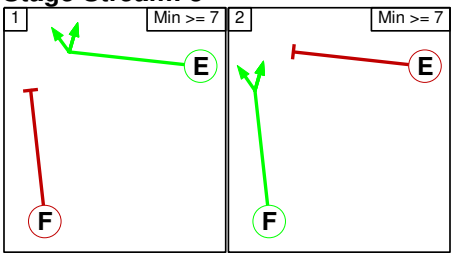
Stage Stream: 1



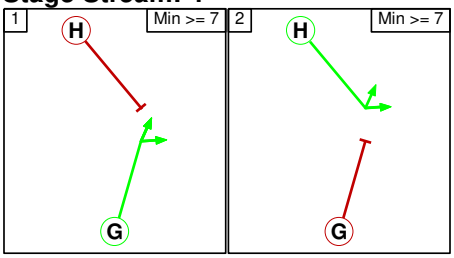
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Prohibited Stage Change

Stage Stream: 1

From Stage \ To Stage		1	2
	1		6
	2	6	

Stage Stream: 2

From Stage \ To Stage		1	2
	1		6
	2	6	

Stage Stream: 3

From Stage \ To Stage		1	2
	1		6
	2	6	

Stage Stream: 4

From Stage \ To Stage		1	2
	1		6
	2	6	

Lane Input Data

Junction: Baynards Green

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 (A43 North)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 2 Ahead	60.00
											Arm 3 Left	60.00
1/2 (A43 North)	U	B	2	3	60.0	Geom	-	3.65	0.00	N	Arm 2 Ahead	60.00
1/3 (A43 North)	U	B	2	3	24.3	Geom	-	3.65	0.00	N	Arm 2 Ahead	60.00
2/1	U	C	2	3	8.7	Geom	-	3.65	0.00	Y	Arm 5 Ahead	Inf
2/2	U	C	2	3	8.7	Geom	-	3.65	0.00	N	Arm 5 Ahead	Inf
2/3	U	C	2	3	8.7	Geom	-	3.65	0.00	N	Arm 5 Ahead	Inf
											Arm 6 Right	Inf
3/1	U		2	3	60.0	Inf	-	-	-	-	-	-
3/2	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1 (B4100 East)	U	D	2	3	10.4	User	3800	-	-	-	-	-
4/2 (B4100 East)	U	D	2	3	60.0	Geom	-	3.50	0.00	N	Arm 6 Ahead	70.00
5/1	U		2	3	60.0	User	2000	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
5/3	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U	E	2	3	10.4	Geom	-	3.65	0.00	Y	Arm 9 Right	Inf
6/2	U	E	2	3	10.4	Geom	-	3.65	0.00	N	Arm 8 Right	Inf
7/1 (A43 South)	U	F	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 8 Ahead	60.00
											Arm 9 Ahead	60.00
7/2 (A43 South)	U	F	2	3	60.0	Geom	-	3.65	0.00	N	Arm 8 Ahead	60.00
7/3 (A43 South)	U	F	2	3	22.6	Geom	-	3.65	0.00	N	Arm 8 Ahead	60.00
8/1	U	G	2	3	8.7	Geom	-	3.65	0.00	Y	Arm 11 Ahead	Inf
8/2	U	G	2	3	8.7	Geom	-	3.65	0.00	N	Arm 11 Ahead	Inf
8/3	U	G	2	3	8.7	Geom	-	3.65	0.00	N	Arm 11 Ahead	Inf
											Arm 12 Right	Inf
9/1	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1	U	H	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 11 Left	30.00

(B4100 West)											Arm 12 Ahead	40.00
10/2 (B4100 West)	U	H	2	3	22.6	Geom	-	3.50	0.00	Y	Arm 12 Ahead	40.00
11/1	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2	U		2	3	60.0	Inf	-	-	-	-	-	-
11/3	U		2	3	60.0	User	2000	-	-	-	-	-
12/1	U	A	2	3	9.6	Geom	-	3.65	0.00	Y	Arm 3 Right	Inf
12/2	U	A	2	3	9.6	Geom	-	3.65	0.00	N	Arm 2 Right	Inf
											Arm 3 Right	Inf

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Baynards1_AM'	07:45	08:45	01:00	
3: 'Baynards1_PM'	16:30	17:30	01:00	
5: 'BaynardsRef1_AM'	07:45	08:45	01:00	
7: 'BaynardsRef1_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Reference Case - AM Peak' (FG5: 'BaynardsRef1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	446	2247	70	2763
	B	350	0	212	306	868
	C	1468	287	0	125	1880
	D	72	296	123	1	492
	Tot.	1890	1029	2582	502	6003

Traffic Lane Flows

Lane	Scenario 1: 2031 Reference Case - AM Peak
Junction: Baynards Green	
1/1	854
1/2 (with short)	1909(In) 975(Out)
1/3 (short)	934
2/1	411
2/2	1040
2/3	990
3/1	765
3/2	264
4/1 (short)	518
4/2 (with short)	868(In) 350(Out)
5/1	623
5/2	1040
5/3	919
6/1	377
6/2	350
7/1	543
7/2 (with short)	1337(In) 742(Out)
7/3 (short)	595
8/1	555
8/2	888
8/3	662
9/1	502
10/1 (with short)	492(In) 246(Out)
10/2 (short)	246
11/1	627
11/2	888
11/3	375
12/1	319
12/2	388

Lane Saturation Flows

Junction: Baynards Green								
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 (A43 North)	3.65	0.00	Y	Arm 2 Ahead	60.00	47.8 %	1932	1932
				Arm 3 Left	60.00	52.2 %		
1/2 (A43 North)	3.65	0.00	N	Arm 2 Ahead	60.00	100.0 %	2068	2068
1/3 (A43 North)	3.65	0.00	N	Arm 2 Ahead	60.00	100.0 %	2068	2068
2/1	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
2/2	3.65	0.00	N	Arm 5 Ahead	Inf	100.0 %	2120	2120
2/3	3.65	0.00	N	Arm 5 Ahead	Inf	92.8 %	2120	2120
				Arm 6 Right	Inf	7.2 %		
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1 (B4100 East Lane 1)	This lane uses a directly entered Saturation Flow						3800	3800
4/2 (B4100 East)	3.50	0.00	N	Arm 6 Ahead	70.00	100.0 %	2061	2061
5/1	This lane uses a directly entered Saturation Flow						2000	2000
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf
6/1	3.65	0.00	Y	Arm 9 Right	Inf	100.0 %	1980	1980
6/2	3.65	0.00	N	Arm 8 Right	Inf	100.0 %	2120	2120
7/1 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	60.00	77.0 %	1932	1932
				Arm 9 Ahead	60.00	23.0 %		
7/2 (A43 South)	3.65	0.00	N	Arm 8 Ahead	60.00	100.0 %	2068	2068
7/3 (A43 South)	3.65	0.00	N	Arm 8 Ahead	60.00	100.0 %	2068	2068
8/1	3.65	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1980	1980
8/2	3.65	0.00	N	Arm 11 Ahead	Inf	100.0 %	2120	2120
8/3	3.65	0.00	N	Arm 11 Ahead	Inf	56.6 %	2120	2120
				Arm 12 Right	Inf	43.4 %		
9/1	Infinite Saturation Flow						Inf	Inf
10/1 (B4100 West)	3.50	0.00	Y	Arm 11 Left	30.00	29.3 %	1887	1887
				Arm 12 Ahead	40.00	70.7 %		
10/2 (B4100 West)	3.50	0.00	Y	Arm 12 Ahead	40.00	100.0 %	1894	1894
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
11/3	This lane uses a directly entered Saturation Flow						2000	2000
12/1	3.65	0.00	Y	Arm 3 Right	Inf	100.0 %	1980	1980
12/2	3.65	0.00	N	Arm 2 Right	Inf	32.0 %	2120	2120

				Arm 3 Right	Inf	68.0 %		

Scenario 2: '2031 Do Something - AM Peak' (FG1: 'Baynards1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	446	2516	70	3032
	B	350	0	212	306	868
	C	1587	287	0	125	1999
	D	72	296	123	1	492
	Tot.	2009	1029	2851	502	6391

Traffic Lane Flows

Lane	Scenario 2: 2031 Do Something - AM Peak
Junction: Baynards Green	
1/1	1061
1/2 (with short)	1971(In) 1011(Out)
1/3 (short)	960
2/1	647
2/2	1067
2/3	996
3/1	760
3/2	269
4/1 (short)	518
4/2 (with short)	868(In) 350(Out)
5/1	859
5/2	1067
5/3	925
6/1	377
6/2	350
7/1	610
7/2 (with short)	1389(In) 790(Out)
7/3 (short)	599
8/1	636
8/2	918
8/3	670
9/1	502
10/1 (with short)	492(In) 246(Out)
10/2 (short)	246
11/1	708
11/2	918
11/3	383
12/1	314
12/2	393

Lane Saturation Flows

Junction: Baynards Green								
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 (A43 North)	3.65	0.00	Y	Arm 2 Ahead	60.00	58.0 %	1932	1932
				Arm 3 Left	60.00	42.0 %		
1/2 (A43 North)	3.65	0.00	N	Arm 2 Ahead	60.00	100.0 %	2068	2068
1/3 (A43 North)	3.65	0.00	N	Arm 2 Ahead	60.00	100.0 %	2068	2068
2/1	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
2/2	3.65	0.00	N	Arm 5 Ahead	Inf	100.0 %	2120	2120
2/3	3.65	0.00	N	Arm 5 Ahead	Inf	92.9 %	2120	2120
				Arm 6 Right	Inf	7.1 %		
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1 (B4100 East Lane 1)	This lane uses a directly entered Saturation Flow						3800	3800
4/2 (B4100 East)	3.50	0.00	N	Arm 6 Ahead	70.00	100.0 %	2061	2061
5/1	This lane uses a directly entered Saturation Flow						2000	2000
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf
6/1	3.65	0.00	Y	Arm 9 Right	Inf	100.0 %	1980	1980
6/2	3.65	0.00	N	Arm 8 Right	Inf	100.0 %	2120	2120
7/1 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	60.00	79.5 %	1932	1932
				Arm 9 Ahead	60.00	20.5 %		
7/2 (A43 South)	3.65	0.00	N	Arm 8 Ahead	60.00	100.0 %	2068	2068
7/3 (A43 South)	3.65	0.00	N	Arm 8 Ahead	60.00	100.0 %	2068	2068
8/1	3.65	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1980	1980
8/2	3.65	0.00	N	Arm 11 Ahead	Inf	100.0 %	2120	2120
8/3	3.65	0.00	N	Arm 11 Ahead	Inf	57.2 %	2120	2120
				Arm 12 Right	Inf	42.8 %		
9/1	Infinite Saturation Flow						Inf	Inf
10/1 (B4100 West)	3.50	0.00	Y	Arm 11 Left	30.00	29.3 %	1887	1887
				Arm 12 Ahead	40.00	70.7 %		
10/2 (B4100 West)	3.50	0.00	Y	Arm 12 Ahead	40.00	100.0 %	1894	1894
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
11/3	This lane uses a directly entered Saturation Flow						2000	2000
12/1	3.65	0.00	Y	Arm 3 Right	Inf	100.0 %	1980	1980
12/2	3.65	0.00	N	Arm 2 Right	Inf	31.6 %	2120	2120

				Arm 3 Right	Inf	68.4 %		

Scenario 3: '2031 Reference Case - PM Peak' (FG7: 'BaynardsRef1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	2	467	1283	45	1797
	B	637	0	240	372	1249
	C	2198	230	0	90	2518
	D	37	244	47	3	331
	Tot.	2874	941	1570	510	5895

Traffic Lane Flows

Lane	Scenario 3: 2031 Reference Case - PM Peak
Junction: Baynards Green	
1/1	523
1/2 (with short)	1274(In) 653(Out)
1/3 (short)	621
2/1	99
2/2	655
2/3	626
3/1	706
3/2	235
4/1 (short)	612
4/2 (with short)	1249(In) 637(Out)
5/1	339
5/2	655
5/3	576
6/1	420
6/2	639
7/1	754
7/2 (with short)	1764(In) 934(Out)
7/3 (short)	830
8/1	903
8/2	1188
8/3	976
9/1	510
10/1 (with short)	331(In) 165(Out)
10/2 (short)	166
11/1	940
11/2	1188
11/3	746
12/1	239
12/2	285

Lane Saturation Flows

Junction: Baynards Green								
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 (A43 North)	3.65	0.00	Y	Arm 2 Ahead	60.00	10.7 %	1932	1932
				Arm 3 Left	60.00	89.3 %		
1/2 (A43 North)	3.65	0.00	N	Arm 2 Ahead	60.00	100.0 %	2068	2068
1/3 (A43 North)	3.65	0.00	N	Arm 2 Ahead	60.00	100.0 %	2068	2068
2/1	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
2/2	3.65	0.00	N	Arm 5 Ahead	Inf	100.0 %	2120	2120
2/3	3.65	0.00	N	Arm 5 Ahead	Inf	92.0 %	2120	2120
				Arm 6 Right	Inf	8.0 %		
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1 (B4100 East Lane 1)	This lane uses a directly entered Saturation Flow						3800	3800
4/2 (B4100 East)	3.50	0.00	N	Arm 6 Ahead	70.00	100.0 %	2061	2061
5/1	This lane uses a directly entered Saturation Flow						2000	2000
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf
6/1	3.65	0.00	Y	Arm 9 Right	Inf	100.0 %	1980	1980
6/2	3.65	0.00	N	Arm 8 Right	Inf	100.0 %	2120	2120
7/1 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	60.00	88.1 %	1932	1932
				Arm 9 Ahead	60.00	11.9 %		
7/2 (A43 South)	3.65	0.00	N	Arm 8 Ahead	60.00	100.0 %	2068	2068
7/3 (A43 South)	3.65	0.00	N	Arm 8 Ahead	60.00	100.0 %	2068	2068
8/1	3.65	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1980	1980
8/2	3.65	0.00	N	Arm 11 Ahead	Inf	100.0 %	2120	2120
8/3	3.65	0.00	N	Arm 11 Ahead	Inf	76.4 %	2120	2120
				Arm 12 Right	Inf	23.6 %		
9/1	Infinite Saturation Flow						Inf	Inf
10/1 (B4100 West)	3.50	0.00	Y	Arm 11 Left	30.00	22.4 %	1889	1889
				Arm 12 Ahead	40.00	77.6 %		
10/2 (B4100 West)	3.50	0.00	Y	Arm 12 Ahead	40.00	100.0 %	1894	1894
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
11/3	This lane uses a directly entered Saturation Flow						2000	2000
12/1	3.65	0.00	Y	Arm 3 Right	Inf	100.0 %	1980	1980
12/2	3.65	0.00	N	Arm 2 Right	Inf	17.5 %	2120	2120

				Arm 3 Right	Inf	82.5 %		

Scenario 4: '2031 Do Something - PM Peak' (FG3: 'Baynards1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	2	467	1435	45	1949
	B	637	0	240	372	1249
	C	2473	230	0	90	2793
	D	37	244	47	3	331
	Tot.	3149	941	1722	510	6322

Traffic Lane Flows

Lane	Scenario 4: 2031 Do Something - PM Peak
Junction: Baynards Green	
1/1	489
1/2 (with short)	1460(In) 746(Out)
1/3 (short)	714
2/1	22
2/2	763
2/3	747
3/1	708
3/2	233
4/1 (short)	612
4/2 (with short)	1249(In) 637(Out)
5/1	262
5/2	763
5/3	697
6/1	420
6/2	639
7/1	861
7/2 (with short)	1932(In) 999(Out)
7/3 (short)	933
8/1	1029
8/2	1277
8/3	1036
9/1	510
10/1 (with short)	331(In) 165(Out)
10/2 (short)	166
11/1	1066
11/2	1277
11/3	806
12/1	241
12/2	283

Lane Saturation Flows

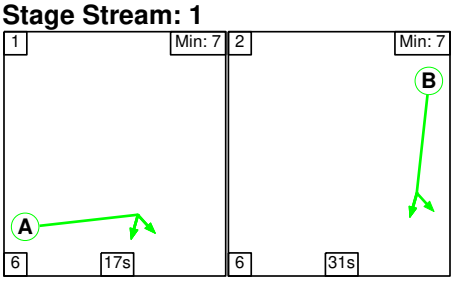
Junction: Baynards Green								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A43 North)	3.65	0.00	Y	Arm 2 Ahead	60.00	4.5 %	1932	1932
				Arm 3 Left	60.00	95.5 %		
1/2 (A43 North)	3.65	0.00	N	Arm 2 Ahead	60.00	100.0 %	2068	2068
1/3 (A43 North)	3.65	0.00	N	Arm 2 Ahead	60.00	100.0 %	2068	2068
2/1	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
2/2	3.65	0.00	N	Arm 5 Ahead	Inf	100.0 %	2120	2120
2/3	3.65	0.00	N	Arm 5 Ahead	Inf	93.3 %	2120	2120
				Arm 6 Right	Inf	6.7 %		
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1 (B4100 East Lane 1)	This lane uses a directly entered Saturation Flow						3800	3800
4/2 (B4100 East)	3.50	0.00	N	Arm 6 Ahead	70.00	100.0 %	2061	2061
5/1	This lane uses a directly entered Saturation Flow						2000	2000
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf
6/1	3.65	0.00	Y	Arm 9 Right	Inf	100.0 %	1980	1980
6/2	3.65	0.00	N	Arm 8 Right	Inf	100.0 %	2120	2120
7/1 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	60.00	89.5 %	1932	1932
				Arm 9 Ahead	60.00	10.5 %		
7/2 (A43 South)	3.65	0.00	N	Arm 8 Ahead	60.00	100.0 %	2068	2068
7/3 (A43 South)	3.65	0.00	N	Arm 8 Ahead	60.00	100.0 %	2068	2068
8/1	3.65	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1980	1980
8/2	3.65	0.00	N	Arm 11 Ahead	Inf	100.0 %	2120	2120
8/3	3.65	0.00	N	Arm 11 Ahead	Inf	77.8 %	2120	2120
				Arm 12 Right	Inf	22.2 %		
9/1	Infinite Saturation Flow						Inf	Inf
10/1 (B4100 West)	3.50	0.00	Y	Arm 11 Left	30.00	22.4 %	1889	1889
				Arm 12 Ahead	40.00	77.6 %		
10/2 (B4100 West)	3.50	0.00	Y	Arm 12 Ahead	40.00	100.0 %	1894	1894
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
11/3	This lane uses a directly entered Saturation Flow						2000	2000
12/1	3.65	0.00	Y	Arm 3 Right	Inf	100.0 %	1980	1980
12/2	3.65	0.00	N	Arm 2 Right	Inf	17.7 %	2120	2120

				Arm 3 Right	Inf	82.3 %		

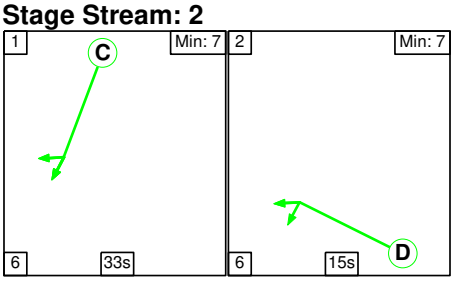
Scenario 1: '2031 Reference Case - AM Peak' (FG5: 'BaynardsRef1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

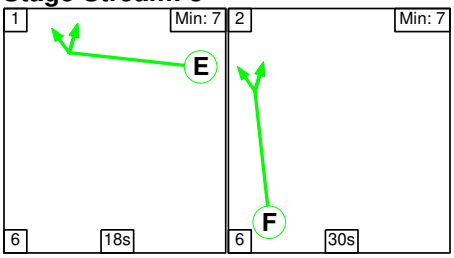
Stage Stream: 1



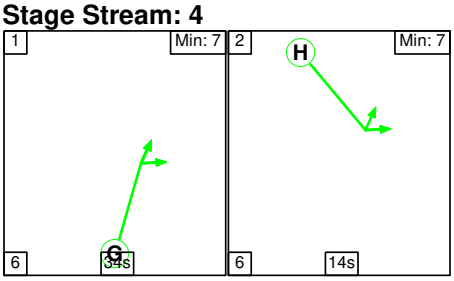
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	17	31
Change Point	0	23

Stage Stream: 2

Stage	1	2
Duration	33	15
Change Point	25	4

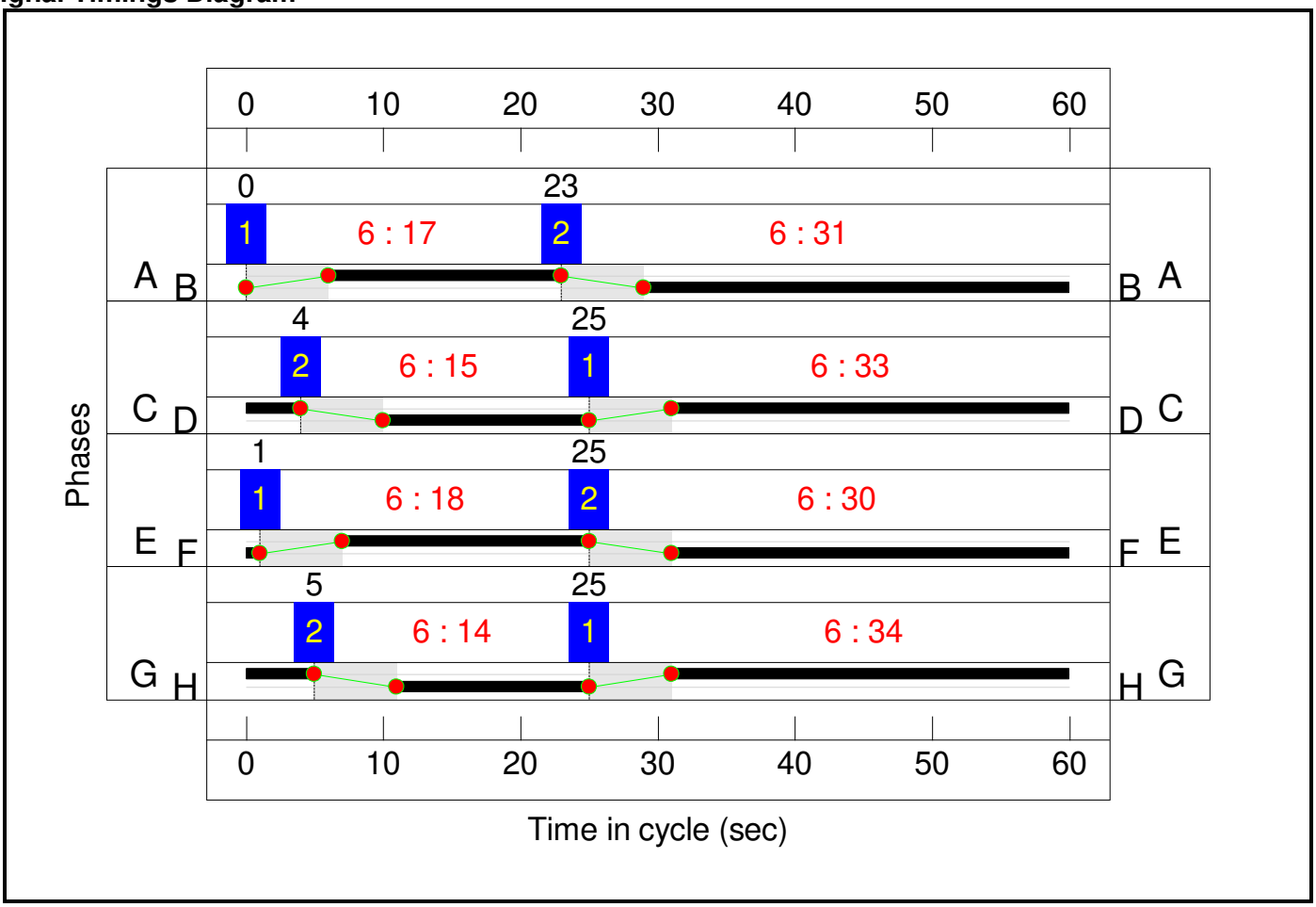
Stage Stream: 3

Stage	1	2
Duration	18	30
Change Point	1	25

Stage Stream: 4

Stage	1	2
Duration	34	14
Change Point	25	5

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: Baynards Green Committed Scheme	-	-	**N/A**	-	-		-	-	-	-	-	-	**92.3%**
Baynards Green	-	-	**N/A**	-	-		-	-	-	-	-	-	**92.3%**
1/1	A43 North Ahead Left	U	1	N/A	B		1	31	-	854	1932	1030	82.9%
1/2+1/3	A43 North Ahead	U	1	N/A	B		1	31	-	1909	2068:2068	1056+1012	92.3 : 92.3%
2/1	Ahead	U	2	N/A	C		1	33	-	411	1980	1122	36.6%
2/2	Ahead	U	2	N/A	C		1	33	-	1040	2120	1201	86.6%
2/3	Ahead Right	U	2	N/A	C		1	33	-	990	2120	1201	82.4%
4/2+4/1	B4100 East Left Ahead	U	2	N/A	D		1	15	-	868	2061:3800	550+813	63.7 : 63.7%
5/1		U	N/A	N/A	-		-	-	-	623	2000	2000	31.2%
6/1	Right	U	3	N/A	E		1	18	-	377	1980	627	60.1%
6/2	Right	U	3	N/A	E		1	18	-	350	2120	671	52.1%
7/1	A43 South Ahead Ahead2	U	3	N/A	F		1	30	-	543	1932	998	54.4%
7/2+7/3	A43 South Ahead	U	3	N/A	F		1	30	-	1337	2068:2068	1068+920	69.4 : 64.7%
8/1	Ahead	U	4	N/A	G		1	34	-	555	1980	1155	48.1%
8/2	Ahead	U	4	N/A	G		1	34	-	888	2120	1237	71.8%
8/3	Ahead Right	U	4	N/A	G		1	34	-	662	2120	1237	53.5%
10/1+10/2	B4100 West Left Ahead	U	4	N/A	H		1	14	-	492	1887:1894	472+474	52.1 : 52.0%
11/3		U	N/A	N/A	-		-	-	-	375	2000	2000	18.8%
12/1	Right	U	1	N/A	A		1	17	-	319	1980	594	53.7%
12/2	Right Right2	U	1	N/A	A		1	17	-	388	2120	636	61.0%

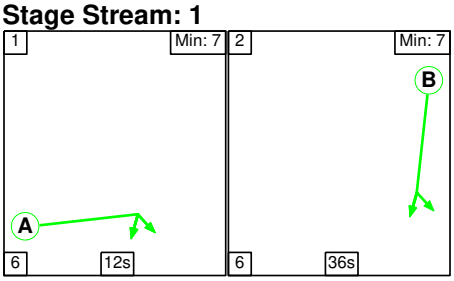
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Baynards Green Committed Scheme	**-**	**-**	**0**	**0**	**0**	**25.9**	**11.3**	**0.0**	**37.2**	**-**	**-**	**-**	**-**
Baynards Green	**-**	**-**	**0**	**0**	**0**	**25.9**	**11.3**	**0.0**	**37.2**	**-**	**-**	**-**	**-**
1/1	854	854	-	-	-	2.8	2.4	-	5.1	21.6	11.9	2.4	14.2
1/2+1/3	1909	1909	-	-	-	6.4	5.6	-	12.0	22.7	14.1	5.6	19.7
2/1	411	411	-	-	-	0.0	0.0	-	0.0	0.1	0.0	0.0	0.0
2/2	1040	1040	-	-	-	0.2	0.0	-	0.2	0.6	1.1	0.0	1.1
2/3	990	990	-	-	-	0.1	0.0	-	0.1	0.5	0.9	0.0	0.9
4/2+4/1	868	868	-	-	-	4.6	0.9	-	5.5	22.6	5.2	0.9	6.0
5/1	623	623	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2
6/1	377	377	-	-	-	0.6	0.0	-	0.6	6.2	1.6	0.0	1.6
6/2	350	350	-	-	-	0.3	0.0	-	0.3	3.2	0.5	0.0	0.5
7/1	543	543	-	-	-	1.5	0.6	-	2.1	13.7	6.0	0.6	6.6
7/2+7/3	1337	1337	-	-	-	3.9	1.0	-	4.9	13.2	9.3	1.0	10.3
8/1	555	555	-	-	-	0.4	0.0	-	0.4	2.3	2.3	0.0	2.3
8/2	888	888	-	-	-	0.4	0.0	-	0.4	1.6	5.3	0.0	5.3
8/3	662	662	-	-	-	0.2	0.0	-	0.2	0.8	1.1	0.0	1.1
10/1+10/2	492	492	-	-	-	2.7	0.5	-	3.2	23.4	3.5	0.5	4.0
11/3	375	375	-	-	-	0.0	0.1	-	0.1	1.1	1.1	0.1	1.2
12/1	319	319	-	-	-	0.9	0.0	-	0.9	10.3	2.7	0.0	2.7
12/2	388	388	-	-	-	1.0	0.0	-	1.0	9.0	2.7	0.0	2.7

C1	Stream: 1 PRC for Signalled Lanes (%):	-2.6	Total Delay for Signalled Lanes (pcuHr):	19.07	Cycle Time (s): 60
C1	Stream: 2 PRC for Signalled Lanes (%):	4.0	Total Delay for Signalled Lanes (pcuHr):	5.78	Cycle Time (s): 60
C1	Stream: 3 PRC for Signalled Lanes (%):	29.6	Total Delay for Signalled Lanes (pcuHr):	7.93	Cycle Time (s): 60
C1	Stream: 4 PRC for Signalled Lanes (%):	25.3	Total Delay for Signalled Lanes (pcuHr):	4.09	Cycle Time (s): 60
	PRC Over All Lanes (%):	-2.6	Total Delay Over All Lanes(pcuHr):	37.21	

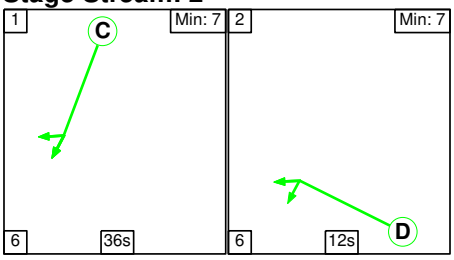
Scenario 2: '2031 Do Something - AM Peak' (FG1: 'Baynards1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

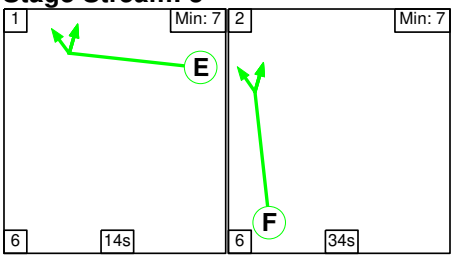
Stage Stream: 1



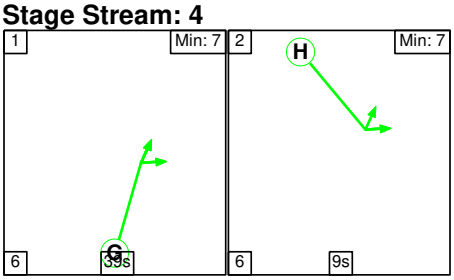
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	12	36
Change Point	0	18

Stage Stream: 2

Stage	1	2
Duration	36	12
Change Point	17	59

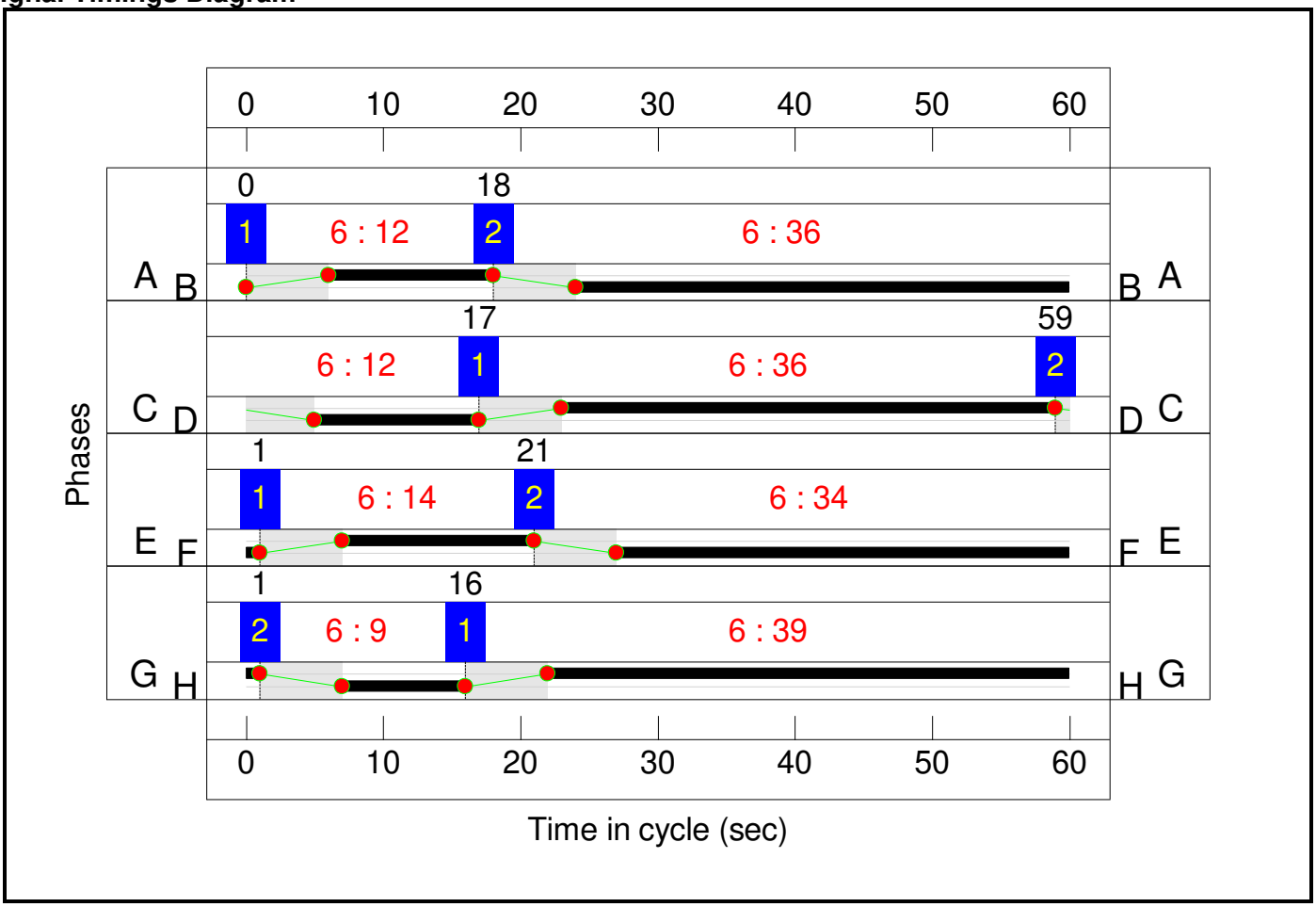
Stage Stream: 3

Stage	1	2
Duration	14	34
Change Point	1	21

Stage Stream: 4

Stage	1	2
Duration	39	9
Change Point	16	1

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: Baynards Green Committed Scheme	-	-	**N/A**	-	-		-	-	-	-	-	-	**95.3%**
Baynards Green	-	-	**N/A**	-	-		-	-	-	-	-	-	**95.3%**
1/1	A43 North Ahead Left	U	1	N/A	B		1	36	-	1061	1932	1191	89.1%
1/2+1/3	A43 North Ahead	U	1	N/A	B		1	36	-	1971	2068:2068	1061+1007	95.3 : 95.3%
2/1	Ahead	U	2	N/A	C		1	36	-	647	1980	1221	53.0%
2/2	Ahead	U	2	N/A	C		1	36	-	1067	2120	1307	81.6%
2/3	Ahead Right	U	2	N/A	C		1	36	-	996	2120	1307	76.2%
4/2+4/1	B4100 East Left Ahead	U	2	N/A	D		1	12	-	868	2061:3800	447+800	78.4 : 64.7%
5/1		U	N/A	N/A	-		-	-	-	859	2000	2000	43.0%
6/1	Right	U	3	N/A	E		1	14	-	377	1980	495	76.2%
6/2	Right	U	3	N/A	E		1	14	-	350	2120	530	66.0%
7/1	A43 South Ahead Ahead2	U	3	N/A	F		1	34	-	610	1932	1127	54.1%
7/2+7/3	A43 South Ahead	U	3	N/A	F		1	34	-	1389	2068:2068	1176+892	67.2 : 67.2%
8/1	Ahead	U	4	N/A	G		1	39	-	636	1980	1320	48.2%
8/2	Ahead	U	4	N/A	G		1	39	-	918	2120	1413	65.0%
8/3	Ahead Right	U	4	N/A	G		1	39	-	670	2120	1413	47.4%
10/1+10/2	B4100 West Left Ahead	U	4	N/A	H		1	9	-	492	1887:1894	314+316	78.2 : 77.9%
11/3		U	N/A	N/A	-		-	-	-	383	2000	2000	19.2%
12/1	Right	U	1	N/A	A		1	12	-	314	1980	429	73.2%
12/2	Right Right2	U	1	N/A	A		1	12	-	393	2120	459	85.6%

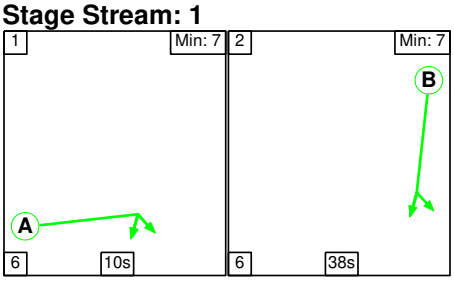
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Baynards Green Committed Scheme	**-**	**-**	**0**	**0**	**0**	**25.6**	**17.4**	**0.0**	**43.1**	**-**	**-**	**-**	**-**
Baynards Green	**-**	**-**	**0**	**0**	**0**	**25.6**	**17.4**	**0.0**	**43.1**	**-**	**-**	**-**	**-**
1/1	1061	1061	-	-	-	2.9	3.8	-	6.7	22.8	15.0	3.8	18.9
1/2+1/3	1971	1971	-	-	-	4.6	8.6	-	13.2	24.2	12.4	8.6	21.0
2/1	647	647	-	-	-	0.4	0.0	-	0.4	2.0	1.4	0.0	1.4
2/2	1067	1067	-	-	-	0.6	0.0	-	0.6	2.1	2.3	0.0	2.3
2/3	996	996	-	-	-	0.5	0.0	-	0.5	2.0	1.9	0.0	1.9
4/2+4/1	868	868	-	-	-	5.2	1.1	-	6.4	26.4	5.4	1.1	6.6
5/1	859	859	-	-	-	0.0	0.4	-	0.4	1.6	0.0	0.4	0.4
6/1	377	377	-	-	-	0.6	0.0	-	0.6	5.4	1.4	0.0	1.4
6/2	350	350	-	-	-	0.1	0.0	-	0.1	0.8	0.1	0.0	0.1
7/1	610	610	-	-	-	1.3	0.6	-	1.9	11.1	6.1	0.6	6.7
7/2+7/3	1389	1389	-	-	-	3.1	1.0	-	4.1	10.6	8.8	1.0	9.8
8/1	636	636	-	-	-	0.4	0.0	-	0.4	2.2	3.1	0.0	3.1
8/2	918	918	-	-	-	0.5	0.0	-	0.5	1.8	3.0	0.0	3.0
8/3	670	670	-	-	-	0.3	0.0	-	0.3	1.6	1.8	0.0	1.8
10/1+10/2	492	492	-	-	-	3.3	1.7	-	5.0	36.7	3.9	1.7	5.6
11/3	383	383	-	-	-	0.0	0.1	-	0.1	1.1	0.6	0.1	0.7
12/1	314	314	-	-	-	1.0	0.0	-	1.0	11.0	2.4	0.0	2.4
12/2	393	393	-	-	-	1.0	0.0	-	1.0	9.5	2.6	0.0	2.6

C1	Stream: 1 PRC for Signalled Lanes (%):	-5.9	Total Delay for Signalled Lanes (pcuHr):	21.96	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	10.3	Total Delay for Signalled Lanes (pcuHr):	7.87	Cycle Time (s):	60
C1	Stream: 3 PRC for Signalled Lanes (%):	18.2	Total Delay for Signalled Lanes (pcuHr):	6.61	Cycle Time (s):	60
C1	Stream: 4 PRC for Signalled Lanes (%):	15.1	Total Delay for Signalled Lanes (pcuHr):	6.16	Cycle Time (s):	60
	PRC Over All Lanes (%):	-5.9	Total Delay Over All Lanes(pcuHr):	43.09		

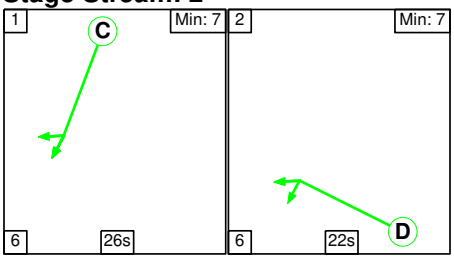
Scenario 3: '2031 Reference Case - PM Peak' (FG7: 'BaynardsRef1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

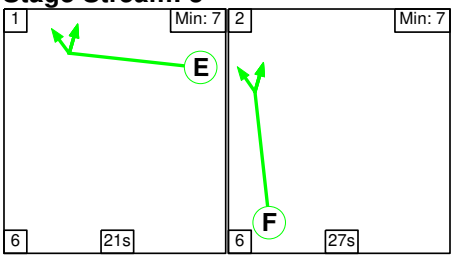
Stage Stream: 1



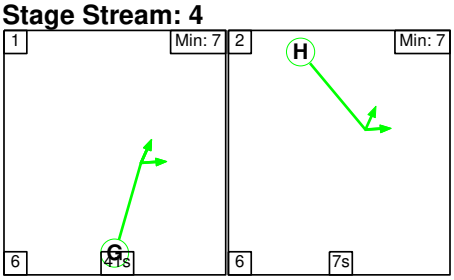
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	10	38
Change Point	0	16

Stage Stream: 2

Stage	1	2
Duration	26	22
Change Point	14	46

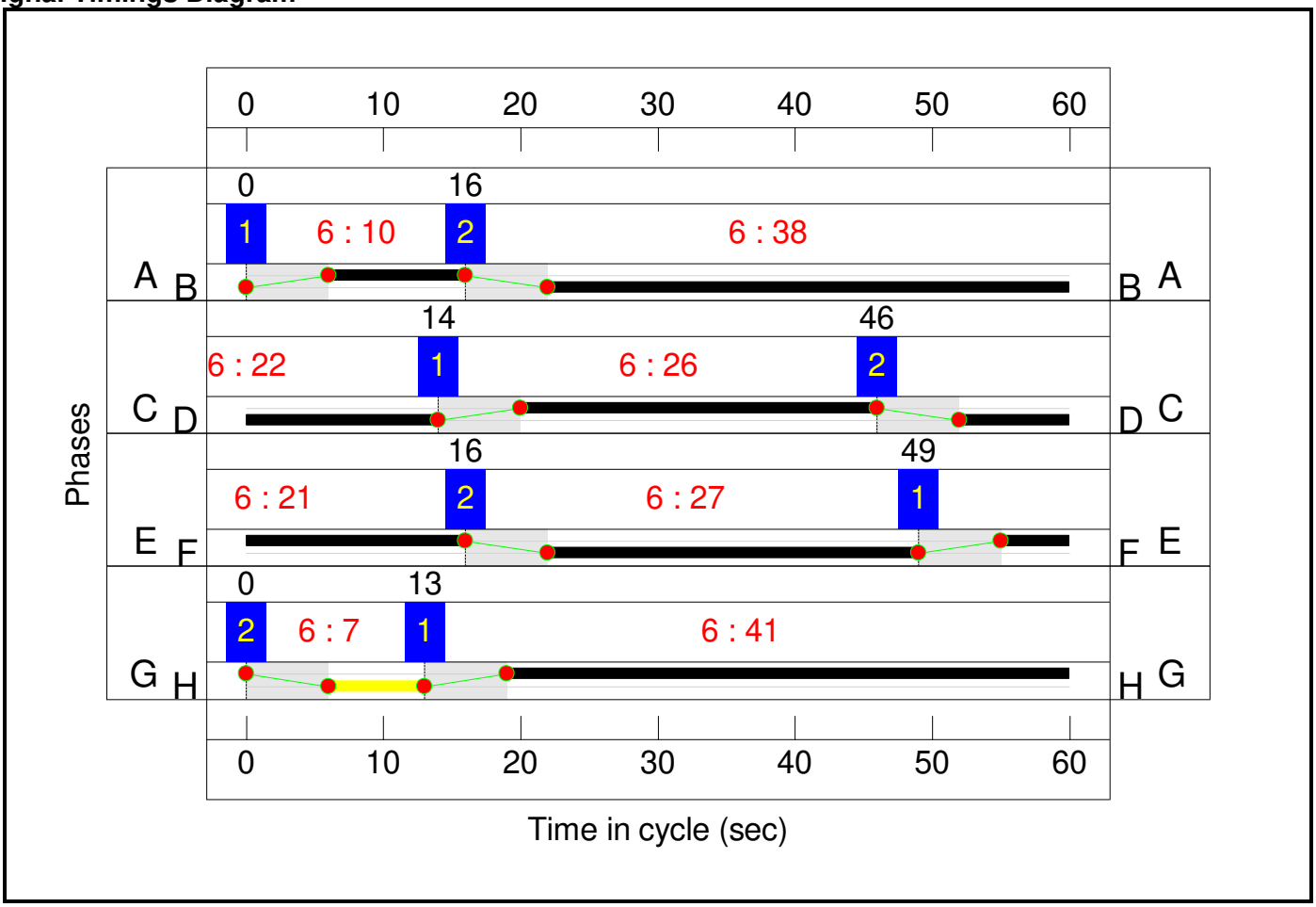
Stage Stream: 3

Stage	1	2
Duration	21	27
Change Point	49	16

Stage Stream: 4

Stage	1	2
Duration	41	7
Change Point	13	0

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: Baynards Green Committed Scheme	-	-	**N/A**	-	-		-	-	-	-	-	-	**96.8%**
Baynards Green	-	-	**N/A**	-	-		-	-	-	-	-	-	**96.8%**
1/1	A43 North Ahead Left	U	1	N/A	B		1	38	-	523	1932	1256	41.6%
1/2+1/3	A43 North Ahead	U	1	N/A	B		1	38	-	1274	2068:2068	1060+1008	61.6 : 61.6%
2/1	Ahead	U	2	N/A	C		1	26	-	99	1980	891	11.1%
2/2	Ahead	U	2	N/A	C		1	26	-	655	2120	954	68.7%
2/3	Ahead Right	U	2	N/A	C		1	26	-	626	2120	954	65.6%
4/2+4/1	B4100 East Left Ahead	U	2	N/A	D		1	22	-	1249	2061:3800	721+692	88.4 : 88.4%
5/1		U	N/A	N/A	-		-	-	-	339	2000	2000	17.0%
6/1	Right	U	3	N/A	E		1	21	-	420	1980	726	57.9%
6/2	Right	U	3	N/A	E		1	21	-	639	2120	777	82.2%
7/1	A43 South Ahead Ahead2	U	3	N/A	F		1	27	-	754	1932	902	83.6%
7/2+7/3	A43 South Ahead	U	3	N/A	F		1	27	-	1764	2068:2068	965+965	96.8 : 86.0%
8/1	Ahead	U	4	N/A	G		1	41	-	903	1980	1386	65.2%
8/2	Ahead	U	4	N/A	G		1	41	-	1188	2120	1484	80.1%
8/3	Ahead Right	U	4	N/A	G		1	41	-	976	2120	1484	65.8%
10/1+10/2	B4100 West Left Ahead	U	4	N/A	H		1	7	-	331	1889:1894	252+253	65.5 : 65.7%
11/3		U	N/A	N/A	-		-	-	-	746	2000	2000	37.3%
12/1	Right	U	1	N/A	A		1	10	-	239	1980	363	65.8%
12/2	Right Right2	U	1	N/A	A		1	10	-	285	2120	389	73.3%

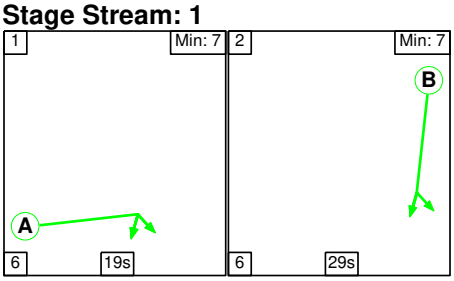
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Baynards Green Committed Scheme	**-**	**-**	**0**	**0**	**0**	**27.8**	**13.6**	**0.0**	**41.4**	**-**	**-**	**-**	**-**
Baynards Green	**-**	**-**	**0**	**0**	**0**	**27.8**	**13.6**	**0.0**	**41.4**	**-**	**-**	**-**	**-**
1/1	523	523	-	-	-	0.7	0.4	-	1.1	7.5	4.1	0.4	4.4
1/2+1/3	1274	1274	-	-	-	1.9	0.8	-	2.7	7.6	5.4	0.8	6.2
2/1	99	99	-	-	-	0.2	0.0	-	0.2	5.7	1.0	0.0	1.0
2/2	655	655	-	-	-	1.5	0.0	-	1.5	8.0	3.3	0.0	3.3
2/3	626	626	-	-	-	1.4	0.0	-	1.4	8.0	3.2	0.0	3.2
4/2+4/1	1249	1249	-	-	-	5.2	3.6	-	8.9	25.6	9.4	3.6	13.0
5/1	339	339	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1
6/1	420	420	-	-	-	0.5	0.0	-	0.5	4.5	1.9	0.0	1.9
6/2	639	639	-	-	-	0.3	0.0	-	0.3	1.9	0.6	0.0	0.6
7/1	754	754	-	-	-	2.9	2.5	-	5.4	25.8	10.9	2.5	13.4
7/2+7/3	1764	1764	-	-	-	7.3	5.0	-	12.3	25.2	15.0	5.0	20.1
8/1	903	903	-	-	-	0.7	0.0	-	0.7	2.9	3.8	0.0	3.8
8/2	1188	1188	-	-	-	0.8	0.0	-	0.8	2.3	4.0	0.0	4.0
8/3	976	976	-	-	-	0.4	0.0	-	0.4	1.4	2.3	0.0	2.3
10/1+10/2	331	331	-	-	-	2.3	0.9	-	3.2	35.0	2.6	0.9	3.5
11/3	746	746	-	-	-	0.0	0.3	-	0.3	1.5	2.3	0.3	2.6
12/1	239	239	-	-	-	0.8	0.0	-	0.8	11.8	1.9	0.0	1.9
12/2	285	285	-	-	-	0.8	0.0	-	0.8	10.7	2.0	0.0	2.0

C1	Stream: 1 PRC for Signalled Lanes (%):	22.7	Total Delay for Signalled Lanes (pcuHr):	5.40	Cycle Time (s):	60		
C1	Stream: 2 PRC for Signalled Lanes (%):	1.8	Total Delay for Signalled Lanes (pcuHr):	11.89	Cycle Time (s):	60		
C1	Stream: 3 PRC for Signalled Lanes (%):	-7.5	Total Delay for Signalled Lanes (pcuHr):	18.60	Cycle Time (s):	60		
C1	Stream: 4 PRC for Signalled Lanes (%):	12.4	Total Delay for Signalled Lanes (pcuHr):	5.10	Cycle Time (s):	60		
	PRC Over All Lanes (%):	-7.5	Total Delay Over All Lanes(pcuHr):	41.39				

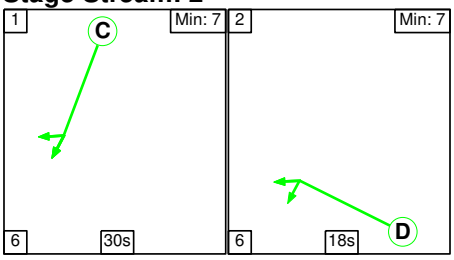
Scenario 4: '2031 Do Something - PM Peak' (FG3: 'Baynards1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

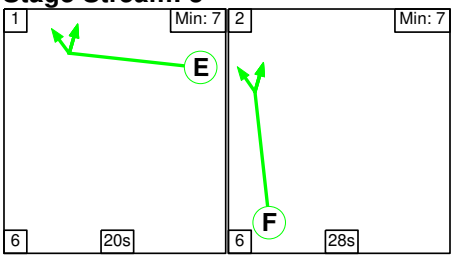
Stage Stream: 1



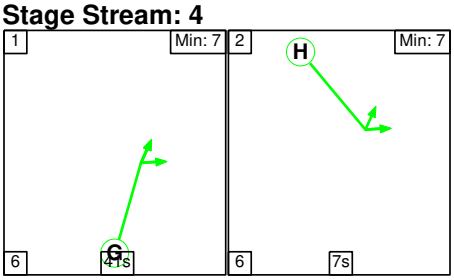
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	19	29
Change Point	0	25

Stage Stream: 2

Stage	1	2
Duration	30	18
Change Point	28	4

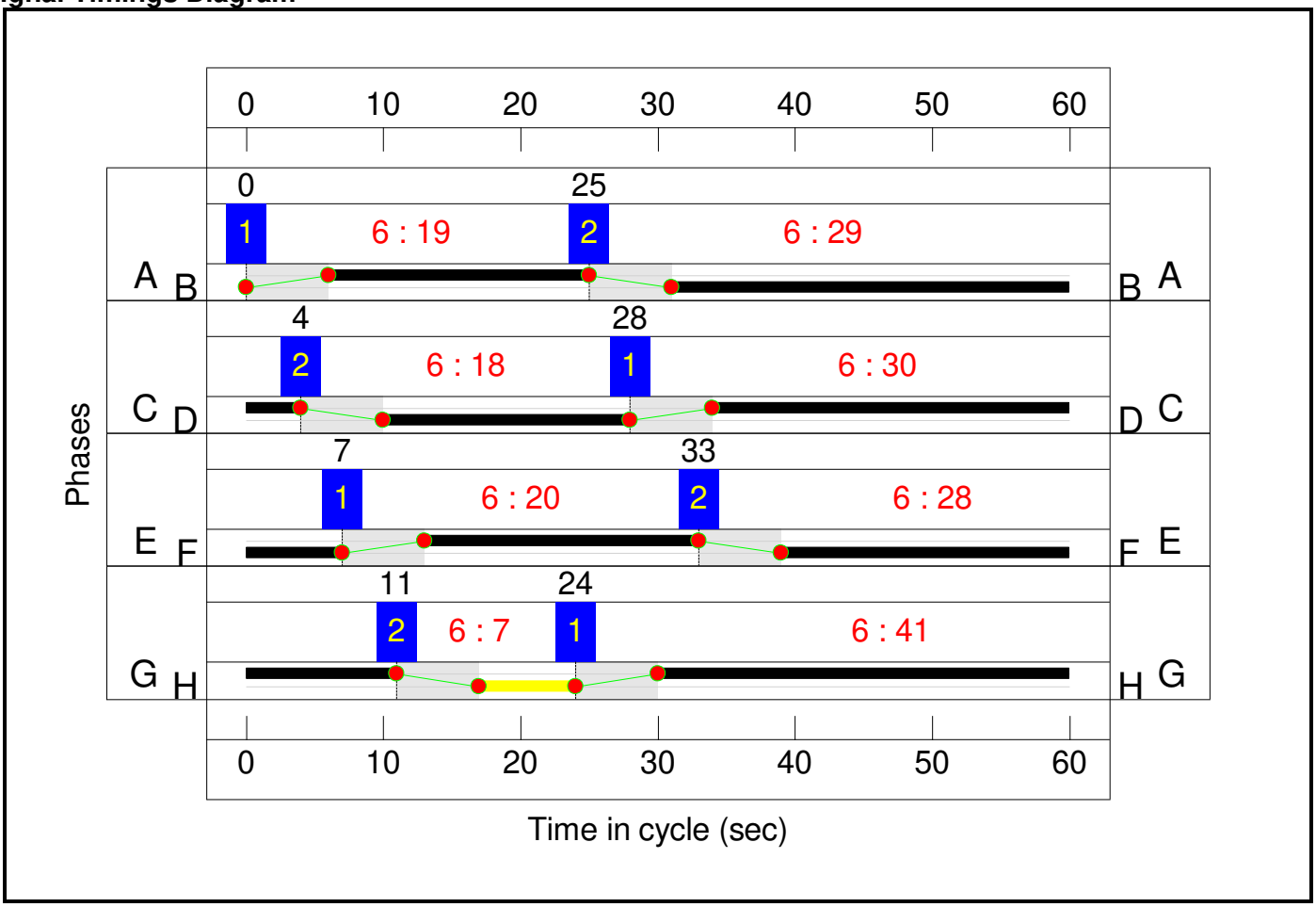
Stage Stream: 3

Stage	1	2
Duration	20	28
Change Point	7	33

Stage Stream: 4

Stage	1	2
Duration	41	7
Change Point	24	11

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: Baynards Green Committed Scheme	-	-	**N/A**	-	-		-	-	-	-	-	-	**99.9%**
Baynards Green	-	-	**N/A**	-	-		-	-	-	-	-	-	**99.9%**
1/1	A43 North Ahead Left	U	1	N/A	B		1	29	-	489	1932	966	50.6%
1/2+1/3	A43 North Ahead	U	1	N/A	B		1	29	-	1460	2068:2068	1034+1011	72.1 : 70.6%
2/1	Ahead	U	2	N/A	C		1	30	-	22	1980	1023	2.2%
2/2	Ahead	U	2	N/A	C		1	30	-	763	2120	1095	69.7%
2/3	Ahead Right	U	2	N/A	C		1	30	-	747	2120	1095	68.2%
4/2+4/1	B4100 East Left Ahead	U	2	N/A	D		1	18	-	1249	2061:3800	653+627	97.6 : 97.6%
5/1		U	N/A	N/A	-		-	-	-	262	2000	2000	13.1%
6/1	Right	U	3	N/A	E		1	20	-	420	1980	693	60.6%
6/2	Right	U	3	N/A	E		1	20	-	639	2120	742	86.1%
7/1	A43 South Ahead Ahead2	U	3	N/A	F		1	28	-	861	1932	934	92.2%
7/2+7/3	A43 South Ahead	U	3	N/A	F		1	28	-	1932	2068:2068	1000+999	99.9 : 93.4%
8/1	Ahead	U	4	N/A	G		1	41	-	1029	1980	1386	74.2%
8/2	Ahead	U	4	N/A	G		1	41	-	1277	2120	1484	86.1%
8/3	Ahead Right	U	4	N/A	G		1	41	-	1036	2120	1484	69.8%
10/1+10/2	B4100 West Left Ahead	U	4	N/A	H		1	7	-	331	1889:1894	252+253	65.5 : 65.7%
11/3		U	N/A	N/A	-		-	-	-	806	2000	2000	40.3%
12/1	Right	U	1	N/A	A		1	19	-	241	1980	660	36.5%
12/2	Right Right2	U	1	N/A	A		1	19	-	283	2120	707	40.0%

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: Baynards Green Committed Scheme	**-**	**-**	**0**	**0**	**0**	**28.2**	**30.8**	**0.0**	**59.0**	**-**	**-**	**-**	**-**
Baynards Green	**-**	**-**	**0**	**0**	**0**	**28.2**	**30.8**	**0.0**	**59.0**	**-**	**-**	**-**	**-**
1/1	489	489	-	-	-	1.4	0.5	-	1.9	13.8	5.4	0.5	5.9
1/2+1/3	1460	1460	-	-	-	4.7	1.2	-	5.9	14.7	9.5	1.2	10.8
2/1	22	22	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	763	763	-	-	-	0.0	0.0	-	0.0	0.2	0.3	0.0	0.3
2/3	747	747	-	-	-	0.1	0.0	-	0.1	0.3	0.5	0.0	0.5
4/2+4/1	1249	1249	-	-	-	6.4	11.6	-	18.0	51.9	10.4	11.6	22.0
5/1	262	262	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.1	0.1
6/1	420	420	-	-	-	0.4	0.0	-	0.4	3.1	2.4	0.0	2.4
6/2	639	639	-	-	-	0.0	0.0	-	0.0	0.1	0.0	0.0	0.0
7/1	861	861	-	-	-	3.5	5.2	-	8.6	36.1	13.2	5.2	18.3
7/2+7/3	1932	1932	-	-	-	8.1	11.0	-	19.0	35.5	16.4	11.0	27.3
8/1	1029	1029	-	-	-	0.3	0.0	-	0.3	1.2	3.9	0.0	3.9
8/2	1277	1277	-	-	-	0.4	0.0	-	0.4	1.0	4.2	0.0	4.2
8/3	1036	1036	-	-	-	0.1	0.0	-	0.1	0.3	1.0	0.0	1.0
10/1+10/2	331	331	-	-	-	2.3	0.9	-	3.2	35.0	2.6	0.9	3.5
11/3	806	806	-	-	-	0.0	0.3	-	0.3	1.5	0.6	0.3	0.9
12/1	241	241	-	-	-	0.3	0.0	-	0.3	4.3	1.5	0.0	1.5
12/2	283	283	-	-	-	0.3	0.0	-	0.3	4.0	1.6	0.0	1.6

C1	Stream: 1 PRC for Signalled Lanes (%):	24.7	Total Delay for Signalled Lanes (pcuHr):	8.43	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	-8.4	Total Delay for Signalled Lanes (pcuHr):	18.12	Cycle Time (s):	60
C1	Stream: 3 PRC for Signalled Lanes (%):	-11.1	Total Delay for Signalled Lanes (pcuHr):	28.05	Cycle Time (s):	60
C1	Stream: 4 PRC for Signalled Lanes (%):	4.6	Total Delay for Signalled Lanes (pcuHr):	4.01	Cycle Time (s):	60
	PRC Over All Lanes (%):	-11.1	Total Delay Over All Lanes(pcuHr):	59.02		

APPENDIX C

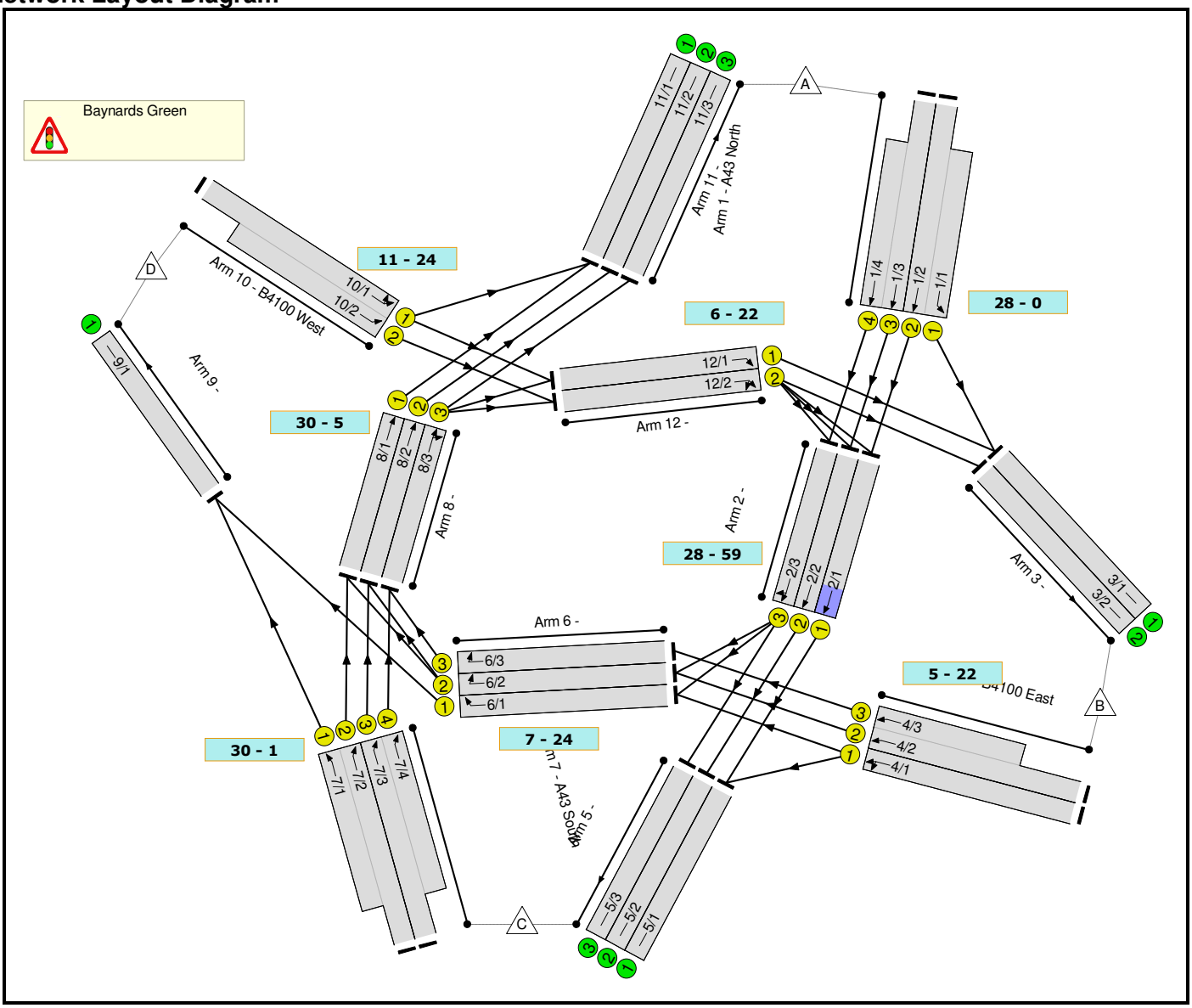
BAYNARDS GREEN MITIGATION SCHEME LINSIG MODEL AUDIT AND REVISED RESULTS

Full Input Data And Results

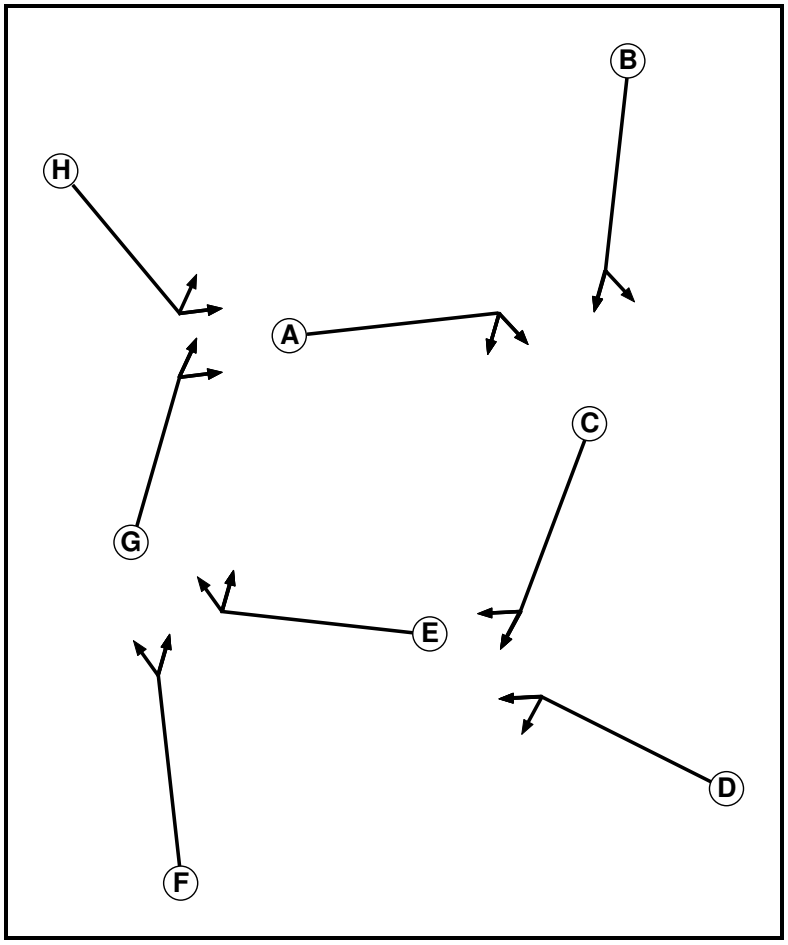
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Baynards Green Mitigation scheme**
Location:	
Additional detail:	Amended sat flows following Aecom comments
File name:	211006 Baynards Gn - OxSRFI mitigation.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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
E	Traffic	3		7	7
F	Traffic	3		7	7
G	Traffic	4		7	7
H	Traffic	4		7	7

Phase Intergreens Matrix

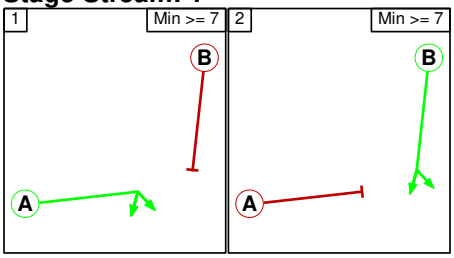
		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A		6	-	-	-	-	-	-
	B	6		-	-	-	-	-	-
	C	-	-		6	-	-	-	-
	D	-	-	6		-	-	-	-
	E	-	-	-	-		6	-	-
	F	-	-	-	-	6		-	-
	G	-	-	-	-	-	-		6
	H	-	-	-	-	-	-	6	

Phases in Stage

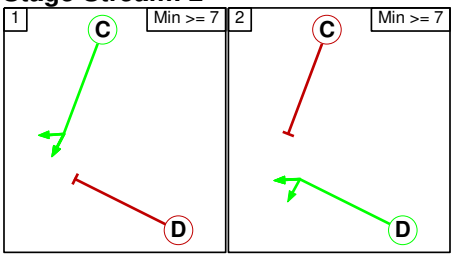
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F
4	1	G
4	2	H

Stage Diagram

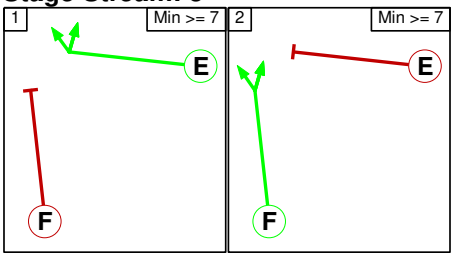
Stage Stream: 1



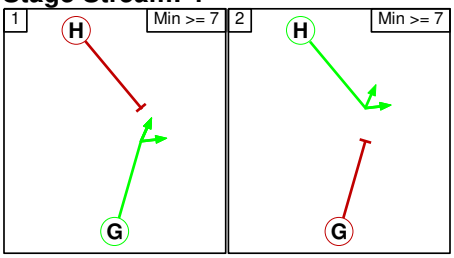
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



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					

Stage Stream: 3

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

Stage Stream: 4

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	

Stage Stream: 2

	To Stage		
		1	2
From Stage	1		6
	2	6	

Stage Stream: 3

	To Stage		
		1	2
From Stage	1		6
	2	6	

Stage Stream: 4

From Stage	To Stage		
		1	2
	1		6
	2	6	

Lane Input Data

Junction: Baynards Green												
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 (A43 North)	U	B	2	3	20.9	Geom	-	3.65	0.00	Y	Arm 3 Left	60.00
1/2 (A43 North)	U	B	2	3	60.0	Geom	-	3.65	0.00	N	Arm 2 Ahead	60.00
1/3 (A43 North)	U	B	2	3	60.0	Geom	-	3.65	0.00	N	Arm 2 Ahead	60.00
1/4 (A43 North)	U	B	2	3	24.3	Geom	-	3.65	0.00	N	Arm 2 Ahead	60.00
2/1	U	C	2	3	9.6	Geom	-	3.65	0.00	Y	Arm 5 Ahead	Inf
2/2	U	C	2	3	9.6	Geom	-	3.65	0.00	N	Arm 5 Ahead	Inf
2/3	U	C	2	3	9.6	Geom	-	3.65	0.00	N	Arm 5 Ahead Arm 6 Right	Inf Inf
3/1	U		2	3	60.0	Inf	-	-	-	-	-	-
3/2	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1 (B4100 East)	U	D	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Left Arm 6 Ahead	35.00 Inf
4/2 (B4100 East)	U	D	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 6 Ahead	Inf
4/3 (B4100 East)	U	D	2	3	10.4	Geom	-	3.50	0.00	N	Arm 6 Ahead	50.00
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
5/3	U		2	3	60.0	User	2000	-	-	-	-	-
6/1	U	E	2	3	11.3	Geom	-	3.50	0.00	Y	Arm 9 Right	Inf
6/2	U	E	2	3	11.3	Geom	-	3.65	0.00	N	Arm 8 Right	Inf
6/3	U	E	2	3	11.3	Geom	-	3.65	0.00	N	Arm 8 Right	Inf
7/1 (A43 South)	U	F	2	3	12.2	Geom	-	3.65	0.00	Y	Arm 9 Ahead	60.00
7/2 (A43 South)	U	F	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 8 Ahead	60.00
7/3 (A43 South)	U	F	2	3	60.0	Geom	-	3.65	0.00	N	Arm 8 Ahead	60.00
7/4 (A43 South)	U	F	2	3	22.6	Geom	-	3.65	0.00	N	Arm 8 Ahead	60.00
8/1	U	G	2	3	12.2	Geom	-	3.65	0.00	Y	Arm 11 Ahead	Inf
8/2	U	G	2	3	12.2	Geom	-	3.65	0.00	N	Arm 11 Ahead	Inf
8/3	U	G	2	3	12.2	Geom	-	3.65	0.00	N	Arm 11 Ahead	Inf

											Arm 12 Right	Inf
9/1	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (B4100 West)	U	H	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 11 Left	30.00
											Arm 12 Ahead	40.00
10/2 (B4100 West)	U	H	2	3	22.6	Geom	-	3.50	0.00	N	Arm 12 Ahead	40.00
11/1	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2	U		2	3	60.0	Inf	-	-	-	-	-	-
11/3	U		2	3	60.0	User	2000	-	-	-	-	-
12/1	U	A	2	3	11.3	Geom	-	3.65	0.00	Y	Arm 3 Right	Inf
12/2	U	A	2	3	11.3	Geom	-	3.65	0.00	N	Arm 2 Right	Inf
											Arm 3 Right	Inf

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Baynards1_AM'	07:45	08:45	01:00	
3: 'Baynards1_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Do Something - AM Peak' (FG1: 'Baynards1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	446	2516	70	3032
	B	350	0	212	306	868
	C	1587	287	0	125	1999
	D	72	296	123	1	492
	Tot.	2009	1029	2851	502	6391

Traffic Lane Flows

Lane	Scenario 1: 2031 Do Something - AM Peak
Junction: Baynards Green	
1/1 (short)	446
1/2 (with short)	1338(In) 892(Out)
1/3 (with short)	1694(In) 928(Out)
1/4 (short)	766
2/1	933
2/2	977
2/3	800
3/1	758
3/2	271
4/1	518
4/2 (with short)	350(In) 278(Out)
4/3 (short)	72
5/1	1145
5/2	977
5/3	729
6/1	377
6/2	278
6/3	72
7/1 (short)	125
7/2 (with short)	690(In) 565(Out)
7/3 (with short)	1309(In) 735(Out)
7/4 (short)	574
8/1	701
8/2	877
8/3	646
9/1	502
10/1 (with short)	492(In) 237(Out)
10/2 (short)	255
11/1	773
11/2	877
11/3	359
12/1	312
12/2	395

Lane Saturation Flows

Junction: Baynards Green								
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 (A43 North)	3.65	0.00	Y	Arm 3 Left	60.00	100.0 %	1932	1932
1/2 (A43 North)	3.65	0.00	N	Arm 2 Ahead	60.00	100.0 %	2068	2068
1/3 (A43 North)	3.65	0.00	N	Arm 2 Ahead	60.00	100.0 %	2068	2068
1/4 (A43 North)	3.65	0.00	N	Arm 2 Ahead	60.00	100.0 %	2068	2068
2/1	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
2/2	3.65	0.00	N	Arm 5 Ahead	Inf	100.0 %	2120	2120
2/3	3.65	0.00	N	Arm 5 Ahead	Inf	91.1 %	2120	2120
				Arm 6 Right	Inf	8.9 %		
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1 (B4100 East)	3.50	0.00	Y	Arm 5 Left	35.00	40.9 %	1931	1931
				Arm 6 Ahead	Inf	59.1 %		
4/2 (B4100 East)	3.50	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1965	1965
4/3 (B4100 East)	3.50	0.00	N	Arm 6 Ahead	50.00	100.0 %	2044	2044
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	This lane uses a directly entered Saturation Flow						2000	2000
6/1	3.50	0.00	Y	Arm 9 Right	Inf	100.0 %	1965	1965
6/2	3.65	0.00	N	Arm 8 Right	Inf	100.0 %	2120	2120
6/3	3.65	0.00	N	Arm 8 Right	Inf	100.0 %	2120	2120
7/1 (A43 South)	3.65	0.00	Y	Arm 9 Ahead	60.00	100.0 %	1932	1932
7/2 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	60.00	100.0 %	1932	1932
7/3 (A43 South)	3.65	0.00	N	Arm 8 Ahead	60.00	100.0 %	2068	2068
7/4 (A43 South)	3.65	0.00	N	Arm 8 Ahead	60.00	100.0 %	2068	2068
8/1	3.65	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1980	1980
8/2	3.65	0.00	N	Arm 11 Ahead	Inf	100.0 %	2120	2120
8/3	3.65	0.00	N	Arm 11 Ahead	Inf	55.6 %	2120	2120
				Arm 12 Right	Inf	44.4 %		
9/1	Infinite Saturation Flow						Inf	Inf
10/1 (B4100 West)	3.50	0.00	Y	Arm 11 Left	30.00	30.4 %	1887	1887
				Arm 12 Ahead	40.00	69.6 %		
10/2 (B4100 West)	3.50	0.00	N	Arm 12 Ahead	40.00	100.0 %	2029	2029

11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
11/3	This lane uses a directly entered Saturation Flow						2000	2000
12/1	3.65	0.00	Y	Arm 3 Right	Inf	100.0 %	1980	1980
12/2	3.65	0.00	N	Arm 2 Right	Inf	31.4 %	2120	2120
				Arm 3 Right	Inf	68.6 %		

Scenario 2: '2031 Do Something - PM Peak' (FG3: 'Baynards1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	467	1435	45	1947
	B	637	0	240	372	1249
	C	2473	230	0	90	2793
	D	37	244	47	3	331
	Tot.	3147	941	1722	510	6320

Traffic Lane Flows

Lane	Scenario 2: 2031 Do Something - PM Peak
Junction: Baynards Green	
1/1 (short)	467
1/2 (with short)	989(In) 522(Out)
1/3 (with short)	958(In) 565(Out)
1/4 (short)	393
2/1	542
2/2	580
2/3	408
3/1	710
3/2	231
4/1	612
4/2 (with short)	637(In) 493(Out)
4/3 (short)	144
5/1	782
5/2	580
5/3	360
6/1	420
6/2	493
6/3	144
7/1 (short)	90
7/2 (with short)	994(In) 904(Out)
7/3 (with short)	1799(In) 940(Out)
7/4 (short)	859
8/1	1142
8/2	1195
8/3	1003
9/1	510
10/1 (with short)	331(In) 165(Out)
10/2 (short)	166
11/1	1179
11/2	1195
11/3	773
12/1	243
12/2	281

Lane Saturation Flows

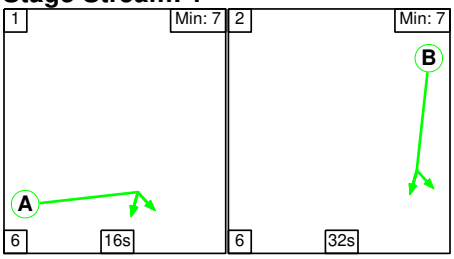
Junction: Baynards Green								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A43 North)	3.65	0.00	Y	Arm 3 Left	60.00	100.0 %	1932	1932
1/2 (A43 North)	3.65	0.00	N	Arm 2 Ahead	60.00	100.0 %	2068	2068
1/3 (A43 North)	3.65	0.00	N	Arm 2 Ahead	60.00	100.0 %	2068	2068
1/4 (A43 North)	3.65	0.00	N	Arm 2 Ahead	60.00	100.0 %	2068	2068
2/1	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
2/2	3.65	0.00	N	Arm 5 Ahead	Inf	100.0 %	2120	2120
2/3	3.65	0.00	N	Arm 5 Ahead	Inf	88.2 %	2120	2120
				Arm 6 Right	Inf	11.8 %		
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1 (B4100 East)	3.50	0.00	Y	Arm 5 Left	35.00	39.2 %	1933	1933
				Arm 6 Ahead	Inf	60.8 %		
4/2 (B4100 East)	3.50	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1965	1965
4/3 (B4100 East)	3.50	0.00	N	Arm 6 Ahead	50.00	100.0 %	2044	2044
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	This lane uses a directly entered Saturation Flow						2000	2000
6/1	3.50	0.00	Y	Arm 9 Right	Inf	100.0 %	1965	1965
6/2	3.65	0.00	N	Arm 8 Right	Inf	100.0 %	2120	2120
6/3	3.65	0.00	N	Arm 8 Right	Inf	100.0 %	2120	2120
7/1 (A43 South)	3.65	0.00	Y	Arm 9 Ahead	60.00	100.0 %	1932	1932
7/2 (A43 South)	3.65	0.00	Y	Arm 8 Ahead	60.00	100.0 %	1932	1932
7/3 (A43 South)	3.65	0.00	N	Arm 8 Ahead	60.00	100.0 %	2068	2068
7/4 (A43 South)	3.65	0.00	N	Arm 8 Ahead	60.00	100.0 %	2068	2068
8/1	3.65	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1980	1980
8/2	3.65	0.00	N	Arm 11 Ahead	Inf	100.0 %	2120	2120
8/3	3.65	0.00	N	Arm 11 Ahead	Inf	77.1 %	2120	2120
				Arm 12 Right	Inf	22.9 %		
9/1	Infinite Saturation Flow						Inf	Inf
10/1 (B4100 West)	3.50	0.00	Y	Arm 11 Left	30.00	22.4 %	1889	1889
				Arm 12 Ahead	40.00	77.6 %		
10/2 (B4100 West)	3.50	0.00	N	Arm 12 Ahead	40.00	100.0 %	2029	2029

11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
11/3	This lane uses a directly entered Saturation Flow						2000	2000
12/1	3.65	0.00	Y	Arm 3 Right	Inf	100.0 %	1980	1980
12/2	3.65	0.00	N	Arm 2 Right	Inf	17.8 %	2120	2120
				Arm 3 Right	Inf	82.2 %		

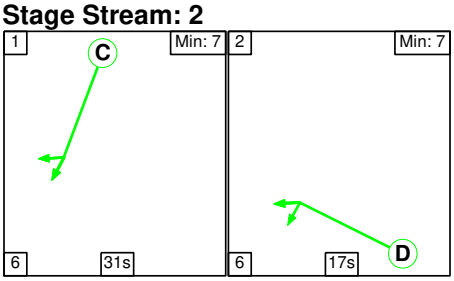
Scenario 1: '2031 Do Something - AM Peak' (FG1: 'Baynards1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

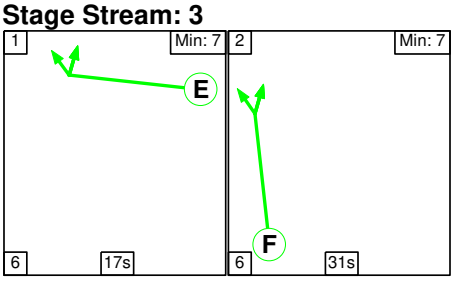
Stage Stream: 1



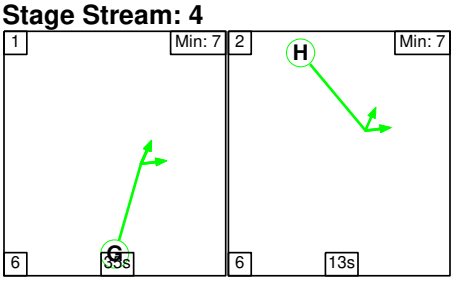
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	16	32
Change Point	0	22

Stage Stream: 2

Stage	1	2
Duration	31	17
Change Point	22	59

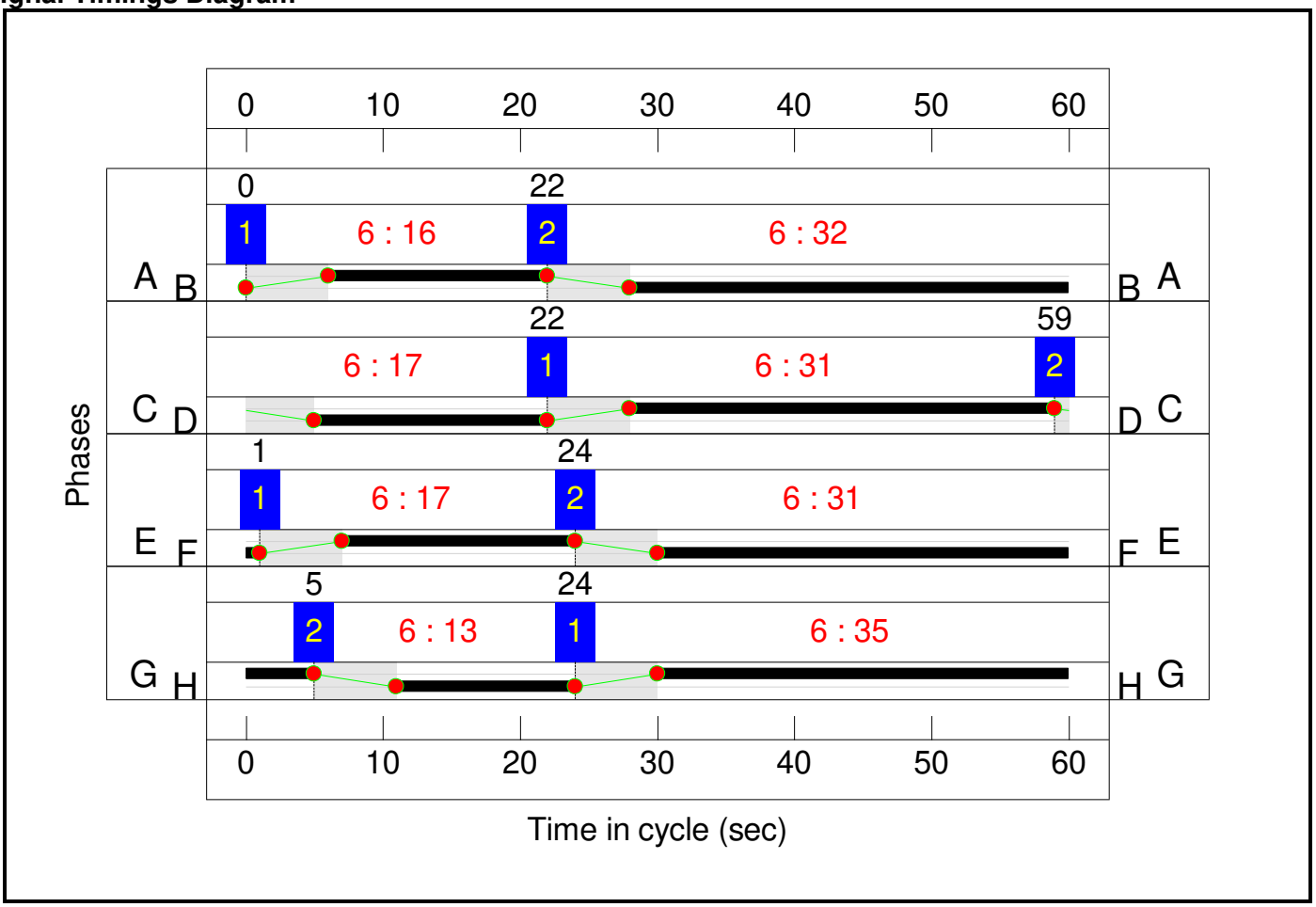
Stage Stream: 3

Stage	1	2
Duration	17	31
Change Point	1	24

Stage Stream: 4

Stage	1	2
Duration	35	13
Change Point	24	5

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: Baynards Green Mitigation scheme	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**89.4%**
Baynards Green	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**89.4%**
1/2+1/1	A43 North Ahead Left	U	1	N/A	B		1	32	-	1338	2068:1932	1137+578	78.4 : 77.1%
1/3+1/4	A43 North Ahead	U	1	N/A	B		1	32	-	1694	2068:2068	1133+935	81.9 : 81.9%
2/1	Ahead	U	2	N/A	C		1	31	-	933	1980	1056	88.4%
2/2	Ahead	U	2	N/A	C		1	31	-	977	2120	1131	86.4%
2/3	Ahead Right	U	2	N/A	C		1	31	-	800	2120	1131	70.8%
4/1	B4100 East Left Ahead	U	2	N/A	D		1	17	-	518	1931	579	89.4%
4/2+4/3	B4100 East Ahead	U	2	N/A	D		1	17	-	350	1965:2044	590+153	47.2 : 47.2%
5/3		U	N/A	N/A	-		-	-	-	729	2000	2000	36.5%
6/1	Right	U	3	N/A	E		1	17	-	377	1965	590	64.0%
6/2	Right	U	3	N/A	E		1	17	-	278	2120	636	43.7%
6/3	Right	U	3	N/A	E		1	17	-	72	2120	636	11.3%
7/2+7/1	A43 South Ahead Ahead2	U	3	N/A	F		1	31	-	690	1932:1932	991+219	57.0 : 57.0%
7/3+7/4	A43 South Ahead	U	3	N/A	F		1	31	-	1309	2068:2068	1103+907	66.6 : 63.3%
8/1	Ahead	U	4	N/A	G		1	35	-	701	1980	1188	59.0%
8/2	Ahead	U	4	N/A	G		1	35	-	877	2120	1272	68.9%
8/3	Ahead Right	U	4	N/A	G		1	35	-	646	2120	1272	50.8%
10/1+10/2	B4100 West Left Ahead	U	4	N/A	H		1	13	-	492	1887:2029	440+473	53.8 : 53.9%
11/3		U	N/A	N/A	-		-	-	-	359	2000	2000	18.0%
12/1	Right	U	1	N/A	A		1	16	-	312	1980	561	55.6%
12/2	Right Right2	U	1	N/A	A		1	16	-	395	2120	601	65.8%

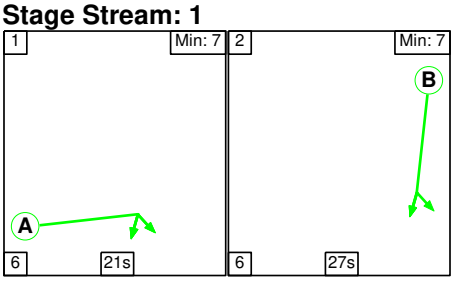
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Baynards Green Mitigation scheme	**-**	**-**	**0**	**0**	**0**	**27.1**	**10.8**	**0.0**	**37.9**	**-**	**-**	**-**	**-**
Baynards Green	**-**	**-**	**0**	**0**	**0**	**27.1**	**10.8**	**0.0**	**37.9**	**-**	**-**	**-**	**-**
1/2+1/1	1338	1338	-	-	-	3.6	1.8	-	5.4	14.5	11.6	1.8	13.4
1/3+1/4	1694	1694	-	-	-	4.9	2.2	-	7.1	15.2	12.4	2.2	14.6
2/1	933	933	-	-	-	0.8	0.0	-	0.8	2.9	1.9	0.0	1.9
2/2	977	977	-	-	-	0.7	0.0	-	0.7	2.6	2.1	0.0	2.1
2/3	800	800	-	-	-	0.6	0.0	-	0.6	2.5	1.6	0.0	1.6
4/1	518	518	-	-	-	2.9	3.8	-	6.7	46.2	8.2	3.8	12.0
4/2+4/3	350	350	-	-	-	1.6	0.4	-	2.1	21.3	3.7	0.4	4.2
5/3	729	729	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.3	0.3
6/1	377	377	-	-	-	0.5	0.0	-	0.5	5.2	1.7	0.0	1.7
6/2	278	278	-	-	-	0.1	0.0	-	0.1	1.4	0.2	0.0	0.2
6/3	72	72	-	-	-	0.0	0.0	-	0.0	1.4	0.0	0.0	0.0
7/2+7/1	690	690	-	-	-	1.7	0.7	-	2.4	12.3	6.1	0.7	6.8
7/3+7/4	1309	1309	-	-	-	3.5	0.9	-	4.4	12.2	8.8	0.9	9.7
8/1	701	701	-	-	-	0.5	0.0	-	0.5	2.8	2.4	0.0	2.4
8/2	877	877	-	-	-	0.6	0.0	-	0.6	2.4	2.6	0.0	2.6
8/3	646	646	-	-	-	0.4	0.0	-	0.4	2.0	1.4	0.0	1.4
10/1+10/2	492	492	-	-	-	2.8	0.6	-	3.3	24.4	3.7	0.6	4.3
11/3	359	359	-	-	-	0.0	0.1	-	0.1	1.1	0.6	0.1	0.7
12/1	312	312	-	-	-	0.9	0.0	-	0.9	10.7	2.7	0.0	2.7
12/2	395	395	-	-	-	1.0	0.0	-	1.0	9.1	2.7	0.0	2.7

C1	Stream: 1 PRC for Signalled Lanes (%):	9.9	Total Delay for Signalled Lanes (pcuHr):	14.44	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	0.7	Total Delay for Signalled Lanes (pcuHr):	10.74	Cycle Time (s):	60
C1	Stream: 3 PRC for Signalled Lanes (%):	35.1	Total Delay for Signalled Lanes (pcuHr):	7.48	Cycle Time (s):	60
C1	Stream: 4 PRC for Signalled Lanes (%):	30.5	Total Delay for Signalled Lanes (pcuHr):	4.83	Cycle Time (s):	60
	PRC Over All Lanes (%):	0.7	Total Delay Over All Lanes(pcuHr):	37.89		

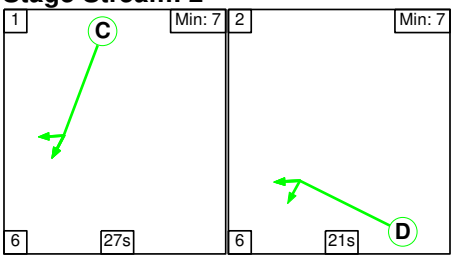
Scenario 2: '2031 Do Something - PM Peak' (FG3: 'Baynards1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

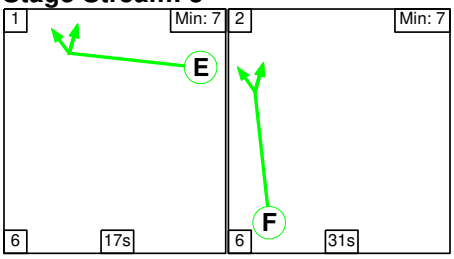
Stage Stream: 1



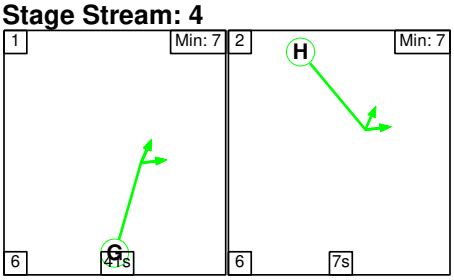
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	21	27
Change Point	0	27

Stage Stream: 2

Stage	1	2
Duration	27	21
Change Point	20	53

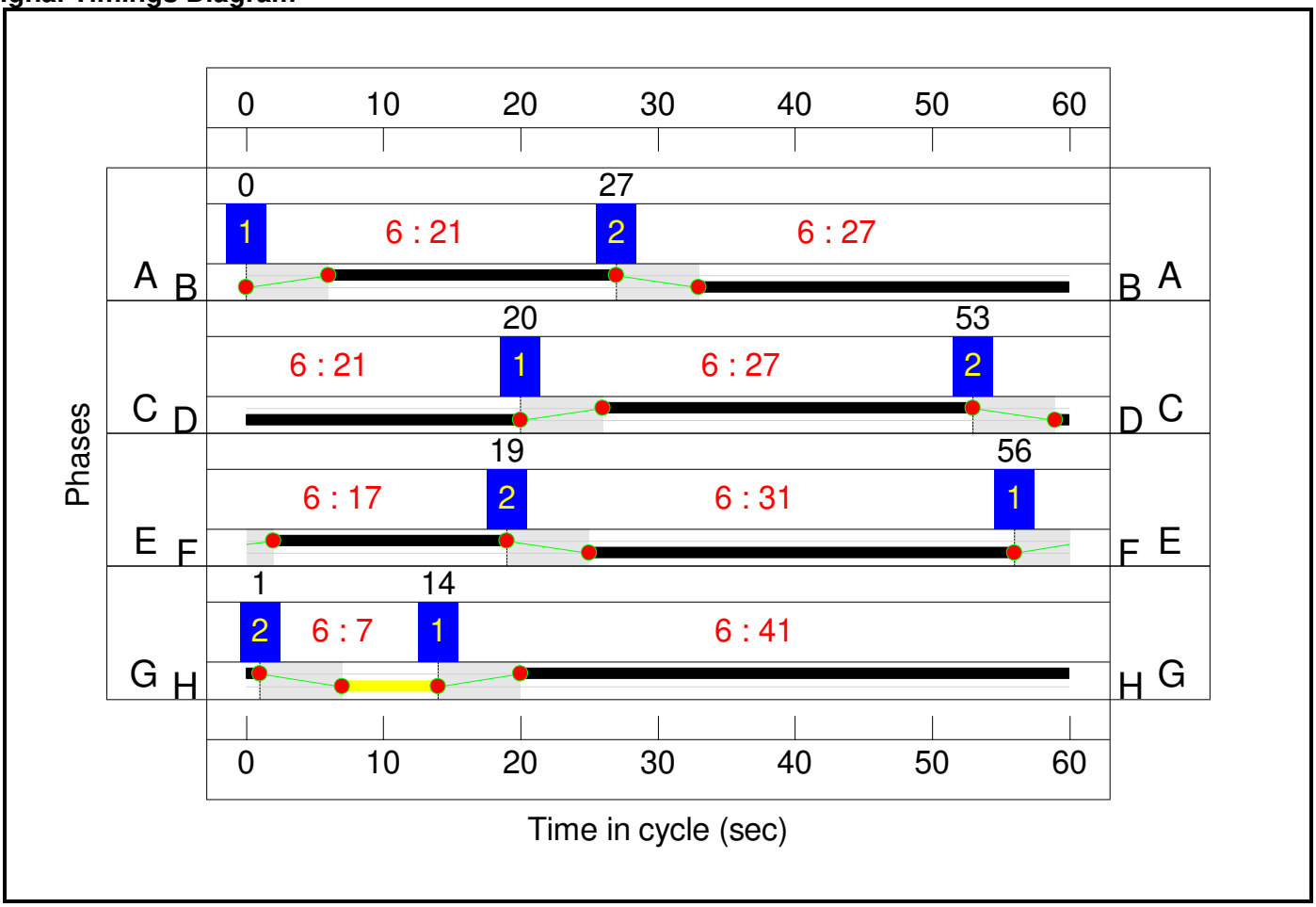
Stage Stream: 3

Stage	1	2
Duration	17	31
Change Point	56	19

Stage Stream: 4

Stage	1	2
Duration	41	7
Change Point	14	1

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: Baynards Green Mitigation scheme	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.7%**
Baynards Green	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.7%**
1/2+1/1	A43 North Ahead Left	U	1	N/A	B		1	27	-	989	2068:1932	965+902	54.1 : 51.8%
1/3+1/4	A43 North Ahead	U	1	N/A	B		1	27	-	958	2068:2068	965+813	58.5 : 48.3%
2/1	Ahead	U	2	N/A	C		1	27	-	542	1980	924	58.7%
2/2	Ahead	U	2	N/A	C		1	27	-	580	2120	989	58.6%
2/3	Ahead Right	U	2	N/A	C		1	27	-	408	2120	989	41.2%
4/1	B4100 East Left Ahead	U	2	N/A	D		1	21	-	612	1933	709	86.3%
4/2+4/3	B4100 East Ahead	U	2	N/A	D		1	21	-	637	1965:2044	718+210	68.7 : 68.7%
5/3		U	N/A	N/A	-		-	-	-	360	2000	2000	18.0%
6/1	Right	U	3	N/A	E		1	17	-	420	1965	590	71.2%
6/2	Right	U	3	N/A	E		1	17	-	493	2120	636	77.5%
6/3	Right	U	3	N/A	E		1	17	-	144	2120	636	22.6%
7/2+7/1	A43 South Ahead Ahead2	U	3	N/A	F		1	31	-	994	1932:1932	1019+101	88.7 : 88.7%
7/3+7/4	A43 South Ahead	U	3	N/A	F		1	31	-	1799	2068:2068	1081+987	87.0 : 87.0%
8/1	Ahead	U	4	N/A	G		1	41	-	1142	1980	1386	82.4%
8/2	Ahead	U	4	N/A	G		1	41	-	1195	2120	1484	80.5%
8/3	Ahead Right	U	4	N/A	G		1	41	-	1003	2120	1484	67.6%
10/1+10/2	B4100 West Left Ahead	U	4	N/A	H		1	7	-	331	1889:2029	252+271	65.5 : 61.4%
11/3		U	N/A	N/A	-		-	-	-	773	2000	2000	38.7%
12/1	Right	U	1	N/A	A		1	21	-	243	1980	726	33.5%
12/2	Right Right2	U	1	N/A	A		1	21	-	281	2120	777	36.1%

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: Baynards Green Mitigation scheme	**-**	**-**	**0**	**0**	**0**	**29.5**	**13.5**	**0.0**	**43.0**	**-**	**-**	**-**	**-**
Baynards Green	**-**	**-**	**0**	**0**	**0**	**29.5**	**13.5**	**0.0**	**43.0**	**-**	**-**	**-**	**-**
1/2+1/1	989	989	-	-	-	3.1	0.6	-	3.7	13.4	6.1	0.6	6.7
1/3+1/4	958	958	-	-	-	3.0	0.6	-	3.6	13.4	6.9	0.6	7.5
2/1	542	542	-	-	-	0.8	0.0	-	0.8	5.5	1.9	0.0	1.9
2/2	580	580	-	-	-	0.9	0.0	-	0.9	5.3	2.0	0.0	2.0
2/3	408	408	-	-	-	0.6	0.0	-	0.6	5.3	1.5	0.0	1.5
4/1	612	612	-	-	-	3.0	3.0	-	6.0	35.1	9.4	3.0	12.3
4/2+4/3	637	637	-	-	-	2.7	1.1	-	3.8	21.5	6.8	1.1	7.9
5/3	360	360	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1
6/1	420	420	-	-	-	0.7	0.0	-	0.7	6.2	2.8	0.0	2.8
6/2	493	493	-	-	-	0.5	0.0	-	0.5	3.4	1.8	0.0	1.8
6/3	144	144	-	-	-	0.1	0.0	-	0.1	3.3	0.2	0.0	0.2
7/2+7/1	994	994	-	-	-	3.3	3.7	-	7.0	25.2	13.1	3.7	16.8
7/3+7/4	1799	1799	-	-	-	5.8	3.3	-	9.1	18.1	13.3	3.3	16.6
8/1	1142	1142	-	-	-	0.5	0.0	-	0.5	1.7	4.0	0.0	4.0
8/2	1195	1195	-	-	-	0.6	0.0	-	0.6	1.7	4.2	0.0	4.2
8/3	1003	1003	-	-	-	0.4	0.0	-	0.4	1.5	2.4	0.0	2.4
10/1+10/2	331	331	-	-	-	2.3	0.9	-	3.1	33.9	2.6	0.9	3.4
11/3	773	773	-	-	-	0.0	0.3	-	0.3	1.5	2.4	0.3	2.7
12/1	243	243	-	-	-	0.6	0.0	-	0.6	9.3	1.9	0.0	1.9
12/2	281	281	-	-	-	0.6	0.0	-	0.6	8.0	1.9	0.0	1.9

C1	Stream: 1 PRC for Signalled Lanes (%):	53.7	Total Delay for Signalled Lanes (pcuHr):	8.50	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	4.2	Total Delay for Signalled Lanes (pcuHr):	12.07	Cycle Time (s):	60
C1	Stream: 3 PRC for Signalled Lanes (%):	1.5	Total Delay for Signalled Lanes (pcuHr):	17.34	Cycle Time (s):	60
C1	Stream: 4 PRC for Signalled Lanes (%):	9.2	Total Delay for Signalled Lanes (pcuHr):	4.67	Cycle Time (s):	60
	PRC Over All Lanes (%):	1.5	Total Delay Over All Lanes(pcuHr):	43.01		

APPENDIX D

PADBURY COMMITTED SCHEME LINSIG MODEL AUDIT AND REVISED RESULTS

LINSIG V3 Model Checking Report

AECOM

Project: **OXFORDSHIRE SRFI-M40 Junction 10**

Model: **210407 Padbury - committed scheme.lsg3x**

Job No: **xxxxx**

Model Submitted: **08/08/2021**

Corrections Submitted: **Date Submitted**

Modelled By: ADC Infrastructure **Checked by: Weiping Guo** **Approved by:**

This note is to document the checks made to LINSIG models. Once completed this should be filed with the model, or model outputs for future reference.

Results Key

× - Changes required before work is signed off
? – Changes may be required before work is signed off, further work required
✓ - No further changes required before work is signed off

File Checked: Hyperlink to model

Network Information					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
08/08/21	Scenario title(s) entered	✓			
08/08/21	Project name entered	✓			
08/08/21	Modeller details recorded	✓			
08/08/21	Network location details entered	✓			
08/08/21	File name is logical	✓			

Network Setup					
Junction Drawings: In report 'OxSRFI-ADC1794-RP-M-V3 'TN5 M40 Junction 10 Options Report' – appendices' Page no.4					
Sat Flow Measurements / Calculations: Hyperlink to Sat Flow Measurements					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
	Junctions				
08/08/21	Appropriate junctions setup	✓			
08/08/21	Junction info/ signal controllers complete	✓			
08/08/21	Logical arm structure setup	✓			
	Lanes				
08/08/21	Lane setup reflects junction drawings	X	Arm5- Junction 10 sbound offslip lane 1 flare length does not match the measuring from the drawing.	Junction 10 sbound offslip lane 1 flare length increased to 60m as per the drawing.	
08/08/21	Check each lane that is signal controlled	✓			
08/08/21	Lanes matched to controller and phase	✓	.		
08/08/21	Lane length appropriate	X	Arm5- Junction 10 sbound offslip lane 1 flare length does not match the measuring from the drawing.	Junction 10 sbound offslip lane 1 flare length increased to 60m as per the drawing.	
08/08/21	Custom occupancy (if req)	N/A			
	Saturation Flows				
08/08/21	Justified method to derive saturation flows				
08/08/21	Check observed sat flows (if used)	N/A			
08/08/21	Check RR67 sat flows calculations (if used)	x	1. All the entry arm lanes saturation flows were calculated by RR67 methods, however all the lanes were treated as the 'nearside lane'. And the turning radius seemingly are too low that affect the lanes sat flow calculation. Please double check. 2. All the circulatory lanes Sat flow are directly entered. As all the entry arms are using RR67, we recommend the circulatory lanes adopt the same method of calculations. Also the direct entered Sat flow are lower than the entry arms Sat flow which can cause the issues. In general, the downstream lanes sat flow should be equal or greater than the entry lanes Sat flows, unless there is evidence supporting there is 'bottle neck' issues at the downstream. 3. As this is the existing signalisation junction, please refer to the existing MOVA datasets for the actual individual lane saturation flows if possible.	1. Central lanes and offside lanes have 'nearside lane' de-selected. All turning radii checked and increased where applicable. 2. All circulating lanes have RR67 parameters applied such that all circulating saturation flows are equal or greater than the entry lanes.	
08/08/21	Check external sat flows calculations (if used)				
08/08/21	Check sat flows for any bottleneck links	N/A			
	Advanced Lane Settings				
08/08/21	Use of start / end green displacements (if req)	✓			
08/08/21	Use of queue limits on short links (if req)	✓			
08/08/21	Use of weightings for optimiser constraints (if req)	✓			
08/08/21	Use of random delay or queue de-sliver (if req)	✓			
	Give Ways				
08/08/21	Check each lane that is priority controlled	N/A			

Tel. 0121 262 6795
www.aecom.com

Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

08/08/21	Measurement of max/min flow when giving way	N/A			
08/08/21	Flow when opposing traffic stopped reasonable	N/A			
08/08/21	Measurement of give-way co-efficient	N/A			
08/08/21	Measurement of clear conflict time of opposing traffic	N/A			
08/08/21	Check all controlling movements identified	N/A			
08/08/21	Measurement of storage in front of stop-line	N/A			
08/08/21	Max turns in inter-green reasonable	N/A			
08/08/21	Measurement of non-blocking storage	N/A			
	Lane Connectors				
08/08/21	Lane connectors provided reasonable	✓	Arm3 Lane 2 should connect the Arm 6 lane 1 and lane 2 to match the drawing, however this may not affect the overall junction capacity.		
08/08/21	Cruise time reasonable	✓	45km/hr cruise speed is applied for all the link connectors.		
08/08/21	Default platoon dispersion used unless observed	X	The platoon dispersion should be switched off due to the short circulatory lanes.	Platoon dispersion has been switched off.	
	Zones				
08/08/21	Zones match O-D matrix	✓	PadburyRef1_AM flow matches the flow report page 26; PadburyRef1_PM flow matches the flow report page 27; Padbury1_AM flow matches the flow report page 40; Padbury1_PM flow matches the flow report page 41.		
	Pedestrians				
08/08/21	Ped crossings represented by ped links (if req)	N/A			
08/08/21	Ped link data correct (if req)	N/A			
08/08/21	Ped connector walk times reasonable (if req)	N/A			
08/08/21	Ped links matched to appropriate phases (if req)	N/A			
08/08/21	Ped zones match ped O-D matrix (if req)	N/A			

Controllers

Controller Specifications: Hyperlink to Controller Specification (if req)
Intergreen Calculations: Hyperlink to Intergreen Calculations (if req)

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
	General Controller Set-up				
08/08/21	Sufficient controllers setup	✓			
08/08/21	Multiple stage streams setup correctly (if req)	✓			
08/08/21	Non-standard filters setup correctly (if req)	N/A			
	Signal Settings				
08/08/21	Check phases for each controller	✓			
08/08/21	Check phase mins/type reasonable	✓			
08/08/21	Check inter-greens calculations/coding	?	There is no existing signal information provided for check, and 6s inter-green is used for all conflict phases.		
08/08/21	Stages reasonable	✓			
08/08/21	Phase delays reasonable (if req)	N/A			

Stage Sequences

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
08/08/21	Check stage sequences observed / optimised	✓			
08/08/21	Check stage timings observed / optimised	N/A			

Traffic Counts and Calculations

Traffic Flow Data: Hyperlink to Traffic Flow Data – in report 'OXSRFI-ADC1794-RP-N-V2 'TN6 - M40 J10 OR Traffic Flow Derivation' – bound'
Matrix Calculations: Hyperlink to Matrix Calculations (if required)
Lane Balancing Calculations: Hyperlink to Lane Balancing Calculations (if required)
Site Observations: Hyperlink to Site Flows Observations

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
08/08/21	Suitability of traffic surveys undertaken	N/A			
08/08/21	Are there sufficient site observations	N/A			
08/08/21	Check O-D matrix calculations	✓			
08/08/21	Are lane balancing calculations sufficient / consistent	?	To be checked after the above lanes and sat flow update.		
08/08/21	Does lane balancing match lining	?	To be checked after the above lanes and sat flow update.		
08/08/21	Does lane balancing match matrices	?	To be checked after the above lanes and sat flow update.		

Traffic Flows

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
08/08/21	Traffic & ped flow (if req) groups setup	✓	Multi flow groups setup in the model. Only four flows matrix are used.		

Tel. 0121 262 6795
www.aecom.com

Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

08/08/21	Desired flows match O-D matrices	✓			
08/08/21	Actual flows match desired flows	✓			
08/08/21	Inappropriate routes closed	✓			
08/08/21	Route flows match lane balancing	✓			

Modelling

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
08/08/21	Scenario set up with correct options	✓			
08/08/21	Cycle time appropriate for network control	✓			
08/08/21	Cycle time optimised (if req)	N/A			

Results

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
	Are all values as expected (Demand Flows, Green Times etc)		To be checked after above changes.		
	Deg Sat >100% for existing situation with no modelled suppressed demand?		To be checked after above changes.		
	Deg Sat appropriate? Validated?		To be checked after above changes.		
	Capacity conclusions		To be checked after above changes.		
	If suppressed demand has been modelled, do queues validate?		To be checked after above changes.		
	Queues appropriate?		To be checked after above changes.		
	Queue limits exceeded?		To be checked after above changes.		
	Queuing conclusions (will exit blocking modify these?)		To be checked after above changes.		
	If suppressed demand has been modelled do journey times validate?		To be checked after above changes.		
	Journey time conclusions?		To be checked after above changes.		

Conclusions and Recommendations

Tel. 0121 262 6795
www.aecom.com

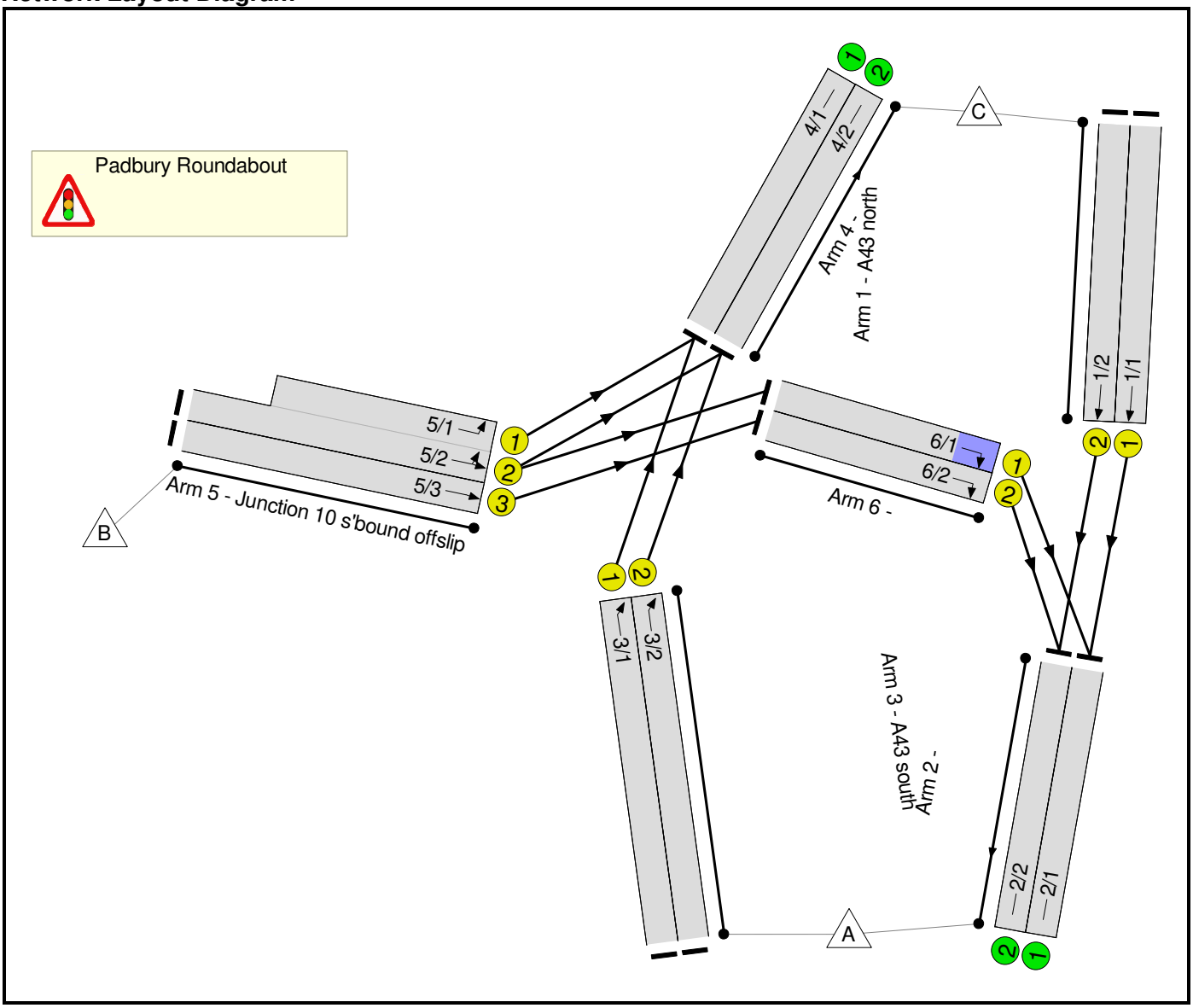
Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

Full Input Data And Results

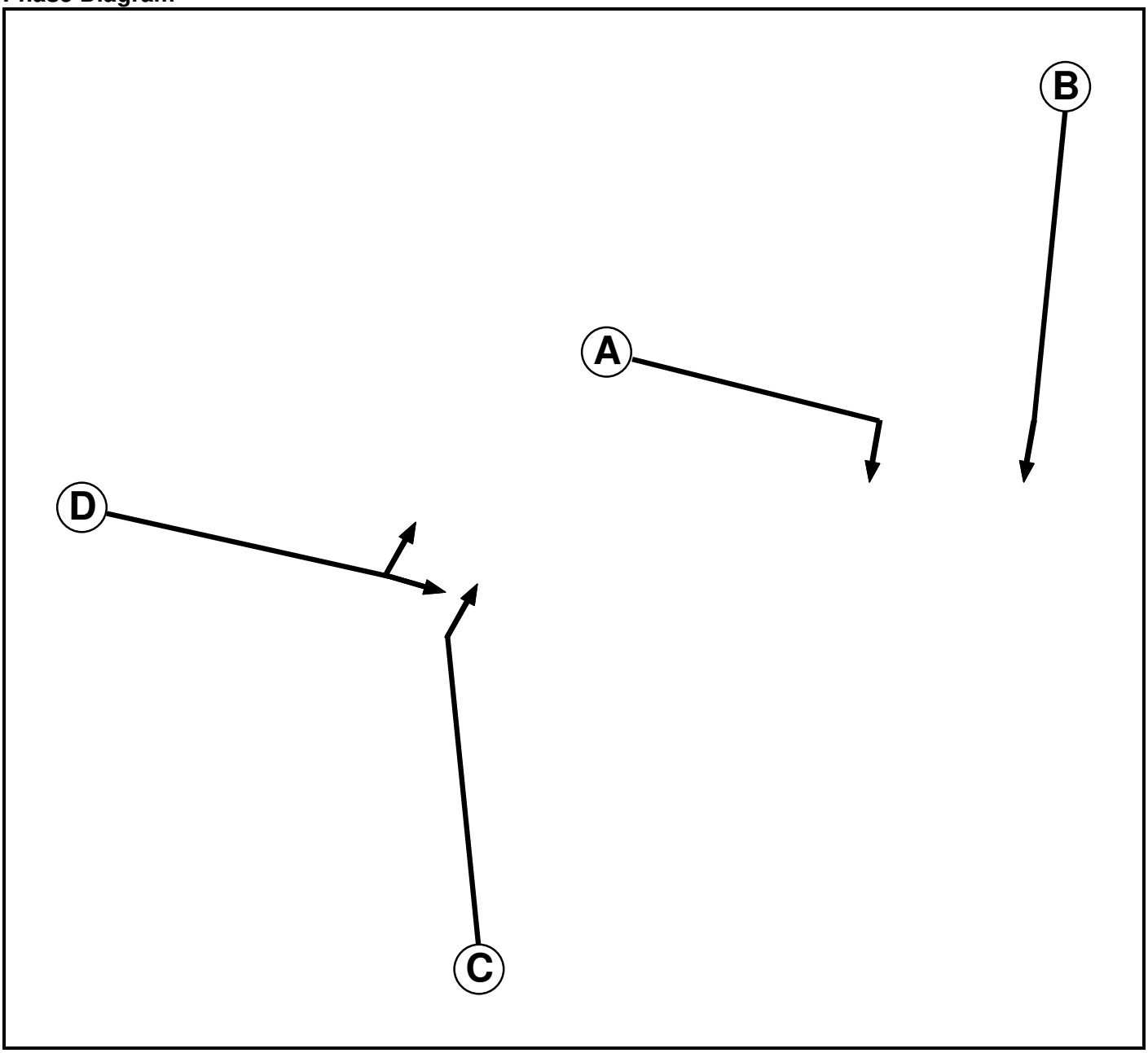
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Padbury HE scheme**
Location:	
Additional detail:	Amended following Aecom comments
File name:	211006 Padbury - committed scheme.lsg3x
Author:	Mark Higgins
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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

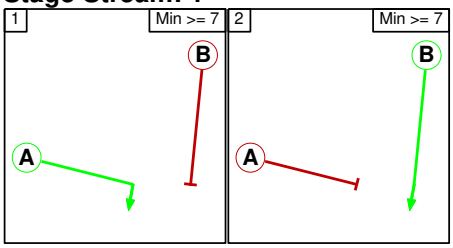
		Starting Phase			
		A	B	C	D
Terminating Phase	A		6	-	-
	B	6		-	-
	C	-	-		6
	D	-	-	6	

Phases in Stage

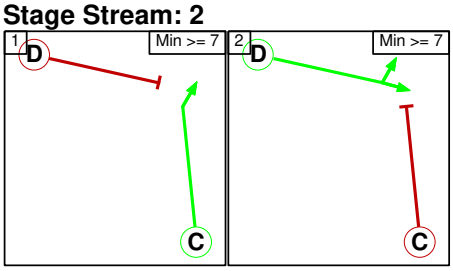
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Prohibited Stage Change

Stage Stream: 1

		To Stage		
			1	2
From Stage	1			6
	2	6		

Stage Stream: 2

		To Stage		
			1	2
From Stage	1			6
	2	6		

Lane Input Data

Junction: Padbury Roundabout												
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 (A43 north)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 2 Ahead	50.00
1/2 (A43 north)	U	B	2	3	60.0	Geom	-	3.65	0.00	N	Arm 2 Ahead	50.00
2/1	U		2	3	60.0	Inf	-	-	-	-	-	-
2/2	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1 (A43 south)	U	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Ahead	30.00
3/2 (A43 south)	U	C	2	3	60.0	Geom	-	3.65	0.00	N	Arm 4 Ahead	30.00
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
4/2	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Junction 10 s'bound offslip)	U	D	2	3	10.8	Geom	-	3.65	0.00	Y	Arm 4 Left	45.00
5/2 (Junction 10 s'bound offslip)	U	D	2	3	60.0	Geom	-	3.65	0.00	N	Arm 4 Left Arm 6 Ahead	50.00 50.00
5/3 (Junction 10 s'bound offslip)	U	D	2	3	60.0	Geom	-	3.65	0.00	N	Arm 6 Ahead	40.00
6/1	U	A	2	3	8.7	Geom	-	3.65	0.00	Y	Arm 2 Right	Inf
6/2	U	A	2	3	8.7	Geom	-	3.65	0.00	N	Arm 2 Right	Inf

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'PadburyRef1_AM'	07:45	08:45	01:00	
3: 'PadburyRef1_PM'	16:30	17:30	01:00	
5: 'Padbury1_AM'	07:45	08:45	01:00	
7: 'Padbury1_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Reference Case - AM Peak' (FG1: 'PadburyRef1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	0	1543	1543
	B	535	0	337	872
	C	2582	0	0	2582
	Tot.	3117	0	1880	4997

Traffic Lane Flows

Lane	Scenario 1: 2031 Reference Case - AM Peak
Junction: Padbury Roundabout	
1/1	1245
1/2	1337
2/1	1554
2/2	1563
3/1	737
3/2	806
4/1	1048
4/2	832
5/1 (short)	311
5/2 (with short)	646(In) 335(Out)
5/3	226
6/1	309
6/2	226

Lane Saturation Flows

Junction: Padbury Roundabout

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 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/2 (A43 north)	3.65	0.00	N	Arm 2 Ahead	50.00	100.0 %	2058	2058
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	30.00	100.0 %	1886	1886
3/2 (A43 south)	3.65	0.00	N	Arm 4 Ahead	30.00	100.0 %	2019	2019
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 4 Left	45.00	100.0 %	1916	1916
5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm 4 Left	50.00	7.8 %	2058	2058
				Arm 6 Ahead	50.00	92.2 %		
5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm 6 Ahead	40.00	100.0 %	2043	2043
6/1	3.65	0.00	Y	Arm 2 Right	Inf	100.0 %	1980	1980
6/2	3.65	0.00	N	Arm 2 Right	Inf	100.0 %	2120	2120

Scenario 2: '2031 Do Something - AM Peak' (FG5: 'Padbury1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	0	1662	1662
	B	738	0	337	1075
	C	2851	0	0	2851
	Tot.	3589	0	1999	5588

Traffic Lane Flows

Lane	Scenario 2: 2031 Do Something - AM Peak
Junction: Padbury Roundabout	
1/1	1377
1/2	1474
2/1	1796
2/2	1793
3/1	796
3/2	866
4/1	1133
4/2	866
5/1 (short)	337
5/2 (with short)	756(In) 419(Out)
5/3	319
6/1	419
6/2	319

Lane Saturation Flows

Junction: Padbury Roundabout

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 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/2 (A43 north)	3.65	0.00	N	Arm 2 Ahead	50.00	100.0 %	2058	2058
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	30.00	100.0 %	1886	1886
3/2 (A43 south)	3.65	0.00	N	Arm 4 Ahead	30.00	100.0 %	2019	2019
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 4 Left	45.00	100.0 %	1916	1916
5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm 4 Left	50.00	0.0 %	2058	2058
				Arm 6 Ahead	50.00	100.0 %		
5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm 6 Ahead	40.00	100.0 %	2043	2043
6/1	3.65	0.00	Y	Arm 2 Right	Inf	100.0 %	1980	1980
6/2	3.65	0.00	N	Arm 2 Right	Inf	100.0 %	2120	2120

Scenario 3: '2031 Reference Case - PM Peak' (FG3: 'PadburyRef1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	0	2200	2200
	B	505	0	318	823
	C	1570	0	0	1570
	Tot.	2075	0	2518	4593

Traffic Lane Flows

Lane	Scenario 3: 2031 Reference Case - PM Peak
Junction: Padbury Roundabout	
1/1	748
1/2	822
2/1	1003
2/2	1072
3/1	1057
3/2	1143
4/1	1333
4/2	1185
5/1 (short)	276
5/2 (with short)	573(In) 297(Out)
5/3	250
6/1	255
6/2	250

Lane Saturation Flows

Junction: Padbury Roundabout

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 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/2 (A43 north)	3.65	0.00	N	Arm 2 Ahead	50.00	100.0 %	2058	2058
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	30.00	100.0 %	1886	1886
3/2 (A43 south)	3.65	0.00	N	Arm 4 Ahead	30.00	100.0 %	2019	2019
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 4 Left	45.00	100.0 %	1916	1916
5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm 4 Left	50.00	14.1 %	2058	2058
				Arm 6 Ahead	50.00	85.9 %		
5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm 6 Ahead	40.00	100.0 %	2043	2043
6/1	3.65	0.00	Y	Arm 2 Right	Inf	100.0 %	1980	1980
6/2	3.65	0.00	N	Arm 2 Right	Inf	100.0 %	2120	2120

Scenario 4: '2031 Do Something - PM Peak' (FG7: 'Padbury1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	0	2475	2475
	B	609	0	318	927
	C	1722	0	0	1722
	Tot.	2331	0	2793	5124

Traffic Lane Flows

Lane	Scenario 4: 2031 Do Something - PM Peak
Junction: Padbury Roundabout	
1/1	822
1/2	900
2/1	1132
2/2	1199
3/1	1193
3/2	1282
4/1	1496
4/2	1297
5/1 (short)	303
5/2 (with short)	628(In) 325(Out)
5/3	299
6/1	310
6/2	299

Lane Saturation Flows

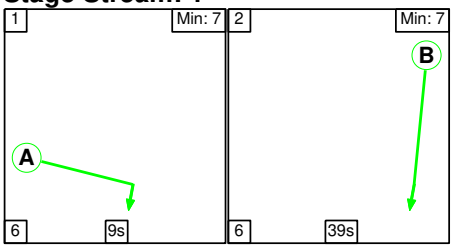
Junction: Padbury Roundabout

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 (A43 north)	3.65	0.00	Y	Arm 2 Ahead	50.00	100.0 %	1922	1922
1/2 (A43 north)	3.65	0.00	N	Arm 2 Ahead	50.00	100.0 %	2058	2058
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1 (A43 south)	3.65	0.00	Y	Arm 4 Ahead	30.00	100.0 %	1886	1886
3/2 (A43 south)	3.65	0.00	N	Arm 4 Ahead	30.00	100.0 %	2019	2019
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm 4 Left	45.00	100.0 %	1916	1916
5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm 4 Left	50.00	4.6 %	2058	2058
				Arm 6 Ahead	50.00	95.4 %		
5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm 6 Ahead	40.00	100.0 %	2043	2043
6/1	3.65	0.00	Y	Arm 2 Right	Inf	100.0 %	1980	1980
6/2	3.65	0.00	N	Arm 2 Right	Inf	100.0 %	2120	2120

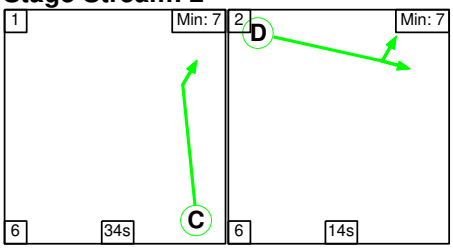
Scenario 1: '2031 Reference Case - AM Peak' (FG1: 'PadburyRef1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

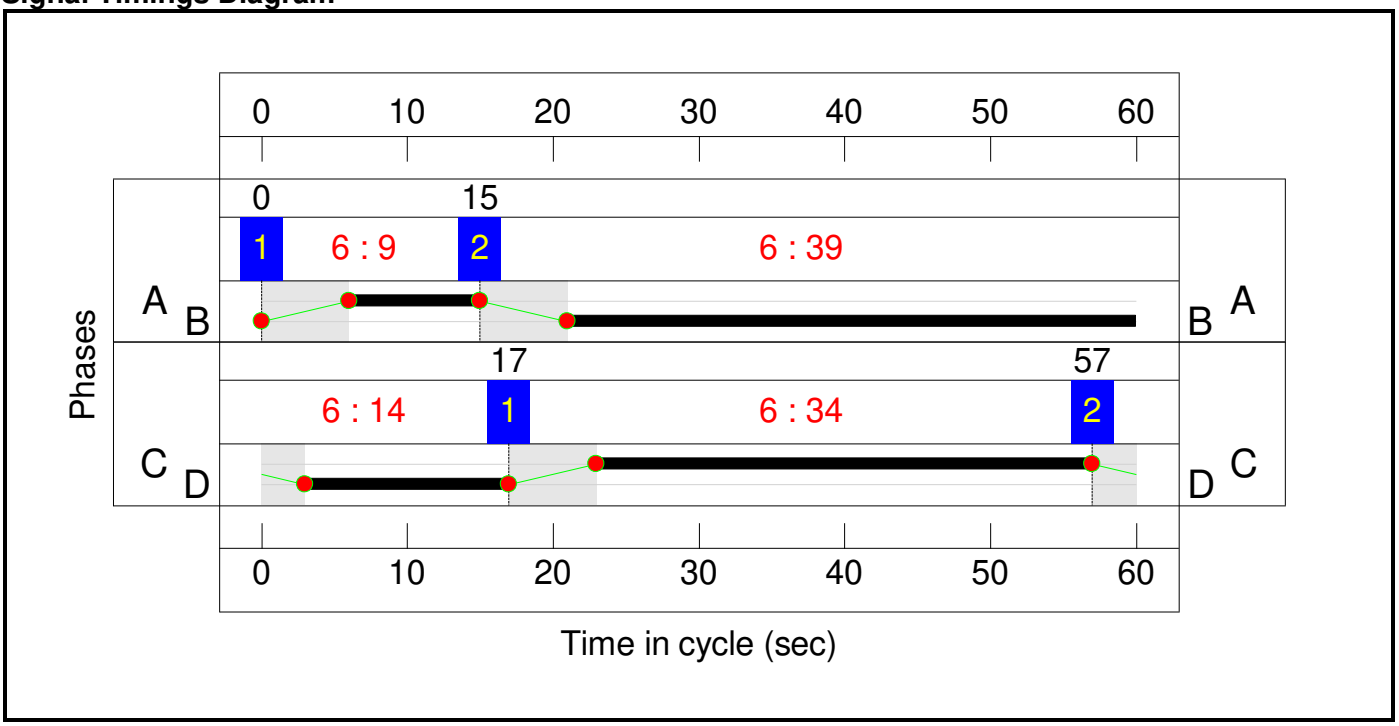
Stage Stream: 1

Stage	1	2
Duration	9	39
Change Point	0	15

Stage Stream: 2

Stage	1	2
Duration	34	14
Change Point	17	57

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: Padbury HE scheme	-	-	**N/A**	-	-		-	-	-	-	-	-	**97.4%**
Padbury Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**97.4%**
1/1	A43 north Ahead	U	1	N/A	B		1	39	-	1245	1922	1281	97.2%
1/2	A43 north Ahead	U	1	N/A	B		1	39	-	1337	2058	1372	97.4%
3/1	A43 south Ahead	U	2	N/A	C		1	34	-	737	1886	1100	67.0%
3/2	A43 south Ahead	U	2	N/A	C		1	34	-	806	2019	1178	68.4%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	2	N/A	D		1	14	-	646	2058:1916	515+479	65.1 : 64.9%
5/3	Junction 10 s'bound offslip Ahead	U	2	N/A	D		1	14	-	226	2043	511	44.2%
6/1	Right	U	1	N/A	A		1	9	-	309	1980	330	93.6%
6/2	Right	U	1	N/A	A		1	9	-	226	2120	353	64.0%

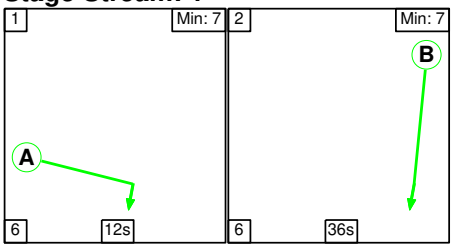
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Padbury HE scheme	**-**	**-**	**0**	**0**	**0**	**16.0**	**25.7**	**0.0**	**41.7**	**-**	**-**	**-**	**-**
Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**16.0**	**25.7**	**0.0**	**41.7**	**-**	**-**	**-**	**-**
1/1	1245	1245	-	-	-	3.3	10.8	-	14.0	40.6	19.4	10.8	30.1
1/2	1337	1337	-	-	-	3.5	11.5	-	15.1	40.5	21.2	11.5	32.7
3/1	737	737	-	-	-	1.8	1.0	-	2.8	13.5	8.4	1.0	9.4
3/2	806	806	-	-	-	1.9	1.1	-	3.0	13.5	9.2	1.1	10.3
5/2+5/1	646	646	-	-	-	3.6	0.9	-	4.5	25.3	4.9	0.9	5.9
5/3	226	226	-	-	-	1.2	0.4	-	1.6	25.3	3.1	0.4	3.5
6/1	309	309	-	-	-	0.4	0.0	-	0.4	4.8	0.5	0.0	0.5
6/2	226	226	-	-	-	0.3	0.0	-	0.3	4.7	0.4	0.0	0.4

C1 Stream: 1 PRC for Signalled Lanes (%): -8.3 Total Delay for Signalled Lanes (pcuHr): 29.79 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 31.5 Total Delay for Signalled Lanes (pcuHr): 11.91 Cycle Time (s): 60
PRC Over All Lanes (%): -8.3 Total Delay Over All Lanes(pcuHr): 41.70

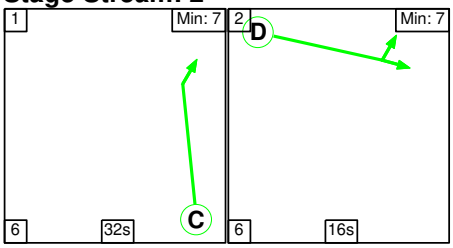
Scenario 2: '2031 Do Something - AM Peak' (FG5: 'Padbury1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

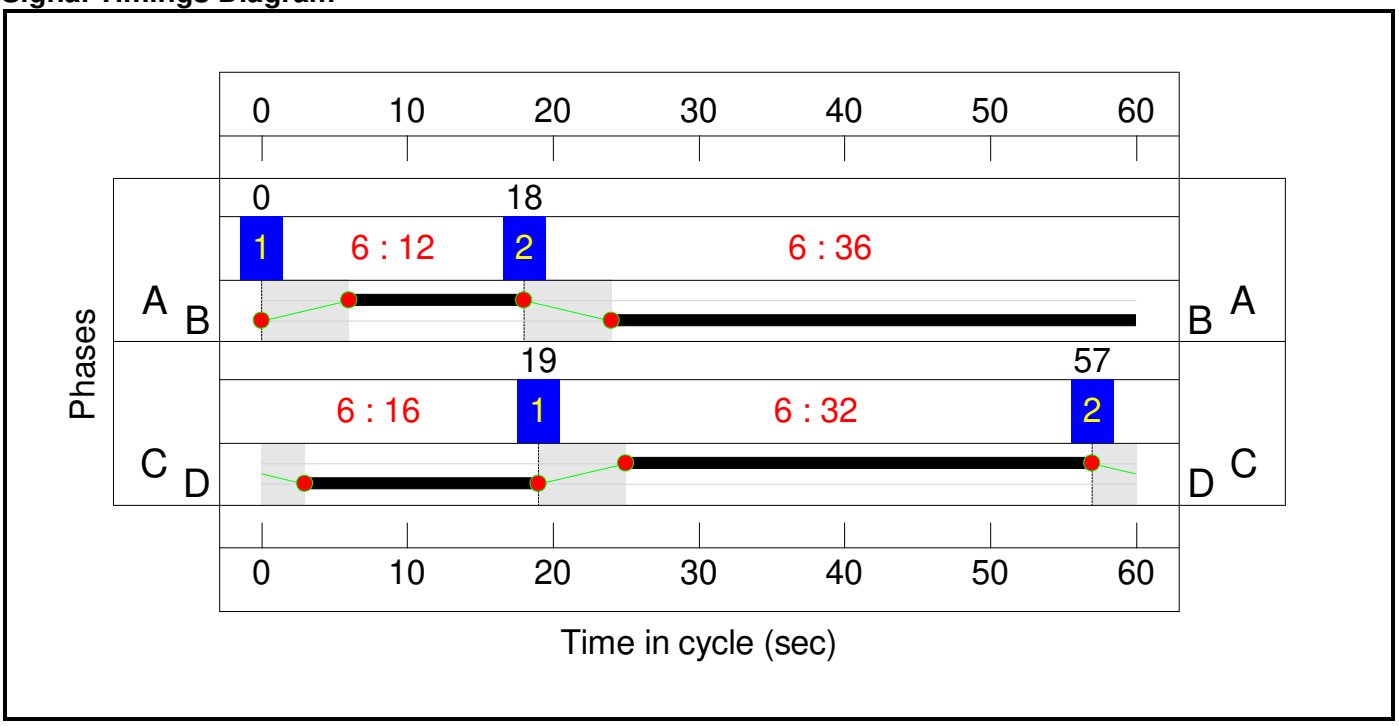
Stage Stream: 1

Stage	1	2
Duration	12	36
Change Point	0	18

Stage Stream: 2

Stage	1	2
Duration	32	16
Change Point	19	57

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: Padbury HE scheme	-	-	**N/A**	-	-		-	-	-	-	-	-	**116.2%**
Padbury Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**116.2%**
1/1	A43 north Ahead	U	1	N/A	B		1	36	-	1377	1922	1185	116.2%
1/2	A43 north Ahead	U	1	N/A	B		1	36	-	1474	2058	1269	116.1%
3/1	A43 south Ahead	U	2	N/A	C		1	32	-	796	1886	1037	76.7%
3/2	A43 south Ahead	U	2	N/A	C		1	32	-	866	2019	1110	78.0%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	2	N/A	D		1	16	-	756	2058:1916	583+477	71.9 : 70.7%
5/3	Junction 10 s'bound offslip Ahead	U	2	N/A	D		1	16	-	319	2043	579	55.1%
6/1	Right	U	1	N/A	A		1	12	-	419	1980	429	97.7%
6/2	Right	U	1	N/A	A		1	12	-	319	2120	459	69.4%

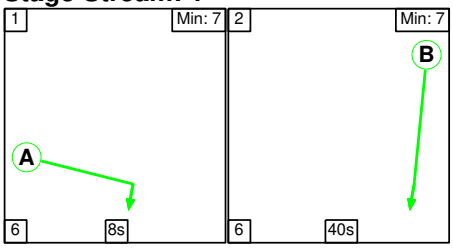
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Padbury HE scheme	**-**	**-**	**0**	**0**	**0**	**35.4**	**210.5**	**0.0**	**245.9**	**-**	**-**	**-**	**-**
Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**35.4**	**210.5**	**0.0**	**245.9**	**-**	**-**	**-**	**-**
1/1	1377	1185	-	-	-	11.6	99.3	-	111.0	290.2	28.2	99.3	127.5
1/2	1474	1269	-	-	-	12.4	105.9	-	118.4	289.1	30.2	105.9	136.1
3/1	796	796	-	-	-	2.3	1.6	-	4.0	17.9	10.2	1.6	11.8
3/2	866	866	-	-	-	2.6	1.7	-	4.3	17.9	11.3	1.7	13.1
5/2+5/1	756	756	-	-	-	4.0	1.2	-	5.2	24.9	6.2	1.2	7.4
5/3	319	319	-	-	-	1.6	0.6	-	2.2	25.2	4.4	0.6	5.0
6/1	419	419	-	-	-	0.5	0.0	-	0.5	4.0	1.2	0.0	1.2
6/2	319	319	-	-	-	0.3	0.0	-	0.3	3.7	0.4	0.0	0.4

C1 Stream: 1 PRC for Signalled Lanes (%): -29.1 Total Delay for Signalled Lanes (pcuHr): 230.17 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 15.4 Total Delay for Signalled Lanes (pcuHr): 15.72 Cycle Time (s): 60
PRC Over All Lanes (%): -29.1 Total Delay Over All Lanes(pcuHr): 245.89

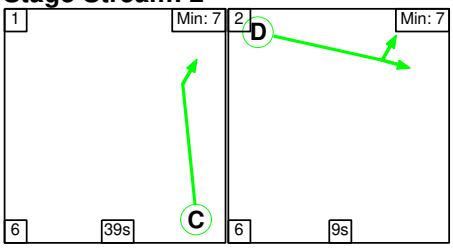
Scenario 3: '2031 Reference Case - PM Peak' (FG3: 'PadburyRef1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

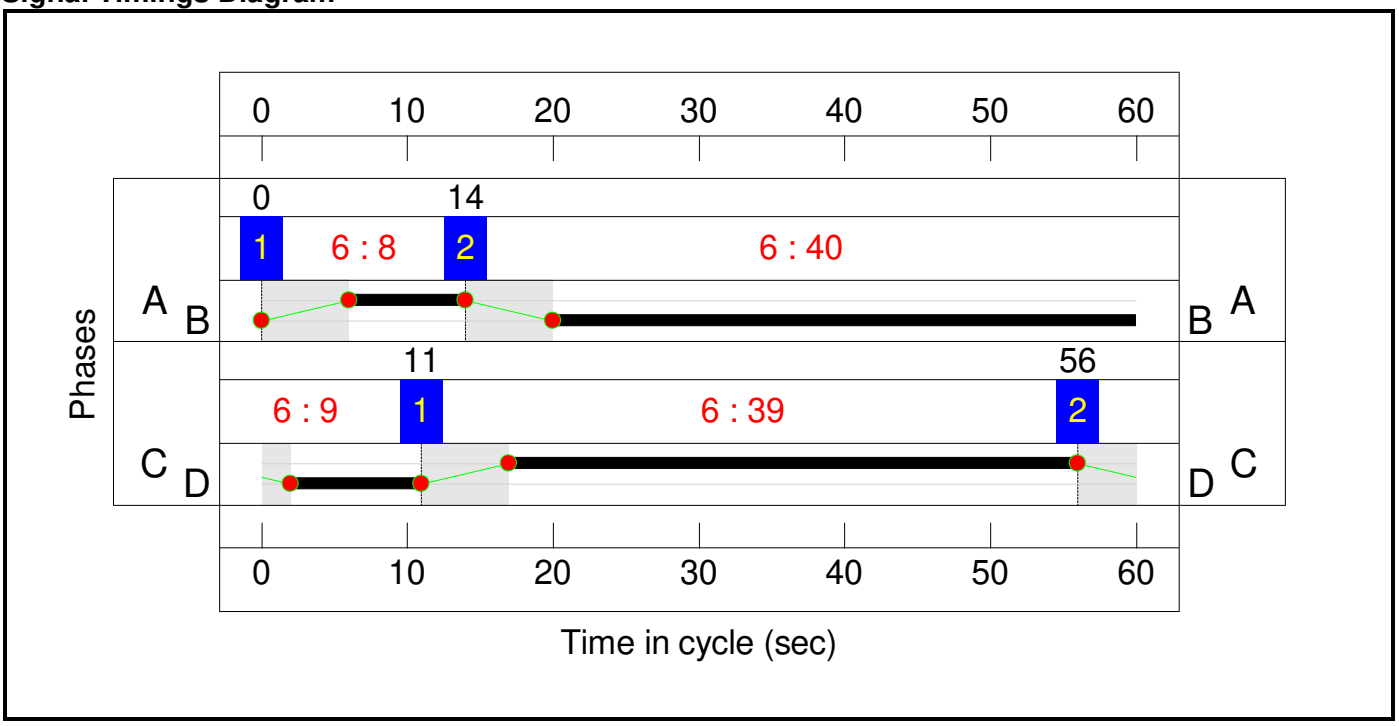
Stage Stream: 1

Stage	1	2
Duration	8	40
Change Point	0	14

Stage Stream: 2

Stage	1	2
Duration	39	9
Change Point	11	56

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: Padbury HE scheme	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.6%**
Padbury Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.6%**
1/1	A43 north Ahead	U	1	N/A	B		1	40	-	748	1922	1313	57.0%
1/2	A43 north Ahead	U	1	N/A	B		1	40	-	822	2058	1406	58.5%
3/1	A43 south Ahead	U	2	N/A	C		1	39	-	1057	1886	1257	84.1%
3/2	A43 south Ahead	U	2	N/A	C		1	39	-	1143	2019	1346	84.9%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	2	N/A	D		1	9	-	573	2058:1916	343+319	86.6 : 86.4%
5/3	Junction 10 s'bound offslip Ahead	U	2	N/A	D		1	9	-	250	2043	340	73.4%
6/1	Right	U	1	N/A	A		1	8	-	255	1980	297	85.9%
6/2	Right	U	1	N/A	A		1	8	-	250	2120	318	78.6%

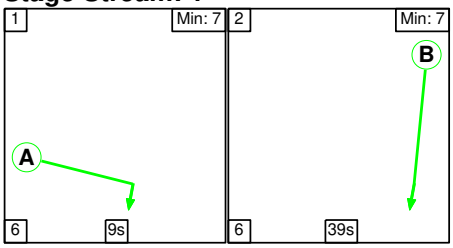
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Padbury HE scheme	**-**	**-**	**0**	**0**	**0**	**12.5**	**11.0**	**0.0**	**23.5**	**-**	**-**	**-**	**-**
Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**12.5**	**11.0**	**0.0**	**23.5**	**-**	**-**	**-**	**-**
1/1	748	748	-	-	-	1.0	0.7	-	1.7	8.1	6.4	0.7	7.1
1/2	822	822	-	-	-	1.1	0.7	-	1.8	8.1	7.1	0.7	7.8
3/1	1057	1057	-	-	-	2.2	2.6	-	4.8	16.3	13.2	2.6	15.8
3/2	1143	1143	-	-	-	2.4	2.7	-	5.2	16.3	14.6	2.7	17.3
5/2+5/1	573	573	-	-	-	3.9	3.0	-	6.9	43.2	4.8	3.0	7.8
5/3	250	250	-	-	-	1.6	1.3	-	3.0	43.1	3.9	1.3	5.2
6/1	255	255	-	-	-	0.1	0.0	-	0.1	0.9	0.1	0.0	0.1
6/2	250	250	-	-	-	0.1	0.0	-	0.1	0.9	1.8	0.0	1.8

C1 Stream: 1 PRC for Signalled Lanes (%): 4.8 Total Delay for Signalled Lanes (pcuHr): 3.65 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 3.9 Total Delay for Signalled Lanes (pcuHr): 19.85 Cycle Time (s): 60
PRC Over All Lanes (%): 3.9 Total Delay Over All Lanes(pcuHr): 23.50

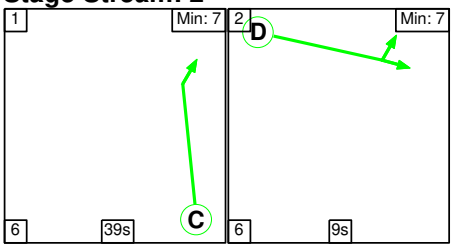
Scenario 4: '2031 Do Something - PM Peak' (FG7: 'Padbury1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

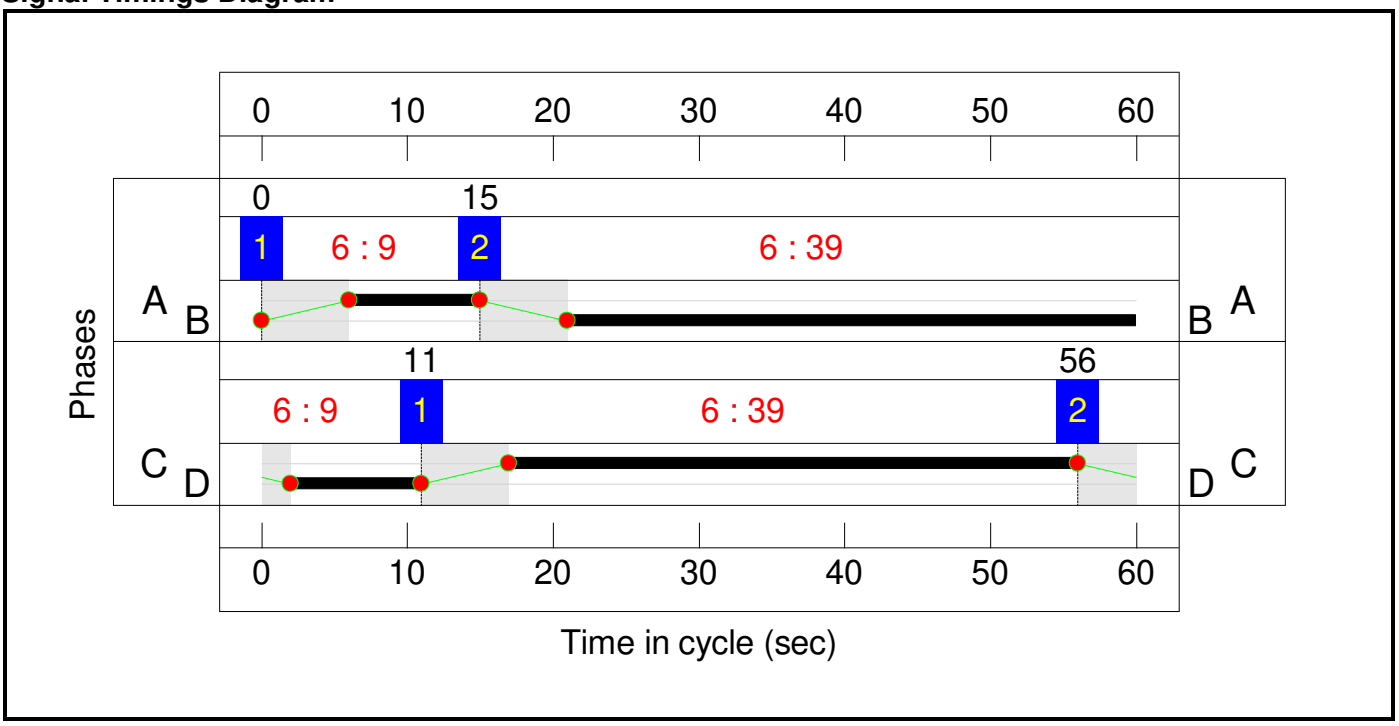
Stage Stream: 1

Stage	1	2
Duration	9	39
Change Point	0	15

Stage Stream: 2

Stage	1	2
Duration	39	9
Change Point	11	56

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: Padbury HE scheme	-	-	**N/A**	-	-		-	-	-	-	-	-	**95.2%**
Padbury Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**95.2%**
1/1	A43 north Ahead	U	1	N/A	B		1	39	-	822	1922	1281	64.2%
1/2	A43 north Ahead	U	1	N/A	B		1	39	-	900	2058	1372	65.6%
3/1	A43 south Ahead	U	2	N/A	C		1	39	-	1193	1886	1257	94.9%
3/2	A43 south Ahead	U	2	N/A	C		1	39	-	1282	2019	1346	95.2%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	2	N/A	D		1	9	-	628	2058:1916	343+319	94.8 : 94.9%
5/3	Junction 10 s'bound offslip Ahead	U	2	N/A	D		1	9	-	299	2043	340	87.8%
6/1	Right	U	1	N/A	A		1	9	-	310	1980	330	93.9%
6/2	Right	U	1	N/A	A		1	9	-	299	2120	353	84.6%

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: Padbury HE scheme	**-**	**-**	**0**	**0**	**0**	**15.4**	**27.1**	**0.0**	**42.5**	**-**	**-**	**-**	**-**
Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**15.4**	**27.1**	**0.0**	**42.5**	**-**	**-**	**-**	**-**
1/1	822	822	-	-	-	1.3	0.9	-	2.2	9.7	7.8	0.9	8.7
1/2	900	900	-	-	-	1.5	0.9	-	2.4	9.7	8.8	0.9	9.7
3/1	1193	1193	-	-	-	3.0	7.5	-	10.5	31.8	17.9	7.5	25.4
3/2	1282	1282	-	-	-	3.3	8.0	-	11.3	31.6	19.2	8.0	27.2
5/2+5/1	628	628	-	-	-	4.3	6.6	-	10.9	62.6	5.3	6.6	11.9
5/3	299	299	-	-	-	2.0	3.1	-	5.2	62.1	4.8	3.1	7.9
6/1	310	310	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	299	299	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 Stream: 1 PRC for Signalled Lanes (%): -4.4 Total Delay for Signalled Lanes (pcuHr): 4.65 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): -5.8 Total Delay for Signalled Lanes (pcuHr): 37.87 Cycle Time (s): 60
PRC Over All Lanes (%): -5.8 Total Delay Over All Lanes(pcuHr): 42.52

APPENDIX E

PADBURY T-JUNCTION MITIGATION SCHEME LINSIG MODEL AUDIT AND REVISED RESULTS

LINSIG V3 Model Checking Report

AECOM

Project: **OXFORDSHIRE SRFI-M40 Junction 10**

Model: **210407 Padbury - P-4 T-junction option.lsg3x**

Job No: **xxxxx**

Model Submitted: **16/07/2021**

Corrections Submitted: **Date Submitted**

Modelled By: ADC Infrastructure **Checked by: Weiping Guo** **Approved by:**

This note is to document the checks made to LINSIG models. Once completed this should be filed with the model, or model outputs for future reference.

Results Key

× - Changes required before work is signed off
? – Changes may be required before work is signed off, further work required
✓ - No further changes required before work is signed off

File Checked: Hyperlink to model

Network Information					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
26/07/21	Scenario title(s) entered	✓			
26/07/21	Project name entered	✓			
26/07/21	Modeller details recorded	✓			
26/07/21	Network location details entered	✓			
26/07/21	File name is logical	✓			

Network Setup					
Junction Drawings: In report 'OxSRFI-ADC1794-RP-M-V3 'TN5 M40 Junction 10 Options Report' – appendices' Page no.54					
Sat Flow Measurements / Calculations: Hyperlink to Sat Flow Measurements					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
	Junctions				
26/07/21	Appropriate junctions setup	✓			
26/07/21	Junction info/ signal controllers complete	✓			
26/07/21	Logical arm structure setup	✓			
	Lanes				
26/07/21	Lane setup reflects junction drawings	✓			
26/07/21	Check each lane that is signal controlled	✓			
26/07/21	Lanes matched to controller and phase	✓	.		
26/07/21	Lane length appropriate	✓			
26/07/21	Custom occupancy (if req)	N/A			
	Saturation Flows				
26/07/21	Justified method to derive saturation flows				
26/07/21	Check observed sat flows (if used)	N/A			
26/07/21	Check RR67 sat flows calculations (if used)	x	1. All the entry arm lanes saturation flows were calculated by RR67 methods, however all the lanes were treated as the 'nearside lane'. 2. Arm1 left turn and right turn radius are set 20mtr in the model, however after exam the drawing, 20mtr is not accurate and too low. Please double check.	1. Central lanes and offside lanes have 'nearside lane' de-selected. All turning radii checked and increased where applicable. 2. Arm1 left turn and right turn radii increased to 30m and 35m respectively to reflect the drawing.	
26/07/21	Check external sat flows calculations (if used)				
26/07/21	Check sat flows for any bottleneck links	x	Please check the Arm5. After exam the drawing Arm 5 lane 3 will be merging into lane 2 after 100mtr. Hence, lane sat flow should be coded on Arm 5 to limit the flow distribution on lane 3 to reflect the realist driving behaviours.	Saturation flow applied to Arm 5 lane 3 to alter traffic assignment in the merging lane.	
	Advanced Lane Settings				
26/07/21	Use of start / end green displacements (if req)	✓	Default values used.		
26/07/21	Use of queue limits on short links (if req)	N/A			
26/07/21	Use of weightings for optimiser constraints (if req)	N/A			
26/07/21	Use of random delay or queue de-sliver (if req)	N/A			
	Give Ways				
26/07/21	Check each lane that is priority controlled	N/A			
26/07/21	Measurement of max/min flow when giving way	N/A			
26/07/21	Flow when opposing traffic stopped reasonable	N/A			
26/07/21	Measurement of give-way co-efficient	N/A			
26/07/21	Measurement of clear conflict time of opposing traffic	N/A			
26/07/21	Check all controlling movements identified	N/A			
26/07/21	Measurement of storage in front of stop-line	N/A			
26/07/21	Max turns in inter-green reasonable	N/A			
26/07/21	Measurement of non-blocking storage	N/A			

Tel. 0121 262 6795
www.aecom.com

Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

	Lane Connectors				
26/07/21	Lane connectors provided reasonable	✓			
26/07/21	Cruise time reasonable	N/A			
26/07/21	Default platoon dispersion used unless observed	✓			
	Zones				
26/07/21	Zones match O-D matrix	✓	Padbury2_AM flow matches the flow report page 42; Padbury2_PM flow matches the flow report page 43;		

	Pedestrians				
26/07/21	Ped crossings represented by ped links (if req)	N/A			
26/07/21	Ped link data correct (if req)	N/A			
26/07/21	Ped connector walk times reasonable (if req)	N/A			
26/07/21	Ped links matched to appropriate phases (if req)	N/A			
26/07/21	Ped zones match ped O-D matrix (if req)	N/A			

Controllers

Controller Specifications: Hyperlink to Controller Specification (if req)
Intergreen Calculations: Hyperlink to Intergreen Calculations (if req)

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
	General Controller Set-up				
26/07/21	Sufficient controllers setup	✓			
26/07/21	Multiple stage streams setup correctly (if req)	N/A			
26/07/21	Non-standard filters setup correctly (if req)	N/A			
	Signal Settings				
26/07/21	Check phases for each controller	✓			
26/07/21	Check phase mins/type reasonable	✓			
26/07/21	Check inter-greens calculations/coding	X	1. Phase B-C inter-green is 6s in the model, however after exam the drawing, this is possible too low. Please use the Traffic Sign Manual Chapter 6 calculation method. 2. Phase C-A inter-green is 6s in the model, however after exam the drawing, this is possible too low. Please use the Traffic Sign Manual Chapter 6 calculation method.	Intergreens B-C and C-A increased to 9 seconds as per Traffic Signs Chapter 6 methodology.	
26/07/21	Stages reasonable	✓			
26/07/21	Phase delays reasonable (if req)	?	Phase delays might be required after the above inter-green amendment.	3 second losing phase delay added to phase A on stage change 1-2.	

Stage Sequences

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
26/07/21	Check stage sequences observed / optimised	✓			
26/07/21	Check stage timings observed / optimised	N/A			

Traffic Counts and Calculations

Traffic Flow Data: Hyperlink to Traffic Flow Data – in report 'OXSRFI-ADC1794-RP-N-V2 'TN6 - M40 J10 OR Traffic Flow Derivation' – bound'
Matrix Calculations: Hyperlink to Matrix Calculations (if required)
Lane Balancing Calculations: Hyperlink to Lane Balancing Calculations (if required)
Site Observations: Hyperlink to Site Flows Observations

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
26/07/21	Suitability of traffic surveys undertaken	N/A			
26/07/21	Are there sufficient site observations	N/A			
26/07/21	Check O-D matrix calculations	✓			
26/07/21	Are lane balancing calculations sufficient / consistent	x	Please check the Arm5, as lane 3 will be merging to lane 2 in 100mtr, the traffic distribution on lane 3 should be restricted especially during the PM period, it is not expecting same 789pcus to be distributed equally on lane 2 and lane 3.	Saturation flow applied to Arm 5 lane 3 to alter traffic assignment in the merging lane.	
26/07/21	Does lane balancing match lining	✓			
26/07/21	Does lane balancing match matrices	✓			

Traffic Flows

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
26/07/21	Traffic & ped flow (if req) groups setup	✓			
26/07/21	Desired flows match O-D matrices	✓			
26/07/21	Actual flows match desired flows	✓			
26/07/21	Inappropriate routes closed	✓			
26/07/21	Route flows match lane balancing	✓			

Tel. 0121 262 6795
www.aecom.com

Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

Modelling					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
26/07/21	Scenario set up with correct options	✓			
26/07/21	Cycle time appropriate for network control	✓			
26/07/21	Cycle time optimised (if req)	N/A			

Results					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
	Are all values as expected (Demand Flows, Green Times etc)		To be checked after above changes.		
	Deg Sat >100% for existing situation with no modelled suppressed demand?		To be checked after above changes.		
	Deg Sat appropriate? Validated?		To be checked after above changes.		
	Capacity conclusions		To be checked after above changes.		
	If suppressed demand has been modelled, do queues validate?		To be checked after above changes.		
	Queues appropriate?		To be checked after above changes.		
	Queue limits exceeded?		To be checked after above changes.		
	Queuing conclusions (will exit blocking modify these?)		To be checked after above changes.		
	If suppressed demand has been modelled do journey times validate?		To be checked after above changes.		
	Journey time conclusions?		To be checked after above changes.		

Conclusions and Recommendations

Tel. 0121 262 6795
www.aecom.com

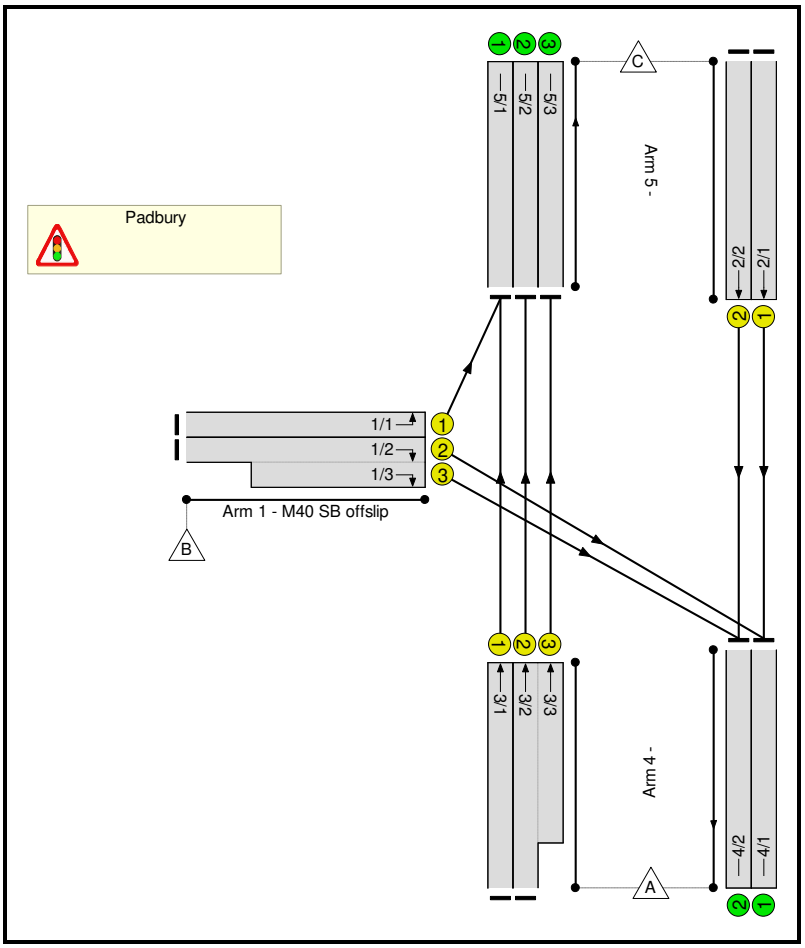
Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

Full Input Data And Results

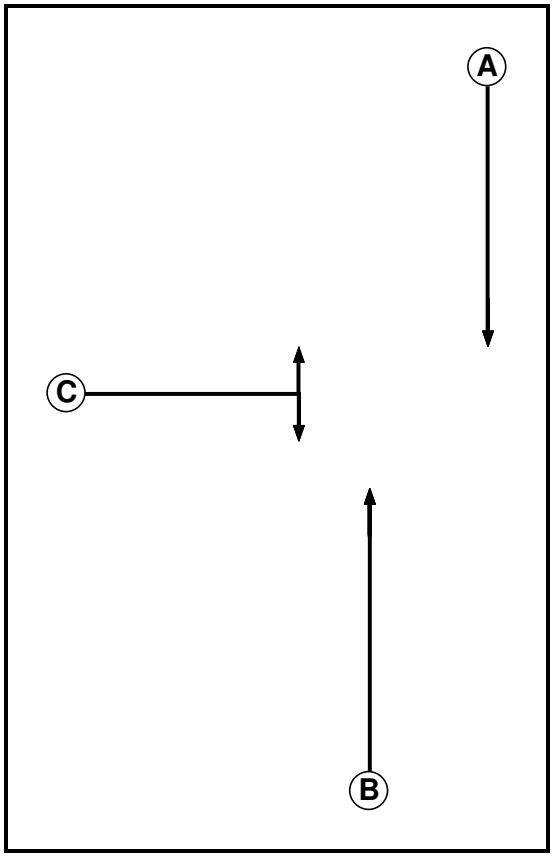
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Padbury T-junction option**
Location:	
Additional detail:	Amended following Aecom comments
File name:	211006 Padbury - P-4 T-junction option.lsg3x
Author:	Mark Higgins
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	4
B	Traffic		7	7
C	Traffic		7	7

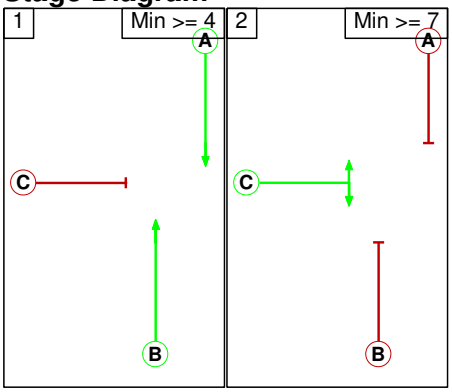
Phase Intergreens Matrix

		Starting Phase		
		A	B	C
Terminating Phase	A		-	6
	B	-		9
	C	9	6	

Phases in Stage

Stage No.	Phases in Stage
1	A B
2	C

Stage Diagram



Prohibited Stage Change

	To Stage		
		1	2
From Stage	1		9
	2	9	

Lane Input Data

Junction: Padbury

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 (M40 SB offslip)	U	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 5 Left	30.00
1/2 (M40 SB offslip)	U	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Right	35.00
1/3 (M40 SB offslip)	U	C	2	3	10.4	Geom	-	3.65	0.00	N	Arm 4 Right	35.00
2/1 (A43 north)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Ahead	Inf
2/2 (A43 north)	U	A	2	3	60.0	Geom	-	3.65	0.00	N	Arm 4 Ahead	Inf
3/1 (A43 south)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 5 Ahead	Inf
3/2 (A43 south)	U	B	2	3	60.0	Geom	-	3.65	0.00	N	Arm 5 Ahead	Inf
3/3 (A43 south)	U	B	2	3	13.0	Geom	-	3.65	0.00	N	Arm 5 Ahead	Inf
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
4/2	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
5/3	U		2	3	60.0	User	2120	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Padbury2_AM'	07:45	08:45	01:00	
2: 'Padbury2_PM'	16:30	17:30	01:00	

Scenario 1: '2031 do some 11,13,15,18,19 - AM Peak' (FG1: 'Padbury2_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	0	1662	1662
	B	738	0	337	1075
	C	1246	0	0	1246
	Tot.	1984	0	1999	3983

Traffic Lane Flows

Lane	Scenario 1: 2031 do some 11,13,15,18,19 - AM Peak
Junction: Padbury	
1/1	337
1/2 (with short)	738(In) 356(Out)
1/3 (short)	382
2/1	594
2/2	652
3/1	548
3/2 (with short)	1114(In) 648(Out)
3/3 (short)	466
4/1	950
4/2	1034
5/1	885
5/2	648
5/3	466

Lane Saturation Flows

Junction: Padbury								
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 (M40 SB offslip)	3.65	0.00	Y	Arm 5 Left	30.00	100.0 %	1886	1886
1/2 (M40 SB offslip)	3.65	0.00	Y	Arm 4 Right	35.00	100.0 %	1899	1899
1/3 (M40 SB offslip)	3.65	0.00	N	Arm 4 Right	35.00	100.0 %	2033	2033
2/1 (A43 north)	3.65	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1980	1980
2/2 (A43 north)	3.65	0.00	N	Arm 4 Ahead	Inf	100.0 %	2120	2120
3/1 (A43 south)	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
3/2 (A43 south)	3.65	0.00	N	Arm 5 Ahead	Inf	100.0 %	2120	2120
3/3 (A43 south)	3.65	0.00	N	Arm 5 Ahead	Inf	100.0 %	2120	2120
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	This lane uses a directly entered Saturation Flow						2120	2120

Scenario 2: '2031 do some 11,13,15,18,19 - PM Peak' (FG2: 'Padbury2_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
Origin		A	B	C	Tot.
	A	0	0	2475	2475
	B	609	0	318	927
	C	783	0	0	783
	Tot.	1392	0	2793	4185

Traffic Lane Flows

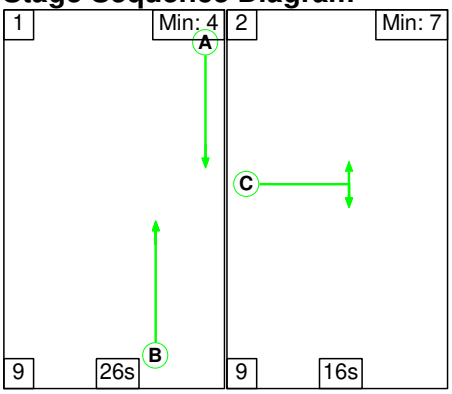
Lane	Scenario 2: 2031 do some 11,13,15,18,19 - PM Peak
Junction: Padbury	
1/1	318
1/2 (with short)	609(In) 294(Out)
1/3 (short)	315
2/1	366
2/2	417
3/1	883
3/2 (with short)	1592(In) 896(Out)
3/3 (short)	696
4/1	660
4/2	732
5/1	1201
5/2	896
5/3	696

Lane Saturation Flows

Junction: Padbury								
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 (M40 SB offslip)	3.65	0.00	Y	Arm 5 Left	30.00	100.0 %	1886	1886
1/2 (M40 SB offslip)	3.65	0.00	Y	Arm 4 Right	35.00	100.0 %	1899	1899
1/3 (M40 SB offslip)	3.65	0.00	N	Arm 4 Right	35.00	100.0 %	2033	2033
2/1 (A43 north)	3.65	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1980	1980
2/2 (A43 north)	3.65	0.00	N	Arm 4 Ahead	Inf	100.0 %	2120	2120
3/1 (A43 south)	3.65	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1980	1980
3/2 (A43 south)	3.65	0.00	N	Arm 5 Ahead	Inf	100.0 %	2120	2120
3/3 (A43 south)	3.65	0.00	N	Arm 5 Ahead	Inf	100.0 %	2120	2120
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	This lane uses a directly entered Saturation Flow						2120	2120

Scenario 1: '2031 do some 11,13,15,18,19 - AM Peak' (FG1: 'Padbury2_AM', Plan 1: 'Network Control Plan 1')

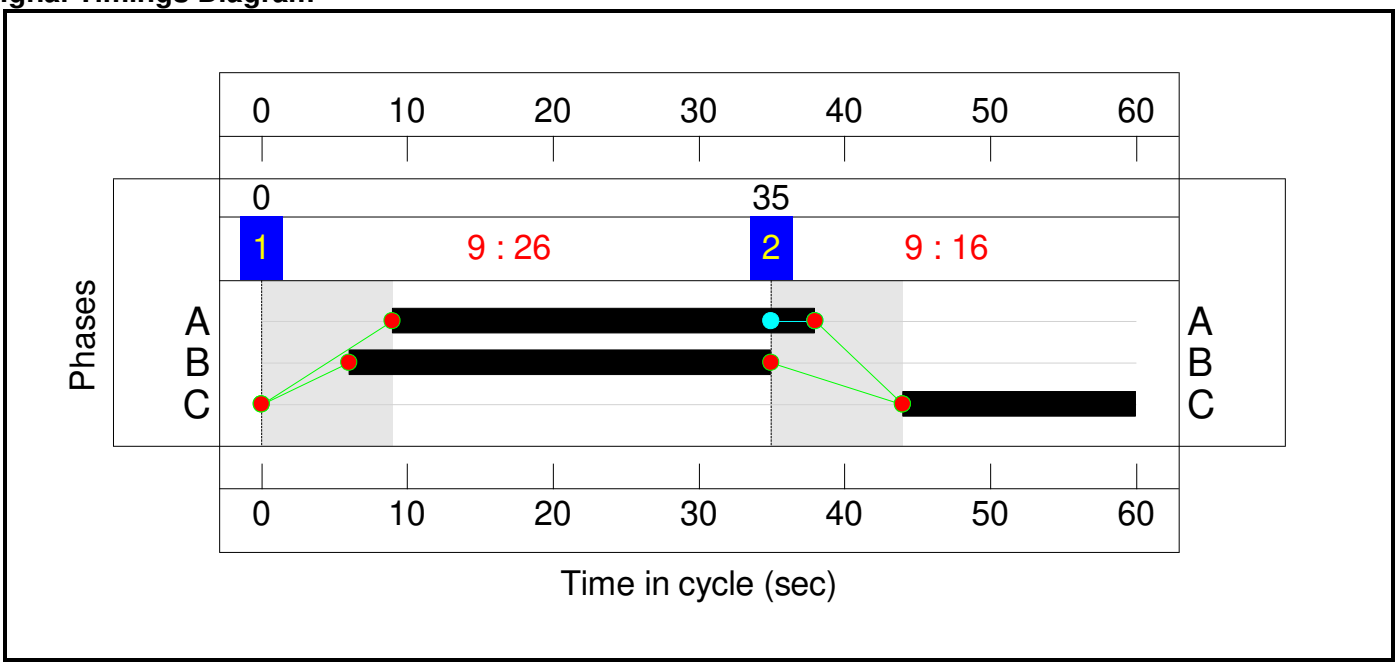
Stage Sequence Diagram



Stage Timings

Stage	1	2
Duration	26	16
Change Point	0	35

Signal Timings Diagram



Network Results

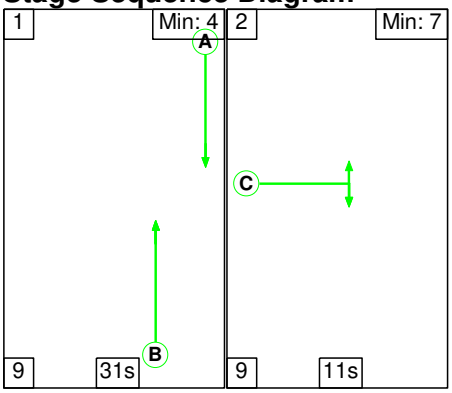
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Padbury T-junction option	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**68.6%**
Padbury	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**68.6%**
1/1	M40 SB offslip Left	U	N/A	N/A	C		1	16	-	337	1886	534	63.1%
1/2+1/3	M40 SB offslip Right	U	N/A	N/A	C		1	16	-	738	1899:2033	538+576	66.2 : 66.3%
2/1	A43 north Ahead	U	N/A	N/A	A		1	29	-	594	1980	990	60.0%
2/2	A43 north Ahead	U	N/A	N/A	A		1	29	-	652	2120	1060	61.5%
3/1	A43 south Ahead	U	N/A	N/A	B		1	29	-	548	1980	990	55.4%
3/2+3/3	A43 south Ahead	U	N/A	N/A	B		1	29	-	1114	2120:2120	944+679	68.6 : 68.6%
5/3		U	N/A	N/A	-		-	-	-	466	2120	2120	22.0%

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: Padbury T-junction option	**-**	**-**	**0**	**0**	**0**	**14.1**	**5.2**	**0.0**	**19.4**	**-**	**-**	**-**	**-**
Padbury	**-**	**-**	**0**	**0**	**0**	**14.1**	**5.2**	**0.0**	**19.4**	**-**	**-**	**-**	**-**
1/1	337	337	-	-	-	1.8	0.8	-	2.6	27.8	4.9	0.8	5.7
1/2+1/3	738	738	-	-	-	3.9	1.0	-	4.9	23.7	5.5	1.0	6.5
2/1	594	594	-	-	-	1.8	0.7	-	2.5	15.2	6.9	0.7	7.7
2/2	652	652	-	-	-	2.0	0.8	-	2.8	15.2	7.8	0.8	8.6
3/1	548	548	-	-	-	1.6	0.6	-	2.2	14.4	6.2	0.6	6.9
3/2+3/3	1114	1114	-	-	-	3.2	1.1	-	4.3	13.8	7.7	1.1	8.8
5/3	466	466	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1

C1 PRC for Signalled Lanes (%): 31.2 PRC Over All Lanes (%): 31.2 Total Delay for Signalled Lanes (pcuHr): 19.22 Total Delay Over All Lanes(pcuHr): 19.36 Cycle Time (s): 60

Scenario 2: '2031 do some 11,13,15,18,19 - PM Peak' (FG2: 'Padbury2_PM', Plan 1: 'Network Control Plan 1')

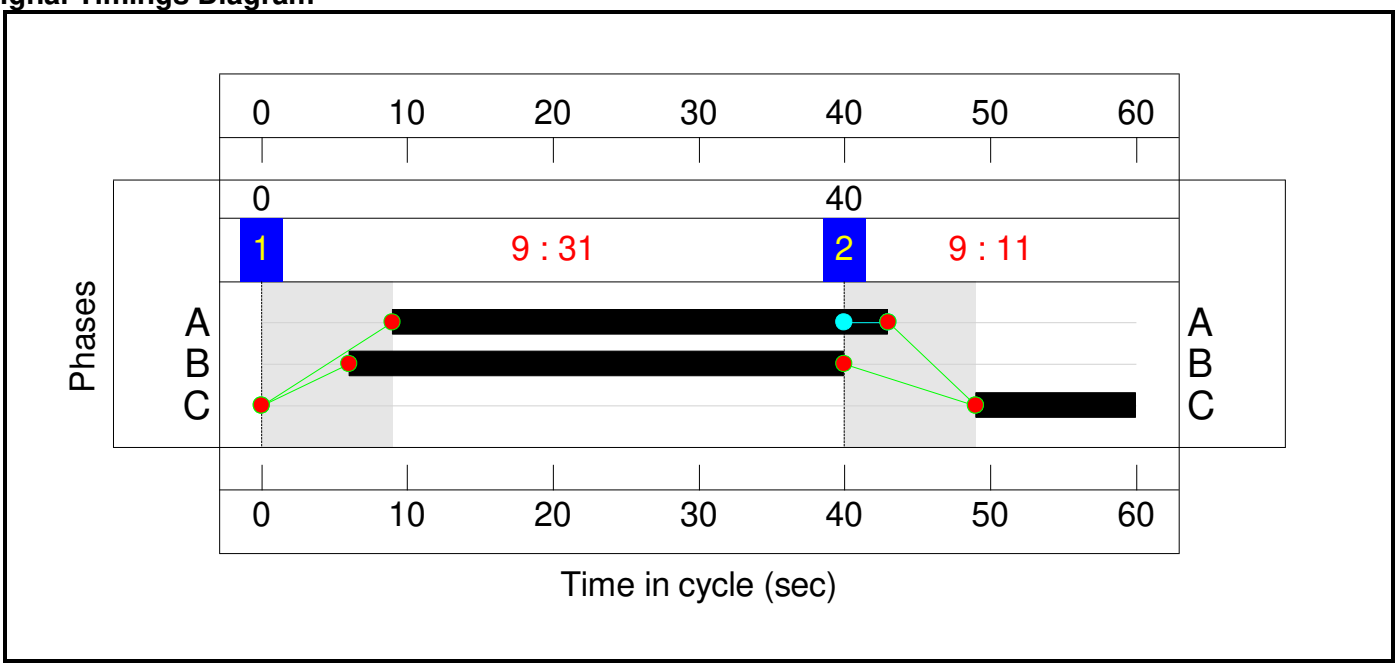
Stage Sequence Diagram



Stage Timings

Stage	1	2
Duration	31	11
Change Point	0	40

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: Padbury T-junction option	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.3%**
Padbury	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.3%**
1/1	M40 SB offslip Left	U	N/A	N/A	C		1	11	-	318	1886	377	84.3%
1/2+1/3	M40 SB offslip Right	U	N/A	N/A	C		1	11	-	609	1899:2033	380+407	77.4 : 77.5%
2/1	A43 north Ahead	U	N/A	N/A	A		1	34	-	366	1980	1155	31.7%
2/2	A43 north Ahead	U	N/A	N/A	A		1	34	-	417	2120	1237	33.7%
3/1	A43 south Ahead	U	N/A	N/A	B		1	34	-	883	1980	1155	76.5%
3/2+3/3	A43 south Ahead	U	N/A	N/A	B		1	34	-	1592	2120:2120	1039+807	86.3 : 86.3%
5/3		U	N/A	N/A	-		-	-	-	696	2120	2120	32.8%

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: Padbury T-junction option	**-**	**-**	**0**	**0**	**0**	**13.3**	**9.6**	**0.0**	**22.9**	**-**	**-**	**-**	**-**
Padbury	**-**	**-**	**0**	**0**	**0**	**13.3**	**9.6**	**0.0**	**22.9**	**-**	**-**	**-**	**-**
1/1	318	318	-	-	-	2.0	2.5	-	4.5	51.2	5.0	2.5	7.5
1/2+1/3	609	609	-	-	-	3.8	1.7	-	5.5	32.7	4.9	1.7	6.6
2/1	366	366	-	-	-	0.7	0.2	-	0.9	8.7	3.1	0.2	3.3
2/2	417	417	-	-	-	0.8	0.3	-	1.0	8.7	3.6	0.3	3.8
3/1	883	883	-	-	-	2.3	1.6	-	3.9	15.9	11.0	1.6	12.6
3/2+3/3	1592	1592	-	-	-	3.7	3.1	-	6.8	15.4	10.7	3.1	13.8
5/3	696	696	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2

C1 PRC for Signalled Lanes (%): 4.3 Total Delay for Signalled Lanes (pcuHr): 22.66 Cycle Time (s): 60
PRC Over All Lanes (%): 4.3 Total Delay Over All Lanes(pcuHr): 22.90

APPENDIX F

CHERWELL ROUNDABOUT REFERENCE CASE LINSIG MODEL AUDIT AND REVISED RESULTS

LINSIG V3 Model Checking Report

AECOM

Project: **OXFORDSHIRE SRFI-M40 Junction 10**

Model: **2031_DS_M40J10_Cherwell_reference case.lsg3x**

Job No: **xxxxx**

Model Submitted: **16/07/2021**

Corrections Submitted: **Date Submitted**

Modelled By: ADC Infrastructure **Checked by: Weiping Guo** **Approved by:**

This note is to document the checks made to LINSIG models. Once completed this should be filed with the model, or model outputs for future reference.

Results Key

× - Changes required before work is signed off
? – Changes may be required before work is signed off, further work required
✓ - No further changes required before work is signed off

File Checked: Hyperlink to model

Network Information					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
08/08/21	Scenario title(s) entered	✓			
08/08/21	Project name entered	✓			
08/08/21	Modeller details recorded	✓			
08/08/21	Network location details entered	✓			
08/08/21	File name is logical	✓			

Network Setup					
Junction Drawings: In report 'OxSRFI-ADC1794-RP-M-V3 'TN5 M40 Junction 10 Options Report' – appendices' Page no.4					
Sat Flow Measurements / Calculations: Hyperlink to Sat Flow Measurements					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
	Junctions				
08/08/21	Appropriate junctions setup	✓			
08/08/21	Junction info/ signal controllers complete	✓			
08/08/21	Logical arm structure setup	✓			
	Lanes				
08/08/21	Lane setup reflects junction drawings	X	Arm1 lane 1 should be a long lane, and lane 2/3 should be a long lane with a short lane setup according to the google maps.	Arm 1 lane 1 converted to a long lane with Arm 1 lane 3converted to a short lane, 70m long.	
08/08/21	Check each lane that is signal controlled	✓			
08/08/21	Lanes matched to controller and phase	✓	.No existing signal controller information is provided. However considering the assessment is for the 2031, the current setup in the model is acceptable.		
08/08/21	Lane length appropriate	X	Arm1 lane 1 should be a long lane, and lane 2/3 should be a long lane with a short lane setup according to the google maps.	Arm 1 lane 1 converted to a long lane with Arm 1 lane 3converted to a short lane, 70m long.	
08/08/21	Custom occupancy (if req)	N/A			
	Saturation Flows				
08/08/21	Justified method to derive saturation flows				
08/08/21	Check observed sat flows (if used)	N/A			
08/08/21	Check RR67 sat flows calculations (if used)	x	1. All the entry arm lanes saturation flows were calculated by RR67 methods, however all the lanes were treated as the 'nearside lane'. And some lanes turning radius are missing that affect the lanes sat flow calculation. Please double check. 2. The north circulatory lane Sat flow are directly entered. As all the entry arms are using RR67, we recommend the circulatory lane adopt the same method of calculations. Also the direct entered Sat flow are lower than the entry arms Sat flow which can cause the issues. In general, the downstream lanes sat flow should be equal or greater than the entry lanes Sat flows, unless there is evidence supporting there is 'bottle neck' issues at the downstream. 3. Arm 2 lane 2 is the priority controlled lane but with no Sat flow setup.	1. Central lanes and offside lanes have 'nearside lane' de-selected. All turning radii checked and increased where applicable 2. All circulating lanes have RR67 parameters applied such that all circulating saturation flows are equal or greater than the entry lanes.	
08/08/21	Check external sat flows calculations (if used)				
08/08/21	Check sat flows for any bottleneck links	X	Arm11 lane 2 is the short merging exit lane, and the should be treated as the bottleneck lane with the sat flow setup to restrict the flows distribution. I.e in 2031 do something PM scenario, there are 1122 pcus are using arm 10 lane 2 to the Arm 11 lane 2 but only 289pcus are using the arm 10 lane 1 to the Arm 11 lane 1 which does not reflect the real	Saturation flow applied to Arm 11 lane 2 to alter traffic assignment in the merging lane.	

Tel. 0121 262 6795
www.aecom.com

Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

			world situation considering the Arm 11 lane 2 is a merging lane.		
	Advanced Lane Settings				
08/08/21	Use of start / end green displacements (if req)	✓			
08/08/21	Use of queue limits on short links (if req)	X	Arm8 queue limit is setup to 2pcus. It is a quite short lane, however, it may not be realistic to set this queue limit too low as considering the feeding Arm 2 lane 2 is the priority control. The reality is to setup this lane's queue can not over to the Arm 9 and make sure when Arm 5 is on green, Arm8 will be on green.	The model shows that the queue limit of 2 pcu is exceeded in 3 out of 4 scenarios, with the queue effectively reaching the arm 2 give-way line in the 2031 do something PM scenario. The queue limit has been increased to 3 pcu, however, any further increases are not possible as they would result in the queue extending beyond the arm 2 give-way line.	
08/08/21	Use of weightings for optimiser constraints (if req)	✓			
08/08/21	Use of random delay or queue de-sliver (if req)	X	1. Arm 10 lane 2 and 3 are ticking off the 'ignore random Delay' but not Lane 1. 2. Arm 9 should not setup the queue limit and random delay as it is the 'unconstrained' lane in the model.	1. Arm 10 lane 1 now has 'ignore random delay' ticked. 2. Arm 9 queue limit removed and 'ignore random delay' unticked.	
	Give Ways				
08/08/21	Check each lane that is priority controlled	✓			
08/08/21	Measurement of max/min flow when giving way	✓	1000 pcus is used as recommended by JCT.		
08/08/21	Flow when opposing traffic stopped reasonable	✓	Maxi flow is used.		
08/08/21	Measurement of give-way co-efficient	✓	0.33 is used as recommended by JCT.		
08/08/21	Measurement of clear conflict time of opposing traffic	✓	2s default is used.		
08/08/21	Check all controlling movements identified	✓			
08/08/21	Measurement of storage in front of stop-line	N/A			
08/08/21	Max turns in inter-green reasonable	N/A			
08/08/21	Measurement of non-blocking storage	N/A			
	Lane Connectors				
08/08/21	Lane connectors provided reasonable	X	There are a lot of demand from B-C, but Arm 8 lane 1 is only connected to Arm10 lane 2.	Arm 8 lane 1 now connected Arm10 lanes 1 and 2.	
08/08/21	Cruise time reasonable	✓	45km/hr cruise speed is applied for all the link connectors.		
08/08/21	Default platoon dispersion used unless observed	✓	The platoon dispersion are switched off due to the short circulatory lanes.		
	Zones				
08/08/21	Zones match O-D matrix	✓	1. Cherwell1Ref1_AM flow matches the flow report 'OXSRFI-ADC1794-RP-N-V2 'TN6 - M40 J10 OR Traffic Flow Derivation' – bound' page 28; 2. Cherwell1Ref1_PM flow matches the flow report 'OXSRFI-ADC1794-RP-N-V2 'TN6 - M40 J10 OR Traffic Flow Derivation' – bound' 'page 29; ========== 3. Cherwell1_AM flow matches the flow report 'OXSRFI-ADC1794-RP-N-V2 'TN6 - M40 J10 OR Traffic Flow Derivation' – bound' page 44 4. Cherwell1_PM flow matches the flow report 'OXSRFI-ADC1794-RP-N-V2 'TN6 - M40 J10 OR Traffic Flow Derivation' – bound' page 45.		

	Pedestrians				
08/08/21	Ped crossings represented by ped links (if req)	N/A			
08/08/21	Ped link data correct (if req)	N/A			
08/08/21	Ped connector walk times reasonable (if req)	N/A			
08/08/21	Ped links matched to appropriate phases (if req)	N/A			
08/08/21	Ped zones match ped O-D matrix (if req)	N/A			

Controllers

Controller Specifications: Hyperlink to Controller Specification (if req)
Intergreen Calculations: Hyperlink to Intergreen Calculations (if req)

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
	General Controller Set-up				
08/08/21	Sufficient controllers setup	✓			
08/08/21	Multiple stage streams setup correctly (if req)	✓			
08/08/21	Non-standard filters setup correctly (if req)	N/A			
	Signal Settings				
08/08/21	Check phases for each controller	✓			
08/08/21	Check phase mins/type reasonable	✓			
08/08/21	Check inter-greens calculations/coding	?	6s inter-green is used for all conflict phases. 6s maybe too low for Phase C and Phase D inter-green. Please double check.	Intergreens C-D and D-C increased to 7 AND 8 seconds respectively, as per Traffic Signs Chapter 6 methodology.	
08/08/21	Stages reasonable	✓			

Tel. 0121 262 6795
www.aecom.com

Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

08/08/21	Phase delays reasonable (if req)	N/A			

Stage Sequences

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
08/08/21	Check stage sequences observed / optimised	✓			
08/08/21	Check stage timings observed / optimised	X	No existing signal information (i.e controller config and/or MOVA datasets)		

Traffic Counts and Calculations

Traffic Flow Data: Hyperlink to Traffic Flow Data – in report 'OXSRFI-ADC1794-RP-N-V2 'TN6 - M40 J10 OR Traffic Flow Derivation' – bound'
Matrix Calculations: Hyperlink to Matrix Calculations (if required)
Lane Balancing Calculations: Hyperlink to Lane Balancing Calculations (if required)
Site Observations: Hyperlink to Site Flows Observations

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
08/08/21	Suitability of traffic surveys undertaken	N/A			
08/08/21	Are there sufficient site observations	N/A			
08/08/21	Check O-D matrix calculations	✓			
08/08/21	Are lane balancing calculations sufficient / consistent	?	To be checked after the above lanes and sat flow update.		
08/08/21	Does lane balancing match lining	?	To be checked after the above lanes and sat flow update.		
08/08/21	Does lane balancing match matrices	?	To be checked after the above lanes and sat flow update.		

Traffic Flows

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
08/08/21	Traffic & ped flow (if req) groups setup	✓	Multi flow groups setup in the model. Only four flows matrix are used.		
08/08/21	Desired flows match O-D matrices	✓			
08/08/21	Actual flows match desired flows	✓			
08/08/21	Inappropriate routes closed	✓			
08/08/21	Route flows match lane balancing	✓			

Modelling

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
08/08/21	Scenario set up with correct options	✓			
08/08/21	Cycle time appropriate for network control	✓			
08/08/21	Cycle time optimised (if req)	N/A			

Results

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
	Are all values as expected (Demand Flows, Green Times etc)		To be checked after above changes.		
	Deg Sat >100% for existing situation with no modelled suppressed demand?		To be checked after above changes.		
	Deg Sat appropriate? Validated?		To be checked after above changes.		
	Capacity conclusions		To be checked after above changes.		
	If suppressed demand has been modelled, do queues validate?		To be checked after above changes.		
	Queues appropriate?		To be checked after above changes.		
	Queue limits exceeded?		To be checked after above changes.		
	Queuing conclusions (will exit blocking modify these?)		To be checked after above changes.		
	If suppressed demand has been modelled do journey times validate?		To be checked after above changes.		
	Journey time conclusions?		To be checked after above changes.		

Conclusions and Recommendations

Tel. 0121 262 6795
www.aecom.com

Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

Tel. 0121 262 6795
www.aecom.com

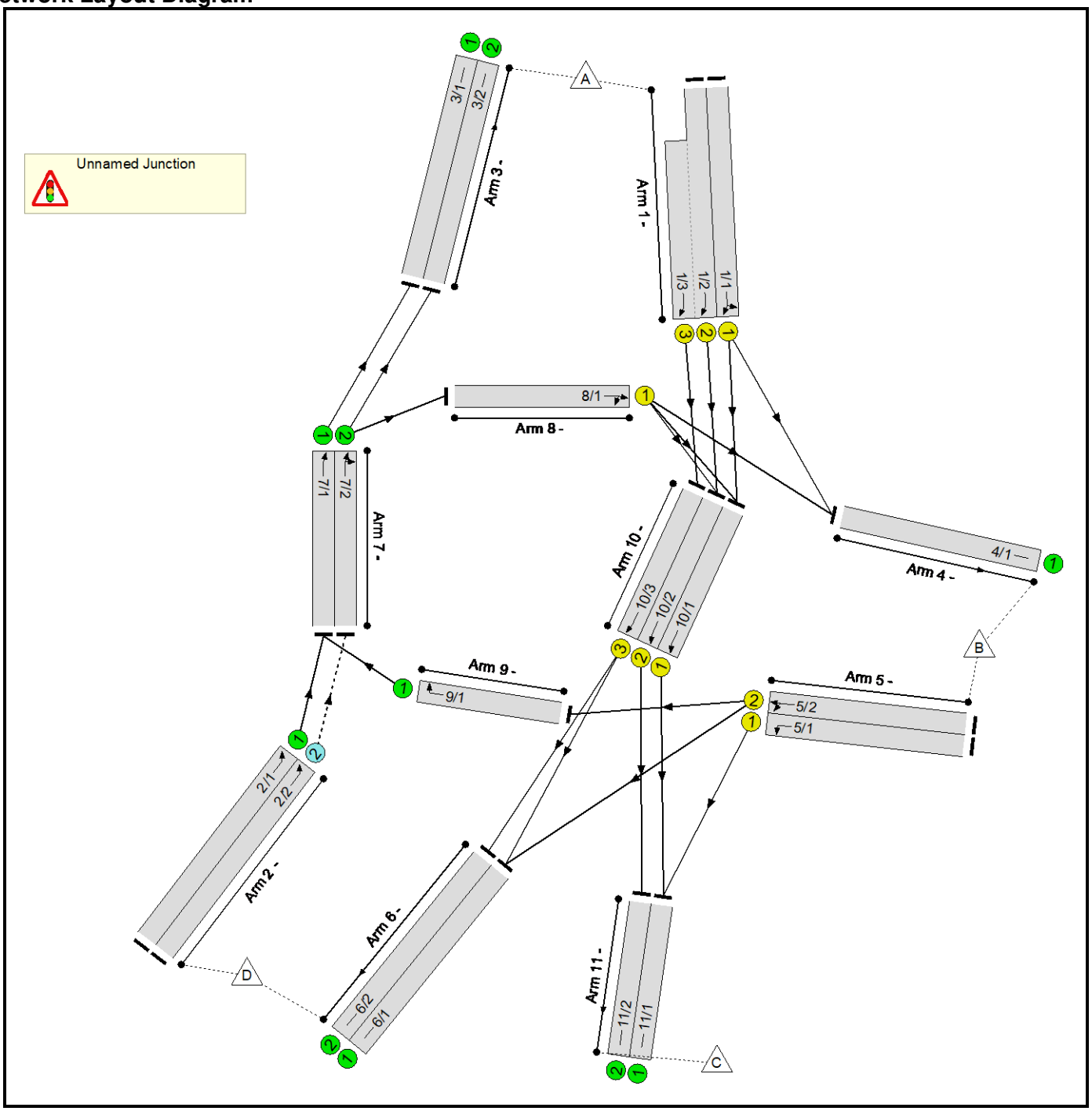
Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

Full Input Data And Results

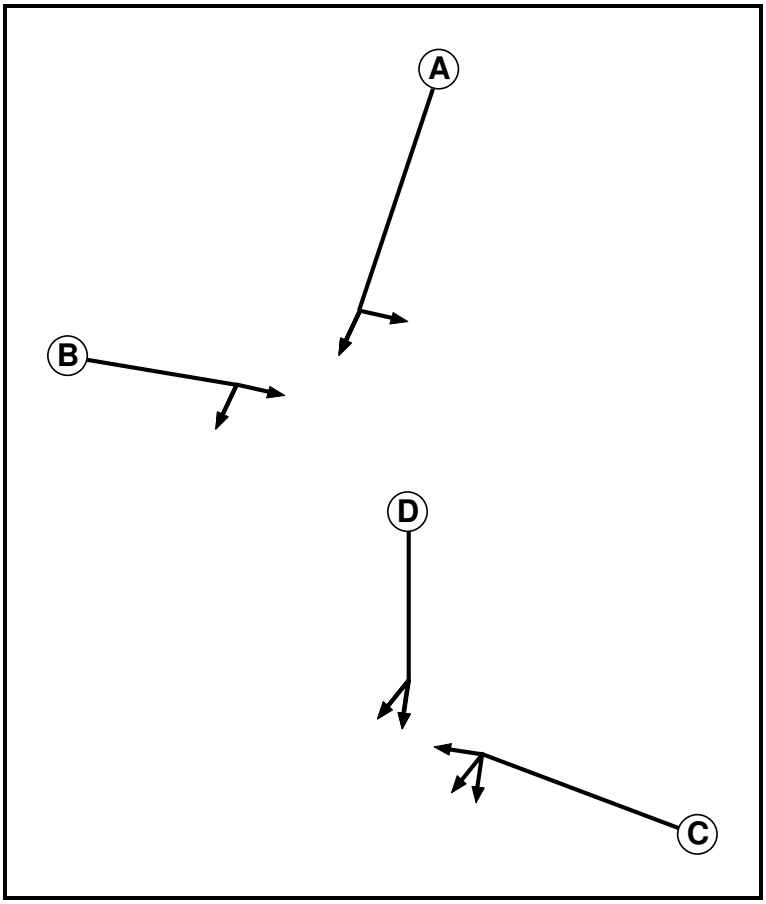
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Existing Cherwell Roundabout**
Location:	
Additional detail:	Amended to include Aecom comments
File name:	2031_DS_M40J10_Cherwell_reference case.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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

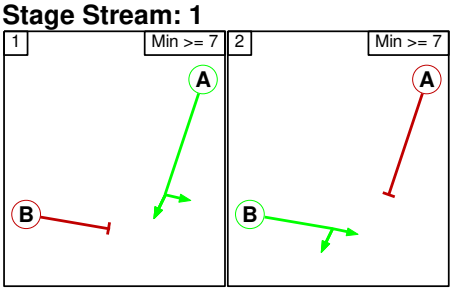
		Starting Phase			
		A	B	C	D
Terminating Phase	A		6	-	-
	B	6		-	-
	C	-	-		7
	D	-	-	8	

Phases in Stage

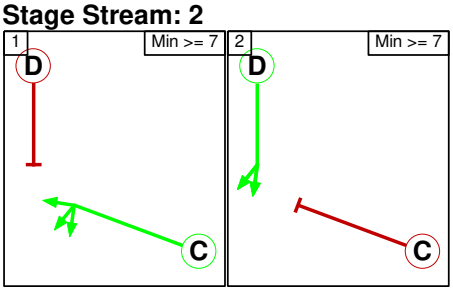
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Prohibited Stage Change

Stage Stream: 1

From Stage \ To Stage	1	2
1		6
2	6	

Stage Stream: 2

From Stage \ To Stage	1	2
1		7
2	8	

Lane Input Data

Junction: Unnamed Junction												
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	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Left	20.00
											Arm 10 Ahead	Inf
1/2	U	A	2	3	60.0	Geom	-	3.65	0.00	N	Arm 10 Ahead	Inf
1/3	U	A	2	3	12.2	Geom	-	3.65	0.00	N	Arm 10 Ahead	Inf
2/1	U		2	3	60.0	Inf	-	-	-	-	-	-
2/2	O		2	3	60.0	User	1800	-	-	-	-	-
3/1	U		2	3	60.0	Inf	-	-	-	-	-	-
3/2	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 11 Left	30.00
5/2	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 6 Left	40.00
											Arm 9 Ahead	Inf
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	7.0	Inf	-	-	-	-	-	-
7/2	U		2	3	7.0	Inf	-	-	-	-	-	-
8/1	U	B	2	3	5.2	Geom	-	3.65	0.00	Y	Arm 4 Ahead	40.00
											Arm 10 Right	40.00
9/1	U		2	3	7.8	Inf	-	-	-	-	-	-
10/1	U	D	2	3	8.7	Geom	-	3.65	0.00	Y	Arm 11 Ahead	Inf
10/2	U	D	2	3	8.7	Geom	-	3.65	0.00	N	Arm 11 Ahead	Inf
10/3	U	D	2	3	8.7	Geom	-	3.65	0.00	N	Arm 6 Ahead	Inf
11/1	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2	U		2	3	60.0	User	2120	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Cherwell1_AM'	07:45	08:45	01:00	
2: 'Cherwell1_PM'	16:30	17:30	01:00	
3: 'CherwellRef1_AM'	07:45	08:45	01:00	
4: 'CherwellRef1_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Reference Case - AM Peak' (FG3: 'CherwellRef1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	343	1605	1169	3117
	B	85	0	295	202	582
	C	0	0	0	0	0
	D	1458	239	101	0	1798
	Tot.	1543	582	2001	1371	5497

Traffic Lane Flows

Lane	Scenario 1: 2031 Reference Case - AM Peak
Junction: Unnamed Junction	
1/1	1195
1/2 (with short)	1922(In) 753(Out)
1/3 (short)	1169
2/1	1458
2/2	340
3/1	1543
3/2	0
4/1	582
5/1	295
5/2	287
6/1	787
6/2	584
7/1	1543
7/2	340
8/1	340
9/1	85
10/1	899
10/2	807
10/3	1169
11/1	1194
11/2	807

Lane Saturation Flows

Junction: Unnamed Junction								
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	3.65	0.00	Y	Arm 4 Left	20.00	28.7 %	1938	1938
				Arm 10 Ahead	Inf	71.3 %		
1/2	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
1/3	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
2/1	Infinite Saturation Flow						Inf	Inf
2/2	This lane uses a directly entered Saturation Flow						1800	1800
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	3.50	0.00	Y	Arm 11 Left	30.00	100.0 %	1871	1871
5/2	3.50	0.00	Y	Arm 6 Left	40.00	70.4 %	1914	1914
				Arm 9 Ahead	Inf	29.6 %		
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	3.65	0.00	Y	Arm 4 Ahead	40.00	70.3 %	1908	1908
				Arm 10 Right	40.00	29.7 %		
9/1	Infinite Saturation Flow						Inf	Inf
10/1	3.65	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1980	1980
10/2	3.65	0.00	N	Arm 11 Ahead	Inf	100.0 %	2120	2120
10/3	3.65	0.00	N	Arm 6 Ahead	Inf	100.0 %	2120	2120
11/1	Infinite Saturation Flow						Inf	Inf
11/2	This lane uses a directly entered Saturation Flow						2120	2120

Scenario 2: '2031 Do Something - AM Peak' (FG1: 'Cherwell1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	343	1605	1641	3589
	B	85	0	295	202	582
	C	0	0	0	0	0
	D	1577	239	282	0	2098
	Tot.	1662	582	2182	1843	6269

Traffic Lane Flows

Lane	Scenario 2: 2031 Do Something - AM Peak
Junction: Unnamed Junction	
1/1	1527
1/2 (with short)	2062(In) 421(Out)
1/3 (short)	1641
2/1	1577
2/2	521
3/1	1662
3/2	0
4/1	582
5/1	295
5/2	287
6/1	1023
6/2	820
7/1	1662
7/2	521
8/1	521
9/1	85
10/1	1355
10/2	532
10/3	1641
11/1	1650
11/2	532

Lane Saturation Flows

Junction: Unnamed Junction								
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	3.65	0.00	Y	Arm 4 Left	20.00	22.5 %	1947	1947
				Arm 10 Ahead	Inf	77.5 %		
1/2	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
1/3	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
2/1	Infinite Saturation Flow						Inf	Inf
2/2	This lane uses a directly entered Saturation Flow						1800	1800
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	3.50	0.00	Y	Arm 11 Left	30.00	100.0 %	1871	1871
5/2	3.50	0.00	Y	Arm 6 Left	40.00	70.4 %	1914	1914
				Arm 9 Ahead	Inf	29.6 %		
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	3.65	0.00	Y	Arm 4 Ahead	40.00	45.9 %	1908	1908
				Arm 10 Right	40.00	54.1 %		
9/1	Infinite Saturation Flow						Inf	Inf
10/1	3.65	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1980	1980
10/2	3.65	0.00	N	Arm 11 Ahead	Inf	100.0 %	2120	2120
10/3	3.65	0.00	N	Arm 6 Ahead	Inf	100.0 %	2120	2120
11/1	Infinite Saturation Flow						Inf	Inf
11/2	This lane uses a directly entered Saturation Flow						2120	2120

Scenario 3: '2031 Reference Case - PM Peak' (FG4: 'CherwellRef1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	336	939	800	2075
	B	129	0	258	213	600
	C	0	0	0	0	0
	D	2071	268	88	0	2427
	Tot.	2200	604	1285	1013	5102

Traffic Lane Flows

Lane	Scenario 3: 2031 Reference Case - PM Peak
Junction: Unnamed Junction	
1/1	716
1/2 (with short)	1359(In) 559(Out)
1/3 (short)	800
2/1	2071
2/2	356
3/1	2200
3/2	0
4/1	604
5/1	258
5/2	342
6/1	613
6/2	400
7/1	2200
7/2	356
8/1	356
9/1	129
10/1	463
10/2	564
10/3	800
11/1	721
11/2	564

Lane Saturation Flows

Junction: Unnamed Junction								
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	3.65	0.00	Y	Arm 4 Left	20.00	46.9 %	1913	1913
				Arm 10 Ahead	Inf	53.1 %		
1/2	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
1/3	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
2/1	Infinite Saturation Flow						Inf	Inf
2/2	This lane uses a directly entered Saturation Flow						1800	1800
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	3.50	0.00	Y	Arm 11 Left	30.00	100.0 %	1871	1871
5/2	3.50	0.00	Y	Arm 6 Left	40.00	62.3 %	1920	1920
				Arm 9 Ahead	Inf	37.7 %		
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	3.65	0.00	Y	Arm 4 Ahead	40.00	75.3 %	1908	1908
				Arm 10 Right	40.00	24.7 %		
9/1	Infinite Saturation Flow						Inf	Inf
10/1	3.65	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1980	1980
10/2	3.65	0.00	N	Arm 11 Ahead	Inf	100.0 %	2120	2120
10/3	3.65	0.00	N	Arm 6 Ahead	Inf	100.0 %	2120	2120
11/1	Infinite Saturation Flow						Inf	Inf
11/2	This lane uses a directly entered Saturation Flow						2120	2120

Scenario 4: '2031 Do something - PM Peak' (FG2: 'Cherwell1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	336	939	1056	2331
	B	129	0	258	213	600
	C	0	0	0	0	0
	D	2346	268	472	0	3086
	Tot.	2475	604	1669	1269	6017

Traffic Lane Flows

Lane	Scenario 4: 2031 Do something - PM Peak
Junction: Unnamed Junction	
1/1	947
1/2 (with short)	1384(In) 328(Out)
1/3 (short)	1056
2/1	2346
2/2	740
3/1	2475
3/2	0
4/1	604
5/1	258
5/2	342
6/1	741
6/2	528
7/1	2475
7/2	740
8/1	740
9/1	129
10/1	874
10/2	537
10/3	1056
11/1	1132
11/2	537

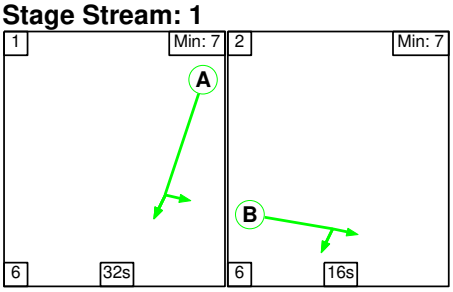
Lane Saturation Flows

Junction: Unnamed Junction								
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	3.65	0.00	Y	Arm 4 Left	20.00	35.5 %	1929	1929
				Arm 10 Ahead	Inf	64.5 %		
1/2	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
1/3	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
2/1	Infinite Saturation Flow						Inf	Inf
2/2	This lane uses a directly entered Saturation Flow						1800	1800
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	3.50	0.00	Y	Arm 11 Left	30.00	100.0 %	1871	1871
5/2	3.50	0.00	Y	Arm 6 Left	40.00	62.3 %	1920	1920
				Arm 9 Ahead	Inf	37.7 %		
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	3.65	0.00	Y	Arm 4 Ahead	40.00	36.2 %	1908	1908
				Arm 10 Right	40.00	63.8 %		
9/1	Infinite Saturation Flow						Inf	Inf
10/1	3.65	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1980	1980
10/2	3.65	0.00	N	Arm 11 Ahead	Inf	100.0 %	2120	2120
10/3	3.65	0.00	N	Arm 6 Ahead	Inf	100.0 %	2120	2120
11/1	Infinite Saturation Flow						Inf	Inf
11/2	This lane uses a directly entered Saturation Flow						2120	2120

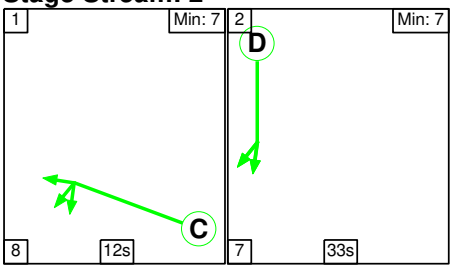
Scenario 1: '2031 Reference Case - AM Peak' (FG3: 'CherwellRef1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

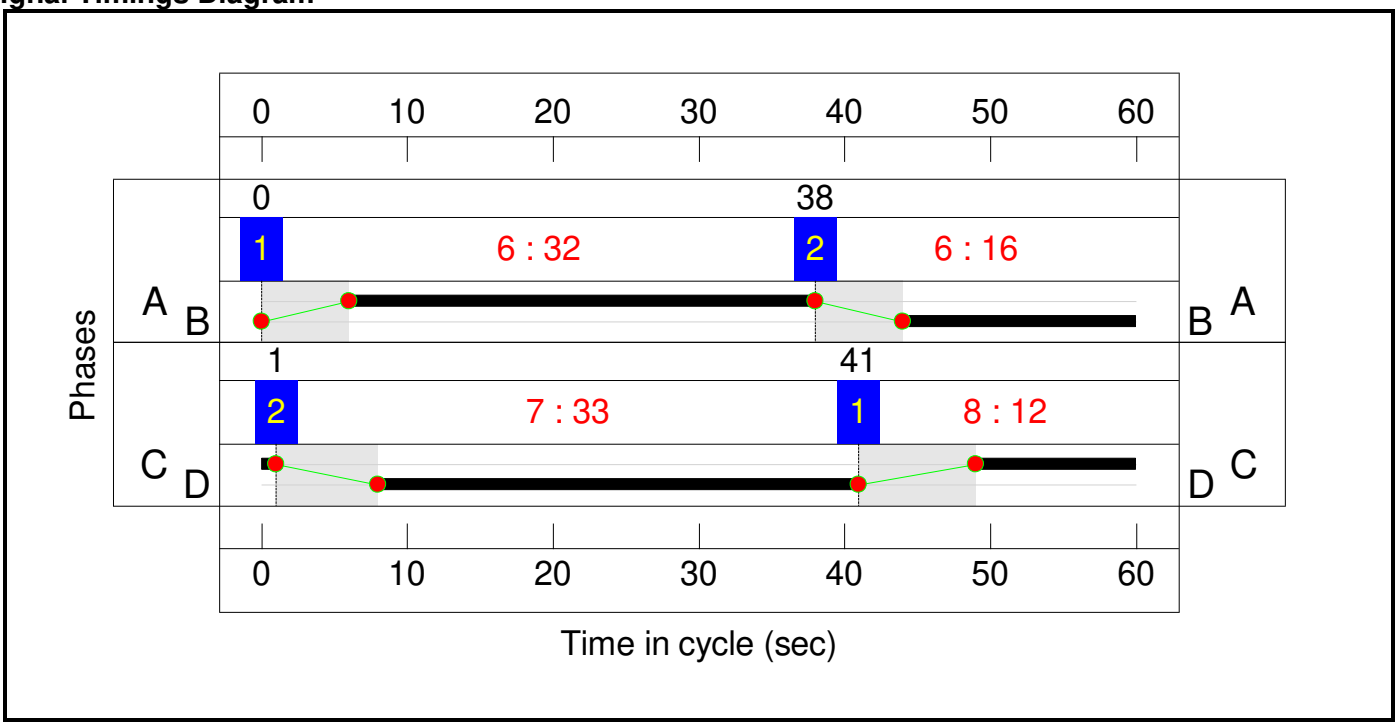
Stage Stream: 1

Stage	1	2
Duration	32	16
Change Point	0	38

Stage Stream: 2

Stage	1	2
Duration	12	33
Change Point	41	1

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: Existing Cherwell Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**115.9%**
Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**115.9%**
1/1	Left Ahead	U	1	N/A	A		1	32	-	1195	1938	1066	112.1%
1/2+1/3	Ahead	U	1	N/A	A		1	32	-	1922	2120:2120	650+1009	115.9 : 115.9%
2/2	Ahead	O	N/A	N/A	-		-	-	-	340	1800	972	35.0%
5/1	Left	U	2	N/A	C		1	12	-	295	1871	405	72.8%
5/2	Left Ahead	U	2	N/A	C		1	12	-	287	1914	415	69.2%
8/1	Ahead Right	U	1	N/A	B		1	16	-	340	1908	541	62.9%
10/1	Ahead	U	2	N/A	D		1	33	-	899	1980	1122	71.9%
10/2	Ahead	U	2	N/A	D		1	33	-	807	2120	1201	58.6%
10/3	Ahead	U	2	N/A	D		1	33	-	1169	2120	1201	84.0%
11/2		U	N/A	N/A	-		-	-	-	807	2120	2120	33.2%

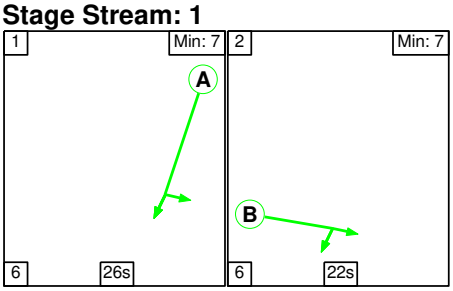
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Existing Cherwell Roundabout	**-**	**-**	**340**	**0**	**0**	**27.1**	**208.1**	**0.0**	**235.2**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**340**	**0**	**0**	**27.1**	**208.1**	**0.0**	**235.2**	**-**	**-**	**-**	**-**
1/1	1195	1066	-	-	-	7.9	68.9	-	76.8	231.4	22.1	68.9	91.0
1/2+1/3	1922	1658	-	-	-	13.0	135.5	-	148.4	278.0	32.9	135.5	168.3
2/2	340	340	340	0	0	0.0	0.3	-	0.3	2.8	0.0	0.3	0.3
5/1	295	295	-	-	-	1.8	1.3	-	3.1	37.8	4.5	1.3	5.8
5/2	287	287	-	-	-	1.7	1.1	-	2.8	35.5	4.4	1.1	5.5
8/1	340	340	-	-	-	1.8	0.8	-	2.6	27.7	4.9	0.8	5.8
10/1	807	807	-	-	-	0.4	0.0	-	0.4	1.7	1.2	0.0	1.2
10/2	704	704	-	-	-	0.3	0.0	-	0.3	1.7	1.1	0.0	1.1
10/3	1009	1009	-	-	-	0.2	0.0	-	0.2	0.6	0.4	0.0	0.4
11/2	704	704	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2

C1 Stream: 1 PRC for Signalled Lanes (%): -28.8 Total Delay for Signalled Lanes (pcuHr): 227.86 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 7.2 Total Delay for Signalled Lanes (pcuHr): 6.78 Cycle Time (s): 60
PRC Over All Lanes (%): -28.8 Total Delay Over All Lanes(pcuHr): 235.16

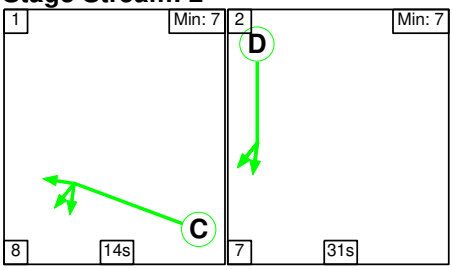
Scenario 2: '2031 Do Something - AM Peak' (FG1: 'Cherwell1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

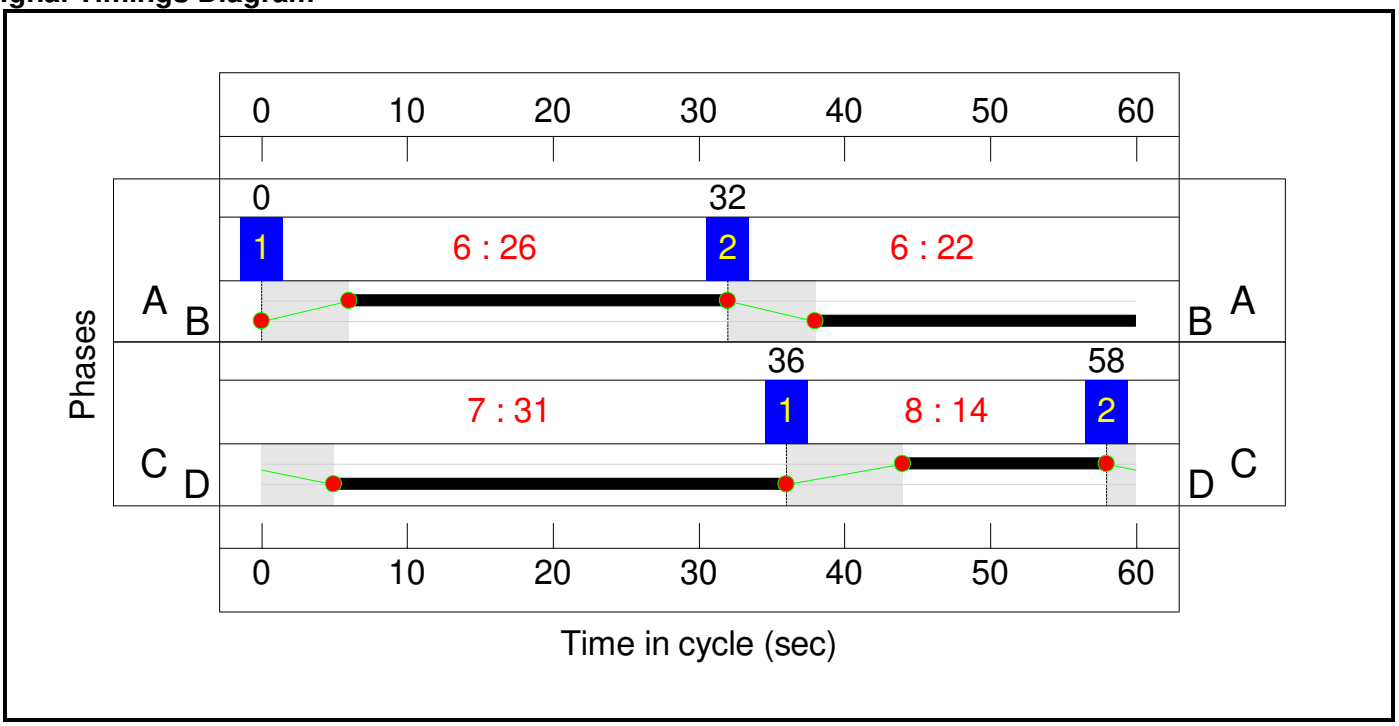
Stage Stream: 1

Stage	1	2
Duration	26	22
Change Point	0	32

Stage Stream: 2

Stage	1	2
Duration	14	31
Change Point	36	58

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: Existing Cherwell Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**177.6%**
Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**177.6%**
1/1	Left Ahead	U	1	N/A	A		1	26	-	1527	1947	876	174.3%
1/2+1/3	Ahead	U	1	N/A	A		1	26	-	2062	2120:2120	237+924	177.6 : 177.6%
2/2	Ahead	O	N/A	N/A	-		-	-	-	521	1800	972	53.6%
5/1	Left	U	2	N/A	C		1	14	-	295	1871	468	63.1%
5/2	Left Ahead	U	2	N/A	C		1	14	-	287	1914	479	60.0%
8/1	Ahead Right	U	1	N/A	B		1	22	-	521	1908	731	71.2%
10/1	Ahead	U	2	N/A	D		1	31	-	1355	1980	1056	80.5%
10/2	Ahead	U	2	N/A	D		1	31	-	532	2120	1131	30.8%
10/3	Ahead	U	2	N/A	D		1	31	-	1641	2120	1131	81.7%
11/2		U	N/A	N/A	-		-	-	-	532	2120	2120	16.4%

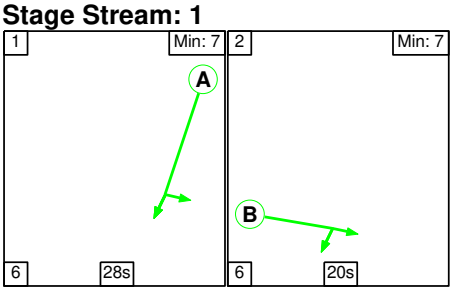
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Existing Cherwell Roundabout	**-**	**-**	**521**	**0**	**0**	**65.6**	**781.6**	**0.0**	**847.2**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**521**	**0**	**0**	**65.6**	**781.6**	**0.0**	**847.2**	**-**	**-**	**-**	**-**
1/1	1527	876	-	-	-	25.1	326.6	-	351.7	829.2	36.5	326.6	363.1
1/2+1/3	2062	1161	-	-	-	33.7	451.5	-	485.2	847.1	50.8	451.5	502.3
2/2	521	521	521	0	0	0.0	0.6	-	0.6	4.0	0.0	0.6	0.6
5/1	295	295	-	-	-	1.6	0.8	-	2.5	30.4	4.3	0.8	5.2
5/2	287	287	-	-	-	1.6	0.7	-	2.3	29.2	4.1	0.7	4.9
8/1	521	521	-	-	-	2.3	1.2	-	3.5	24.2	7.2	1.2	8.5
10/1	850	850	-	-	-	0.8	0.0	-	0.8	3.4	2.9	0.0	2.9
10/2	348	348	-	-	-	0.5	0.0	-	0.5	5.1	1.8	0.0	1.8
10/3	924	924	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	348	348	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.1	0.1

C1 Stream: 1 PRC for Signalled Lanes (%): -97.3 Total Delay for Signalled Lanes (pcuHr): 840.44 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 10.1 Total Delay for Signalled Lanes (pcuHr): 6.11 Cycle Time (s): 60
PRC Over All Lanes (%): -97.3 Total Delay Over All Lanes(pcuHr): 847.22

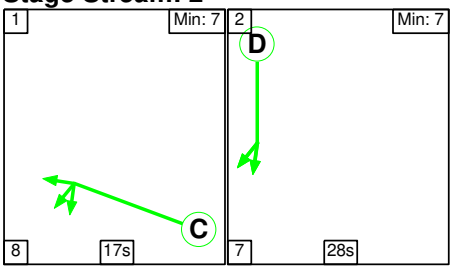
Scenario 3: '2031 Reference Case - PM Peak' (FG4: 'CherwellRef1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

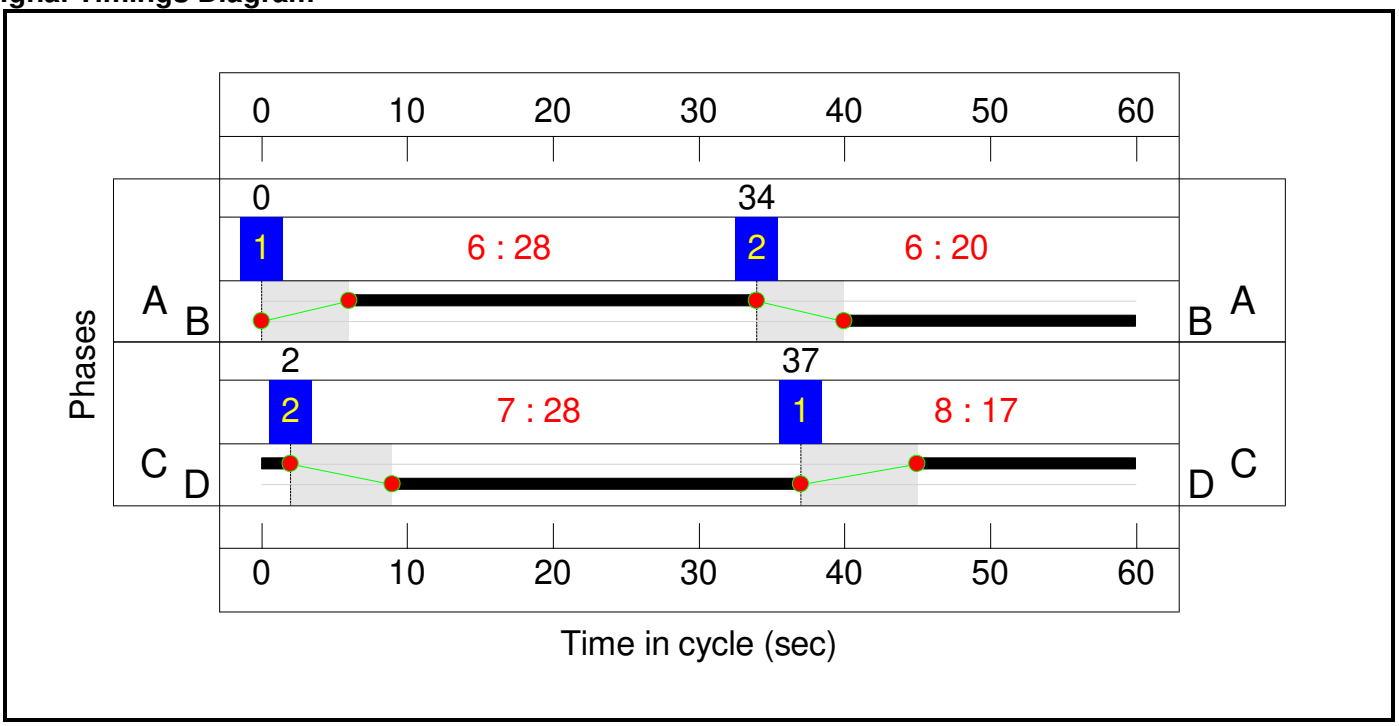
Stage Stream: 1

Stage	1	2
Duration	28	20
Change Point	0	34

Stage Stream: 2

Stage	1	2
Duration	17	28
Change Point	37	2

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: Existing Cherwell Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.3%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.3%**
1/1	Left Ahead	U	1	N/A	A		1	28	-	716	1913	925	77.4%
1/2+1/3	Ahead	U	1	N/A	A		1	28	-	1359	2120:2120	640+917	87.3 : 87.3%
2/2	Ahead	O	N/A	N/A	-		-	-	-	356	1800	957	37.2%
5/1	Left	U	2	N/A	C		1	17	-	258	1871	561	46.0%
5/2	Left Ahead	U	2	N/A	C		1	17	-	342	1920	576	59.4%
8/1	Ahead Right	U	1	N/A	B		1	20	-	356	1908	668	53.3%
10/1	Ahead	U	2	N/A	D		1	28	-	463	1980	957	48.4%
10/2	Ahead	U	2	N/A	D		1	28	-	564	2120	1025	55.0%
10/3	Ahead	U	2	N/A	D		1	28	-	800	2120	1025	78.1%
11/2		U	N/A	N/A	-		-	-	-	564	2120	2120	26.6%

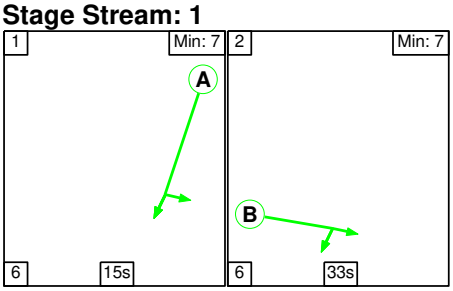
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Existing Cherwell Roundabout	**-**	**-**	**356**	**0**	**0**	**12.3**	**7.2**	**0.0**	**19.5**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**356**	**0**	**0**	**12.3**	**7.2**	**0.0**	**19.5**	**-**	**-**	**-**	**-**
1/1	716	716	-	-	-	2.5	1.7	-	4.2	21.3	9.7	1.7	11.4
1/2+1/3	1359	1359	-	-	-	4.5	3.3	-	7.9	20.8	10.9	3.3	14.2
2/2	356	356	356	0	0	0.0	0.3	-	0.3	3.0	0.0	0.3	0.3
5/1	258	258	-	-	-	1.2	0.4	-	1.6	23.0	3.4	0.4	3.9
5/2	342	342	-	-	-	1.7	0.7	-	2.4	25.5	4.8	0.7	5.6
8/1	356	356	-	-	-	1.5	0.6	-	2.1	21.3	4.6	0.6	5.2
10/1	463	463	-	-	-	0.5	0.0	-	0.5	4.1	2.3	0.0	2.3
10/2	564	564	-	-	-	0.1	0.0	-	0.1	0.7	0.2	0.0	0.2
10/3	800	800	-	-	-	0.1	0.0	-	0.1	0.5	0.2	0.0	0.2
11/2	564	564	-	-	-	0.0	0.2	-	0.2	1.2	0.0	0.2	0.2

C1 Stream: 1 PRC for Signalled Lanes (%): 3.1 Total Delay for Signalled Lanes (pcuHr): 14.21 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 15.3 Total Delay for Signalled Lanes (pcuHr): 4.82 Cycle Time (s): 60
PRC Over All Lanes (%): 3.1 Total Delay Over All Lanes(pcuHr): 19.51

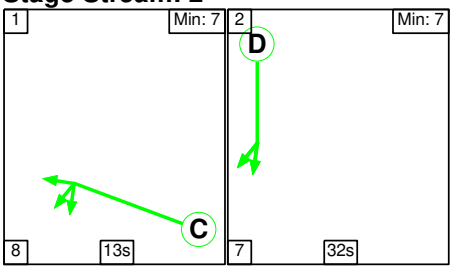
Scenario 4: '2031 Do something - PM Peak' (FG2: 'Cherwell1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

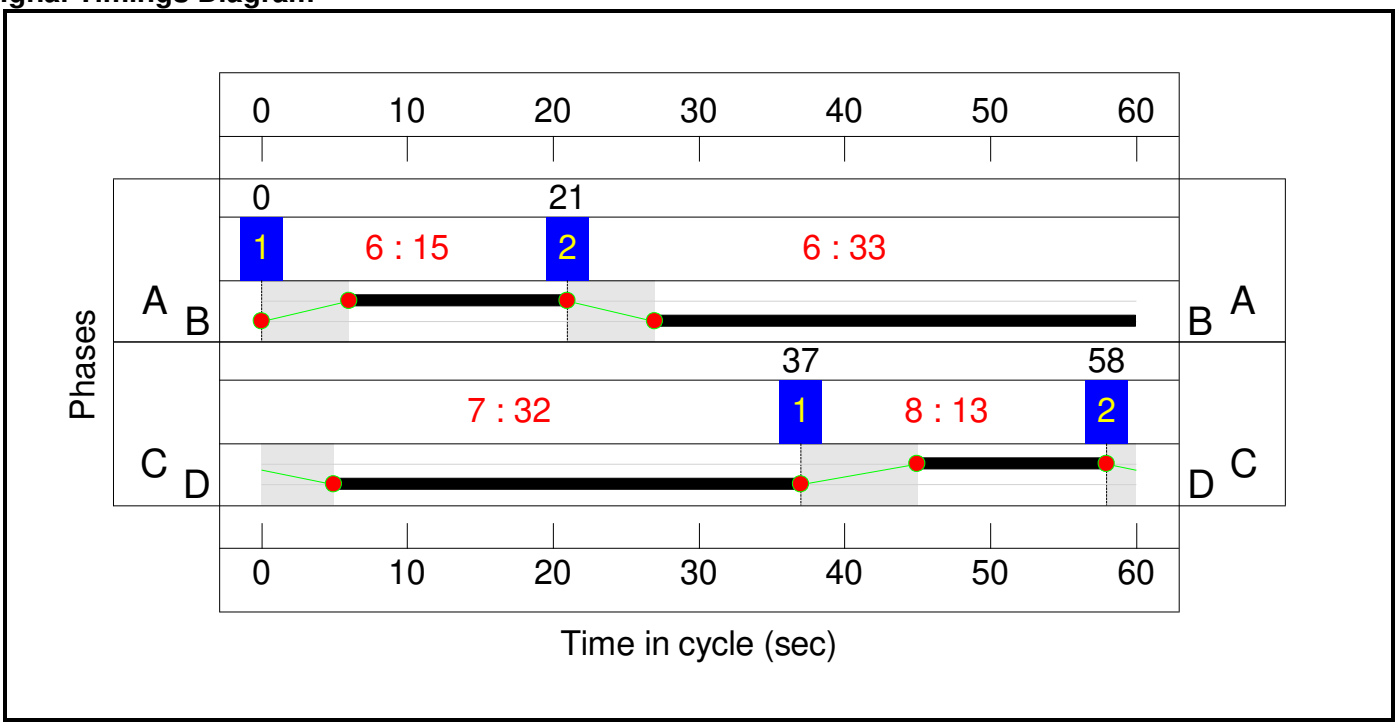
Stage Stream: 1

Stage	1	2
Duration	15	33
Change Point	0	21

Stage Stream: 2

Stage	1	2
Duration	13	32
Change Point	37	58

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: Existing Cherwell Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**186.8%**
Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**186.8%**
1/1	Left Ahead	U	1	N/A	A		1	15	-	947	1929	514	184.1%
1/2+1/3	Ahead	U	1	N/A	A		1	15	-	1384	2120:2120	176+565	186.8 : 186.8%
2/2	Ahead	O	N/A	N/A	-		-	-	-	740	1800	957	77.3%
5/1	Left	U	2	N/A	C		1	13	-	258	1871	437	59.1%
5/2	Left Ahead	U	2	N/A	C		1	13	-	342	1920	448	76.3%
8/1	Ahead Right	U	1	N/A	B		1	33	-	740	1908	1081	68.4%
10/1	Ahead	U	2	N/A	D		1	32	-	874	1980	1089	54.6%
10/2	Ahead	U	2	N/A	D		1	32	-	537	2120	1166	33.0%
10/3	Ahead	U	2	N/A	D		1	32	-	1056	2120	1166	48.5%
11/2		U	N/A	N/A	-		-	-	-	537	2120	2120	18.1%

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: Existing Cherwell Roundabout	**-**	**-**	**740**	**0**	**0**	**51.5**	**545.1**	**0.0**	**596.6**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**740**	**0**	**0**	**51.5**	**545.1**	**0.0**	**596.6**	**-**	**-**	**-**	**-**
1/1	947	514	-	-	-	18.3	217.4	-	235.7	896.1	23.9	217.4	241.3
1/2+1/3	1384	741	-	-	-	26.0	322.6	-	348.6	906.8	33.1	322.6	355.7
2/2	740	740	740	0	0	0.0	1.7	-	1.7	8.2	0.0	1.7	1.7
5/1	258	258	-	-	-	1.5	0.7	-	2.2	30.5	3.8	0.7	4.5
5/2	342	342	-	-	-	2.0	1.6	-	3.6	37.9	5.2	1.6	6.8
8/1	740	740	-	-	-	1.9	1.1	-	3.0	14.4	8.6	1.1	9.7
10/1	595	595	-	-	-	1.0	0.0	-	1.0	6.0	3.4	0.0	3.4
10/2	385	385	-	-	-	0.8	0.0	-	0.8	7.1	2.4	0.0	2.4
10/3	565	565	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	385	385	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.1	0.1

C1 Stream: 1 PRC for Signalled Lanes (%): -107.5 Total Delay for Signalled Lanes (pcuHr): 587.30 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 17.9 Total Delay for Signalled Lanes (pcuHr): 7.54 Cycle Time (s): 60
PRC Over All Lanes (%): -107.5 Total Delay Over All Lanes(pcuHr): 596.64

APPENDIX G

CHERWELL ROUNDABOUT MITIGATION (C-5) LINSIG MODEL AUDIT AND REVISED RESULTS

LINSIG V3 Model Checking Report

AECOM

Project: **OXFORDSHIRE SRFI-M40 Junction 10**

Model: **2031_DS_M40J10_Cherwell - Junction option C-5.lsg3x**

Job No: **xxxxx**

Model Submitted: **16/07/2021**

Corrections Submitted: **Date Submitted**

Modelled By: ADC Infrastructure **Checked by: Weiping Guo** **Approved by:**

This note is to document the checks made to LINSIG models. Once completed this should be filed with the model, or model outputs for future reference.

Results Key

- × - Changes required before work is signed off
- ? – Changes may be required before work is signed off, further work required
- ✓ - No further changes required before work is signed off

File Checked: Hyperlink to model

Network Information					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
26/07/21	Scenario title(s) entered	✓			
26/07/21	Project name entered	✓			
26/07/21	Modeller details recorded	✓			
26/07/21	Network location details entered	✓			
26/07/21	File name is logical	✓			

Network Setup **Junction Drawings: In report 'OxSRFI-ADC1794-RP-M-V3 'TN5 M40 Junction 10 Options Report' – appendices' Page no.53** **Sat Flow Measurements / Calculations: Hyperlink to Sat Flow Measurements**					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
	Junctions				
26/07/21	Appropriate junctions setup	✓			
26/07/21	Junction info/ signal controllers complete	✓			
26/07/21	Logical arm structure setup	✓			
	Lanes				
26/07/21	Lane setup reflects junction drawings	✓			
26/07/21	Check each lane that is signal controlled	✓			
26/07/21	Lanes matched to controller and phase	✓	.		
26/07/21	Lane length appropriate	X	Arm1 Lane 1 flare length is measured 105mtr from drawing, but 80mtr setup in the model.	Flare length amended to 105m.	
26/07/21	Custom occupancy (if req)	N/A			
	Saturation Flows				
26/07/21	Justified method to derive saturation flows				
26/07/21	Check observed sat flows (if used)	N/A			
26/07/21	Check RR67 sat flows calculations (if used)	x	1. Most lanes saturation flows were calculated by RR67 methods, however all the lanes were treated as the 'nearside lane'. 2. Arm7 lane 1 has direct entered sat flow, please use RR67 to make sure the model consistence.	1. All lanes have RR67 sat flows, with 'nearside lane' de-selected where appropriate. All turning radii checked and increased where applicable 2. All circulating lanes have RR67 parameters applied such that all circulating saturation flows are equal or greater than the entry lanes.	
26/07/21	Check external sat flows calculations (if used)	N/A			
26/07/21	Check sat flows for any bottleneck links	✓			
	Advanced Lane Settings				
26/07/21	Use of start / end green displacements (if req)	✓	Default values used.		
26/07/21	Use of queue limits on short links (if req)	✓			
26/07/21	Use of weightings for optimiser constraints (if req)	✓			
26/07/21	Use of random delay or queue de-sliver (if req)	✓	Selected for all short circulatory lanes.		
	Give Ways				
26/07/21	Check each lane that is priority controlled	N/A			
26/07/21	Measurement of max/min flow when giving way	N/A			
26/07/21	Flow when opposing traffic stopped reasonable	N/A			
26/07/21	Measurement of give-way co-efficient	N/A			
26/07/21	Measurement of clear conflict time of opposing traffic	N/A			
26/07/21	Check all controlling movements identified	N/A			
26/07/21	Measurement of storage in front of stop-line	N/A			
26/07/21	Max turns in inter-green reasonable	N/A			

Tel. 0121 262 6795
www.aecom.com

Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

26/07/21	Measurement of non-blocking storage	N/A			
	Lane Connectors				
26/07/21	Lane connectors provided reasonable	✓			
26/07/21	Cruise time reasonable	✓	45Km/hr cruise speed is used for all internal links		
26/07/21	Default platoon dispersion used unless observed	✓			
	Zones				
26/07/21	Zones match O-D matrix	✓	Cherwell6_AM flow matches the flow report page 54; Cherwell6_PM flow matches the flow report page 55;		

	Pedestrians				
26/07/21	Ped crossings represented by ped links (if req)	N/A			
26/07/21	Ped link data correct (if req)	N/A			
26/07/21	Ped connector walk times reasonable (if req)	N/A			
26/07/21	Ped links matched to appropriate phases (if req)	N/A			
26/07/21	Ped zones match ped O-D matrix (if req)	N/A			

Controllers

Controller Specifications: Hyperlink to Controller Specification (if req)
Intergreen Calculations: Hyperlink to Intergreen Calculations (if req)

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
	General Controller Set-up				
26/07/21	Sufficient controllers setup	✓			
26/07/21	Multiple stage streams setup correctly (if req)	N/A			
26/07/21	Non-standard filters setup correctly (if req)	N/A			
	Signal Settings				
26/07/21	Check phases for each controller	✓			
26/07/21	Check phase mins/type reasonable	✓			
26/07/21	Check inter-greens calculations/coding	✓			
26/07/21	Stages reasonable	✓			
26/07/21	Phase delays reasonable (if req)	N/A			

Stage Sequences

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
26/07/21	Check stage sequences observed / optimised	✓			
26/07/21	Check stage timings observed / optimised	N/A			

Traffic Counts and Calculations

Traffic Flow Data: Hyperlink to Traffic Flow Data – in report 'OXSRFI-ADC1794-RP-N-V2 'TN6 - M40 J10 OR Traffic Flow Derivation' – bound'
Matrix Calculations: Hyperlink to Matrix Calculations (if required)
Lane Balancing Calculations: Hyperlink to Lane Balancing Calculations (if required)
Site Observations: Hyperlink to Site Flows Observations

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
26/07/21	Suitability of traffic surveys undertaken	N/A			
26/07/21	Are there sufficient site observations	N/A			
26/07/21	Check O-D matrix calculations	✓			
26/07/21	Are lane balancing calculations sufficient / consistent	✓			
26/07/21	Does lane balancing match lining	✓			
26/07/21	Does lane balancing match matrices	✓			

Traffic Flows

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
26/07/21	Traffic & ped flow (if req) groups setup	✓			
26/07/21	Desired flows match O-D matrices	✓			
26/07/21	Actual flows match desired flows	✓			
26/07/21	Inappropriate routes closed	✓			
26/07/21	Route flows match lane balancing	✓			

Modelling

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
26/07/21	Scenario set up with correct options	✓			
26/07/21	Cycle time appropriate for network control	✓			
26/07/21	Cycle time optimised (if req)	✓			

Tel. 0121 262 6795
www.aecom.com

Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

AECOM

Results					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
	Are all values as expected (Demand Flows, Green Times etc)		To be checked after above changes.		
	Deg Sat >100% for existing situation with no modelled suppressed demand?		To be checked after above changes.		
	Deg Sat appropriate? Validated?		To be checked after above changes.		
	Capacity conclusions		To be checked after above changes.		
	If suppressed demand has been modelled, do queues validate?		To be checked after above changes.		
	Queues appropriate?		To be checked after above changes.		
	Queue limits exceeded?		To be checked after above changes.		
	Queuing conclusions (will exit blocking modify these?)		To be checked after above changes.		
	If suppressed demand has been modelled do journey times validate?		To be checked after above changes.		
	Journey time conclusions?		To be checked after above changes.		

Conclusions and Recommendations

Tel. 0121 262 6795
www.aecom.com

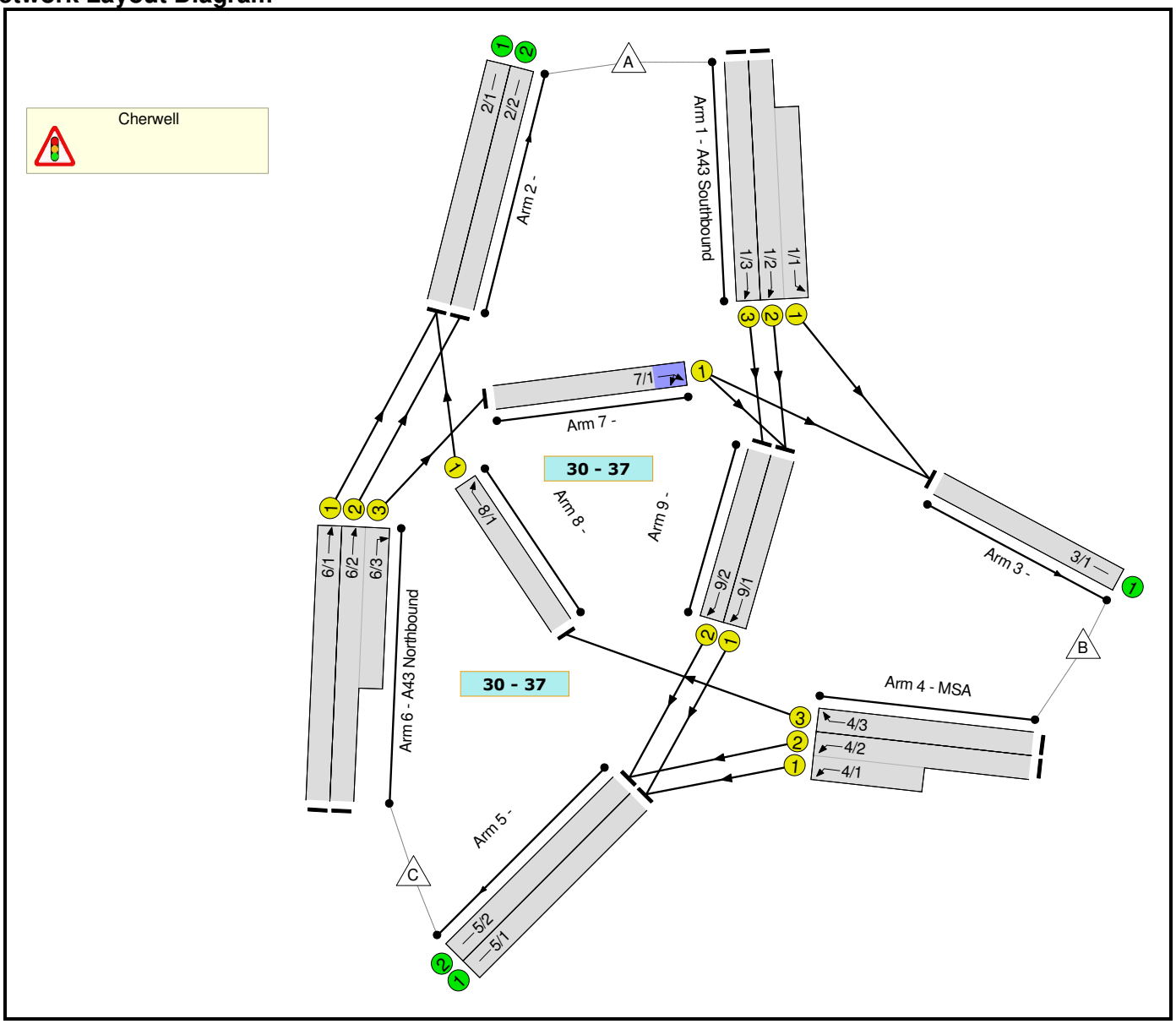
Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

Full Input Data And Results

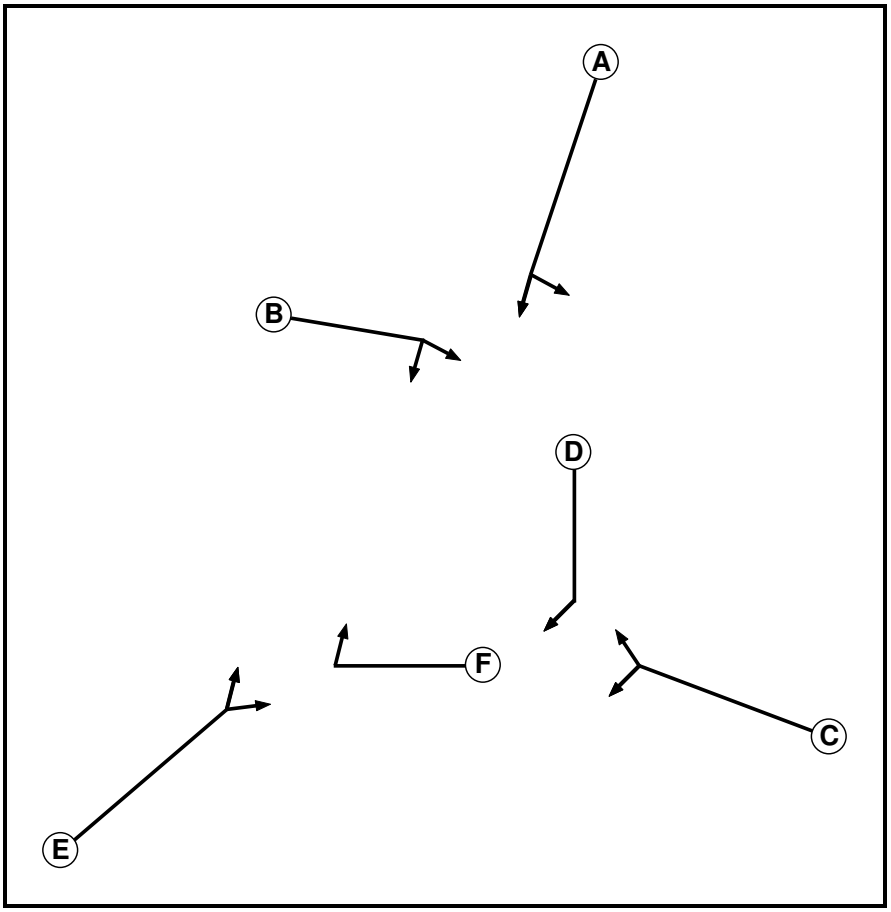
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Cherwell hamburger gyratory - Junction options C-5**
Location:	
Additional detail:	Amended following Aecom comments
File name:	2031_DS_M40J10_Cherwell - Junction option C-5.lsg3x
Author:	Mark Higgins
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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
E	Traffic	3		7	7
F	Traffic	3		7	7

Phase Intergreens Matrix

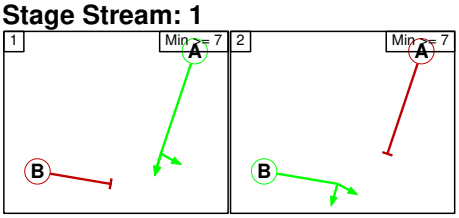
		Starting Phase					
		A	B	C	D	E	F
Terminating Phase	A		6	-	-	-	-
	B	6		-	-	-	-
	C	-	-		6	-	-
	D	-	-	6		-	-
	E	-	-	-	-		6
	F	-	-	-	-	6	

Phases in Stage

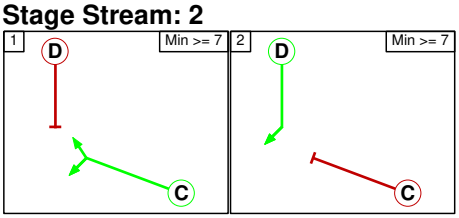
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F

Stage Diagram

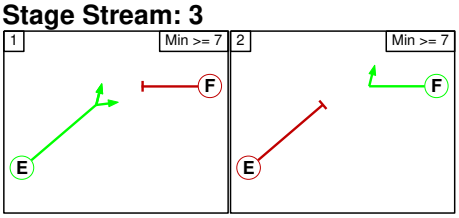
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Prohibited Stage Change

Stage Stream: 1

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

From Stage	To Stage		
		1	2
	1		6
	2	6	

Stage Stream: 3

From Stage	To Stage		
		1	2
	1		6
	2	6	

Lane Input Data

Junction: Cherwell												
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 (A43 Southbound)	U	A	2	3	18.3	Geom	-	3.65	0.00	Y	Arm 3 Left	Inf
1/2 (A43 Southbound)	U	A	2	3	60.0	Geom	-	3.65	0.00	N	Arm 9 Ahead	Inf
1/3 (A43 Southbound)	U	A	2	3	60.0	Geom	-	3.65	0.00	N	Arm 9 Ahead	Inf
2/1	U		2	3	60.0	Inf	-	-	-	-	-	-
2/2	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1 (MSA)	U	C	2	3	7.0	Geom	-	3.50	0.00	Y	Arm 5 Left	30.00
4/2 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Left	30.00
4/3 (MSA)	U	C	2	3	60.0	Geom	-	3.65	0.00	N	Arm 8 Right	Inf
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (A43 Northbound)	U	E	2	3	62.6	Geom	-	3.65	0.00	Y	Arm 2 Ahead	40.00
6/2 (A43 Northbound)	U	E	2	3	62.6	Geom	-	3.65	0.00	N	Arm 2 Ahead	45.00
6/3 (A43 Northbound)	U	E	2	3	10.1	Geom	-	3.65	0.00	N	Arm 7 Right	30.00
7/1	U	B	2	3	6.1	Geom	-	3.65	0.00	Y	Arm 3 Ahead	Inf
											Arm 9 Right	Inf
8/1	U	F	2	3	10.4	Geom	-	3.65	0.00	Y	Arm 2 Right	40.00
9/1	U	D	2	3	9.0	Geom	-	3.65	0.00	N	Arm 5 Ahead	Inf
9/2	U	D	2	3	8.7	Geom	-	3.65	0.00	N	Arm 5 Ahead	Inf

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Cherwell6_AM'	07:45	08:45	01:00	
2: 'Cherwell6_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Cherwell10, 11, 13, 18, 19 AM' (FG1: 'Cherwell6_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
Origin		A	B	C	Tot.
	A	0	343	1641	1984
	B	85	0	497	582
	C	1577	239	0	1816
	Tot.	1662	582	2138	4382

Traffic Lane Flows

Lane	Scenario 1: 2031 Cherwell10, 11, 13, 18, 19 AM
Junction: Cherwell	
1/1 (short)	343
1/2 (with short)	1188(In) 845(Out)
1/3	796
2/1	855
2/2	807
3/1	582
4/1 (short)	249
4/2 (with short)	497(In) 248(Out)
4/3	85
5/1	1094
5/2	1044
6/1	770
6/2 (with short)	1046(In) 807(Out)
6/3 (short)	239
7/1	239
8/1	85
9/1	845
9/2	796

Lane Saturation Flows

Junction: Cherwell								
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 (A43 Southbound)	3.65	0.00	Y	Arm 3 Left	Inf	100.0 %	1980	1980
1/2 (A43 Southbound)	3.65	0.00	N	Arm 9 Ahead	Inf	100.0 %	2120	2120
1/3 (A43 Southbound)	3.65	0.00	N	Arm 9 Ahead	Inf	100.0 %	2120	2120
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
4/1 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/2 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/3 (MSA)	3.65	0.00	N	Arm 8 Right	Inf	100.0 %	2120	2120
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (A43 Northbound)	3.65	0.00	Y	Arm 2 Ahead	40.00	100.0 %	1908	1908
6/2 (A43 Northbound)	3.65	0.00	N	Arm 2 Ahead	45.00	100.0 %	2052	2052
6/3 (A43 Northbound)	3.65	0.00	N	Arm 7 Right	30.00	100.0 %	2019	2019
7/1	3.65	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1980	1980
				Arm 9 Right	Inf	0.0 %		
8/1	3.65	0.00	Y	Arm 2 Right	40.00	100.0 %	1908	1908
9/1	3.65	0.00	N	Arm 5 Ahead	Inf	100.0 %	2120	2120
9/2	3.65	0.00	N	Arm 5 Ahead	Inf	100.0 %	2120	2120

Scenario 2: '2031 Cherwell10, 11, 13, 18, 19 PM' (FG2: 'Cherwell6_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	336	1056	1392
	B	129	0	471	600
	C	2346	268	0	2614
	Tot.	2475	604	1527	4606

Traffic Lane Flows

Lane	Scenario 2: 2031 Cherwell10, 11, 13, 18, 19 PM
Junction: Cherwell	
1/1 (short)	336
1/2 (with short)	894(In) 558(Out)
1/3	498
2/1	1324
2/2	1151
3/1	604
4/1 (short)	236
4/2 (with short)	471(In) 235(Out)
4/3	129
5/1	794
5/2	733
6/1	1195
6/2 (with short)	1419(In) 1151(Out)
6/3 (short)	268
7/1	268
8/1	129
9/1	558
9/2	498

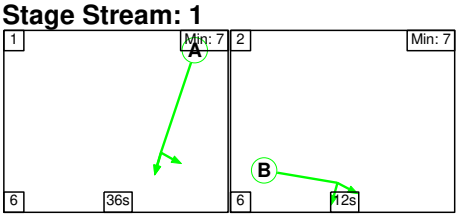
Lane Saturation Flows

Junction: Cherwell								
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 (A43 Southbound)	3.65	0.00	Y	Arm 3 Left	Inf	100.0 %	1980	1980
1/2 (A43 Southbound)	3.65	0.00	N	Arm 9 Ahead	Inf	100.0 %	2120	2120
1/3 (A43 Southbound)	3.65	0.00	N	Arm 9 Ahead	Inf	100.0 %	2120	2120
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
4/1 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/2 (MSA)	3.50	0.00	Y	Arm 5 Left	30.00	100.0 %	1871	1871
4/3 (MSA)	3.65	0.00	N	Arm 8 Right	Inf	100.0 %	2120	2120
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (A43 Northbound)	3.65	0.00	Y	Arm 2 Ahead	40.00	100.0 %	1908	1908
6/2 (A43 Northbound)	3.65	0.00	N	Arm 2 Ahead	45.00	100.0 %	2052	2052
6/3 (A43 Northbound)	3.65	0.00	N	Arm 7 Right	30.00	100.0 %	2019	2019
7/1	3.65	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1980	1980
				Arm 9 Right	Inf	0.0 %		
8/1	3.65	0.00	Y	Arm 2 Right	40.00	100.0 %	1908	1908
9/1	3.65	0.00	N	Arm 5 Ahead	Inf	100.0 %	2120	2120
9/2	3.65	0.00	N	Arm 5 Ahead	Inf	100.0 %	2120	2120

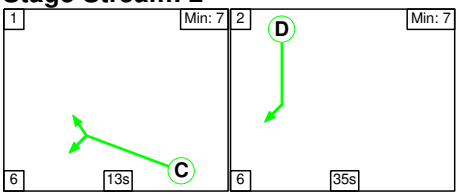
Scenario 1: '2031 Cherwell10, 11, 13, 18, 19 AM' (FG1: 'Cherwell6_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

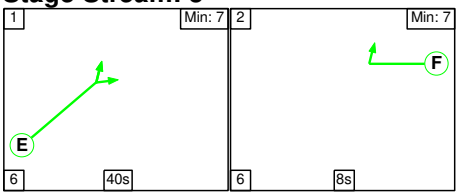
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	36	12
Change Point	0	42

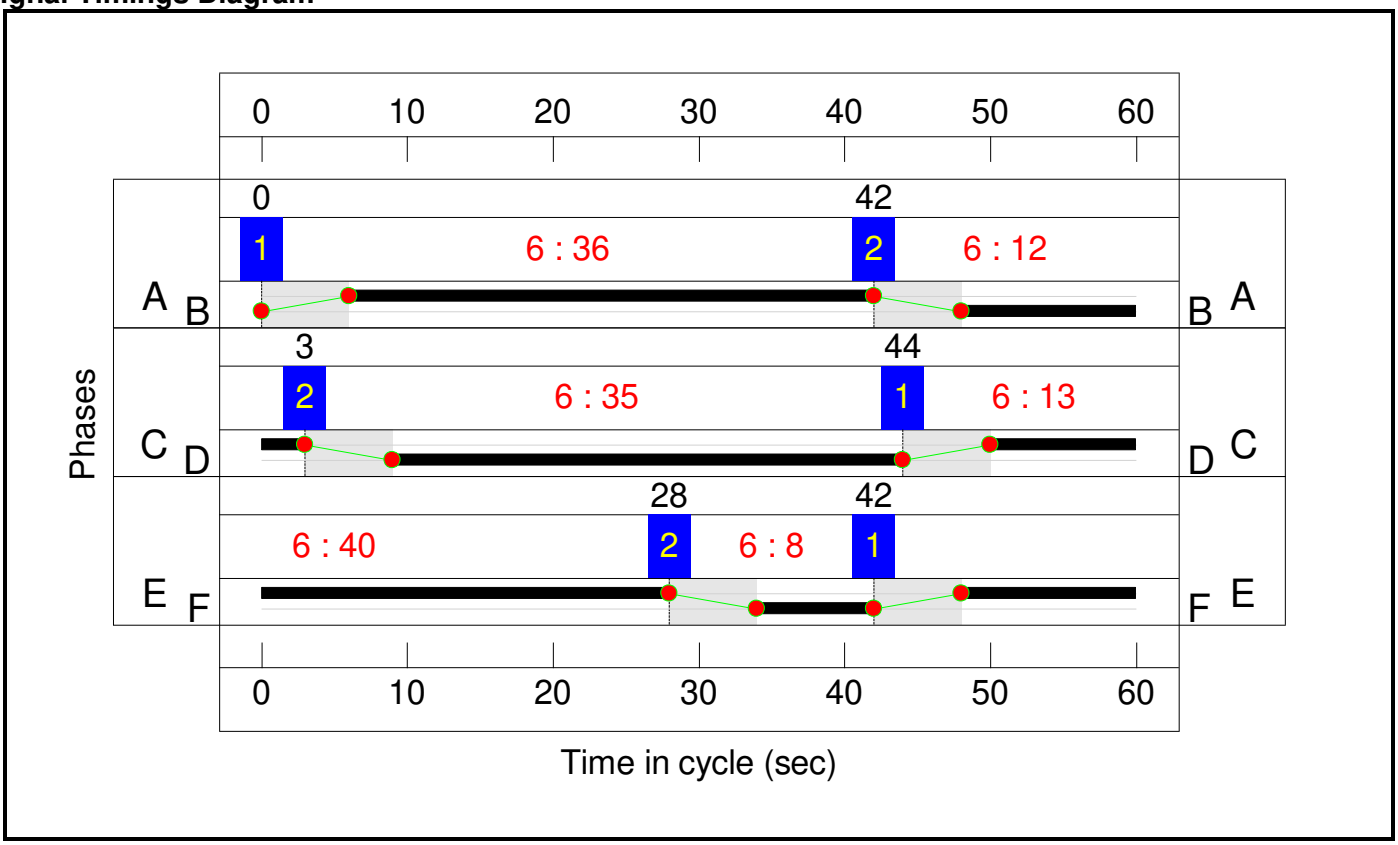
Stage Stream: 2

Stage	1	2
Duration	13	35
Change Point	44	3

Stage Stream: 3

Stage	1	2
Duration	40	8
Change Point	42	28

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: Cherwell hamburger gyratory - Junction options C-5	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**68.1%**
Cherwell	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**68.1%**
1/2+1/1	A43 Southbound Left Ahead	U	1	N/A	A		1	36	-	1188	2120:1980	1240+503	68.1 : 68.1%
1/3	A43 Southbound Ahead	U	1	N/A	A		1	36	-	796	2120	1307	60.9%
4/2+4/1	MSA Left	U	2	N/A	C		1	13	-	497	1871:1871	434+436	57.2 : 57.2%
4/3	MSA Right	U	2	N/A	C		1	13	-	85	2120	495	17.2%
6/1	A43 Northbound Ahead	U	3	N/A	E		1	40	-	770	1908	1304	59.1%
6/2+6/3	A43 Northbound Ahead Right	U	3	N/A	E		1	40	-	1046	2052:2019	1209+358	66.8 : 66.8%
7/1	Ahead Right	U	1	N/A	B		1	12	-	239	1980	429	55.7%
8/1	Right	U	3	N/A	F		1	8	-	85	1908	286	29.7%
9/1	Ahead	U	2	N/A	D		1	35	-	845	2120	1272	66.4%
9/2	Ahead	U	2	N/A	D		1	35	-	796	2120	1272	62.6%

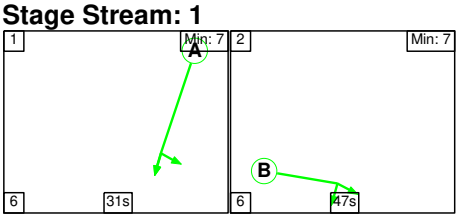
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Cherwell hamburger gyratory - Junction options C-5	**-**	**-**	**0**	**0**	**0**	**11.9**	**4.3**	**0.0**	**16.2**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**0**	**0**	**0**	**11.9**	**4.3**	**0.0**	**16.2**	**-**	**-**	**-**	**-**
1/2+1/1	1188	1188	-	-	-	2.2	1.1	-	3.3	10.0	8.9	1.1	10.0
1/3	796	796	-	-	-	1.6	0.8	-	2.3	10.6	8.0	0.8	8.7
4/2+4/1	497	497	-	-	-	2.8	0.7	-	3.5	25.2	3.7	0.7	4.3
4/3	85	85	-	-	-	0.4	0.1	-	0.5	22.8	1.1	0.1	1.2
6/1	770	770	-	-	-	1.1	0.7	-	1.8	8.4	6.6	0.7	7.3
6/2+6/3	1046	1046	-	-	-	1.3	1.0	-	2.3	8.1	6.9	1.0	8.0
7/1	239	239	-	-	-	1.2	0.0	-	1.2	17.5	2.6	0.0	2.6
8/1	85	85	-	-	-	0.9	0.0	-	0.9	38.0	1.4	0.0	1.4
9/1	845	845	-	-	-	0.2	0.0	-	0.2	0.8	0.5	0.0	0.5
9/2	796	796	-	-	-	0.2	0.0	-	0.2	0.8	0.4	0.0	0.4

C1	Stream: 1	PRC for Signalled Lanes (%):	32.1	Total Delay for Signalled Lanes (pcuHr):	6.80	Cycle Time (s):	60
C1	Stream: 2	PRC for Signalled Lanes (%):	35.5	Total Delay for Signalled Lanes (pcuHr):	4.37	Cycle Time (s):	60
C1	Stream: 3	PRC for Signalled Lanes (%):	34.8	Total Delay for Signalled Lanes (pcuHr):	5.04	Cycle Time (s):	60
		PRC Over All Lanes (%):	32.1	Total Delay Over All Lanes(pcuHr):	16.20		

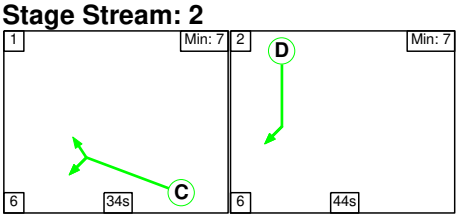
Scenario 2: '2031 Cherwell10, 11, 13, 18, 19 PM' (FG2: 'Cherwell6_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

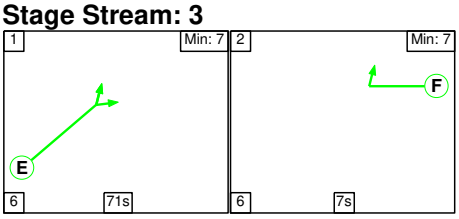
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	31	47
Change Point	0	37

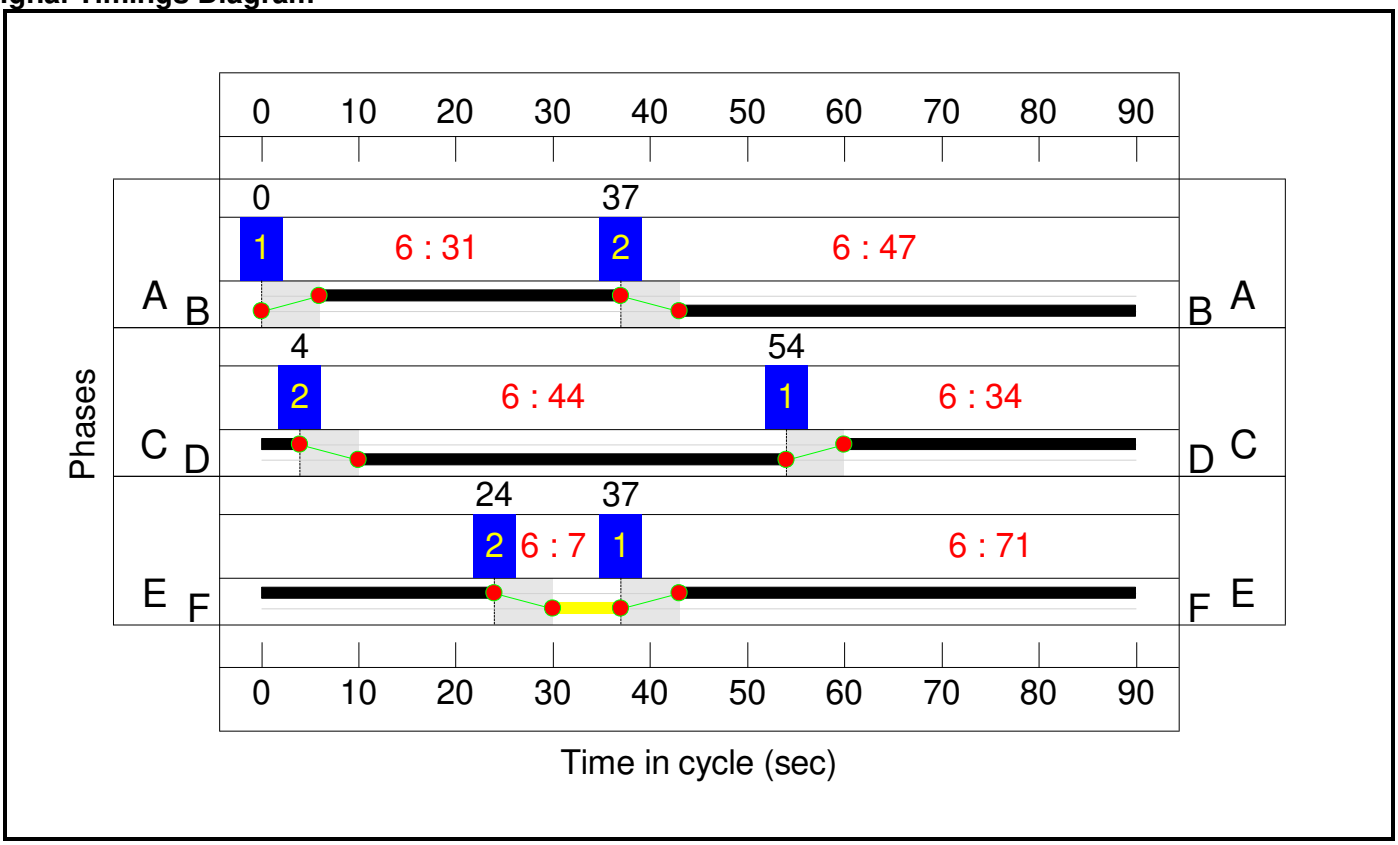
Stage Stream: 2

Stage	1	2
Duration	34	44
Change Point	54	4

Stage Stream: 3

Stage	1	2
Duration	71	7
Change Point	37	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: Cherwell hamburger gyratory - Junction options C-5	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**82.3%**
Cherwell	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**82.3%**
1/2+1/1	A43 Southbound Left Ahead	U	1	N/A	A		1	31	-	894	2120:1980	743+448	75.1 : 75.1%
1/3	A43 Southbound Ahead	U	1	N/A	A		1	31	-	498	2120	754	66.1%
4/2+4/1	MSA Left	U	2	N/A	C		1	34	-	471	1871:1871	507+509	46.4 : 46.4%
4/3	MSA Right	U	2	N/A	C		1	34	-	129	2120	824	15.6%
6/1	A43 Northbound Ahead	U	3	N/A	E		1	71	-	1195	1908	1526	78.3%
6/2+6/3	A43 Northbound Ahead Right	U	3	N/A	E		1	71	-	1419	2052:2019	1398+326	82.3 : 82.3%
7/1	Ahead Right	U	1	N/A	B		1	47	-	268	1980	1056	25.4%
8/1	Right	U	3	N/A	F		1	7	-	129	1908	170	76.1%
9/1	Ahead	U	2	N/A	D		1	44	-	558	2120	1060	52.6%
9/2	Ahead	U	2	N/A	D		1	44	-	498	2120	1060	47.0%

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: Cherwell hamburger gyratory - Junction options C-5	**-**	**-**	**0**	**0**	**0**	**18.2**	**7.1**	**0.0**	**25.3**	**-**	**-**	**-**	**-**
Cherwell	**-**	**-**	**0**	**0**	**0**	**18.2**	**7.1**	**0.0**	**25.3**	**-**	**-**	**-**	**-**
1/2+1/1	894	894	-	-	-	6.0	1.5	-	7.5	30.3	12.1	1.5	13.6
1/3	498	498	-	-	-	3.4	1.0	-	4.3	31.4	10.4	1.0	11.3
4/2+4/1	471	471	-	-	-	2.5	0.4	-	2.9	22.5	4.1	0.4	4.5
4/3	129	129	-	-	-	0.6	0.1	-	0.7	20.5	2.1	0.1	2.2
6/1	1195	1195	-	-	-	1.6	1.8	-	3.4	10.2	15.9	1.8	17.7
6/2+6/3	1419	1419	-	-	-	1.5	2.3	-	3.8	9.7	16.0	2.3	18.3
7/1	268	268	-	-	-	0.7	0.0	-	0.7	9.3	2.6	0.0	2.6
8/1	129	129	-	-	-	1.8	0.0	-	1.8	50.1	3.2	0.0	3.2
9/1	558	558	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	498	498	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1	Stream: 1	PRC for Signalled Lanes (%):	19.9	Total Delay for Signalled Lanes (pcuHr):	12.56	Cycle Time (s):	90
C1	Stream: 2	PRC for Signalled Lanes (%):	71.0	Total Delay for Signalled Lanes (pcuHr):	3.68	Cycle Time (s):	90
C1	Stream: 3	PRC for Signalled Lanes (%):	9.3	Total Delay for Signalled Lanes (pcuHr):	9.02	Cycle Time (s):	90
		PRC Over All Lanes (%):	9.3	Total Delay Over All Lanes(pcuHr):	25.26		

APPENDIX H

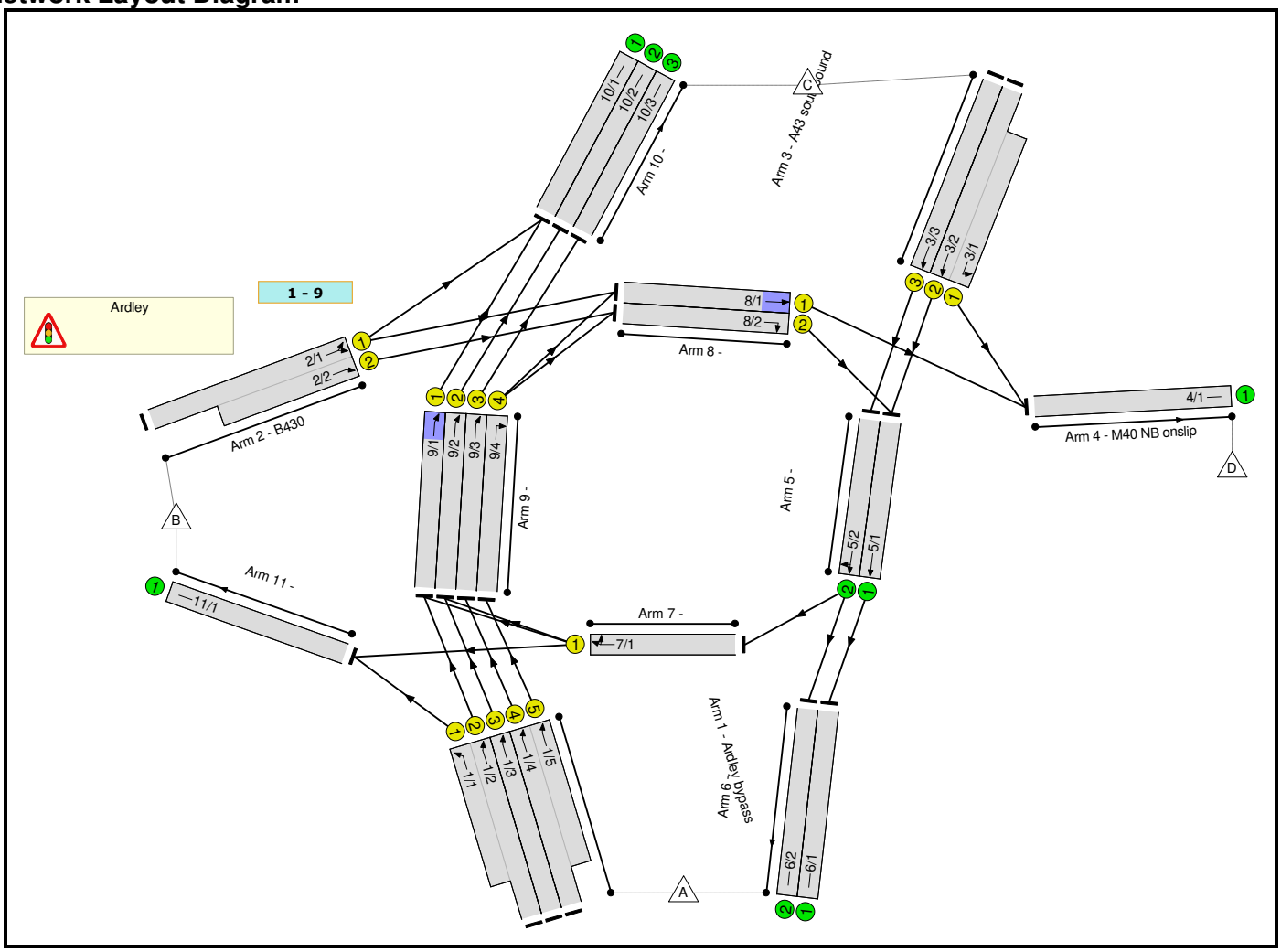
ARDLEY ROUNDABOUT MITIGATION (A-2) REVISED RESULTS

Full Input Data And Results

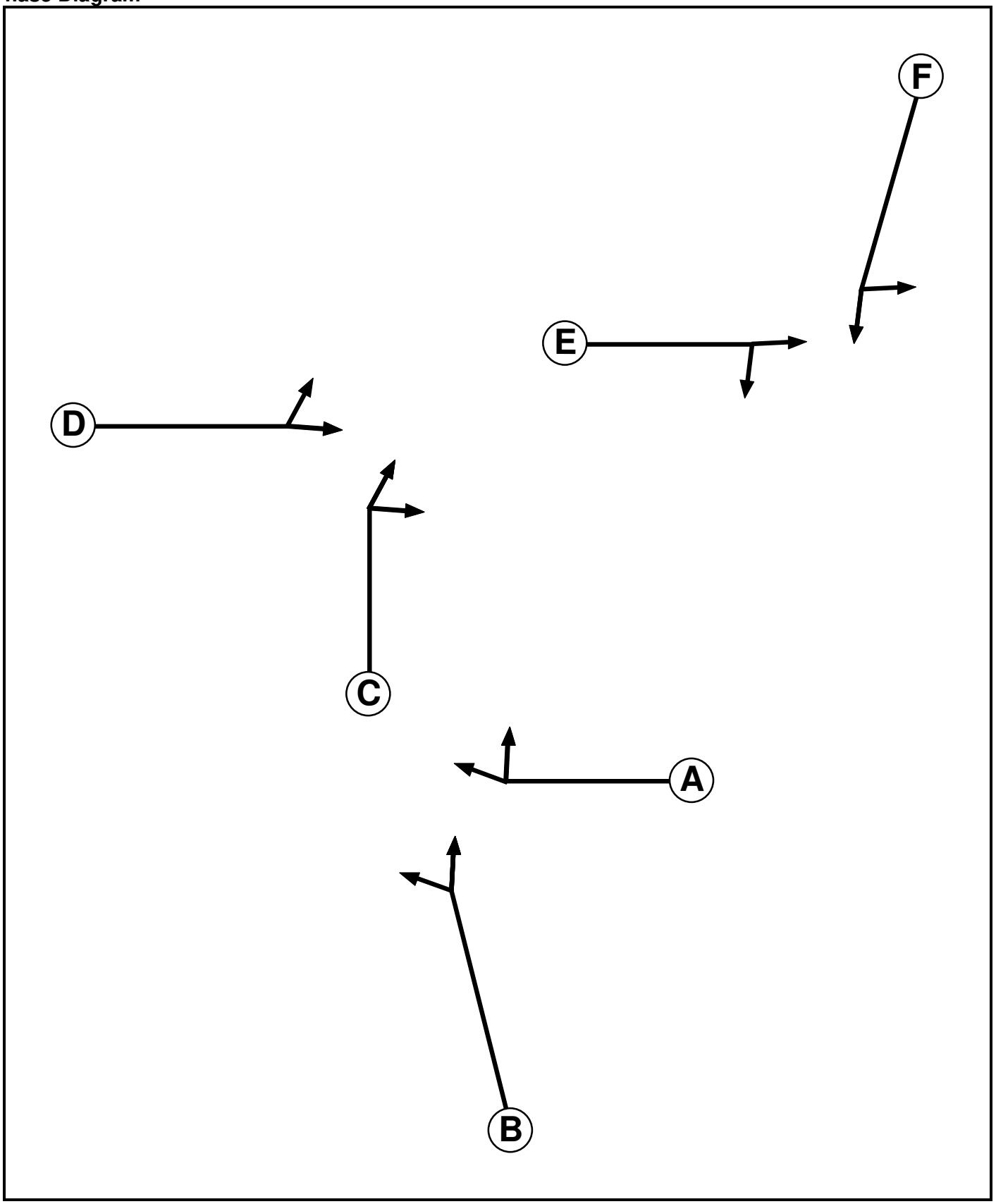
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Ardley improvements - 4-arm signalised roundabout A-2**
Location:	
Additional detail:	Amended following Aecom comments
File name:	2031_DS_M40J10_Ardley - 4-arm signalised roundabout A-2.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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
E	Traffic	3		7	7
F	Traffic	3		7	7

Phase Intergreens Matrix

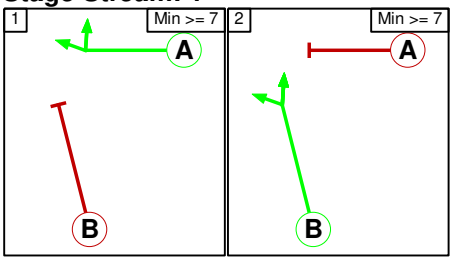
		Starting Phase					
		A	B	C	D	E	F
Terminating Phase	A		6	-	-	-	-
	B	6		-	-	-	-
	C	-	-		6	-	-
	D	-	-	6		-	-
	E	-	-	-	-		6
	F	-	-	-	-	6	

Phases in Stage

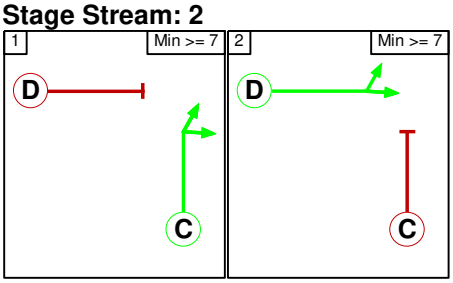
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F

Stage Diagram

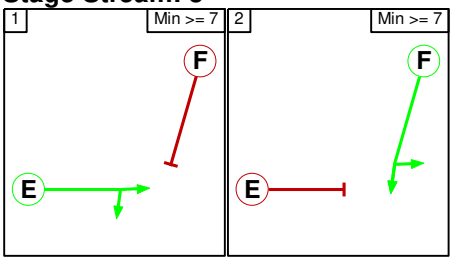
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Prohibited Stage Change

Stage Stream: 1

	To Stage		
From Stage		1	2
	1		6
	2	6	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		6
	2	6	

Stage Stream: 3

	To Stage		
From Stage		1	2
	1		6
	2	6	

Lane Input Data

Junction: Ardley

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 (Ardley bypass)	U	B	2	3	10.4	Geom	-	3.65	0.00	Y	Arm 11 Left	40.00
1/2 (Ardley bypass)	U	B	2	3	60.0	Geom	-	3.65	0.00	N	Arm 9 Ahead	50.00
1/3 (Ardley bypass)	U	B	2	3	60.0	Geom	-	3.65	0.00	N	Arm 9 Ahead	50.00
1/4 (Ardley bypass)	U	B	2	3	60.0	Geom	-	3.65	0.00	N	Arm 9 Ahead	50.00
1/5 (Ardley bypass)	U	B	2	3	20.9	Geom	-	3.65	0.00	N	Arm 9 Ahead	50.00
2/1 (B430)	U	D	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 8 Ahead	50.00
											Arm 10 Ahead	50.00
2/2 (B430)	U	D	2	3	10.4	Geom	-	3.62	0.00	N	Arm 8 Ahead	50.00
3/1 (A43 southbound)	U	F	2	3	17.4	Geom	-	3.65	0.00	Y	Arm 4 Left	40.00
3/2 (A43 southbound)	U	F	2	3	60.0	Geom	-	3.65	0.00	N	Arm 5 Ahead	54.00
3/3 (A43 southbound)	U	F	2	3	60.0	Geom	-	3.65	0.00	N	Arm 5 Ahead	54.00
4/1 (M40 NB onslip)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1	U		2	3	10.4	Inf	-	-	-	-	-	-
5/2	U		2	3	10.4	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U	A	2	3	5.2	Geom	-	3.65	0.00	Y	Arm 9 Right	Inf
											Arm 11 Ahead	Inf
8/1	U	E	2	3	10.4	Geom	-	3.65	0.00	Y	Arm 4 Ahead	Inf
8/2	U	E	2	3	10.4	Geom	-	3.65	0.00	N	Arm 5 Right	Inf
9/1	U	C	2	3	7.8	Geom	-	3.65	0.00	Y	Arm 10 Ahead	Inf
9/2	U	C	2	3	7.8	Geom	-	3.65	0.00	N	Arm 10 Ahead	Inf

9/3	U	C	2	3	7.8	Geom	-	3.65	0.00	N	Arm 10 Ahead	Inf
9/4	U	C	2	3	7.8	Geom	-	3.65	0.00	N	Arm 8 Right	Inf
10/1	U		2	3	60.0	Inf	-	-	-	-	-	-
10/2	U		2	3	60.0	Inf	-	-	-	-	-	-
10/3	U		2	3	60.0	User	2120	-	-	-	-	-
11/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Ardley4_AM'	07:45	08:45	01:00	
2: 'Ardley4_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Ardley13, 19 AM' (FG1: 'Ardley4_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	68	1799	372	2239
	B	218	0	17	19	254
	C	1700	16	0	422	2138
	D	0	0	0	0	0
	Tot.	1918	84	1816	813	4631

Traffic Lane Flows

Lane	Scenario 1: 2031 Ardley13, 19 AM
Junction: Ardley	
1/1 (short)	68
1/2 (with short)	706(In) 638(Out)
1/3	644
1/4 (with short)	889(In) 517(Out)
1/5 (short)	372
2/1 (with short)	254(In) 36(Out)
2/2 (short)	218
3/1 (short)	422
3/2 (with short)	1307(In) 885(Out)
3/3	831
4/1	813
5/1	1103
5/2	831
6/1	1103
6/2	815
7/1	16
8/1	391
8/2	218
9/1	638
9/2	644
9/3	517
9/4	372
10/1	655
10/2	644
10/3	517
11/1	84

Lane Saturation Flows

Junction: Ardley								
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 (Ardley bypass)	3.65	0.00	Y	Arm 11 Left	40.00	100.0 %	1908	1908
1/2 (Ardley bypass)	3.65	0.00	N	Arm 9 Ahead	50.00	100.0 %	2058	2058
1/3 (Ardley bypass)	3.65	0.00	N	Arm 9 Ahead	50.00	100.0 %	2058	2058
1/4 (Ardley bypass)	3.65	0.00	N	Arm 9 Ahead	50.00	100.0 %	2058	2058
1/5 (Ardley bypass)	3.65	0.00	N	Arm 9 Ahead	50.00	100.0 %	2058	2058
2/1 (B430)	3.65	0.00	Y	Arm 8 Ahead	50.00	52.8 %	1922	1922
				Arm 10 Ahead	50.00	47.2 %		
2/2 (B430)	3.62	0.00	N	Arm 8 Ahead	50.00	100.0 %	2055	2055
3/1 (A43 southbound)	3.65	0.00	Y	Arm 4 Left	40.00	100.0 %	1908	1908
3/2 (A43 southbound)	3.65	0.00	N	Arm 5 Ahead	54.00	100.0 %	2063	2063
3/3 (A43 southbound)	3.65	0.00	N	Arm 5 Ahead	54.00	100.0 %	2063	2063
4/1 (M40 NB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	3.65	0.00	Y	Arm 9 Right	Inf	0.0 %	1980	1980
				Arm 11 Ahead	Inf	100.0 %		
8/1	3.65	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1980	1980
8/2	3.65	0.00	N	Arm 5 Right	Inf	100.0 %	2120	2120
9/1	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/2	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
9/3	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
9/4	3.65	0.00	N	Arm 8 Right	Inf	100.0 %	2120	2120
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
10/3	This lane uses a directly entered Saturation Flow						2120	2120
11/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2031 Ardley13, 19 PM' (FG2: 'Ardley4_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	136	2599	420	3155
	B	178	0	15	7	200
	C	1018	24	0	485	1527
	D	0	0	0	0	0
	Tot.	1196	160	2614	912	4882

Traffic Lane Flows

Lane	Scenario 2: 2031 Ardley13, 19 PM
Junction: Ardley	
1/1 (short)	136
1/2 (with short)	1009(In) 873(Out)
1/3	899
1/4 (with short)	1247(In) 827(Out)
1/5 (short)	420
2/1 (with short)	200(In) 22(Out)
2/2 (short)	178
3/1 (short)	485
3/2 (with short)	1075(In) 590(Out)
3/3	452
4/1	912
5/1	768
5/2	452
6/1	768
6/2	428
7/1	24
8/1	427
8/2	178
9/1	873
9/2	899
9/3	827
9/4	420
10/1	888
10/2	899
10/3	827
11/1	160

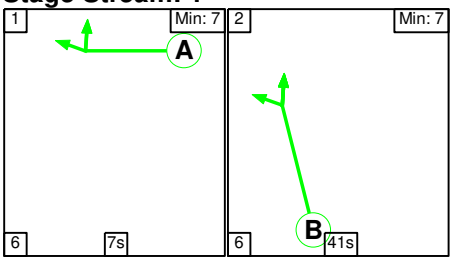
Lane Saturation Flows

Junction: Ardley								
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 (Ardley bypass)	3.65	0.00	Y	Arm 11 Left	40.00	100.0 %	1908	1908
1/2 (Ardley bypass)	3.65	0.00	N	Arm 9 Ahead	50.00	100.0 %	2058	2058
1/3 (Ardley bypass)	3.65	0.00	N	Arm 9 Ahead	50.00	100.0 %	2058	2058
1/4 (Ardley bypass)	3.65	0.00	N	Arm 9 Ahead	50.00	100.0 %	2058	2058
1/5 (Ardley bypass)	3.65	0.00	N	Arm 9 Ahead	50.00	100.0 %	2058	2058
2/1 (B430)	3.65	0.00	Y	Arm 8 Ahead	50.00	31.8 %	1922	1922
				Arm 10 Ahead	50.00	68.2 %		
2/2 (B430)	3.62	0.00	N	Arm 8 Ahead	50.00	100.0 %	2055	2055
3/1 (A43 southbound)	3.65	0.00	Y	Arm 4 Left	40.00	100.0 %	1908	1908
3/2 (A43 southbound)	3.65	0.00	N	Arm 5 Ahead	54.00	100.0 %	2063	2063
3/3 (A43 southbound)	3.65	0.00	N	Arm 5 Ahead	54.00	100.0 %	2063	2063
4/1 (M40 NB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	3.65	0.00	Y	Arm 9 Right	Inf	0.0 %	1980	1980
				Arm 11 Ahead	Inf	100.0 %		
8/1	3.65	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1980	1980
8/2	3.65	0.00	N	Arm 5 Right	Inf	100.0 %	2120	2120
9/1	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
9/2	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
9/3	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
9/4	3.65	0.00	N	Arm 8 Right	Inf	100.0 %	2120	2120
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
10/3	This lane uses a directly entered Saturation Flow						2120	2120
11/1	Infinite Saturation Flow						Inf	Inf

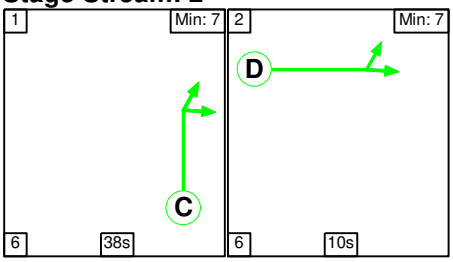
Scenario 1: '2031 Ardley13, 19 AM' (FG1: 'Ardley4_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

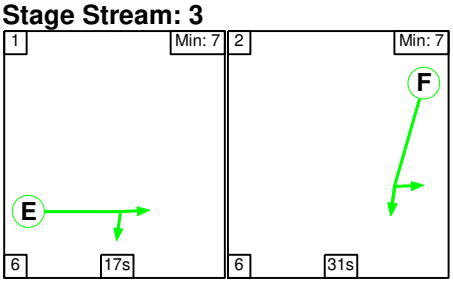
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	7	41
Change Point	0	13

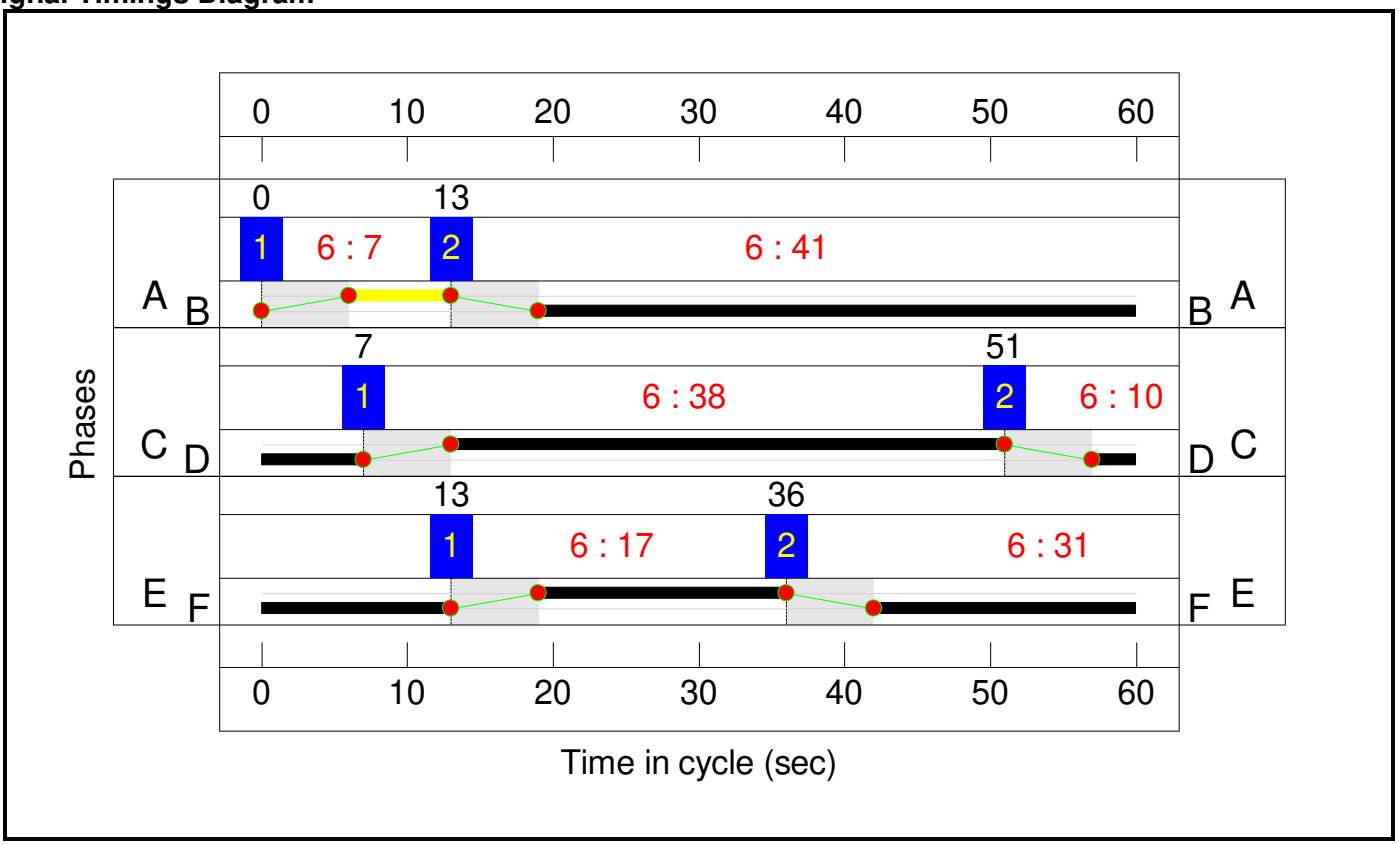
Stage Stream: 2

Stage	1	2
Duration	38	10
Change Point	7	51

Stage Stream: 3

Stage	1	2
Duration	17	31
Change Point	13	36

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: Ardley improvements - 4-arm signalised roundabout A-2	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**81.8%**
Ardley	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**81.8%**
1/2+1/1	Ardley bypass Ahead Left	U	1	N/A	B		1	41	-	706	2058:1908	1382+147	46.2 : 46.2%
1/3	Ardley bypass Ahead	U	1	N/A	B		1	41	-	644	2058	1441	44.7%
1/4+1/5	Ardley bypass Ahead	U	1	N/A	B		1	41	-	889	2058:2058	1197+861	43.2 : 43.2%
2/1+2/2	B430 Ahead Ahead2	U	2	N/A	D		1	10	-	254	1922:2055	62+377	57.9 : 57.9%
3/2+3/1	A43 southbound Left Ahead	U	3	N/A	F		1	31	-	1307	2063:1908	1082+516	81.8 : 81.8%
3/3	A43 southbound Ahead	U	3	N/A	F		1	31	-	831	2063	1100	75.5%
7/1	Right Ahead	U	1	N/A	A		1	7	-	16	1980	264	6.1%
8/1	Ahead	U	3	N/A	E		1	17	-	391	1980	594	65.8%
8/2	Right	U	3	N/A	E		1	17	-	218	2120	636	34.3%
9/1	Ahead	U	2	N/A	C		1	38	-	638	1980	1287	49.6%
9/2	Ahead	U	2	N/A	C		1	38	-	644	2120	1378	46.7%
9/3	Ahead	U	2	N/A	C		1	38	-	517	2120	1378	37.5%
9/4	Right	U	2	N/A	C		1	38	-	372	2120	1378	27.0%
10/3		U	N/A	N/A	-		-	-	-	517	2120	2120	24.4%

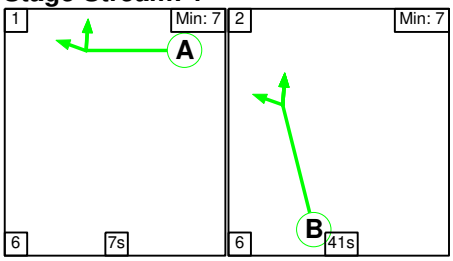
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ardley improvements - 4-arm signalised roundabout A-2	**-**	**-**	**0**	**0**	**0**	**14.7**	**5.8**	**0.0**	**20.5**	**-**	**-**	**-**	**-**
Ardley	**-**	**-**	**0**	**0**	**0**	**14.7**	**5.8**	**0.0**	**20.5**	**-**	**-**	**-**	**-**
1/2+1/1	706	706	-	-	-	0.7	0.4	-	1.2	6.0	4.6	0.4	5.0
1/3	644	644	-	-	-	0.7	0.4	-	1.1	6.2	4.7	0.4	5.1
1/4+1/5	889	889	-	-	-	0.9	0.4	-	1.2	5.0	3.4	0.4	3.8
2/1+2/2	254	254	-	-	-	1.6	0.7	-	2.2	31.8	3.3	0.7	4.0
3/2+3/1	1307	1307	-	-	-	3.8	2.2	-	6.0	16.5	12.0	2.2	14.3
3/3	831	831	-	-	-	2.5	1.5	-	4.1	17.6	10.6	1.5	12.1
7/1	16	16	-	-	-	0.1	0.0	-	0.1	19.3	0.2	0.0	0.3
8/1	391	391	-	-	-	1.4	0.0	-	1.4	12.5	3.5	0.0	3.5
8/2	218	218	-	-	-	1.1	0.0	-	1.1	17.7	3.6	0.0	3.6
9/1	638	638	-	-	-	0.6	0.0	-	0.6	3.5	2.1	0.0	2.1
9/2	644	644	-	-	-	0.6	0.0	-	0.6	3.4	2.1	0.0	2.1
9/3	517	517	-	-	-	0.5	0.0	-	0.5	3.3	1.7	0.0	1.7
9/4	372	372	-	-	-	0.3	0.0	-	0.3	3.2	1.2	0.0	1.2
10/3	517	517	-	-	-	0.0	0.2	-	0.2	1.1	0.0	0.2	0.2

C1	Stream: 1 PRC for Signalled Lanes (%):	94.9	Total Delay for Signalled Lanes (pcuHr):	3.61	Cycle Time (s): 60
C1	Stream: 2 PRC for Signalled Lanes (%):	55.5	Total Delay for Signalled Lanes (pcuHr):	4.26	Cycle Time (s): 60
C1	Stream: 3 PRC for Signalled Lanes (%):	10.1	Total Delay for Signalled Lanes (pcuHr):	12.49	Cycle Time (s): 60
	PRC Over All Lanes (%):	10.1	Total Delay Over All Lanes(pcuHr):	20.52	

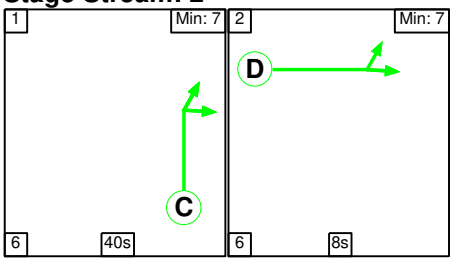
Scenario 2: '2031 Ardley13, 19 PM' (FG2: 'Ardley4_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

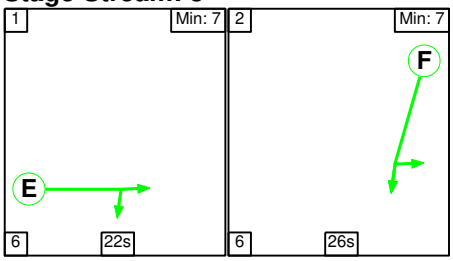
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	7	41
Change Point	0	13

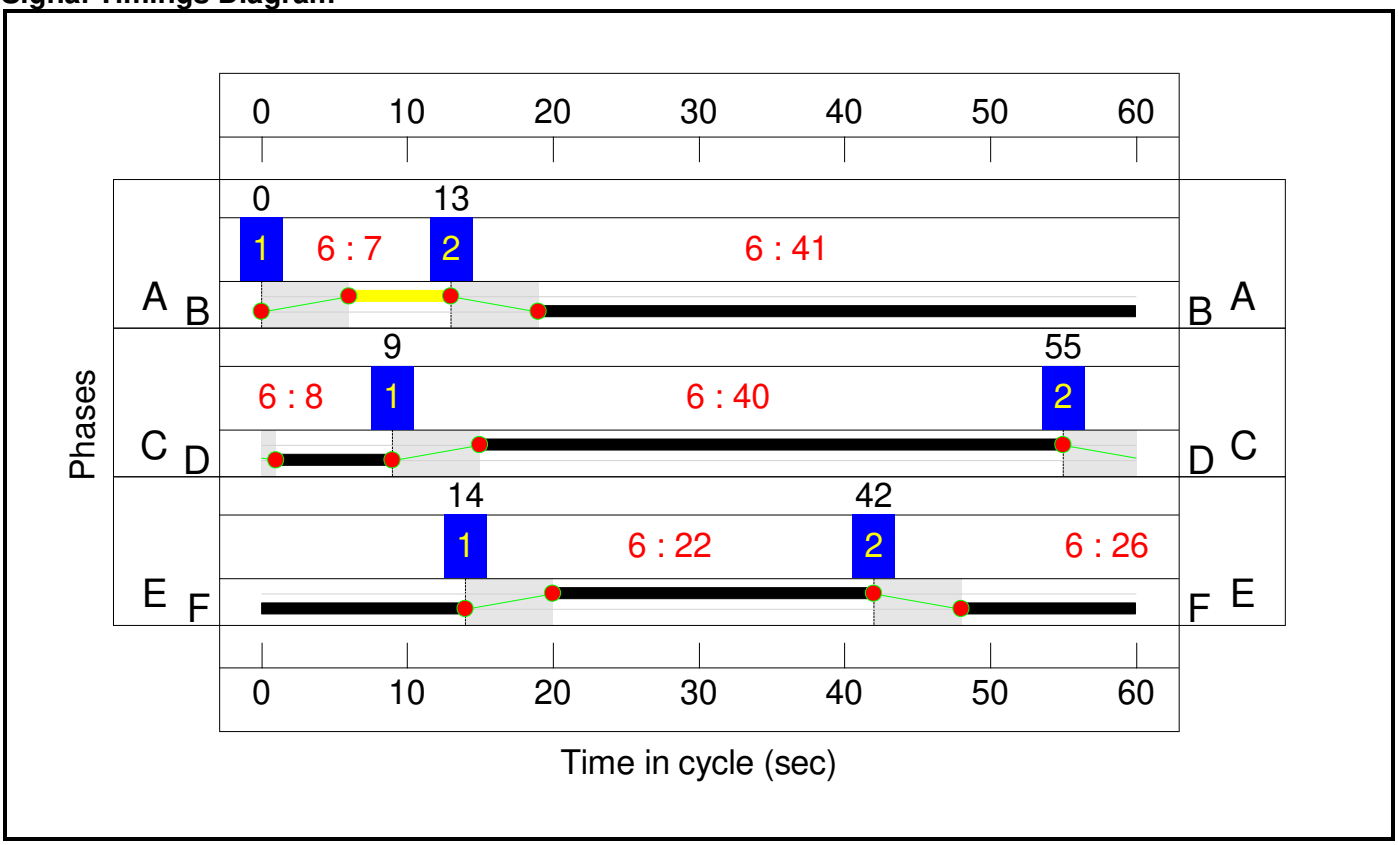
Stage Stream: 2

Stage	1	2
Duration	40	8
Change Point	9	55

Stage Stream: 3

Stage	1	2
Duration	22	26
Change Point	14	42

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: Ardley improvements - 4-arm signalised roundabout A-2	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**64.8%**
Ardley	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**64.8%**
1/2+1/1	Ardley bypass Ahead Left	U	1	N/A	B		1	41	-	1009	2058:1908	1347+210	64.8 : 64.8%
1/3	Ardley bypass Ahead	U	1	N/A	B		1	41	-	899	2058	1441	62.4%
1/4+1/5	Ardley bypass Ahead	U	1	N/A	B		1	41	-	1247	2058:2058	1365+693	60.6 : 60.6%
2/1+2/2	B430 Ahead Ahead2	U	2	N/A	D		1	8	-	200	1922:2055	38+308	57.7 : 57.7%
3/2+3/1	A43 southbound Left Ahead	U	3	N/A	F		1	26	-	1075	2063:1908	928+793	63.6 : 61.2%
3/3	A43 southbound Ahead	U	3	N/A	F		1	26	-	452	2063	928	48.7%
7/1	Right Ahead	U	1	N/A	A		1	7	-	24	1980	264	9.1%
8/1	Ahead	U	3	N/A	E		1	22	-	427	1980	759	56.3%
8/2	Right	U	3	N/A	E		1	22	-	178	2120	813	21.9%
9/1	Ahead	U	2	N/A	C		1	40	-	873	1980	1353	64.5%
9/2	Ahead	U	2	N/A	C		1	40	-	899	2120	1449	62.1%
9/3	Ahead	U	2	N/A	C		1	40	-	827	2120	1449	57.1%
9/4	Right	U	2	N/A	C		1	40	-	420	2120	1449	29.0%
10/3		U	N/A	N/A	-		-	-	-	827	2120	2120	39.0%

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: Ardley improvements - 4-arm signalised roundabout A-2	**-**	**-**	**0**	**0**	**0**	**14.2**	**4.9**	**0.0**	**19.0**	**-**	**-**	**-**	**-**
Ardley	**-**	**-**	**0**	**0**	**0**	**14.2**	**4.9**	**0.0**	**19.0**	**-**	**-**	**-**	**-**
1/2+1/1	1009	1009	-	-	-	1.2	0.9	-	2.2	7.7	7.5	0.9	8.4
1/3	899	899	-	-	-	1.2	0.8	-	2.0	8.1	7.7	0.8	8.6
1/4+1/5	1247	1247	-	-	-	1.4	0.8	-	2.2	6.4	6.9	0.8	7.7
2/1+2/2	200	200	-	-	-	1.3	0.7	-	2.0	35.7	2.7	0.7	3.4
3/2+3/1	1075	1075	-	-	-	3.7	0.8	-	4.6	15.2	7.5	0.8	8.4
3/3	452	452	-	-	-	1.5	0.5	-	1.9	15.4	5.3	0.5	5.7
7/1	24	24	-	-	-	0.1	0.0	-	0.1	18.8	0.3	0.0	0.4
8/1	427	427	-	-	-	1.1	0.0	-	1.1	9.4	3.0	0.0	3.0
8/2	178	178	-	-	-	0.7	0.0	-	0.7	14.8	3.0	0.0	3.0
9/1	873	873	-	-	-	0.6	0.0	-	0.6	2.4	1.9	0.0	1.9
9/2	899	899	-	-	-	0.6	0.0	-	0.6	2.2	2.0	0.0	2.0
9/3	827	827	-	-	-	0.5	0.0	-	0.5	2.2	1.8	0.0	1.8
9/4	420	420	-	-	-	0.2	0.0	-	0.2	2.1	0.9	0.0	0.9
10/3	827	827	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.3	0.3

C1 Stream: 1 PRC for Signalled Lanes (%): 38.9 Total Delay for Signalled Lanes (pcuHr): 6.52 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): 39.5 Total Delay for Signalled Lanes (pcuHr): 3.87 Cycle Time (s): 60
C1 Stream: 3 PRC for Signalled Lanes (%): 41.6 Total Delay for Signalled Lanes (pcuHr): 8.33 Cycle Time (s): 60
PRC Over All Lanes (%): 38.9 Total Delay Over All Lanes(pcuHr): 19.04

APPENDIX I

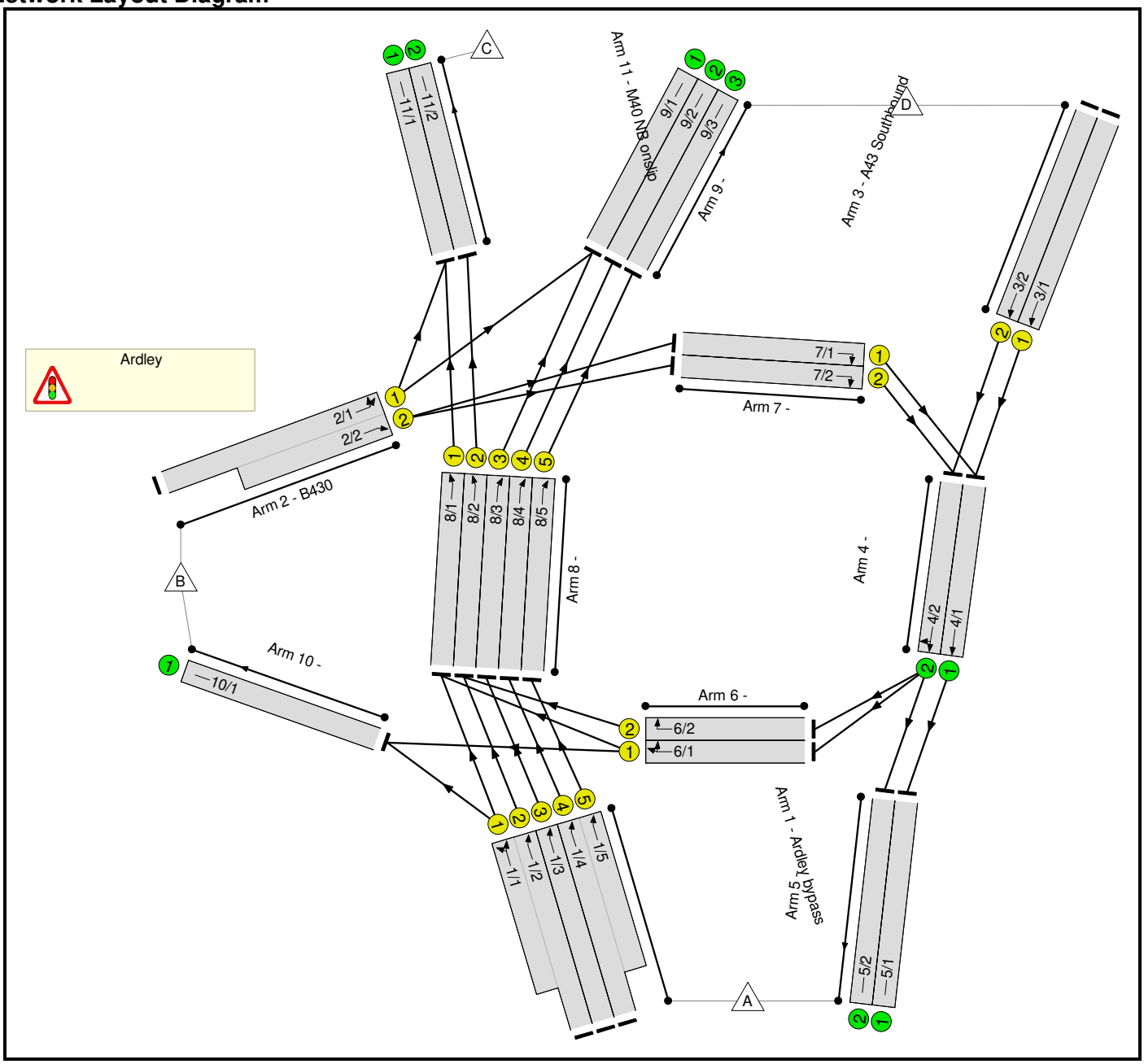
ARDLEY ROUNDABOUT MITIGATION (A-3) REVISED RESULTS

Full Input Data And Results

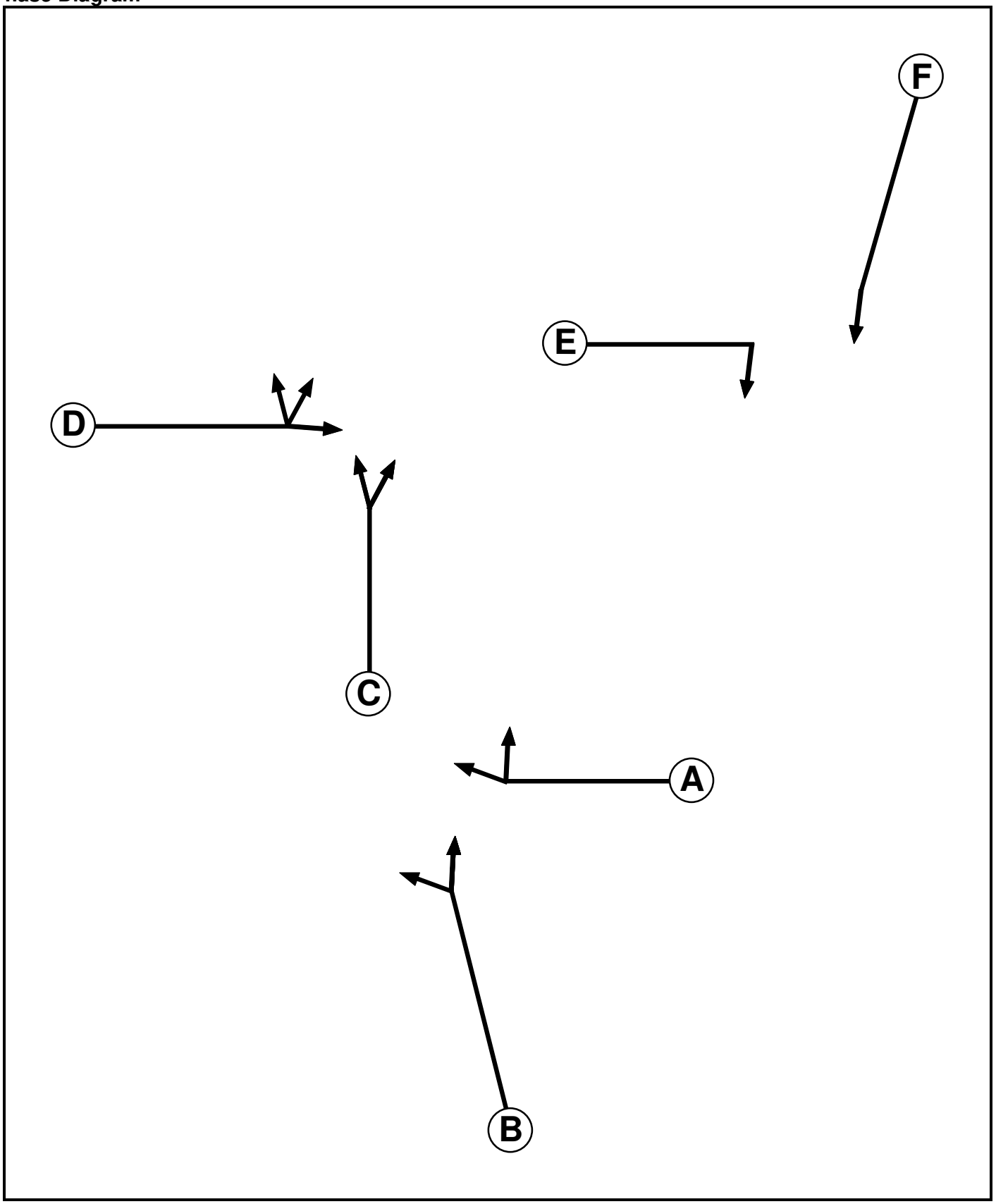
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Ardley roundabout - 4-arm signalised roundabout A-3**
Location:	
Additional detail:	Amended following Aecom comments
File name:	2031_DS_M40J10_Ardley - 4-arm signalised roundabout A-3.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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
E	Traffic	3		7	7
F	Traffic	3		7	7

Phase Intergreens Matrix

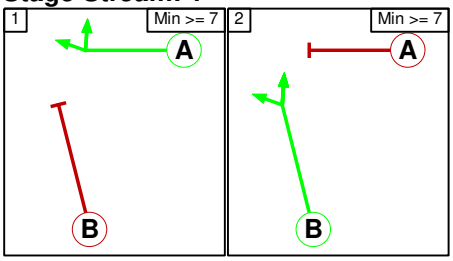
		Starting Phase					
		A	B	C	D	E	F
Terminating Phase	A		6	-	-	-	-
	B	6		-	-	-	-
	C	-	-		6	-	-
	D	-	-	6		-	-
	E	-	-	-	-		6
	F	-	-	-	-	6	

Phases in Stage

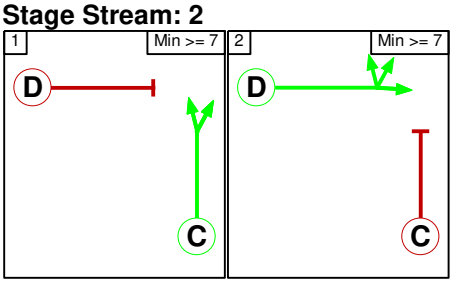
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F

Stage Diagram

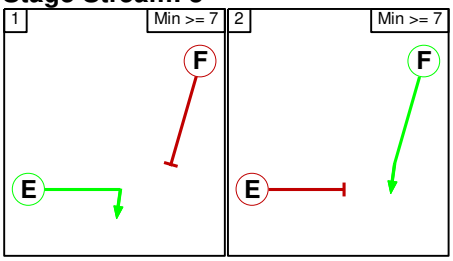
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Prohibited Stage Change

Stage Stream: 1

	To Stage		
From Stage		1	2
	1		6
	2	6	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		6
	2	6	

Stage Stream: 3

	To Stage		
From Stage		1	2
	1		6
	2	6	

Lane Input Data

Junction: Ardley

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 (Ardley bypass)	U	B	2	3	10.4	Geom	-	3.65	0.00	Y	Arm 8 Ahead	Inf
											Arm 10 Left	40.00
1/2 (Ardley bypass)	U	B	2	3	60.0	Geom	-	3.65	0.00	N	Arm 8 Ahead	50.00
1/3 (Ardley bypass)	U	B	2	3	60.0	Geom	-	3.65	0.00	N	Arm 8 Ahead	50.00
1/4 (Ardley bypass)	U	B	2	3	60.0	Geom	-	3.65	0.00	N	Arm 8 Ahead	50.00
1/5 (Ardley bypass)	U	B	2	3	27.8	Geom	-	3.65	0.00	N	Arm 8 Ahead	50.00
2/1 (B430)	U	D	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 9 Ahead	50.00
											Arm 11 Left	Inf
2/2 (B430)	U	D	2	3	10.4	Geom	-	3.50	0.00	N	Arm 7 Ahead	50.00
3/1 (A43 Southbound)	U	F	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Ahead	50.00
3/2 (A43 Southbound)	U	F	2	3	60.0	Geom	-	3.65	0.00	N	Arm 4 Ahead	50.00
4/1	U		2	3	7.0	Inf	-	-	-	-	-	-
4/2	U		2	3	7.0	Inf	-	-	-	-	-	-
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U	A	2	3	8.7	Geom	-	3.65	0.00	Y	Arm 8 Right	Inf
											Arm 10 Ahead	Inf
6/2	U	A	2	3	8.7	Geom	-	3.65	0.00	N	Arm 8 Right	Inf
7/1	U	E	2	3	8.7	Geom	-	3.65	0.00	Y	Arm 4 Right	Inf
7/2	U	E	2	3	8.7	Geom	-	3.65	0.00	N	Arm 4 Right	Inf
8/1	U	C	2	3	8.7	Geom	-	3.65	0.00	Y	Arm 11 Ahead	Inf
8/2	U	C	2	3	8.7	Geom	-	3.65	0.00	N	Arm 11 Ahead	Inf
8/3	U	C	2	3	8.7	Geom	-	3.65	0.00	N	Arm 9 Ahead	Inf

8/4	U	C	2	3	10.4	Geom	-	3.65	0.00	N	Arm 9 Ahead	Inf
8/5	U	C	2	3	10.4	Geom	-	3.65	0.00	N	Arm 9 Ahead	Inf
9/1	U		2	3	60.0	Inf	-	-	-	-	-	-
9/2	U		2	3	60.0	Inf	-	-	-	-	-	-
9/3	U		2	3	60.0	User	2120	-	-	-	-	-
10/1	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1 (M40 NB onslip)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2 (M40 NB onslip)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Ardley6_AM'	07:45	08:45	01:00	
2: 'Ardley6_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Ardley11, 18 AM' (FG1: 'Ardley6_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	68	372	1799	2239
	B	218	0	19	17	254
	C	0	0	0	0	0
	D	1700	16	422	0	2138
	Tot.	1918	84	813	1816	4631

Traffic Lane Flows

Lane	Scenario 1: 2031 Ardley11, 18 AM
Junction: Ardley	
1/1 (short)	215
1/2 (with short)	440(In) 225(Out)
1/3	680
1/4 (with short)	1119(In) 679(Out)
1/5 (short)	440
2/1 (with short)	254(In) 36(Out)
2/2 (short)	218
3/1	1024
3/2	1114
4/1	1129
4/2	1227
5/1	1129
5/2	789
6/1	210
6/2	228
7/1	105
7/2	113
8/1	341
8/2	453
8/3	680
8/4	679
8/5	440
9/1	697
9/2	679
9/3	440
10/1	84
11/1	360
11/2	453

Lane Saturation Flows

Junction: Ardley								
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 (Ardley bypass)	3.65	0.00	Y	Arm 8 Ahead	Inf	68.4 %	1957	1957
				Arm 10 Left	40.00	31.6 %		
1/2 (Ardley bypass)	3.65	0.00	N	Arm 8 Ahead	50.00	100.0 %	2058	2058
1/3 (Ardley bypass)	3.65	0.00	N	Arm 8 Ahead	50.00	100.0 %	2058	2058
1/4 (Ardley bypass)	3.65	0.00	N	Arm 8 Ahead	50.00	100.0 %	2058	2058
1/5 (Ardley bypass)	3.65	0.00	N	Arm 8 Ahead	50.00	100.0 %	2058	2058
2/1 (B430)	3.50	0.00	Y	Arm 9 Ahead	50.00	47.2 %	1938	1938
				Arm 11 Left	Inf	52.8 %		
2/2 (B430)	3.50	0.00	N	Arm 7 Ahead	50.00	100.0 %	2044	2044
3/1 (A43 Southbound)	3.65	0.00	Y	Arm 4 Ahead	50.00	100.0 %	1922	1922
3/2 (A43 Southbound)	3.65	0.00	N	Arm 4 Ahead	50.00	100.0 %	2058	2058
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	3.65	0.00	Y	Arm 8 Right	Inf	92.4 %	1980	1980
				Arm 10 Ahead	Inf	7.6 %		
6/2	3.65	0.00	N	Arm 8 Right	Inf	100.0 %	2120	2120
7/1	3.65	0.00	Y	Arm 4 Right	Inf	100.0 %	1980	1980
7/2	3.65	0.00	N	Arm 4 Right	Inf	100.0 %	2120	2120
8/1	3.65	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1980	1980
8/2	3.65	0.00	N	Arm 11 Ahead	Inf	100.0 %	2120	2120
8/3	3.65	0.00	N	Arm 9 Ahead	Inf	100.0 %	2120	2120
8/4	3.65	0.00	N	Arm 9 Ahead	Inf	100.0 %	2120	2120
8/5	3.65	0.00	N	Arm 9 Ahead	Inf	100.0 %	2120	2120
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
9/3	This lane uses a directly entered Saturation Flow						2120	2120
10/1	Infinite Saturation Flow						Inf	Inf
11/1 (M40 NB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (M40 NB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2031 Ardley11, 18 PM' (FG2: 'Ardley6_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	136	420	2599	3155
	B	178	0	7	15	200
	C	0	0	0	0	0
	D	1018	24	485	0	1527
	Tot.	1196	160	912	2614	4882

Traffic Lane Flows

Lane	Scenario 2: 2031 Ardley11, 18 PM
Junction: Ardley	
1/1 (short)	270
1/2 (with short)	556(In) 286(Out)
1/3	881
1/4 (with short)	1718(In) 936(Out)
1/5 (short)	782
2/1 (with short)	200(In) 22(Out)
2/2 (short)	178
3/1	726
3/2	801
4/1	812
4/2	893
5/1	812
5/2	384
6/1	246
6/2	263
7/1	86
7/2	92
8/1	356
8/2	549
8/3	881
8/4	936
8/5	782
9/1	896
9/2	936
9/3	782
10/1	160
11/1	363
11/2	549

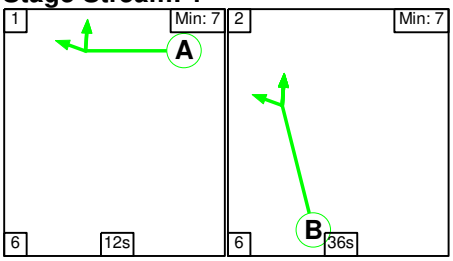
Lane Saturation Flows

Junction: Ardley								
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 (Ardley bypass)	3.65	0.00	Y	Arm 8 Ahead	Inf	49.6 %	1943	1943
				Arm 10 Left	40.00	50.4 %		
1/2 (Ardley bypass)	3.65	0.00	N	Arm 8 Ahead	50.00	100.0 %	2058	2058
1/3 (Ardley bypass)	3.65	0.00	N	Arm 8 Ahead	50.00	100.0 %	2058	2058
1/4 (Ardley bypass)	3.65	0.00	N	Arm 8 Ahead	50.00	100.0 %	2058	2058
1/5 (Ardley bypass)	3.65	0.00	N	Arm 8 Ahead	50.00	100.0 %	2058	2058
2/1 (B430)	3.50	0.00	Y	Arm 9 Ahead	50.00	68.2 %	1926	1926
				Arm 11 Left	Inf	31.8 %		
2/2 (B430)	3.50	0.00	N	Arm 7 Ahead	50.00	100.0 %	2044	2044
3/1 (A43 Southbound)	3.65	0.00	Y	Arm 4 Ahead	50.00	100.0 %	1922	1922
3/2 (A43 Southbound)	3.65	0.00	N	Arm 4 Ahead	50.00	100.0 %	2058	2058
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	3.65	0.00	Y	Arm 8 Right	Inf	90.2 %	1980	1980
				Arm 10 Ahead	Inf	9.8 %		
6/2	3.65	0.00	N	Arm 8 Right	Inf	100.0 %	2120	2120
7/1	3.65	0.00	Y	Arm 4 Right	Inf	100.0 %	1980	1980
7/2	3.65	0.00	N	Arm 4 Right	Inf	100.0 %	2120	2120
8/1	3.65	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1980	1980
8/2	3.65	0.00	N	Arm 11 Ahead	Inf	100.0 %	2120	2120
8/3	3.65	0.00	N	Arm 9 Ahead	Inf	100.0 %	2120	2120
8/4	3.65	0.00	N	Arm 9 Ahead	Inf	100.0 %	2120	2120
8/5	3.65	0.00	N	Arm 9 Ahead	Inf	100.0 %	2120	2120
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
9/3	This lane uses a directly entered Saturation Flow						2120	2120
10/1	Infinite Saturation Flow						Inf	Inf
11/1 (M40 NB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
11/2 (M40 NB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf

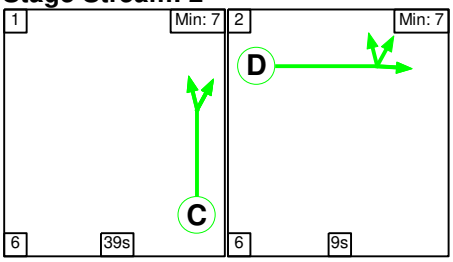
Scenario 1: '2031 Ardley11, 18 AM' (FG1: 'Ardley6_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

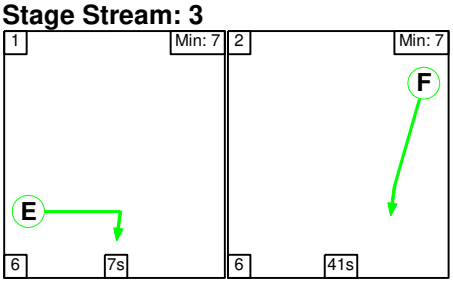
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	12	36
Change Point	0	18

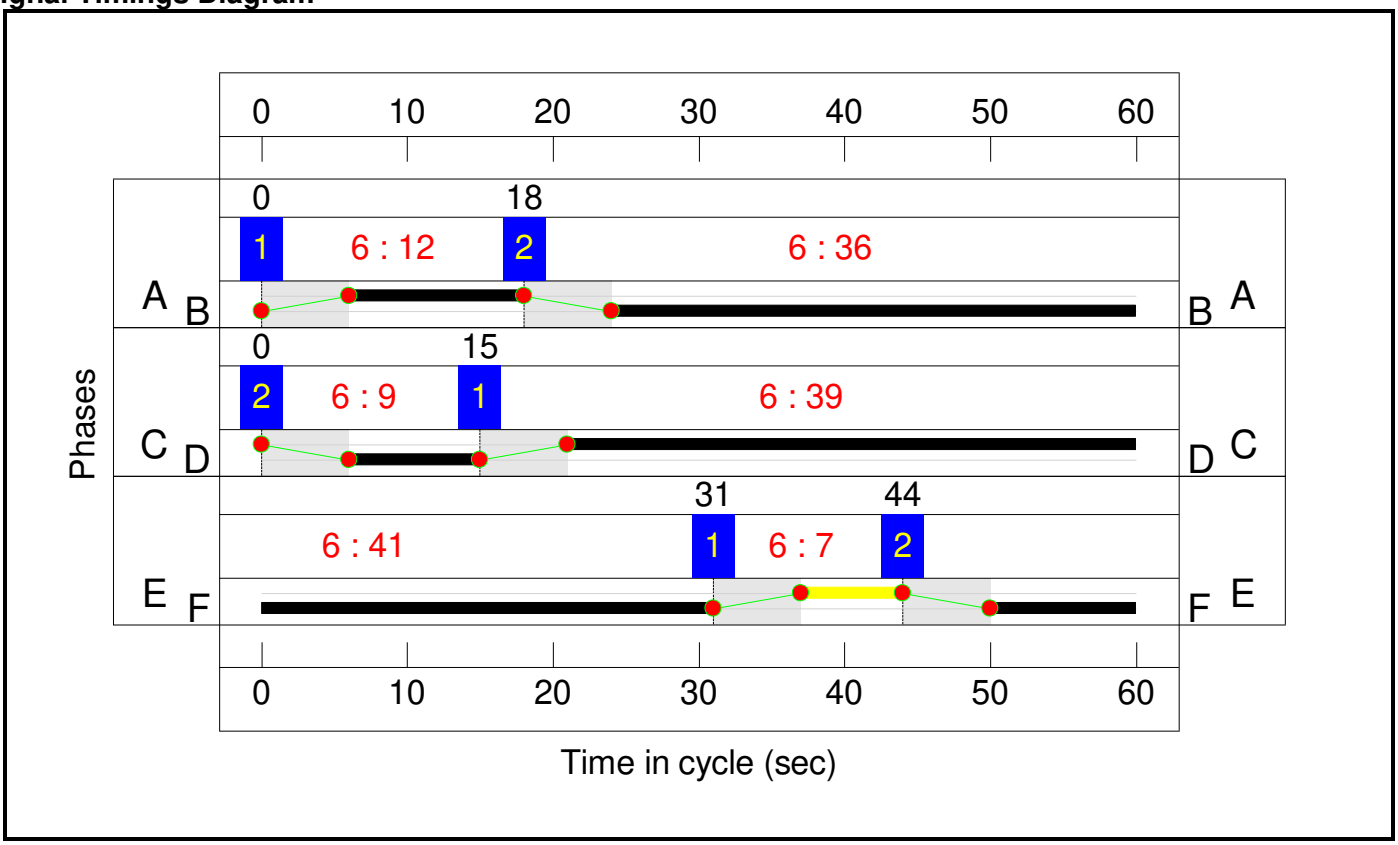
Stage Stream: 2

Stage	1	2
Duration	39	9
Change Point	15	0

Stage Stream: 3

Stage	1	2
Duration	7	41
Change Point	31	44

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: Ardley roundabout - 4-arm signalised roundabout A-3	-	-	**N/A**	-	-		-	-	-	-	-	-	**77.3%**
Ardley	-	-	**N/A**	-	-		-	-	-	-	-	-	**77.3%**
1/2+1/1	Ardley bypass Ahead Left	U	1	N/A	B		1	36	-	440	2058:1957	962+919	23.4 : 23.4%
1/3	Ardley bypass Ahead	U	1	N/A	B		1	36	-	680	2058	1269	53.6%
1/4+1/5	Ardley bypass Ahead	U	1	N/A	B		1	36	-	1119	2058:2058	1249+809	54.4 : 54.4%
2/1+2/2	B430 Ahead Ahead2 Left	U	2	N/A	D		1	9	-	254	1938:2044	56+341	64.0 : 64.0%
3/1	A43 Southbound Ahead	U	3	N/A	F		1	41	-	1024	1922	1345	76.1%
3/2	A43 Southbound Ahead	U	3	N/A	F		1	41	-	1114	2058	1441	77.3%
6/1	Right Ahead	U	1	N/A	A		1	12	-	210	1980	429	49.0%
6/2	Right	U	1	N/A	A		1	12	-	228	2120	459	49.6%
7/1	Right	U	3	N/A	E		1	7	-	105	1980	264	39.8%
7/2	Right	U	3	N/A	E		1	7	-	113	2120	283	40.0%
8/1	Ahead	U	2	N/A	C		1	39	-	341	1980	1320	25.8%
8/2	Ahead	U	2	N/A	C		1	39	-	453	2120	1413	32.1%
8/3	Ahead	U	2	N/A	C		1	39	-	680	2120	1413	48.1%
8/4	Ahead	U	2	N/A	C		1	39	-	679	2120	1413	48.0%
8/5	Ahead	U	2	N/A	C		1	39	-	440	2120	1413	31.1%
9/3		U	N/A	N/A	-		-	-	-	440	2120	2120	20.8%

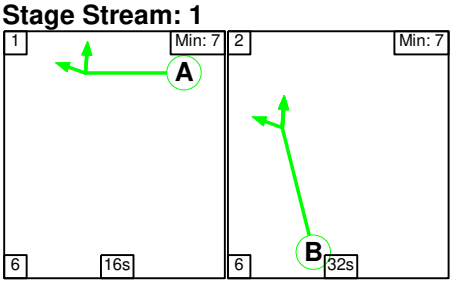
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ardley roundabout - 4-arm signalised roundabout A-3	**-**	**-**	**0**	**0**	**0**	**14.3**	**6.6**	**0.0**	**20.9**	**-**	**-**	**-**	**-**
Ardley	**-**	**-**	**0**	**0**	**0**	**14.3**	**6.6**	**0.0**	**20.9**	**-**	**-**	**-**	**-**
1/2+1/1	440	440	-	-	-	0.6	0.2	-	0.8	6.2	1.6	0.2	1.7
1/3	680	680	-	-	-	1.2	0.6	-	1.8	9.6	6.4	0.6	7.0
1/4+1/5	1119	1119	-	-	-	1.9	0.6	-	2.5	8.1	6.4	0.6	7.0
2/1+2/2	254	254	-	-	-	1.6	0.9	-	2.5	35.5	3.3	0.9	4.2
3/1	1024	1024	-	-	-	1.6	1.6	-	3.2	11.3	10.8	1.6	12.4
3/2	1114	1114	-	-	-	1.8	1.7	-	3.5	11.3	12.1	1.7	13.8
6/1	210	210	-	-	-	0.9	0.5	-	1.4	23.2	2.6	0.5	3.0
6/2	228	228	-	-	-	1.0	0.5	-	1.4	22.8	2.8	0.5	3.3
7/1	105	105	-	-	-	0.7	0.0	-	0.7	25.3	1.8	0.0	1.8
7/2	113	113	-	-	-	0.8	0.0	-	0.8	25.3	1.9	0.0	1.9
8/1	341	341	-	-	-	0.6	0.0	-	0.6	6.4	3.4	0.0	3.4
8/2	453	453	-	-	-	0.8	0.0	-	0.8	6.0	4.0	0.0	4.0
8/3	680	680	-	-	-	0.2	0.0	-	0.2	1.2	0.8	0.0	0.8
8/4	679	679	-	-	-	0.3	0.0	-	0.3	1.5	0.9	0.0	0.9
8/5	440	440	-	-	-	0.2	0.0	-	0.2	1.5	0.6	0.0	0.6
9/3	440	440	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1

C1	Stream: 1 PRC for Signalled Lanes (%):	65.5	Total Delay for Signalled Lanes (pcuHr):	7.90	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	40.6	Total Delay for Signalled Lanes (pcuHr):	4.57	Cycle Time (s):	60
C1	Stream: 3 PRC for Signalled Lanes (%):	16.4	Total Delay for Signalled Lanes (pcuHr):	8.26	Cycle Time (s):	60
	PRC Over All Lanes (%):	16.4	Total Delay Over All Lanes(pcuHr):	20.87		

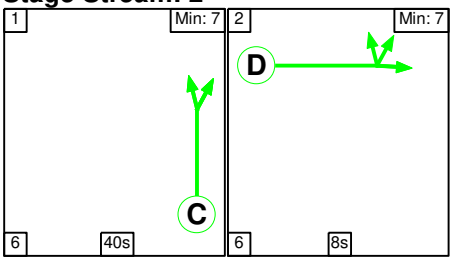
Scenario 2: '2031 Ardley11, 18 PM' (FG2: 'Ardley6_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

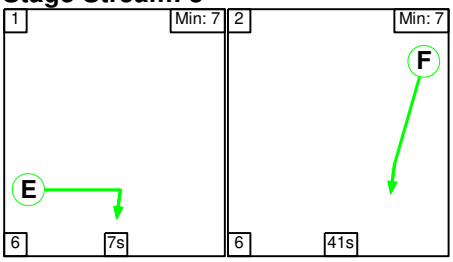
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	16	32
Change Point	0	22

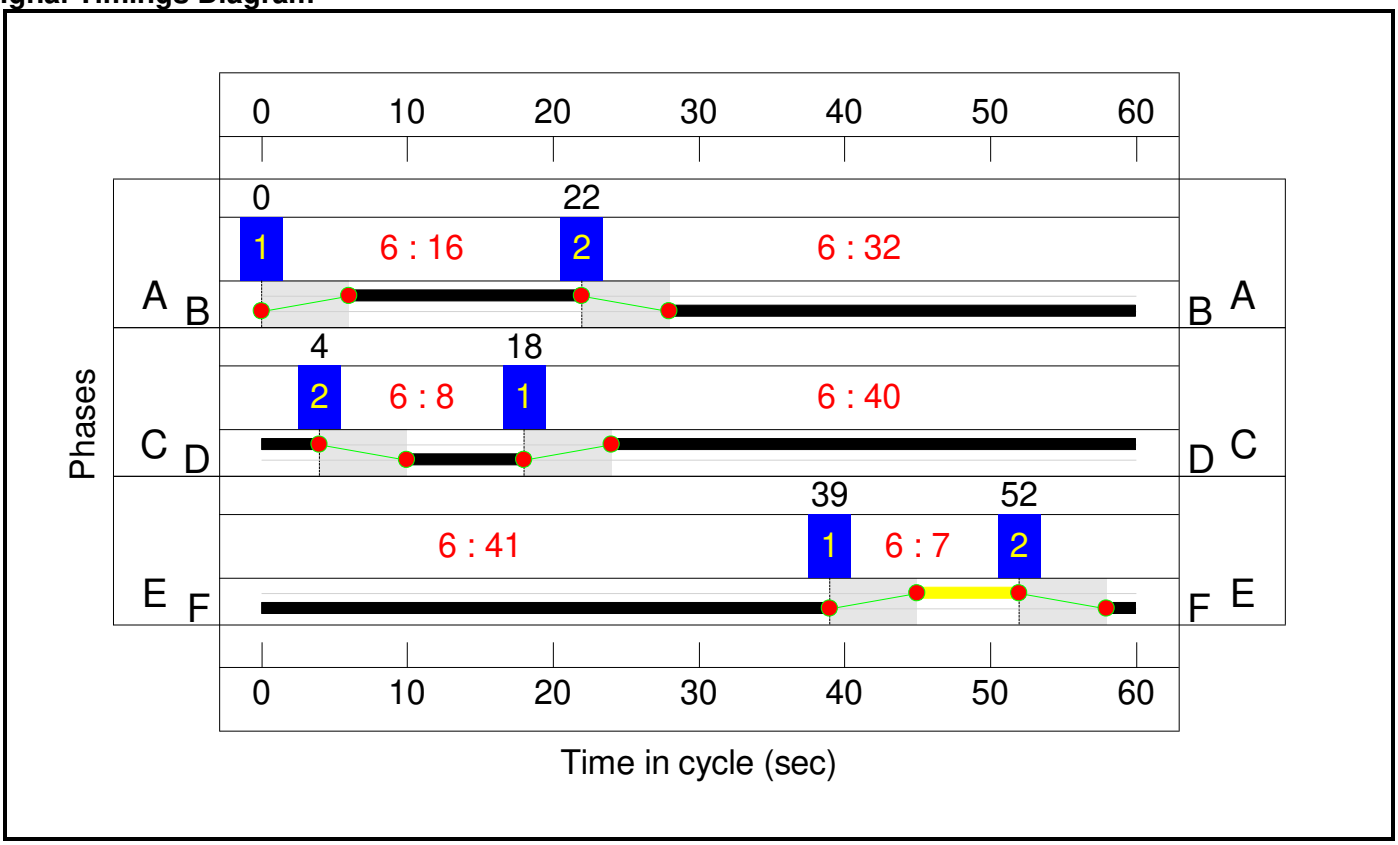
Stage Stream: 2

Stage	1	2
Duration	40	8
Change Point	18	4

Stage Stream: 3

Stage	1	2
Duration	7	41
Change Point	39	52

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: Ardley roundabout - 4-arm signalised roundabout A-3	-	-	**N/A**	-	-		-	-	-	-	-	-	**83.5%**
Ardley	-	-	**N/A**	-	-		-	-	-	-	-	-	**83.5%**
1/2+1/1	Ardley bypass Ahead Left	U	1	N/A	B		1	32	-	556	2058:1943	892+843	32.0 : 32.0%
1/3	Ardley bypass Ahead	U	1	N/A	B		1	32	-	881	2058	1132	77.8%
1/4+1/5	Ardley bypass Ahead	U	1	N/A	B		1	32	-	1718	2058:2058	1121+937	83.5 : 83.5%
2/1+2/2	B430 Ahead Ahead2 Left	U	2	N/A	D		1	8	-	200	1926:2044	38+307	58.1 : 58.1%
3/1	A43 Southbound Ahead	U	3	N/A	F		1	41	-	726	1922	1345	54.0%
3/2	A43 Southbound Ahead	U	3	N/A	F		1	41	-	801	2058	1441	55.6%
6/1	Right Ahead	U	1	N/A	A		1	16	-	246	1980	561	43.9%
6/2	Right	U	1	N/A	A		1	16	-	263	2120	601	43.8%
7/1	Right	U	3	N/A	E		1	7	-	86	1980	264	32.6%
7/2	Right	U	3	N/A	E		1	7	-	92	2120	283	32.5%
8/1	Ahead	U	2	N/A	C		1	40	-	356	1980	1353	26.3%
8/2	Ahead	U	2	N/A	C		1	40	-	549	2120	1449	37.9%
8/3	Ahead	U	2	N/A	C		1	40	-	881	2120	1449	60.8%
8/4	Ahead	U	2	N/A	C		1	40	-	936	2120	1449	64.6%
8/5	Ahead	U	2	N/A	C		1	40	-	782	2120	1449	54.0%
9/3		U	N/A	N/A	-		-	-	-	782	2120	2120	36.9%

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: Ardley roundabout - 4-arm signalised roundabout A-3	**-**	**-**	**0**	**0**	**0**	**17.1**	**7.4**	**0.0**	**24.5**	**-**	**-**	**-**	**-**
Ardley	**-**	**-**	**0**	**0**	**0**	**17.1**	**7.4**	**0.0**	**24.5**	**-**	**-**	**-**	**-**
1/2+1/1	556	556	-	-	-	1.1	0.2	-	1.3	8.6	2.5	0.2	2.7
1/3	881	881	-	-	-	2.6	1.7	-	4.3	17.7	11.5	1.7	13.2
1/4+1/5	1718	1718	-	-	-	5.0	2.5	-	7.5	15.8	12.7	2.5	15.2
2/1+2/2	200	200	-	-	-	1.3	0.7	-	2.0	35.9	2.7	0.7	3.4
3/1	726	726	-	-	-	0.9	0.6	-	1.5	7.2	5.6	0.6	6.2
3/2	801	801	-	-	-	1.0	0.6	-	1.6	7.2	6.5	0.6	7.1
6/1	246	246	-	-	-	0.9	0.4	-	1.3	19.2	2.5	0.4	2.9
6/2	263	263	-	-	-	1.0	0.4	-	1.4	18.8	2.7	0.4	3.1
7/1	86	86	-	-	-	0.7	0.0	-	0.7	29.6	1.4	0.0	1.4
7/2	92	92	-	-	-	0.8	0.0	-	0.8	29.6	1.5	0.0	1.5
8/1	356	356	-	-	-	0.8	0.0	-	0.8	7.8	3.7	0.0	3.7
8/2	549	549	-	-	-	0.9	0.0	-	0.9	6.1	4.4	0.0	4.4
8/3	881	881	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/4	936	936	-	-	-	0.1	0.0	-	0.1	0.3	0.3	0.0	0.3
8/5	782	782	-	-	-	0.1	0.0	-	0.1	0.3	0.2	0.0	0.2
9/3	782	782	-	-	-	0.0	0.3	-	0.3	1.3	0.0	0.3	0.3

C1	Stream: 1 PRC for Signalled Lanes (%):	7.8	Total Delay for Signalled Lanes (pcuHr):	15.86	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	39.3	Total Delay for Signalled Lanes (pcuHr):	3.85	Cycle Time (s):	60
C1	Stream: 3 PRC for Signalled Lanes (%):	61.9	Total Delay for Signalled Lanes (pcuHr):	4.53	Cycle Time (s):	60
	PRC Over All Lanes (%):	7.8	Total Delay Over All Lanes(pcuHr):	24.54		

APPENDIX J

ARDLEY EAST ROUNDABOUT OPTION AE-6 LINSIG MODEL AUDIT AND REVISED RESULTS

LINSIG V3 Model Checking Report

AECOM

Project: **OXFORDSHIRE SRFI-M40 Junction 10**

Model: **2031_DS_M40J10_ArdleyEast_AE6_ArdleyEast6 (Signals Option).lsg3x**

Job No: **xxxxx**

Model Submitted: **16/07/2021**

Corrections Submitted: **Date Submitted**

Modelled By: ADC Infrastructure **Checked by: Weiping Guo** **Approved by:**

This note is to document the checks made to LINSIG models. Once completed this should be filed with the model, or model outputs for future reference.

Results Key

× - Changes required before work is signed off
? – Changes may be required before work is signed off, further work required
✓ - No further changes required before work is signed off

File Checked: Hyperlink to model

Network Information					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
26/07/21	Scenario title(s) entered	✓			
26/07/21	Project name entered	✓			
26/07/21	Modeller details recorded	X		Modeller added	
26/07/21	Network location details entered	✓			
26/07/21	File name is logical	✓	The file name is not very clear to reflect the options		

Network Setup **Junction Drawings: In report 'OxSRFI-ADC1794-RP-M-V3 'TN5 M40 Junction 10 Options Report' – appendices' Page no.54** **Sat Flow Measurements / Calculations: Hyperlink to Sat Flow Measurements**					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
	Junctions				
26/07/21	Appropriate junctions setup	✓			
26/07/21	Junction info/ signal controllers complete	✓			
26/07/21	Logical arm structure setup	✓			
	Lanes				
26/07/21	Lane setup reflects junction drawings	X	In the model, Arm2 has four lanes with lane 1 left turn flare, however, after exam the drawing provided, this is not reflecting the drawing.	Left-turn flared lane removed from the model.	
26/07/21	Check each lane that is signal controlled	✓			
26/07/21	Lanes matched to controller and phase	✓	.		
26/07/21	Lane length appropriate	✓			
26/07/21	Custom occupancy (if req)	N/A			
	Saturation Flows				
26/07/21	Justified method to derive saturation flows				
26/07/21	Check observed sat flows (if used)	N/A			
26/07/21	Check RR67 sat flows calculations (if used)	x	1. Some lanes saturation flows were calculated by RR67 methods, and some have the radius setup but some don't. And all the lanes were treated as the 'nearside lane'. 2. Some other lanes have direct entered sat flows, please use RR67 to make sure the model consistence.	1. Central lanes and offside lanes have 'nearside lane' de-selected. All turning radii checked. 2. All lanes have RR67 parameters applied. Sat flows for circulating lanes are set so that they are equal or greater than the entry lanes.	
26/07/21	Check external sat flows calculations (if used)	N/A			
26/07/21	Check sat flows for any bottleneck links	✓			
	Advanced Lane Settings				
26/07/21	Use of start / end green displacements (if req)	✓	Default values used.		
26/07/21	Use of queue limits on short links (if req)	✓	1. 1pcu limit setup for Arm5 all lanes, seemingly too low. 2. 2pcus limit setup for Arm8 all lanes, seemingly too low. 3. 2pcus limit setup for Arm 10 all lanes, seemingly too low, especially for lane 2.	Queue limits amended.	
26/07/21	Use of weightings for optimiser constraints (if req)	✓			
26/07/21	Use of random delay or queue de-sliver (if req)	X	1. All the short circulatory lanes have 'ignore random delay' selected, except Arm8 lane 2. 2. 1pcu De-sliver is selected. We don't recommend to use the de-sliver if possible, please review the offset between the signals. If have to, please use 0.5pcu if possible.	1. All short circulatory lanes have 'ignore random delay' selected. 2. De-sliver factors removed where possible, set to 0.5 pcus where still needed.	
	Give Ways				
26/07/21	Check each lane that is priority controlled	✓			
26/07/21	Measurement of max/min flow when giving way	✓	1000pcus max flow is used		
26/07/21	Flow when opposing traffic stopped reasonable	✓			

Tel. 0121 262 6795
www.aecom.com

Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

26/07/21	Measurement of give-way co-efficient	✓	0.33 is used as suggested by JCT.		
26/07/21	Measurement of clear conflict time of opposing traffic	✓	Default 2s used.		
26/07/21	Check all controlling movements identified	X	1. Movement to 11/1 should conflict with lane 13/2 left turn as well. 2. Movement 10/1 should conflict with lane 13/3 as well due to the high speed traveling traffic and short distance stop ahead.	Both of these additional conflicts included in the model.	
26/07/21	Measurement of storage in front of stop-line	N/A			
26/07/21	Max turns in inter-green reasonable	N/A			
26/07/21	Measurement of non-blocking storage	N/A			
	Lane Connectors				
26/07/21	Lane connectors provided reasonable	✓			
26/07/21	Cruise time reasonable	✓	45Km/hr cruise speed is used for all internal links		
26/07/21	Default platoon dispersion used unless observed	X	Default platoon dispersion is selected for all links, however the short circulatory links should not be selected.	Default platoon dispersion has been de-selected.	
	Zones				
26/07/21	Zones match O-D matrix	?	ArdleyEast6_AM flow matches the flow report page 90; ArdleyEast6_PM flow matches the flow report page 91; Not sure what is ArdleyEast6AM(Shoulder) flow for, please clarify. ========== The flow sets in report 'OXSRFI-ADC1794-RP-N-V2'TN6-M40J10 OR Traffic Flow Derivation' – bound file page 90 and 91 stated for Strategic option 10,11,12. And the flow sets in page 86 and 87 is for Strategic option 13, 19. We assume this model is for strategic option 11 and 13 test? Can you please clarify?	The ArdleyEast6AM(Shoulder) flow set is not required for this assessment and has been removed. Flow sets and scenarios are for strategic options 11 and 13.	

	Pedestrians				
26/07/21	Ped crossings represented by ped links (if req)	N/A			
26/07/21	Ped link data correct (if req)	N/A			
26/07/21	Ped connector walk times reasonable (if req)	N/A			
26/07/21	Ped links matched to appropriate phases (if req)	N/A			
26/07/21	Ped zones match ped O-D matrix (if req)	N/A			

Controllers

Controller Specifications: Hyperlink to Controller Specification (if req)
Intergreen Calculations: Hyperlink to Intergreen Calculations (if req)

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
	General Controller Set-up				
26/07/21	Sufficient controllers setup	✓			
26/07/21	Multiple stage streams setup correctly (if req)	✓			
26/07/21	Non-standard filters setup correctly (if req)	N/A			
	Signal Settings				
26/07/21	Check phases for each controller	?	What is Phase E for? Seeming is not in use. Please clarify.		
26/07/21	Check phase mins/type reasonable	✓			
26/07/21	Check inter-greens calculations/coding	X	1. The nature of this roundabout should be the same as others as high speed trunk road, so the inter-green is to be set 6s between the phases. 2. What is Phase E for? Seeming is not in use. Please clarify.	1. Intergreens increased to 6 sec. 2. Phase E removed.	
26/07/21	Stages reasonable	✓			
26/07/21	Phase delays reasonable (if req)	N/A			

Stage Sequences

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
26/07/21	Check stage sequences observed / optimised	✓			
26/07/21	Check stage timings observed / optimised	N/A			

Traffic Counts and Calculations

Traffic Flow Data: Hyperlink to Traffic Flow Data – in report 'OXSRFI-ADC1794-RP-N-V2 'TN6 - M40 J10 OR Traffic Flow Derivation' – bound'
Matrix Calculations: Hyperlink to Matrix Calculations (if required)
Lane Balancing Calculations: Hyperlink to Lane Balancing Calculations (if required)
Site Observations: Hyperlink to Site Flows Observations

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
26/07/21	Suitability of traffic surveys undertaken	N/A			
26/07/21	Are there sufficient site observations	N/A			
26/07/21	Check O-D matrix calculations	✓			
26/07/21	Are lane balancing calculations sufficient / consistent	✓			
26/07/21	Does lane balancing match lining	✓			

Tel. 0121 262 6795
www.aecom.com

Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

26/07/21	Does lane balancing match matrices	✓			

Traffic Flows

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
26/07/21	Traffic & ped flow (if req) groups setup	✓			
26/07/21	Desired flows match O-D matrices	✓			
26/07/21	Actual flows match desired flows	✓			
26/07/21	Inappropriate routes closed	✓			
26/07/21	Route flows match lane balancing	✓			

Modelling

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
26/07/21	Scenario set up with correct options	✓			
26/07/21	Cycle time appropriate for network control	✓			
26/07/21	Cycle time optimised (if req)	✓			

Results

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
	Are all values as expected (Demand Flows, Green Times etc)		To be checked after above changes.		
	Deg Sat >100% for existing situation with no modelled suppressed demand?		To be checked after above changes.		
	Deg Sat appropriate? Validated?		To be checked after above changes.		
	Capacity conclusions		To be checked after above changes.		
	If suppressed demand has been modelled, do queues validate?		To be checked after above changes.		
	Queues appropriate?		To be checked after above changes.		
	Queue limits exceeded?		To be checked after above changes.		
	Queuing conclusions (will exit blocking modify these?)		To be checked after above changes.		
	If suppressed demand has been modelled do journey times validate?		To be checked after above changes.		
	Journey time conclusions?		To be checked after above changes.		

Conclusions and Recommendations

Tel. 0121 262 6795
www.aecom.com

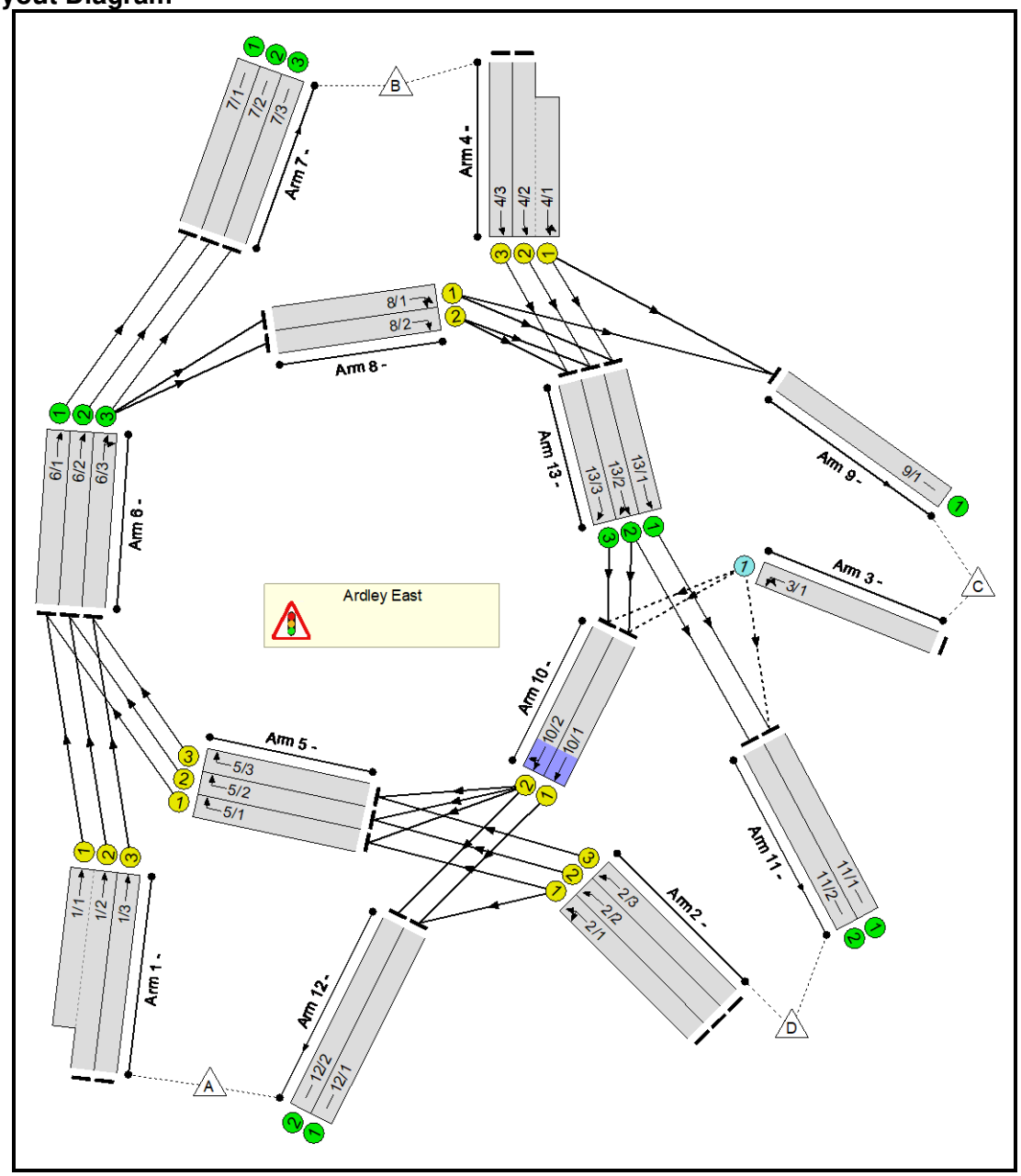
Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

Full Input Data And Results

User and Project Details

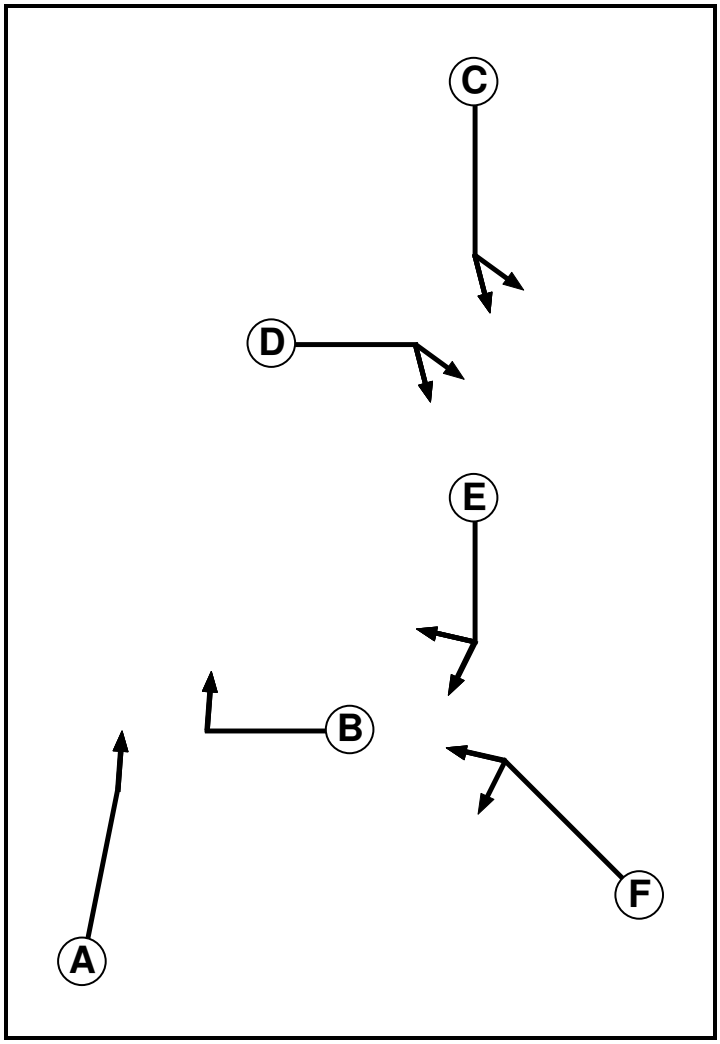
Project:	**OxSRFI**
Title:	**Ardley East Roundabout**
Location:	
Design Layout Ref:	AE-6
Flow Details:	ArdleyEast6_AM ArdleyEast6_PM
Additional detail:	Amended following Aecom comments
File name:	2031_DS_M40J10_ArdleyEast_AE6_ArdleyEast6 (Signals Option).lsg3x
Author:	[redacted]
Company:	ADC Infrastructure Limited
Address:	King Edward Court, Nottingham NG1 3EW

Network Layout Diagram



Full Input Data And Results

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
E	Traffic	3		7	7
F	Traffic	3		7	7

Full Input Data And Results

Phase Intergreens Matrix

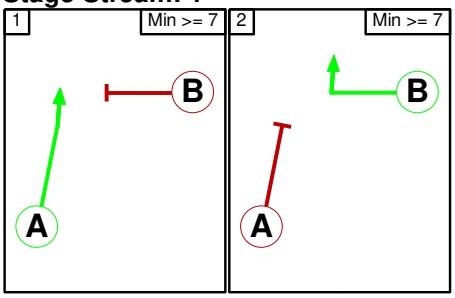
Terminating Phase	Starting Phase A	B	C	D	E	F
A		6	-	-	-	-
B	6		-	-	-	-
C	-	-		6	-	-
D	-	-	6		-	-
E	-	-	-	-		6
F	-	-	-	-	6	

Phases in Stage

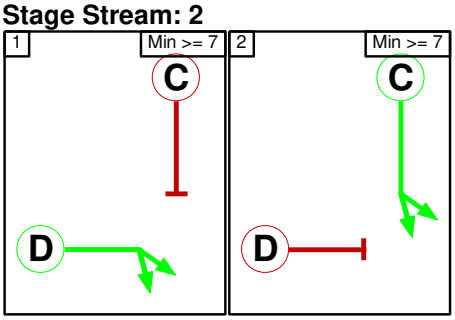
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	D
2	2	C
3	1	F
3	2	E

Stage Diagram

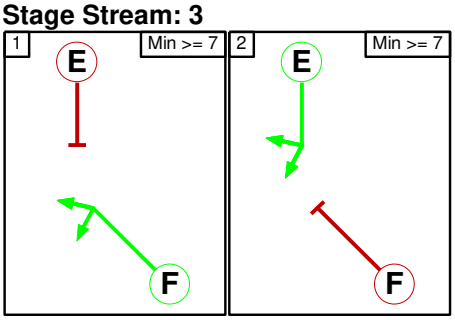
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Full Input Data And Results

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					

Stage Stream: 3

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		6
	2	6	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		6
	2	6	

Stage Stream: 3

	To Stage		
From Stage		1	2
	1		6
	2	6	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Ardley East											
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)**
3/1	10/1 (Left)	1000	0	13/1	0.33	All	-	-	-	-	-
				13/2	0.33	All					
				13/3	0.33	All					
	10/2 (Left)	1000	0	13/1	0.33	All					
				13/2	0.33	All					
				13/3	0.33	All					
	11/1 (U-Turn)	1000	0	13/1	0.33	All					
				13/2	0.33	All					

Full Input Data And Results

Lane Input Data

Junction: Ardley East												
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	U	A	2	3	20.9	Geom	-	3.65	0.00	Y	Arm 6 Ahead	30.00
1/2	U	A	2	3	60.0	Geom	-	3.65	0.00	N	Arm 6 Ahead	30.00
1/3	U	A	2	3	60.0	Geom	-	3.65	0.00	N	Arm 6 Ahead	30.00
2/1	U	F	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 5 Ahead	45.00
											Arm 12 Left	45.00
2/2	U	F	2	3	60.0	Geom	-	3.65	0.00	N	Arm 5 Ahead	45.00
2/3	U	F	2	3	60.0	Geom	-	3.65	0.00	N	Arm 5 Ahead	45.00
3/1	O		2	3	60.0	User	1900	-	-	-	-	-
4/1	U	C	2	3	17.4	Geom	-	3.65	0.00	Y	Arm 9 Left	30.00
											Arm 13 Ahead	30.00
4/2	U	C	2	3	60.0	Geom	-	3.65	0.00	N	Arm 13 Ahead	30.00
4/3	U	C	2	3	60.0	Geom	-	3.65	0.00	N	Arm 13 Ahead	30.00
5/1	U	B	2	3	9.6	Geom	-	3.65	0.00	Y	Arm 6 Right	Inf
5/2	U	B	2	3	9.6	Geom	-	3.65	0.00	N	Arm 6 Right	Inf
5/3	U	B	2	3	9.6	Geom	-	3.65	0.00	N	Arm 6 Right	Inf
6/1	U		2	3	10.4	Inf	-	-	-	-	-	-
6/2	U		2	3	10.4	Inf	-	-	-	-	-	-
6/3	U		2	3	10.4	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/2	U		2	3	60.0	Inf	-	-	-	-	-	-
7/3	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U	D	2	3	5.2	Geom	-	3.65	0.00	Y	Arm 9 Ahead	Inf
											Arm 13 Right	Inf
8/2	U	D	2	3	5.2	Geom	-	3.65	0.00	N	Arm 13 Right	Inf
9/1	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1	U	E	2	3	7.0	Geom	-	3.65	0.00	Y	Arm 12 Ahead	Inf
10/2	U	E	2	3	7.0	Geom	-	3.65	0.00	N	Arm 5 Right	Inf
											Arm 12 Ahead	Inf
11/1	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1	U		2	3	60.0	Inf	-	-	-	-	-	-
12/2	U		2	3	60.0	Inf	-	-	-	-	-	-
13/1	U		2	3	8.7	Inf	-	-	-	-	-	-
13/2	U		2	3	8.7	Inf	-	-	-	-	-	-
13/3	U		2	3	8.7	Inf	-	-	-	-	-	-

Full Input Data And Results

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'ArdleyEast6 AM'	07:45	08:45	01:00	
2: 'ArdleyEast6 PM'	16:30	17:30	01:00	

Scenario 1: '2031 ArdleyEast11, 13 AM' (FG1: 'ArdleyEast6 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	754	151	232	1137
	B	1300	0	320	298	1918
	C	10	104	0	7	121
	D	437	1381	8	40	1866
	Tot.	1747	2239	479	577	5042

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 1: 2031 ArdleyEast11, 13 AM
Junction: Ardley East	
1/1 (short)	363
1/2 (with short)	753(In) 390(Out)
1/3	384
2/1	602
2/2	632
2/3	632
3/1	121
4/1 (short)	591
4/2 (with short)	1317(In) 726(Out)
4/3	601
5/1	223
5/2	657
5/3	653
6/1	586
6/2	1047
6/3	1037
7/1	586
7/2	1047
7/3	606
8/1	212
8/2	219
9/1	479
10/1	709
10/2	705
11/1	331
11/2	246
12/1	1146
12/2	601
13/1	324
13/2	945
13/3	601

Full Input Data And Results

Lane Saturation Flows

Junction: Ardley East								
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	3.65	0.00	Y	Arm 6 Ahead	30.00	100.0 %	1886	1886
1/2	3.65	0.00	N	Arm 6 Ahead	30.00	100.0 %	2019	2019
1/3	3.65	0.00	N	Arm 6 Ahead	30.00	100.0 %	2019	2019
2/1	3.65	0.00	Y	Arm 5 Ahead	45.00	27.4 %	1916	1916
				Arm 12 Left	45.00	72.6 %		
2/2	3.65	0.00	N	Arm 5 Ahead	45.00	100.0 %	2052	2052
2/3	3.65	0.00	N	Arm 5 Ahead	45.00	100.0 %	2052	2052
3/1	This lane uses a directly entered Saturation Flow						1900	1900
4/1	3.65	0.00	Y	Arm 9 Left	30.00	54.1 %	1886	1886
				Arm 13 Ahead	30.00	45.9 %		
4/2	3.65	0.00	N	Arm 13 Ahead	30.00	100.0 %	2019	2019
4/3	3.65	0.00	N	Arm 13 Ahead	30.00	100.0 %	2019	2019
5/1	3.65	0.00	Y	Arm 6 Right	Inf	100.0 %	1980	1980
5/2	3.65	0.00	N	Arm 6 Right	Inf	100.0 %	2120	2120
5/3	3.65	0.00	N	Arm 6 Right	Inf	100.0 %	2120	2120
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
6/3	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
7/3	Infinite Saturation Flow						Inf	Inf
8/1	3.65	0.00	Y	Arm 9 Ahead	Inf	75.0 %	1980	1980
				Arm 13 Right	Inf	25.0 %		
8/2	3.65	0.00	N	Arm 13 Right	Inf	100.0 %	2120	2120
9/1	Infinite Saturation Flow						Inf	Inf
10/1	3.65	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1980	1980
10/2	3.65	0.00	N	Arm 5 Right	Inf	14.8 %	2120	2120
				Arm 12 Ahead	Inf	85.2 %		
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
13/2	Infinite Saturation Flow						Inf	Inf
13/3	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 2: '2031 ArdleyEast11, 13 PM' (FG2: 'ArdleyEast6 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	1141	136	401	1678
	B	840	0	97	259	1196
	C	88	106	0	3	197
	D	291	1908	7	67	2273
	Tot.	1219	3155	240	730	5344

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: 2031 ArdleyEast11, 13 PM
Junction: Ardley East	
1/1 (short)	551
1/2 (with short)	1141(In) 590(Out)
1/3	537
2/1	725
2/2	774
2/3	774
3/1	197
4/1 (short)	350
4/2 (with short)	839(In) 489(Out)
4/3	357
5/1	475
5/2	811
5/3	802
6/1	1026
6/2	1401
6/3	1339
7/1	1026
7/2	1401
7/3	728
8/1	292
8/2	319
9/1	240
10/1	571
10/2	463
11/1	405
11/2	325
12/1	862
12/2	357
13/1	402
13/2	808
13/3	357

Full Input Data And Results

Lane Saturation Flows

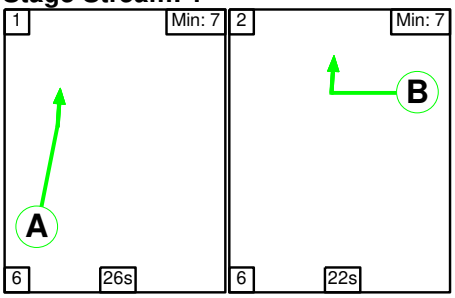
Junction: Ardley East								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1	3.65	0.00	Y	Arm 6 Ahead	30.00	100.0 %	1886	1886
1/2	3.65	0.00	N	Arm 6 Ahead	30.00	100.0 %	2019	2019
1/3	3.65	0.00	N	Arm 6 Ahead	30.00	100.0 %	2019	2019
2/1	3.65	0.00	Y	Arm 5 Ahead	45.00	59.9 %	1916	1916
				Arm 12 Left	45.00	40.1 %		
2/2	3.65	0.00	N	Arm 5 Ahead	45.00	100.0 %	2052	2052
2/3	3.65	0.00	N	Arm 5 Ahead	45.00	100.0 %	2052	2052
3/1	This lane uses a directly entered Saturation Flow						1900	1900
4/1	3.65	0.00	Y	Arm 9 Left	30.00	27.7 %	1886	1886
				Arm 13 Ahead	30.00	72.3 %		
4/2	3.65	0.00	N	Arm 13 Ahead	30.00	100.0 %	2019	2019
4/3	3.65	0.00	N	Arm 13 Ahead	30.00	100.0 %	2019	2019
5/1	3.65	0.00	Y	Arm 6 Right	Inf	100.0 %	1980	1980
5/2	3.65	0.00	N	Arm 6 Right	Inf	100.0 %	2120	2120
5/3	3.65	0.00	N	Arm 6 Right	Inf	100.0 %	2120	2120
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
6/3	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
7/3	Infinite Saturation Flow						Inf	Inf
8/1	3.65	0.00	Y	Arm 9 Ahead	Inf	49.0 %	1980	1980
				Arm 13 Right	Inf	51.0 %		
8/2	3.65	0.00	N	Arm 13 Right	Inf	100.0 %	2120	2120
9/1	Infinite Saturation Flow						Inf	Inf
10/1	3.65	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1980	1980
10/2	3.65	0.00	N	Arm 5 Right	Inf	22.9 %	2120	2120
				Arm 12 Ahead	Inf	77.1 %		
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf
13/2	Infinite Saturation Flow						Inf	Inf
13/3	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

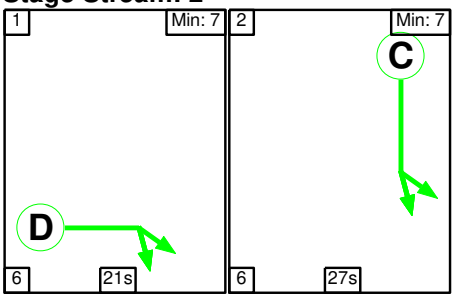
Scenario 1: '2031 ArdleyEast11, 13 AM' (FG1: 'ArdleyEast6 AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

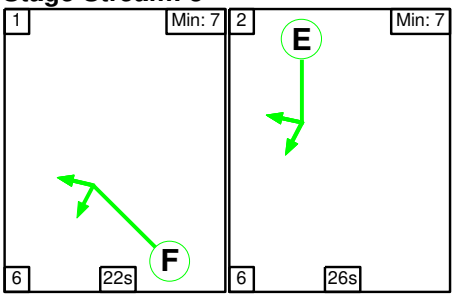
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	26	22
Change Point	0	32

Stage Stream: 2

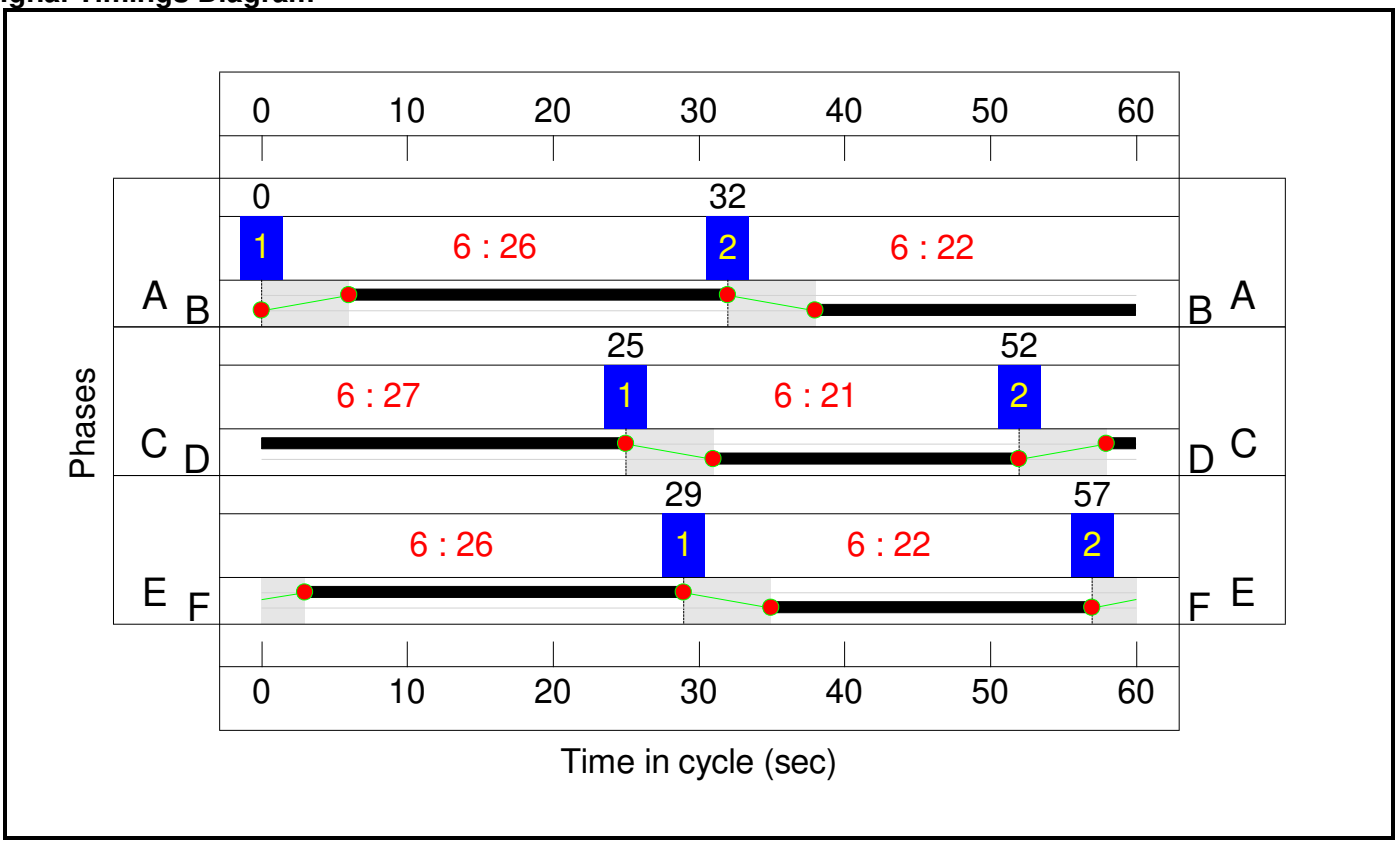
Stage	1	2
Duration	21	27
Change Point	25	52

Stage Stream: 3

Stage	1	2
Duration	22	26
Change Point	29	57

Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ardley East Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**82.0%**
Ardley East	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**82.0%**
1/2+1/1	Ahead	U	1	N/A	A		1	26	-	753	2019:1886	909+849	42.9 : 42.8%
1/3	Ahead	U	1	N/A	A		1	26	-	384	2019	909	42.3%
2/1	Ahead Left	U	3	N/A	F		1	22	-	602	1916	734	82.0%
2/2	Ahead	U	3	N/A	F		1	22	-	632	2052	787	80.3%
2/3	Ahead	U	3	N/A	F		1	22	-	632	2052	787	80.3%
3/1	Left U-Turn	O	N/A	N/A	-		-	-	-	121	1900	526	23.0%
4/2+4/1	Left Ahead	U	2	N/A	C		1	27	-	1317	2019:1886	942+772	77.1 : 76.5%
4/3	Ahead	U	2	N/A	C		1	27	-	601	2019	942	63.8%
5/1	Right	U	1	N/A	B		1	22	-	223	1980	759	29.4%
5/2	Right	U	1	N/A	B		1	22	-	657	2120	813	80.8%
5/3	Right	U	1	N/A	B		1	22	-	653	2120	813	80.4%
6/1	Ahead	U	N/A	N/A	-		-	-	-	586	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	1047	Inf	Inf	0.0%
6/3	Ahead Right	U	N/A	N/A	-		-	-	-	1037	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	586	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	1047	Inf	Inf	0.0%
7/3		U	N/A	N/A	-		-	-	-	606	Inf	Inf	0.0%
8/1	Ahead Right	U	2	N/A	D		1	21	-	212	1980	726	29.2%
8/2	Right	U	2	N/A	D		1	21	-	219	2120	777	28.2%
9/1		U	N/A	N/A	-		-	-	-	479	Inf	Inf	0.0%
10/1	Ahead	U	3	N/A	E		1	26	-	709	1980	891	79.6%
10/2	Right Ahead	U	3	N/A	E		1	26	-	705	2120	954	73.9%
11/1		U	N/A	N/A	-		-	-	-	331	Inf	Inf	0.0%

Full Input Data And Results

11/2		U	N/A	N/A	-		-	-	-	246	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	1146	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	601	Inf	Inf	0.0%
13/1	Ahead	U	N/A	N/A	-		-	-	-	324	Inf	Inf	0.0%
13/2	Ahead Ahead2	U	N/A	N/A	-		-	-	-	945	Inf	Inf	0.0%
13/3	Ahead	U	N/A	N/A	-		-	-	-	601	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ardley East Roundabout	**-**	**-**	**121**	**0**	**0**	**22.5**	**9.6**	**0.0**	**32.1**	**-**	**-**	**-**	**-**
Ardley East	**-**	**-**	**121**	**0**	**0**	**22.5**	**9.6**	**0.0**	**32.1**	**-**	**-**	**-**	**-**
1/2+1/1	753	753	-	-	-	2.4	0.4	-	2.7 (1.4+1.3)	13.0 (13.0:13.0)	4.3	0.4	4.7
1/3	384	384	-	-	-	1.2	0.4	-	1.6	14.6	4.3	0.4	4.6
2/1	602	602	-	-	-	2.8	2.2	-	5.0	29.8	8.9	2.2	11.1
2/2	632	632	-	-	-	2.9	2.0	-	4.9	27.8	9.3	2.0	11.3
2/3	632	632	-	-	-	2.9	2.0	-	4.9	27.8	9.3	2.0	11.3
3/1	121	121	121	0	0	0.1	0.1	-	0.3	7.9	0.8	0.1	0.9
4/2+4/1	1317	1317	-	-	-	4.7	1.6	-	6.4 (3.6+2.8)	17.4 (17.8:16.9)	9.9	1.6	11.5
4/3	601	601	-	-	-	2.0	0.9	-	2.9	17.4	7.5	0.9	8.4
5/1	223	223	-	-	-	0.4	0.0	-	0.4	6.3	1.2	0.0	1.2
5/2	657	657	-	-	-	0.3	0.0	-	0.3	1.4	0.6	0.0	0.6
5/3	653	653	-	-	-	0.2	0.0	-	0.2	1.3	0.5	0.0	0.5
6/1	586	586	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	1047	1047	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/3	1037	1037	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	586	586	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	1047	1047	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/3	606	606	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	212	212	-	-	-	0.8	0.0	-	0.8	13.4	3.2	0.0	3.2
8/2	219	219	-	-	-	0.9	0.0	-	0.9	14.2	3.2	0.0	3.2
9/1	479	479	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	709	709	-	-	-	0.3	0.0	-	0.3	1.7	0.7	0.0	0.7
10/2	705	705	-	-	-	0.6	0.0	-	0.6	3.3	2.2	0.0	2.2
11/1	331	331	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

11/2	246	246	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	1146	1146	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	601	601	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	324	324	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	945	945	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/3	601	601	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

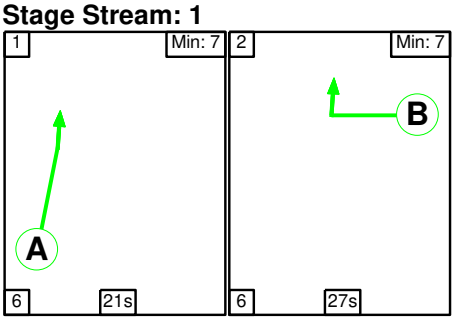
C1	Stream: 1	PRC for Signalled Lanes (%):	11.3	Total Delay for Signalled Lanes (pcuHr):	5.17	Cycle Time (s): 60
C1	Stream: 2	PRC for Signalled Lanes (%):	16.8	Total Delay for Signalled Lanes (pcuHr):	10.93	Cycle Time (s): 60
C1	Stream: 3	PRC for Signalled Lanes (%):	9.8	Total Delay for Signalled Lanes (pcuHr):	15.74	Cycle Time (s): 60
		PRC Over All Lanes (%):	9.8	Total Delay Over All Lanes(pcuHr):	32.11	

Full Input Data And Results

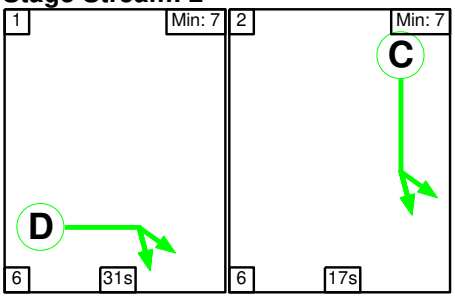
Scenario 2: '2031 ArdleyEast11, 13 PM' (FG2: 'ArdleyEast6 PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

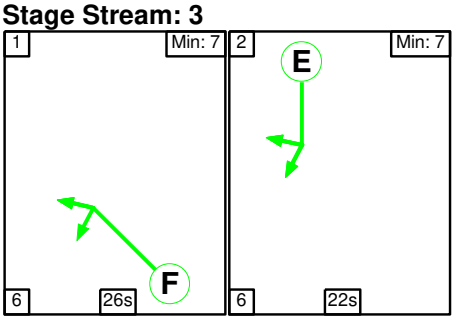
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	21	27
Change Point	0	27

Stage Stream: 2

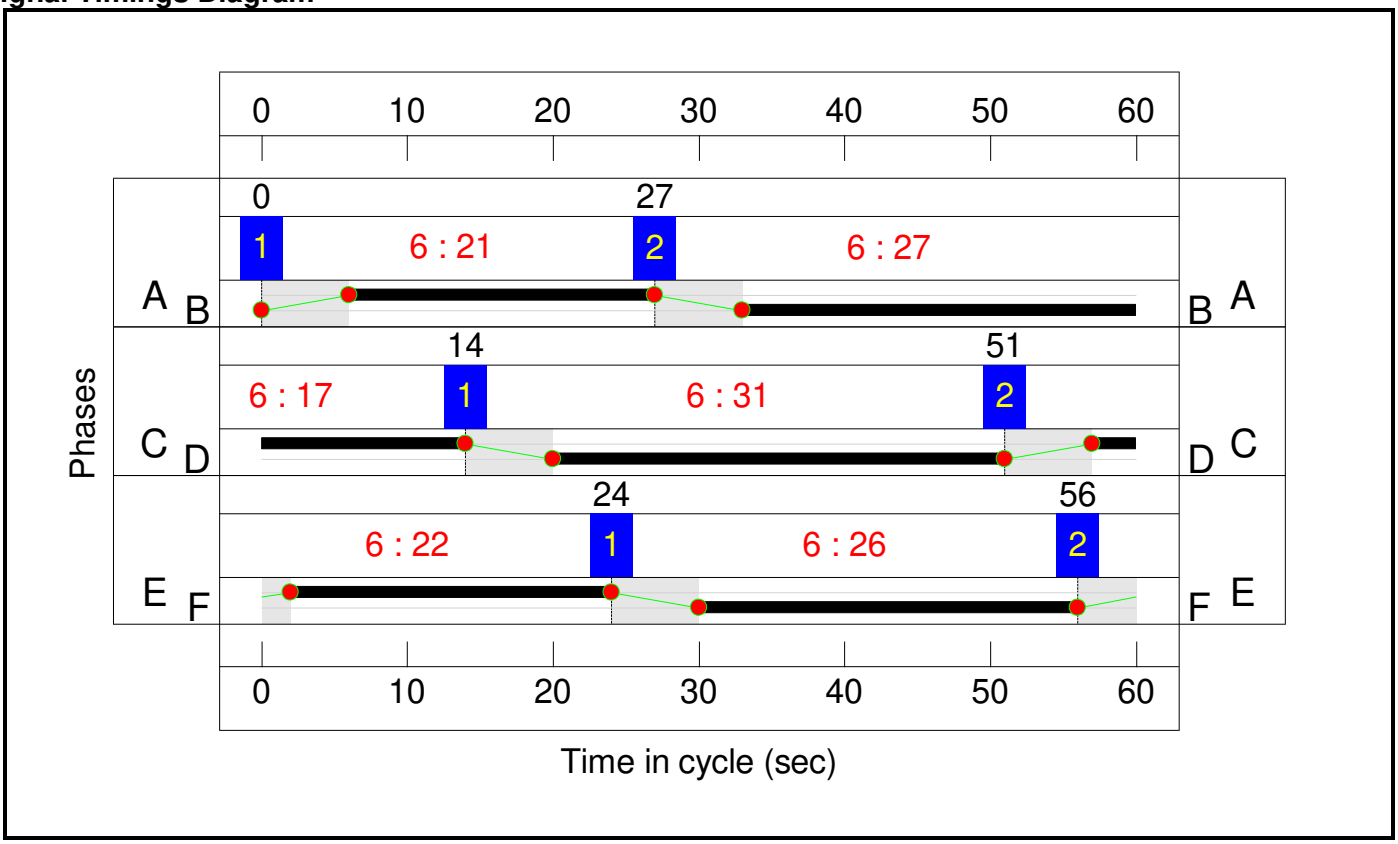
Stage	1	2
Duration	31	17
Change Point	14	51

Stage Stream: 3

Stage	1	2
Duration	26	22
Change Point	24	56

Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ardley East Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.1%**
Ardley East	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.1%**
1/2+1/1	Ahead	U	1	N/A	A		1	21	-	1141	2019:1886	740+692	79.7 : 79.7%
1/3	Ahead	U	1	N/A	A		1	21	-	537	2019	740	72.5%
2/1	Ahead Left	U	3	N/A	F		1	26	-	725	1916	862	84.1%
2/2	Ahead	U	3	N/A	F		1	26	-	774	2052	923	83.8%
2/3	Ahead	U	3	N/A	F		1	26	-	774	2052	923	83.8%
3/1	Left U-Turn	O	N/A	N/A	-		-	-	-	197	1900	605	32.5%
4/2+4/1	Left Ahead	U	2	N/A	C		1	17	-	839	2019:1886	606+566	80.7 : 61.9%
4/3	Ahead	U	2	N/A	C		1	17	-	357	2019	606	58.9%
5/1	Right	U	1	N/A	B		1	27	-	475	1980	924	51.4%
5/2	Right	U	1	N/A	B		1	27	-	811	2120	989	82.0%
5/3	Right	U	1	N/A	B		1	27	-	802	2120	989	81.1%
6/1	Ahead	U	N/A	N/A	-		-	-	-	1026	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	1401	Inf	Inf	0.0%
6/3	Ahead Right	U	N/A	N/A	-		-	-	-	1339	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1026	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	1401	Inf	Inf	0.0%
7/3		U	N/A	N/A	-		-	-	-	728	Inf	Inf	0.0%
8/1	Ahead Right	U	2	N/A	D		1	31	-	292	1980	1056	27.7%
8/2	Right	U	2	N/A	D		1	31	-	319	2120	1131	28.2%
9/1		U	N/A	N/A	-		-	-	-	240	Inf	Inf	0.0%
10/1	Ahead	U	3	N/A	E		1	22	-	571	1980	759	75.2%
10/2	Right Ahead	U	3	N/A	E		1	22	-	463	2120	813	57.0%
11/1		U	N/A	N/A	-		-	-	-	405	Inf	Inf	0.0%

Full Input Data And Results

11/2		U	N/A	N/A	-		-	-	-	325	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	862	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	357	Inf	Inf	0.0%
13/1	Ahead	U	N/A	N/A	-		-	-	-	402	Inf	Inf	0.0%
13/2	Ahead Ahead2	U	N/A	N/A	-		-	-	-	808	Inf	Inf	0.0%
13/3	Ahead	U	N/A	N/A	-		-	-	-	357	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ardley East Roundabout	**-**	**-**	**197**	**0**	**0**	**25.3**	**13.0**	**0.0**	**38.3**	**-**	**-**	**-**	**-**
Ardley East	**-**	**-**	**197**	**0**	**0**	**25.3**	**13.0**	**0.0**	**38.3**	**-**	**-**	**-**	**-**
1/2+1/1	1141	1141	-	-	-	5.4	1.9	-	7.3 (3.8+3.5)	23.1 (23.1:23.1)	8.7	1.9	10.6
1/3	537	537	-	-	-	2.4	1.3	-	3.7	25.1	7.6	1.3	8.9
2/1	725	725	-	-	-	2.9	2.5	-	5.5	27.3	10.7	2.5	13.2
2/2	774	774	-	-	-	3.1	2.5	-	5.6	26.2	11.2	2.5	13.7
2/3	774	774	-	-	-	3.1	2.5	-	5.6	26.2	11.2	2.5	13.7
3/1	197	197	197	0	0	0.1	0.2	-	0.4	6.9	1.0	0.2	1.2
4/2+4/1	839	839	-	-	-	4.4	1.3	-	5.6 (3.4+2.3)	24.2 (24.8:23.4)	7.5	1.3	8.7
4/3	357	357	-	-	-	1.8	0.7	-	2.5	25.1	5.1	0.7	5.8
5/1	475	475	-	-	-	0.2	0.0	-	0.2	1.8	0.7	0.0	0.7
5/2	811	811	-	-	-	0.2	0.0	-	0.2	0.9	1.2	0.0	1.2
5/3	802	802	-	-	-	0.2	0.0	-	0.2	0.7	0.5	0.0	0.5
6/1	1026	1026	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	1401	1401	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/3	1339	1339	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1026	1026	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	1401	1401	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/3	728	728	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	292	292	-	-	-	0.4	0.0	-	0.4	4.9	3.9	0.0	3.9
8/2	319	319	-	-	-	0.4	0.0	-	0.4	4.0	4.5	0.0	4.5
9/1	240	240	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	571	571	-	-	-	0.3	0.0	-	0.3	1.9	0.9	0.0	0.9
10/2	463	463	-	-	-	0.3	0.0	-	0.3	2.6	1.1	0.0	1.1
11/1	405	405	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

11/2	325	325	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	862	862	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	357	357	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	402	402	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	808	808	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/3	357	357	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1	Stream: 1	PRC for Signalled Lanes (%):	9.8	Total Delay for Signalled Lanes (pcuHr):	11.68	Cycle Time (s): 60
C1	Stream: 2	PRC for Signalled Lanes (%):	11.5	Total Delay for Signalled Lanes (pcuHr):	8.89	Cycle Time (s): 60
C1	Stream: 3	PRC for Signalled Lanes (%):	7.0	Total Delay for Signalled Lanes (pcuHr):	17.40	Cycle Time (s): 60
		PRC Over All Lanes (%):	7.0	Total Delay Over All Lanes(pcuHr):	38.34	

APPENDIX K

ARDLEY EAST ROUNDABOUT OPTION AE-8 LINSIG MODEL AUDIT AND REVISED RESULTS

LINSIG V3 Model Checking Report

AECOM

Project:	**OXFORDSHIRE SRFI-M40 Junction 10**	Job No:	**xxxxx**
Model:	**2031_DS_M40J10_ArdleyEast_AE8_ArdleyEast9 (Signals Option) - No Ardley Rd Link.lsg3x**	Model Submitted:	**16/07/2021**
		Corrections Submitted:	**Date Submitted**

Modelled By: ADC Infrastructure **Checked by: Weiping Guo** **Approved by:**

This note is to document the checks made to LINSIG models. Once completed this should be filed with the model, or model outputs for future reference.

Results Key

- × - Changes required before work is signed off
- ? – Changes may be required before work is signed off, further work required
- ✓ - No further changes required before work is signed off

File Checked: Hyperlink to model

Network Information					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
08/08/21	Scenario title(s) entered	✓			
08/08/21	Project name entered	✓			
08/08/21	Modeller details recorded	✓			
08/08/21	Network location details entered	✓			
08/08/21	File name is logical	✓			

Network Setup **Junction Drawings: In report 'OxSRFI-ADC1794-RP-M-V3 'TN5 M40 Junction 10 Options Report' – appendices' Page no.54** **Sat Flow Measurements / Calculations: Hyperlink to Sat Flow Measurements**					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
	Junctions				
08/08/21	Appropriate junctions setup	✓			
08/08/21	Junction info/ signal controllers complete	✓			
08/08/21	Logical arm structure setup	✓			
	Lanes				
08/08/21	Lane setup reflects junction drawings	X	Arm3 lane 1 is showing long lane from the drawing but it is short lane in the model.	Arm 3 lane 1 converted to a 'long lane'.	
08/08/21	Check each lane that is signal controlled	✓	Phase E is not in use, could be deleted.	Phase E removed.	
08/08/21	Lanes matched to controller and phase	✓	.		
08/08/21	Lane length appropriate	X	Arm3 lane 1 is showing long lane from the drawing but it is short lane in the model.	Arm 3 lane 1 converted to a 'long lane'.	
08/08/21	Custom occupancy (if req)	N/A			
	Saturation Flows				
08/08/21	Justified method to derive saturation flows				
08/08/21	Check observed sat flows (if used)	N/A			
08/08/21	Check RR67 sat flows calculations (if used)	x	1. Entry Arms 1 and 2 lanes saturation flows were calculated by RR67 methods, however all the lanes were treated as the 'nearside lane'. And the turning radius seemingly are randomly setup that affects the lanes sat flow calculation. Please double check. 2. Entry Arm 3 lanes saturation flows are directly entered, can you please explain why? 3. All the circulatory lanes Sat flow are directly entered. As all the entry arms are using RR67, we recommend the circulatory lanes adopt the same method of calculations. Also the direct entered Sat flow are lower than the entry arms Sat flow which can cause the issues. In general, the downstream lanes sat flow should be equal or greater than the entry lanes Sat flows, unless there is evidence supporting there is 'bottle neck' issues at the downstream.	1. Central lanes and offside lanes have 'nearside lane' de-selected. All turning radii checked and increased where applicable 2. Arm 3 sat flows changed to RR67. 3. All circulating lanes have RR67 parameters applied such that all circulating saturation flows are equal or greater than the entry lanes.	
08/08/21	Check external sat flows calculations (if used)				
08/08/21	Check sat flows for any bottleneck links	N/A			
	Advanced Lane Settings				
08/08/21	Use of start / end green displacements (if req)	✓			
08/08/21	Use of queue limits on short links (if req)	X	1. Arm 4 all lanes queue limits are set to 1pcu which seemingly is too low according to the drawing measure. 2. Arm 7 all lanes queue limits are set to 2pcus which seemingly is too low according to the drawing measure.	1. Queue limit on Arm 4 increased to 2 pcus. 2. Queue limit on Arm 7 increased to 3 pcus. 3. Queue limit on arm 8 increased to 4 pcus.	

Tel. 0121 262 6795
www.aecom.com

Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

			3. Arm 8 all lanes queue limits are set to 2pcus which seemingly is too low according to the drawing measure.		
08/08/21	Use of weightings for optimiser constraints (if req)	✓			
08/08/21	Use of random delay or queue de-sliver (if req)	X	1. Arm 4 Lane 1 de-sliver is set to 1pcu and this is not necessary. 2. Arm 8 lane 1 and 2 de-sliver is set to 1pcu, after check the queue profile, this may not be realistic. We recommend to avoid using the de-sliver if possible and this could be achieved by setting up the signals coordination between the nodes, and if necessary, use 0.5pcu instead. 3. Arm8 lane 1 selected 'ignore random delay' but not lane 2?	1. Arm 4 de-sliver factors removed. 2. Arm 8 lane 1 de-sliver factor reduced to 0.5. Arm 8 lane 2 de-sliver factor removed. 3. 'Ignore random delay' selected for Arm 8 lane 2.	
	Give Ways				
08/08/21	Check each lane that is priority controlled	N/A			
08/08/21	Measurement of max/min flow when giving way	N/A			
08/08/21	Flow when opposing traffic stopped reasonable	N/A			
08/08/21	Measurement of give-way co-efficient	N/A			
08/08/21	Measurement of clear conflict time of opposing traffic	N/A			
08/08/21	Check all controlling movements identified	N/A			
08/08/21	Measurement of storage in front of stop-line	N/A			
08/08/21	Max turns in inter-green reasonable	N/A			
08/08/21	Measurement of non-blocking storage	N/A			
	Lane Connectors				
08/08/21	Lane connectors provided reasonable	X	According to the provided drawing, Arm 7 lane 1 should connect Arm 11 lane 1 and lane 2, and Arm 7 lane 2 should connect Arm 11 lane 3.	Lane allocation in the model is correct. The drawing will be updated in due course.	
08/08/21	Cruise time reasonable	✓	45km/hr cruise speed is applied for all the link connectors.		
08/08/21	Default platoon dispersion used unless observed	X	The platoon dispersion on the short links should be switched off.	Platoon dispersion switched off.	
	Zones				
08/08/21	Zones match O-D matrix	?	ArdleyEast6_AM flow matches flow set ArdleyEast9_AM in the report page 96, and the name is very confusing; ArdleyEast6_PM flow matches flow set ArdleyEast9_PM in the report page 97, and the name is very confusing; It is very confusing in the report 'OXSRFI-ADC1794-RP-N-V2'TN6-M40J10 OR Traffic Flow Derivation' – bound file regarding the flow sets name. As the flow set ArdleyEast6 is for the strategic Options: 10,11,12 stated in the report, and the matches ArdleyEast9 flow sets are referring to strategic options 11,13,18 and 19, and there is overlap of strategic option 11 for both flow sets. Can you please clarify?	ArdleyEast9 flow sets are used in this model to test strategic options 18 and 19.	

	Pedestrians				
08/08/21	Ped crossings represented by ped links (if req)	N/A			
08/08/21	Ped link data correct (if req)	N/A			
08/08/21	Ped connector walk times reasonable (if req)	N/A			
08/08/21	Ped links matched to appropriate phases (if req)	N/A			
08/08/21	Ped zones match ped O-D matrix (if req)	N/A			

Controllers

Controller Specifications: Hyperlink to Controller Specification (if req)
Intergreen Calculations: Hyperlink to Intergreen Calculations (if req)

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
	General Controller Set-up				
08/08/21	Sufficient controllers setup	✓			
08/08/21	Multiple stage streams setup correctly (if req)	✓			
08/08/21	Non-standard filters setup correctly (if req)	N/A			
	Signal Settings				
08/08/21	Check phases for each controller	✓			
08/08/21	Check phase mins/type reasonable	✓			
08/08/21	Check inter-greens calculations/coding	?	5s inter-green is used for all conflict phases? All other sites are using 6s due to the high speed roads.	All intergreens increased to 6 seconds.	
08/08/21	Stages reasonable	✓			
08/08/21	Phase delays reasonable (if req)	N/A			

Stage Sequences

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date

Tel. 0121 262 6795
www.aecom.com

Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

08/08/21	Check stage sequences observed / optimised	✓			
08/08/21	Check stage timings observed / optimised	N/A			

Traffic Counts and Calculations

Traffic Flow Data: Hyperlink to Traffic Flow Data – in report 'OXSRFI-ADC1794-RP-N-V2 'TN6 - M40 J10 OR Traffic Flow Derivation' – bound'
Matrix Calculations: Hyperlink to Matrix Calculations (if required)
Lane Balancing Calculations: Hyperlink to Lane Balancing Calculations (if required)
Site Observations: Hyperlink to Site Flows Observations

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
08/08/21	Suitability of traffic surveys undertaken	N/A			
08/08/21	Are there sufficient site observations	N/A			
08/08/21	Check O-D matrix calculations	X	As stated above, could not find the flow sets from the report that match the model sets.		
08/08/21	Are lane balancing calculations sufficient / consistent	?	To be checked after the above update.		
08/08/21	Does lane balancing match lining	?	To be checked after the above update.		
08/08/21	Does lane balancing match matrices	?	To be checked after the above update.		

Traffic Flows

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
08/08/21	Traffic & ped flow (if req) groups setup	?	To be checked after the above update.		
08/08/21	Desired flows match O-D matrices	?	To be checked after the above update.		
08/08/21	Actual flows match desired flows	?	To be checked after the above update.		
08/08/21	Inappropriate routes closed	?	To be checked after the above update.		
08/08/21	Route flows match lane balancing	?	To be checked after the above update.		

Modelling

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
08/08/21	Scenario set up with correct options	✓			
08/08/21	Cycle time appropriate for network control	?	90s cycle time in the 2031 AM is too high for this roundabout, especially considering the short circulatory lanes.		
08/08/21	Cycle time optimised (if req)	N/A			

Results

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
	Are all values as expected (Demand Flows, Green Times etc)		To be checked after above changes.		
	Deg Sat >100% for existing situation with no modelled suppressed demand?		To be checked after above changes.		
	Deg Sat appropriate? Validated?		To be checked after above changes.		
	Capacity conclusions		To be checked after above changes.		
	If suppressed demand has been modelled, do queues validate?		To be checked after above changes.		
	Queues appropriate?		To be checked after above changes.		
	Queue limits exceeded?		To be checked after above changes.		
	Queuing conclusions (will exit blocking modify these?)		To be checked after above changes.		
	If suppressed demand has been modelled do journey times validate?		To be checked after above changes.		
	Journey time conclusions?		To be checked after above changes.		

Conclusions and Recommendations

Tel. 0121 262 6795
www.aecom.com

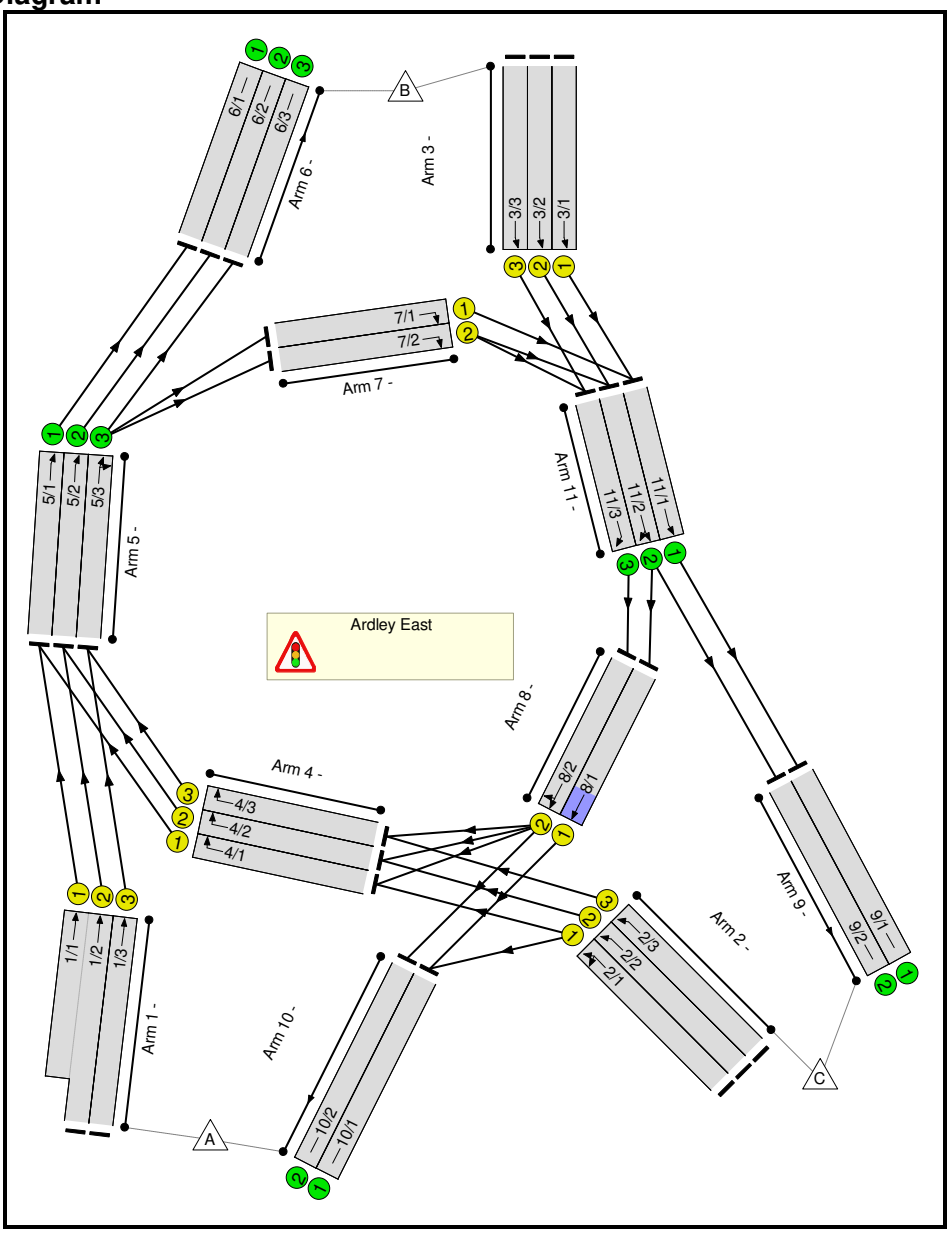
Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

Full Input Data And Results

User and Project Details

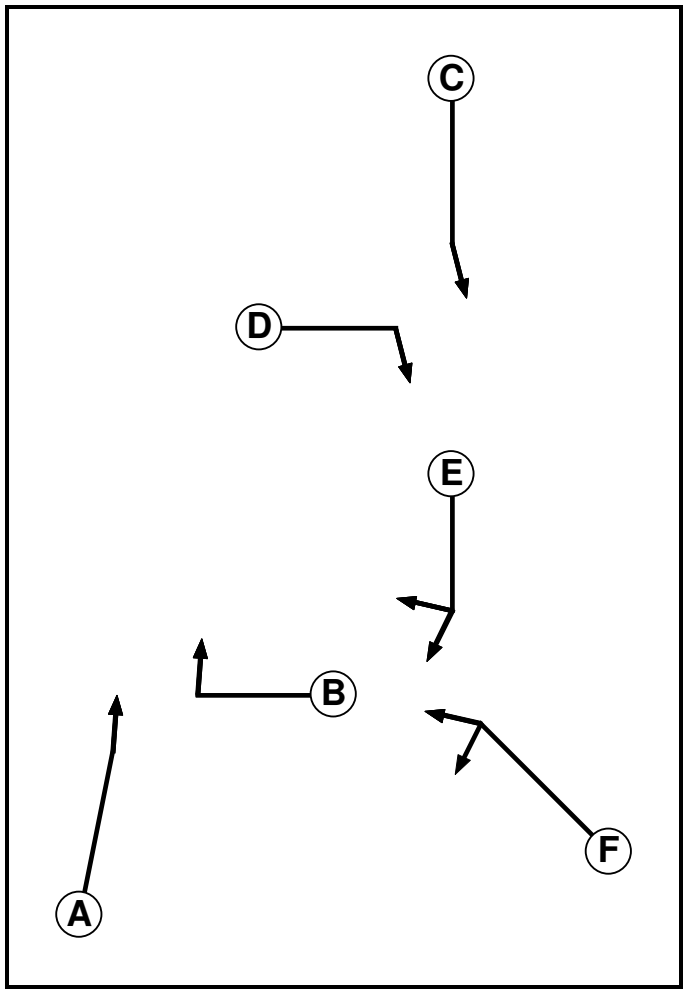
Project:	**OxSRFI**
Title:	**Ardley East Roundabout**
Location:	
Design Layout Ref:	AE-8
Flow Details:	ArdleyEast9_AM ArdleyEast9_PM
Additional detail:	Amended following Aecom comments
File name:	2031_DS_M40J10_ArdleyEast_AE8_ArdleyEast9 (Signals Option).lsg3x
Author:	[redacted]
Company:	ADC Infrastructure Limited
Address:	King Edward Court, Nottingham NG1 3EW

Network Layout Diagram



Full Input Data And Results

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
E	Traffic	3		7	7
F	Traffic	3		7	7

Full Input Data And Results

Phase Intergreens Matrix

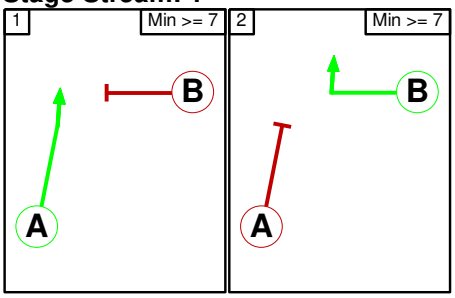
Terminating Phase	Starting Phase A	B	C	D	E	F
A		6	-	-	-	-
B	6		-	-	-	-
C	-	-		6	-	-
D	-	-	6		-	-
E	-	-	-	-		6
F	-	-	-	-	6	

Phases in Stage

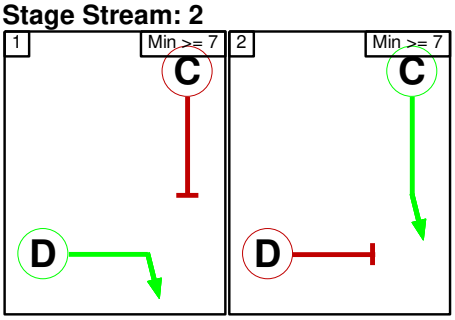
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	D
2	2	C
3	1	F
3	2	E

Stage Diagram

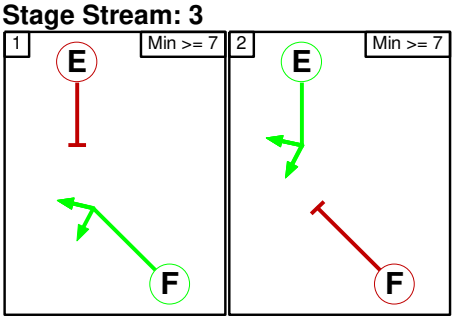
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Full Input Data And Results

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					

Stage Stream: 3

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		6
	2	6	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		6
	2	6	

Stage Stream: 3

	To Stage		
From Stage		1	2
	1		6
	2	6	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Ardley East
There are no Opposed Lanes in this Junction

Full Input Data And Results

Lane Input Data

Junction: Ardley East												
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	U	A	2	3	20.9	Geom	-	3.65	0.00	Y	Arm 5 Ahead	30.00
1/2	U	A	2	3	60.0	Geom	-	3.65	0.00	N	Arm 5 Ahead	30.00
1/3	U	A	2	3	60.0	Geom	-	3.65	0.00	N	Arm 5 Ahead	30.00
2/1	U	F	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Ahead	50.00
											Arm 10 Left	50.00
2/2	U	F	2	3	60.0	Geom	-	3.65	0.00	N	Arm 4 Ahead	50.00
2/3	U	F	2	3	60.0	Geom	-	3.65	0.00	N	Arm 4 Ahead	50.00
3/1	U	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 11 Ahead	30.00
3/2	U	C	2	3	60.0	Geom	-	3.65	0.00	N	Arm 11 Ahead	30.00
3/3	U	C	2	3	60.0	Geom	-	3.65	0.00	N	Arm 11 Ahead	30.00
4/1	U	B	2	3	9.6	Geom	-	3.65	0.00	Y	Arm 5 Right	Inf
4/2	U	B	2	3	9.6	Geom	-	3.65	0.00	N	Arm 5 Right	Inf
4/3	U	B	2	3	9.6	Geom	-	3.65	0.00	N	Arm 5 Right	Inf
5/1	U		2	3	10.4	Inf	-	-	-	-	-	-
5/2	U		2	3	10.4	Inf	-	-	-	-	-	-
5/3	U		2	3	10.4	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2	U		2	3	60.0	Inf	-	-	-	-	-	-
6/3	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U	D	2	3	5.2	Geom	-	3.65	0.00	Y	Arm 11 Right	Inf
7/2	U	D	2	3	5.2	Geom	-	3.65	0.00	N	Arm 11 Right	Inf
8/1	U	E	2	3	7.0	Geom	-	3.65	0.00	Y	Arm 10 Ahead	Inf
8/2	U	E	2	3	7.0	Geom	-	3.65	0.00	N	Arm 4 Right	Inf
											Arm 10 Ahead	Inf
9/1	U		2	3	60.0	Inf	-	-	-	-	-	-
9/2	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1	U		2	3	60.0	Inf	-	-	-	-	-	-
10/2	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1	U		2	3	8.7	Inf	-	-	-	-	-	-
11/2	U		2	3	8.7	Inf	-	-	-	-	-	-
11/3	U		2	3	8.7	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'ArdleyEast9_AM'	07:45	08:45	01:00	
2: 'ArdleyEast9_PM'	16:30	17:30	01:00	

Scenario 1: '2031 ArdleyEast18, 19 AM' (FG1: 'ArdleyEast9_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	754	232	986
	B	1300	0	298	1598
	C	437	1381	40	1858
	Tot.	1737	2135	570	4442

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 1: 2031 ArdleyEast18, 19 AM
Junction: Ardley East	
1/1 (short)	353
1/2 (with short)	731(In) 378(Out)
1/3	255
2/1	588
2/2	635
2/3	635
3/1	298
3/2	646
3/3	654
4/1	151
4/2	635
4/3	635
5/1	504
5/2	1013
5/3	890
6/1	504
6/2	1013
6/3	618
7/1	133
7/2	139
8/1	646
8/2	654
9/1	431
9/2	139
10/1	1083
10/2	654
11/1	431
11/2	785
11/3	654

Full Input Data And Results

Lane Saturation Flows

Junction: Ardley East								
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	3.65	0.00	Y	Arm 5 Ahead	30.00	100.0 %	1886	1886
1/2	3.65	0.00	N	Arm 5 Ahead	30.00	100.0 %	2019	2019
1/3	3.65	0.00	N	Arm 5 Ahead	30.00	100.0 %	2019	2019
2/1	3.65	0.00	Y	Arm 4 Ahead	50.00	25.7 %	1922	1922
				Arm 10 Left	50.00	74.3 %		
2/2	3.65	0.00	N	Arm 4 Ahead	50.00	100.0 %	2058	2058
2/3	3.65	0.00	N	Arm 4 Ahead	50.00	100.0 %	2058	2058
3/1	3.65	0.00	Y	Arm 11 Ahead	30.00	100.0 %	1886	1886
3/2	3.65	0.00	N	Arm 11 Ahead	30.00	100.0 %	2019	2019
3/3	3.65	0.00	N	Arm 11 Ahead	30.00	100.0 %	2019	2019
4/1	3.65	0.00	Y	Arm 5 Right	Inf	100.0 %	1980	1980
4/2	3.65	0.00	N	Arm 5 Right	Inf	100.0 %	2120	2120
4/3	3.65	0.00	N	Arm 5 Right	Inf	100.0 %	2120	2120
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
6/3	Infinite Saturation Flow						Inf	Inf
7/1	3.65	0.00	Y	Arm 11 Right	Inf	100.0 %	1980	1980
7/2	3.65	0.00	N	Arm 11 Right	Inf	100.0 %	2120	2120
8/1	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
8/2	3.65	0.00	N	Arm 4 Right	Inf	0.0 %	2120	2120
				Arm 10 Ahead	Inf	100.0 %		
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
11/3	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 2: '2031 ArdleyEast18, 19 PM' (FG2: 'ArdleyEast9_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	1141	401	1542
	B	840	0	259	1099
	C	291	1908	67	2266
	Tot.	1131	3049	727	4907

Traffic Lane Flows

Lane	Scenario 2: 2031 ArdleyEast18, 19 PM
Junction: Ardley East	
1/1 (short)	527
1/2 (with short)	1091(In) 564(Out)
1/3	451
2/1	716
2/2	775
2/3	775
3/1	259
3/2	418
3/3	422
4/1	425
4/2	775
4/3	775
5/1	952
5/2	1339
5/3	1226
6/1	952
6/2	1339
6/3	758
7/1	223
7/2	245
8/1	418
8/2	422
9/1	482
9/2	245
10/1	709
10/2	422
11/1	482
11/2	663
11/3	422

Full Input Data And Results

Lane Saturation Flows

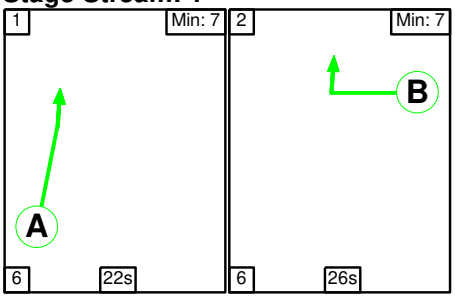
Junction: Ardley East								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1	3.65	0.00	Y	Arm 5 Ahead	30.00	100.0 %	1886	1886
1/2	3.65	0.00	N	Arm 5 Ahead	30.00	100.0 %	2019	2019
1/3	3.65	0.00	N	Arm 5 Ahead	30.00	100.0 %	2019	2019
2/1	3.65	0.00	Y	Arm 4 Ahead	50.00	59.4 %	1922	1922
				Arm 10 Left	50.00	40.6 %		
2/2	3.65	0.00	N	Arm 4 Ahead	50.00	100.0 %	2058	2058
2/3	3.65	0.00	N	Arm 4 Ahead	50.00	100.0 %	2058	2058
3/1	3.65	0.00	Y	Arm 11 Ahead	30.00	100.0 %	1886	1886
3/2	3.65	0.00	N	Arm 11 Ahead	30.00	100.0 %	2019	2019
3/3	3.65	0.00	N	Arm 11 Ahead	30.00	100.0 %	2019	2019
4/1	3.65	0.00	Y	Arm 5 Right	Inf	100.0 %	1980	1980
4/2	3.65	0.00	N	Arm 5 Right	Inf	100.0 %	2120	2120
4/3	3.65	0.00	N	Arm 5 Right	Inf	100.0 %	2120	2120
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
5/3	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
6/3	Infinite Saturation Flow						Inf	Inf
7/1	3.65	0.00	Y	Arm 11 Right	Inf	100.0 %	1980	1980
7/2	3.65	0.00	N	Arm 11 Right	Inf	100.0 %	2120	2120
8/1	3.65	0.00	Y	Arm 10 Ahead	Inf	100.0 %	1980	1980
8/2	3.65	0.00	N	Arm 4 Right	Inf	0.0 %	2120	2120
				Arm 10 Ahead	Inf	100.0 %		
9/1	Infinite Saturation Flow						Inf	Inf
9/2	Infinite Saturation Flow						Inf	Inf
10/1	Infinite Saturation Flow						Inf	Inf
10/2	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
11/3	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

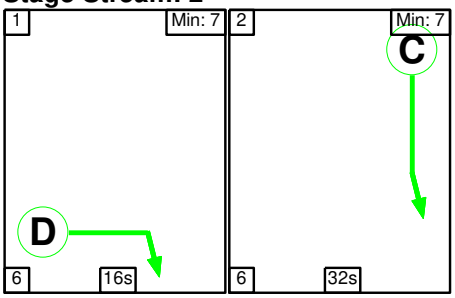
Scenario 1: '2031 ArdleyEast18, 19 AM' (FG1: 'ArdleyEast9_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

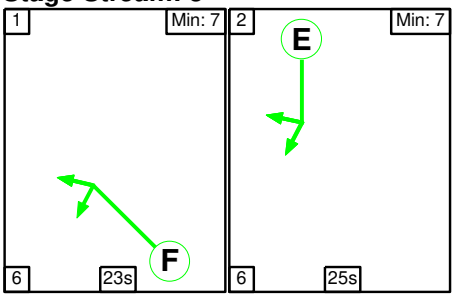
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	22	26
Change Point	0	28

Stage Stream: 2

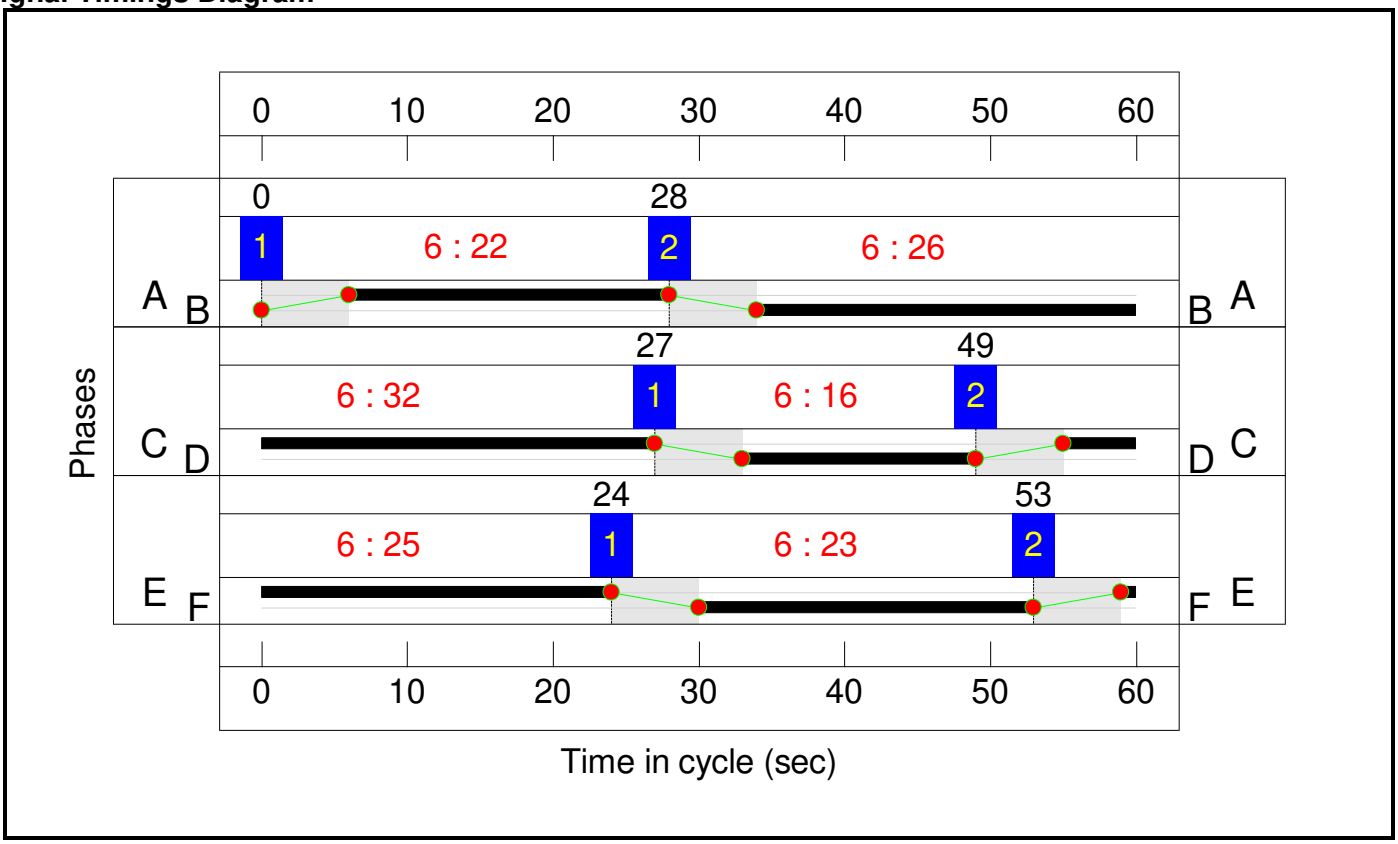
Stage	1	2
Duration	16	32
Change Point	27	49

Stage Stream: 3

Stage	1	2
Duration	23	25
Change Point	24	53

Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ardley East Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**77.1%**
Ardley East	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**77.1%**
1/2+1/1	Ahead	U	1	N/A	A		1	22	-	731	2019:1886	774+723	48.8 : 48.8%
1/3	Ahead	U	1	N/A	A		1	22	-	255	2019	774	32.9%
2/1	Ahead Left	U	3	N/A	F		1	23	-	588	1922	769	76.5%
2/2	Ahead	U	3	N/A	F		1	23	-	635	2058	823	77.1%
2/3	Ahead	U	3	N/A	F		1	23	-	635	2058	823	77.1%
3/1	Ahead	U	2	N/A	C		1	32	-	298	1886	1037	28.7%
3/2	Ahead	U	2	N/A	C		1	32	-	646	2019	1110	58.2%
3/3	Ahead	U	2	N/A	C		1	32	-	654	2019	1110	58.9%
4/1	Right	U	1	N/A	B		1	26	-	151	1980	891	16.9%
4/2	Right	U	1	N/A	B		1	26	-	635	2120	954	66.6%
4/3	Right	U	1	N/A	B		1	26	-	635	2120	954	66.6%
5/1	Ahead	U	N/A	N/A	-		-	-	-	504	Inf	Inf	0.0%
5/2	Ahead	U	N/A	N/A	-		-	-	-	1013	Inf	Inf	0.0%
5/3	Ahead Right	U	N/A	N/A	-		-	-	-	890	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	504	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	1013	Inf	Inf	0.0%
6/3		U	N/A	N/A	-		-	-	-	618	Inf	Inf	0.0%
7/1	Right	U	2	N/A	D		1	16	-	133	1980	561	23.7%
7/2	Right	U	2	N/A	D		1	16	-	139	2120	601	23.1%
8/1	Ahead	U	3	N/A	E		1	25	-	646	1980	858	75.3%
8/2	Right Ahead	U	3	N/A	E		1	25	-	654	2120	919	71.2%
9/1		U	N/A	N/A	-		-	-	-	431	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	139	Inf	Inf	0.0%

Full Input Data And Results

10/1		U	N/A	N/A	-		-	-	-	1083	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	654	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	431	Inf	Inf	0.0%
11/2	Ahead Ahead2	U	N/A	N/A	-		-	-	-	785	Inf	Inf	0.0%
11/3	Ahead	U	N/A	N/A	-		-	-	-	654	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ardley East Roundabout	**-**	**-**	**0**	**0**	**0**	**18.8**	**7.2**	**0.0**	**26.0**	**-**	**-**	**-**	**-**
Ardley East	**-**	**-**	**0**	**0**	**0**	**18.8**	**7.2**	**0.0**	**26.0**	**-**	**-**	**-**	**-**
1/2+1/1	731	731	-	-	-	2.9	0.5	-	3.3 (1.7+1.6)	16.4 (16.4:16.4)	4.7	0.5	5.2
1/3	255	255	-	-	-	0.9	0.2	-	1.2	16.5	3.0	0.2	3.2
2/1	588	588	-	-	-	2.5	1.6	-	4.1	25.3	8.3	1.6	9.9
2/2	635	635	-	-	-	2.8	1.7	-	4.4	25.0	9.2	1.7	10.8
2/3	635	635	-	-	-	2.8	1.7	-	4.4	25.0	9.2	1.7	10.8
3/1	298	298	-	-	-	0.6	0.2	-	0.8	9.7	2.6	0.2	2.9
3/2	646	646	-	-	-	1.6	0.7	-	2.3	12.8	7.0	0.7	7.7
3/3	654	654	-	-	-	1.6	0.7	-	2.3	12.9	7.1	0.7	7.8
4/1	151	151	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	635	635	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/3	635	635	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	504	504	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	1013	1013	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/3	890	890	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	504	504	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	1013	1013	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/3	618	618	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	133	133	-	-	-	0.6	0.0	-	0.6	16.3	2.1	0.0	2.1
7/2	139	139	-	-	-	0.6	0.0	-	0.6	16.6	2.1	0.0	2.1
8/1	646	646	-	-	-	1.0	0.0	-	1.0	5.4	2.4	0.0	2.4
8/2	654	654	-	-	-	0.9	0.0	-	0.9	5.1	2.4	0.0	2.4
9/1	431	431	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	139	139	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	1083	1083	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

10/2	654	654	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	431	431	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	785	785	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/3	654	654	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

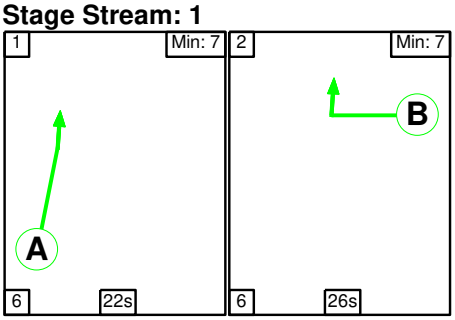
C1	Stream: 1	PRC for Signalled Lanes (%):	35.2	Total Delay for Signalled Lanes (pcuHr):	4.50	Cycle Time (s): 60
C1	Stream: 2	PRC for Signalled Lanes (%):	52.8	Total Delay for Signalled Lanes (pcuHr):	6.69	Cycle Time (s): 60
C1	Stream: 3	PRC for Signalled Lanes (%):	16.7	Total Delay for Signalled Lanes (pcuHr):	14.85	Cycle Time (s): 60
		PRC Over All Lanes (%):	16.7	Total Delay Over All Lanes(pcuHr):	26.04	

Full Input Data And Results

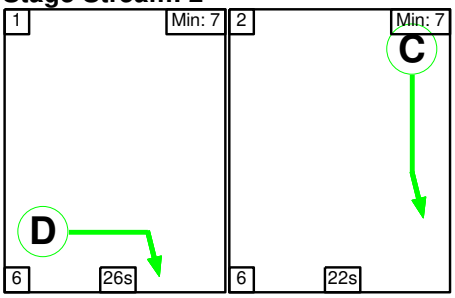
Scenario 2: '2031 ArdleyEast18, 19 PM' (FG2: 'ArdleyEast9_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

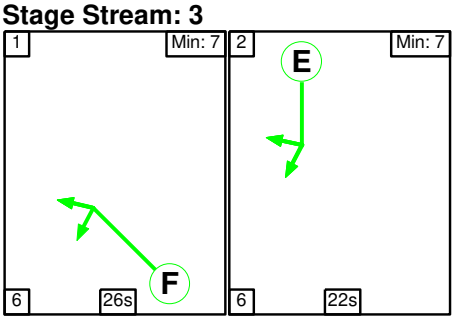
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	22	26
Change Point	0	28

Stage Stream: 2

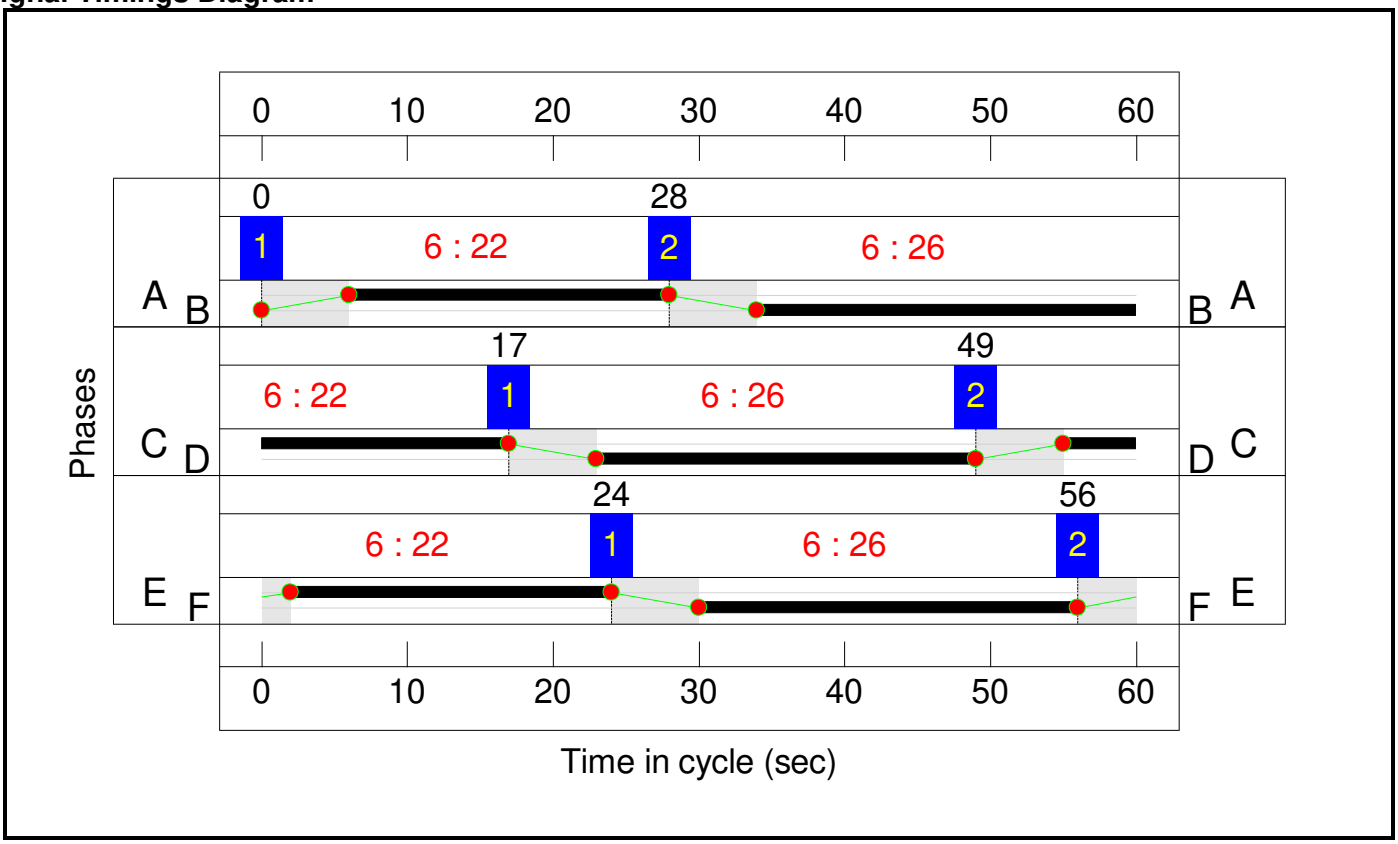
Stage	1	2
Duration	26	22
Change Point	17	49

Stage Stream: 3

Stage	1	2
Duration	26	22
Change Point	24	56

Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Ardley East Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**83.7%**
Ardley East	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**83.7%**
1/2+1/1	Ahead	U	1	N/A	A		1	22	-	1091	2019:1886	774+723	72.9 : 72.9%
1/3	Ahead	U	1	N/A	A		1	22	-	451	2019	774	58.3%
2/1	Ahead Left	U	3	N/A	F		1	26	-	716	1922	865	82.8%
2/2	Ahead	U	3	N/A	F		1	26	-	775	2058	926	83.7%
2/3	Ahead	U	3	N/A	F		1	26	-	775	2058	926	83.7%
3/1	Ahead	U	2	N/A	C		1	22	-	259	1886	723	35.8%
3/2	Ahead	U	2	N/A	C		1	22	-	418	2019	774	54.0%
3/3	Ahead	U	2	N/A	C		1	22	-	422	2019	774	54.5%
4/1	Right	U	1	N/A	B		1	26	-	425	1980	891	47.7%
4/2	Right	U	1	N/A	B		1	26	-	775	2120	954	81.2%
4/3	Right	U	1	N/A	B		1	26	-	775	2120	954	81.2%
5/1	Ahead	U	N/A	N/A	-		-	-	-	952	Inf	Inf	0.0%
5/2	Ahead	U	N/A	N/A	-		-	-	-	1339	Inf	Inf	0.0%
5/3	Ahead Right	U	N/A	N/A	-		-	-	-	1226	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	952	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	1339	Inf	Inf	0.0%
6/3		U	N/A	N/A	-		-	-	-	758	Inf	Inf	0.0%
7/1	Right	U	2	N/A	D		1	26	-	223	1980	891	25.0%
7/2	Right	U	2	N/A	D		1	26	-	245	2120	954	25.7%
8/1	Ahead	U	3	N/A	E		1	22	-	418	1980	759	55.1%
8/2	Right Ahead	U	3	N/A	E		1	22	-	422	2120	813	51.9%
9/1		U	N/A	N/A	-		-	-	-	482	Inf	Inf	0.0%
9/2		U	N/A	N/A	-		-	-	-	245	Inf	Inf	0.0%

Full Input Data And Results

10/1		U	N/A	N/A	-		-	-	-	709	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	422	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	482	Inf	Inf	0.0%
11/2	Ahead Ahead2	U	N/A	N/A	-		-	-	-	663	Inf	Inf	0.0%
11/3	Ahead	U	N/A	N/A	-		-	-	-	422	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Ardley East Roundabout	**-**	**-**	**0**	**0**	**0**	**21.1**	**10.8**	**0.0**	**31.9**	**-**	**-**	**-**	**-**
Ardley East	**-**	**-**	**0**	**0**	**0**	**21.1**	**10.8**	**0.0**	**31.9**	**-**	**-**	**-**	**-**
1/2+1/1	1091	1091	-	-	-	4.8	1.3	-	6.1 (3.2+3.0)	20.2 (20.2:20.2)	8.0	1.3	9.3
1/3	451	451	-	-	-	1.8	0.7	-	2.5	20.2	5.9	0.7	6.6
2/1	716	716	-	-	-	2.9	2.3	-	5.2	26.2	10.3	2.3	12.7
2/2	775	775	-	-	-	3.1	2.5	-	5.6	26.1	11.2	2.5	13.7
2/3	775	775	-	-	-	3.1	2.5	-	5.6	26.1	11.2	2.5	13.7
3/1	259	259	-	-	-	1.0	0.3	-	1.2	17.1	3.0	0.3	3.3
3/2	418	418	-	-	-	1.7	0.6	-	2.3	19.4	5.3	0.6	5.9
3/3	422	422	-	-	-	1.7	0.6	-	2.3	19.5	5.4	0.6	6.0
4/1	425	425	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	775	775	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/3	775	775	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	952	952	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	1339	1339	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/3	1226	1226	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	952	952	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	1339	1339	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/3	758	758	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	223	223	-	-	-	0.5	0.0	-	0.5	8.3	3.0	0.0	3.0
7/2	245	245	-	-	-	0.5	0.0	-	0.5	6.9	3.5	0.0	3.5
8/1	418	418	-	-	-	0.0	0.0	-	0.0	0.1	0.1	0.0	0.1
8/2	422	422	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	482	482	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	245	245	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	709	709	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

10/2	422	422	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	482	482	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	663	663	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/3	422	422	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1	Stream: 1	PRC for Signalled Lanes (%):	10.8	Total Delay for Signalled Lanes (pcuHr):	8.67	Cycle Time (s): 60
C1	Stream: 2	PRC for Signalled Lanes (%):	65.1	Total Delay for Signalled Lanes (pcuHr):	6.76	Cycle Time (s): 60
C1	Stream: 3	PRC for Signalled Lanes (%):	7.5	Total Delay for Signalled Lanes (pcuHr):	16.45	Cycle Time (s): 60
		PRC Over All Lanes (%):	7.5	Total Delay Over All Lanes(pcuHr):	31.88	

APPENDIX 18

TN7: SCOPE OF HIGHWAY DESIGN PRE-DCO

SCOPE OF HIGHWAY DESIGN PRE-DCO (TN07)
OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Project	**Oxfordshire Strategic Rail Freight Interchange (OxSRFI)**		
Document Number	OxSRFI-BWB-GEN-XX-RP-CH-0001	**BWB Ref**	NTH2479
Author	[redacted]	**Status**	S4
Checked		**Revision**	P05
Approved		**Date**	06.12.2024

1 INTRODUCTION

1.1 The purpose of this short Technical Note is to set out the level to which the highway design will be developed prior to and for submission with the DCO application. The totality of the design produced at this stage is termed the "Preliminary design".

1.2 The output of the design and assessment work will take the form of drawings, explanatory notes and reports.

1.3 The highway works are shown indicatively on drawing OxSRFI-BWB-GEN-XX-SK-CH-SK041 and this drawing also shows the highway authority for each part of the highway works.

2 DESIGN STANDARDS

2.1 The design standards are agreed to be:

Highway Authority (see drawing OxSRFI-BWB-GEN-XX-SK-CH-SK041)	Route	Design standards
National Highways (NH)	All trunk road works including, for the avoidance of doubt, any changes to the M40 motorway	DMRB
Oxfordshire County Council (OCC)	B430 Ardley Bypass Middleton Stoney Relief Road Heyford Park link road	DMRB
	All other local highway works	Elements from the following standard to be agreed with OCC on a location by location basis DMRB OCC Cycling Design Standards OCC Walking Design Standards Manual for Streets

3 DESIGN AND DESIGN OUTPUTS FOR DCO SUBMISSION

Highway options reporting

3.1 Reports will be provided as follows:

- M40 Junction 10 Options Report and addendum reports – also detailing improvements and associate changes to the local highway network (including B430 Ardley Bypass)
- Middleton Stoney Relief Road and Heyford Park Link Road Options Report and addendum reports (including associated junctions options report).

3.2 These will detail options for the highway works that have been considered and rejected in favour of the proposals for submission and the reasons for their rejection. They will include where appropriate options for dealing with local access as well as for the major road proposals. The options reports will be closely related to the Transport Assessment for the SRFI.

3.3 Assessment of options for routes for walking, cycling and horse riding (WCHR) will be included in the walking, cycling and horse riding assessment and review reports (see below).

3.4 Assessment of options for public transport will be included within the Transport Assessment for the SRFI.

Geometric design

3.5 Horizontal and vertical alignment design will be undertaken and presented on general arrangement, long and cross section drawings and this will be based on detailed topographical survey information. Progressing design to this level is important for understanding of land take and future highway boundaries. These will identify the departures from geometric standards that will be required for the scheme. The geometric design will also identify the footprint of the earthworks (embankments and cuttings, including any reinforced earthworks or retaining walls) required for the scheme, as well as key environmental mitigation features.

3.6 A list of departures will be compiled in order for NH and OCC to provide feedback. Whilst departures could simply be authorised by the DCO itself it is intended that applications to NH and OCC for departures from geometric standards will be made as soon as possible after they have been identified, prior to submission of the DCO. For NH this would use the Departure Approval System (DAS).

3.7 The design will also include, where appropriate, facilities for WCHR and these will be shown on the general arrangement drawings referred to above.

3.8 Drawings showing stopping up, diversion and creation of new highways, along with stopping up and creation of any private means of access, will be included with the DCO application.

Drainage

3.9 A detailed drainage strategy will be prepared for submission with the DCO application and this will include a Highways England Water Risk Assessment Tool (HEWRAT) assessment for the trunk road and motorway components of the proposals. It will take on board the findings of the environmental assessment for issues such as run off rates, impact on flood plain and spillage risk. The drainage strategy will also identify features such as swales, ponds and outfalls. The strategy will align with the flood risk assessment prepared for the overall scheme and water framework directive assessment (if required).

3.10 NH and OCC drainage networks shall be kept separate as far as is reasonably practicable.

3.11 The Environment Agency together with OCC, as Lead Local Flood Authority, will be consulted on the drainage proposals.

Geotechnical certification

3.12 Prior to submission of the DCO application it is envisaged that the Statement of Intent (SoI), Preliminary Sources Study Report (PSSR) and Ground Investigation Scope Report (GISR) will be completed to DMRB CD 622.

3.13 Based on the risks identified in the PSSR an amount of intrusive site investigation may also be carried out prior to submission to inform the Environmental Assessment and ensuring that any key risks to the deliverability of the design are understood. The aim will be to avoid any site investigation that would require extensive traffic management.

Signage and signalling

3.14 A strategy for directional signage will be developed for both local and trunk road networks, which will also confirm whether or not gantry structures are required on the M40 and/or A43. This will be agreed with NH and OCC prior to submission.

3.15 A strategy for alterations to motorway communications on the M40 will be developed including changes to existing and provision of new gantry structures as necessary.

Speed limits and Traffic regulation orders

3.16 Drawings showing any proposed changes to Speed Limits and Traffic Regulation Orders will be included with the DCO application.

3.17 The draft DCO will contain the associated powers to implement new speed limits and traffic regulation, as well as amend or revoking existing orders as necessary.

Traffic signals

3.18 LinSig will be used as the primary traffic signals design tool and the key parameters and results shall be recorded in the Transport Assessment. The level of design for M40 J10, the A43 / B4100 Baynard's Green, Ardley Bypass and OxSRFI principal site access junction will then be advanced to include the linked MOVA control strategy which will be demonstrated using a VISSIM microsimulation model with PCMOVA.

3.19 The potential need for cantilever mast or gantry mounted signals will be reviewed and if these are required they will be shown on the general arrangement drawings and considered in the Environmental Assessment.

3.20 Locations of feeder pillars and signal controllers will be established and the general arrangement drawings will show locations of maintenance hardstandings.

Street lighting

3.21 A strategy will be prepared identifying the sections of the scheme that will be illuminated and what level they will be illuminated to in accordance with BS5489-1:2020. Maximum column heights will be identified and this strategy will be used in the Environmental Assessment.

3.22 The general arrangement drawings will show locations of maintenance hardstandings.

Structures

3.23 Any new or altered structure will be categorised according to DMRB standards. Whilst approvals for the structures can be dealt with following grant of the DCO it is the intention that, with the exception of Category 0 structures, Approval in Principle documentation containing general arrangements will be issued prior to submission of the DCO application.

WCHAR process

3.24 Prior to submission of the DCO application a WCHR Assessment Report and a WCHR Review Report of the preliminary design will be carried out in accordance with DMRB GG 142 for the wider development including the highway works. This will include assessment of effects on the public rights of way network.

3.25 Drawings showing changes to public rights of way will be included with the DCO application.

Road Safety Audit

3.26 A Stage 1 Road Safety Audit will be carried out for the highway works preliminary design in accordance with DMRB GG 119.

3.27 For the avoidance of doubt the overseeing organisation for the relevant parts of the safety audit shall be the highway authority for the road as shown on the highway classification plans.

3.28 Changes in highway authority will occur at junctions and not part way along a link. Whilst different highway authorities will only officially have responsibility for their network, the RSA will be undertaken as a single RSA with both highway authorities i.e. NH and OCC involved in the process so that any safety issues at the boundaries between the highway authorities are identified and discussed between the parties. A single RSA report will be produced, but the issues related to each highway authority are recorded in separate chapters.

Maintenance and Repair Strategy (MRS)

3.29 Prior to the DCO submission a preliminary design MRS will be prepared and issued to each highway authority for the respective works in line with DMRB standard GD 304; this will be an outline document based on the information available at the preliminary design stage that will then be further developed at the detailed design stage which would follow DCO approval.

3.30 The MRS will identify where assets owned and maintained by one highway authority are located on another highway authority's highway, a potential example of this being signal assets such as ducting and loops owned by National Highways at the Baynard's Green junction being located on the B4100 local authority highway.

3.31 Maintenance hardstandings (for vehicle parking) will be shown on the highway plans.

Environmental Assessment

3.32 The Environmental Statement (ES) for the scheme will include a transport chapter with the Transport Assessment appended.

3.33 No single standard approach is to be used across the topics. Each topic will be assessed according to the methodology appropriate for that topic which will be explained in the related chapter in the ES. This is described in relation to each topic in the Scoping Report that has been submitted to PINS which is found here:

https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR050008/TR050008-000010-ORFI%20-%20Scoping%20Report.pdf

3.34 Any environmental mitigation measures that affect the highway works (noise fencing for example) will be shown on the preliminary design drawings.

Equality Impact Assessment (EqIA)

3.35 An EqIA statement shall be provided.

Construction compounds

3.36 Locations of construction compounds (where located outside of the main OxSRFI site) will be shown on the Highway Plans.

4 INTERFACE WITH OXFORDSHIRE HOUSING GROWTH DEAL IMPROVEMENTS

4.1 Changes to the A43 / M40 SB exit slip Padbury Roundabout are included in the schemes for the Oxfordshire Housing Growth Deal.

4.2 It is understood that this scheme is currently under construction (completion due February 2025). It is a committed scheme for the purposes of the assessment work being undertaken for OxSRFI. The highway proposals for OxSRFI include further changes at the Padbury Roundabout beyond those committed. Based on the expected completion date of the Growth Deal works in February 2025, there would not be any overlap between those works and the OxSRFI works.

5 INTERFACE WITH HEYFORD PARK IMPROVEMENTS

5.1 The Heyford Park development (Planning Reference 18/00825/HYBRID) was granted planning permission on 9 September 2022. The S106 Agreement for the development sets out the 'Highway Works' packages that are required to be delivered as part of the planning permission. The 'Highway Works' are summarised in the table below.

Highway Works Package	Title	Description	Heyford Park Drawing number
A	Camp Road/Chligrove Drive Junction Improvements	Signalisation junction together with bridleway crossing facilities	39304/5501/SK26, Rev I
B	Camp Road East Improvements	Works on Camp Road to provide a footway between the existing footway and Chilgrove Drive, including zebra crossing	16871-SK381 Rev B and 16871-SK380 Rev B
C	Unnamed Road Ped/Cycle and Junction Improvements	Pedestrian and cycle path adjacent to the unnamed road linking Camp Road and the B430, and signalisation of the junction of that road and the B430, incorporating crossing of the B430 for non-motorised users including equestrians	39304/5501/SK58
D	B430/Ardley Road/Bucknell Road junction in Ardley	Signalisation of the junction of the B430 /Ardley Road / Bucknell Road junction in Ardley	39304-5501-SK65
E	Hopcroft Halt Works	Widening of the B4030 western arm if Hopcroft Holt junction near Lower Heyford to provide two lane approach over approximately 140 metres and widening of the B4030 eastern arm of the junction to provide two lane approach over approximately 100 metres	S9304/5501/SK03 Rev H

5.2 There are also S106 transport related obligations associated with the Heyford Park scheme, including the following (index linked) contributions:

- Bus Service contribution (£2,179,238)
- Cycle Route contribution (£1,001,995) – towards a cycle route to link the Site with Bicester
- Local Weight Restriction Contribution (£69,697)
- M40 Junction 10 Contribution (£3,663,724)
- Public Transport Infrastructure Contribution (£25,428)

- Safety Improvements Contribution (No. 1) (£78,733) – towards safety measure at the junction of North Aston Road and A4260
- Safety improvements Contribution (No. 2) (£74,740) – towards safety measures at the junction of the A4260 and B407
- Travel Plan Monitoring Contribution (£2,478)
- Village Traffic Calming Contribution (£604,112)
- Middleton Stoney Traffic Mitigation Scheme Contribution (£1,181,087).

5.3 In addition, there is a committed highway improvement scheme at the B430 / B4030 crossroads in the centre of Middleton Stoney associated with a 2008 planning approval at the Heyford Park site.

5.4 The emerging highway access strategy for OxSRFI would alter the highway network in the vicinity of the site thought the provision of the Ardley Bypass, Middleton Stoney Relief Road and Heyford Park link road. The implications of those changes on the timing, delivery, and requirement for the Heyford Park 'Highway Works' package and will be discussed and agreed with OCC and provisions made in the DCO accordingly.

6 DESIGN PROCESS FOLLOWING THE DCO APPLICATION

6.1 It is currently envisaged that the detailed design will not commence until at least the end of the Examination process, and possibly not before the Secretary of State's Decision is announced.

6.2 The detailed design of any highway works will be in accordance with the general arrangement plans and will be audited and agreed by OCC and or NH (as appropriate) under the relevant provisions of the DCO prior to commencement of works, with all costs (including commuted sums) payable in accordance with the provisions of the DCO.

6.3 The DCO will be granted on the basis of the following plans (with associated schedules) and the subsequent technical approval process would not revisit any areas of design defined by them:

- Works plans, defining the works that are to be carried out in each area;
- Highway plans, showing general arrangements, long sections (vertical alignments), cross sections and drainage outfalls;
- Access and Rights of Way plans showing stopping up and diversion of highways & rights of way, new rights of way, stopping up and creation of private means of access;
- Highway classification plans showing classifications for new highway and changes of classification for existing highway (e.g. trunk road / principal road / classified road status, special road status etc.);
- Speed limit plans, showing new speed limits and changes to existing speed limits; and
- Traffic regulation plans; showing new traffic regulations and changes to existing traffic regulations.

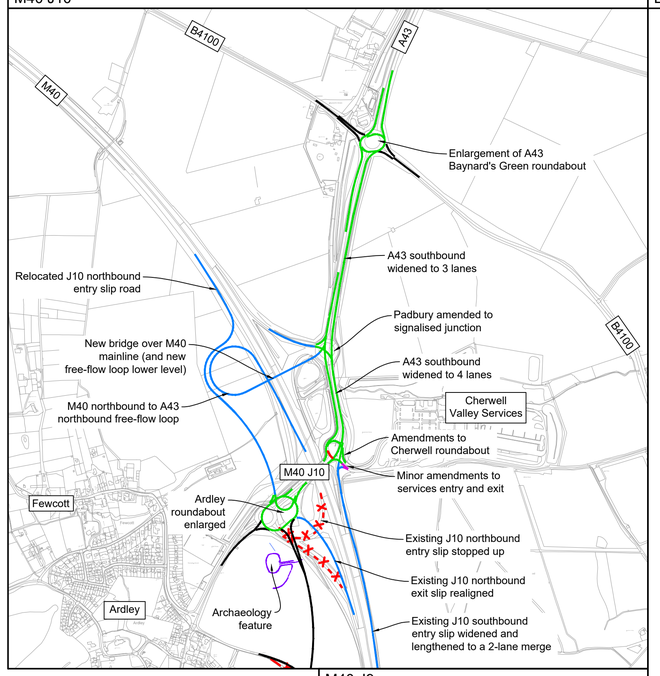
APPENDIX A

Drawing OxSRFI-BWB-GEN-XX-SK-CH-SK041

free-flow loop lower level)
A43 southbound widened to 4 lanes
M40 northbound to A43 northbound free-flow loop
Cherwell Valley Services
Amendments to Cherwell roundabout
M40 J10
Minor amendments to services entry and exit
Fewcott
Ardley roundabout enlarged
Existing J10 northbound entry slip stopped up
Existing J10 northbound exit slip realigned
Turning head
Ardley
Archaeology feature
Existing J10 southbound entry slip widened and lengthened to a 2-lane merge
Quarry cottages lane stopped up over railway, replaced by bridleway
See inset for M40 J10
Ardley Road diverted over new bypass
Turning head
Existing B430 stopped up south of Ardley, replaced with footway/cycleway/bridleway link
Upper Heyford Airfield
B430 Ardley bypass and OxSRFI link road (Single 2+1)
Segregated left turn lane on exit to direct all HGVs to J10
Bridge over Chiltern Mainline
Principal OxSRFI access
Bridge over new rail sidings
B430 signalised junction
Existing road to Heyford Park stopped up, replaced by the Heyford Park Link Road
Heyford Park
B430
Secondary OxSRFI access (buses and cyclists only)
Camp Road / Chilgrove Drive priority amendment and equestrian crossing
Junction closed and removed
Bucknell
Heyford Park Link Road
B430 Toucan crossing
Signal junctions with existing B430
No right turn from Middleton Stoney onto Relief Road
No left turn from Relief Road into Middleton Stoney
Middleton Road walking, cycling and horse-riding enhancement
B4030
Bridleway underpass
Gagle brook crossing
M40
B4030
Village gateway
Middleton Road roundabout
Middleton Stoney
Middleton Stoney crossroads pedestrian crossing improvements
Potential for 7.5T environmental weight restriction in the east side of Middleton Stoney, subject to further review.
Except for access
B4030
Bicester
B430

0 250 500 750 1000
SCALE: METRES

M40 J10



M40 J9



Legend

- Upgraded / new motorway (National Highways)
- Upgraded / new all-purpose trunk road (National Highways)
- Upgraded / new local roads (OCC)
- Private access roads
- Existing highway stopped up

Rev	Date	Details of issue / revision	Drw	Rev
P07	05.12.24	Updated to M40 J10 Option 28	SRH	SRH
P06	10.03.23	Scheme updates	SRH	SRH
P05	15.12.22	J10 amendments	SRH	SRH
P04	04.10.22	Updates following Stage 1 consultation	SRH	SRH
P03	30.03.22	Minor text amendment	SRH	SRH
P02	29.03.22	Updated following comments	SRH	SRH
P01	22.03.22	Preliminary Issue	SRH	SRH

Issues & Revisions

BWB CONSULTANCY | ENVIRONMENT INFRASTRUCTURE | BUILDINGS

Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7407 3879
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client

OXFORDSHIRE RAILFREIGHT LTD.

Project Title

OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title

HIGHWAY WORKS OVERVIEW (PHASES 1 & 2)

Drawn:	S. Hilditch		Reviewed:	S. Hilditch	
BWB Ref:	NTH2479	Date:	22.03.22	Scale@A1:	1:10,000

Drawing Status

PRELIMINARY

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-BWB-GEN-ZZ-SK-CH-SK041	S1	P07

© Copyright BWB Consulting Ltd

APPENDIX 19

TN8: M40 JUNCTION 10 OPTIONS 3A AND 3B

OXFORDSHIRE RAILFREIGHT INTERCHANGE LIMITED

TECHNICAL NOTE 8: M40 JUNCTION 10 OPTIONS 3A AND 3B

ADC Infrastructure Limited
Suite 3a, King Edward Court
King Edward Street
Nottingham
NG1 1EW

www.ADCinfrastructure.com

project number: ADC1794				report reference: ADC1794-RP-Q
version	date	lead author(s)	reviewer(s)	comments
1		[redacted]		internal draft
2	30/09/2021			draft to BWB Consulting
3	05/10/2021			issue to Transport Working Group
4	06/10/2021			issue to Transport Working Group

CONTENTS PAGE

1.0	**INTRODUCTION**	**4**
2.0	**FUTURE BASELINE AT M40 JUNCTION 10**	**5**
	Introduction	5
	Cherwell Roundabout	5
	Ardley Roundabout	6
	Summary	7
3.0	**M40 JUNCTIO0N 10 OPTION DEVELOPMENT AND CAPACITY TESTING**	**8**
	Introduction	8
	Option 3A	8
	Option 3B	11
	Summary	13
4.0	**LONG TERM PLANNING FOR M40 J10**	**15**
	Headroom	15
5.0	**GEOMETRY ISSUES AND IMPACT ON CAPACITY**	**17**
	Background and Standards	17
	Option 3A	17
	Option 3B	18
6.0	**ENVIRONMENT AND BUILDABILITY**	**19**
	Environment	19
	Buildability	19
7.0	**LOCAL ACCESS, WALKING, CYCLING AND HORSE RIDING**	**21**
	Local access issues	21
	Walking and cycling	22
8.0	**SUMMARY AND CONCLUSIONS**	**23**

DRAWINGS

OxSRFI-ADC-GEN-XX-SK-CH-SK06-S1-P1	M40 J10 Strategic Option 3A
OxSRFI-BWB-GEN-XX-SK-CH-SK024-S1-P01	M40 J10 Strategic Option 3B

APPENDICES

Appendix A	Cherwell Roundabout existing layout – revised LinSig results
Appendix B	Option 3A – LinSig results
Appendix C	Option 3B – LinSig results

1.0 INTRODUCTION

1.1 ADC Infrastructure Ltd and BWB Consulting Ltd are appointed by Oxfordshire Railfreight Ltd (the Applicant) to assess and design the transport and infrastructure requirements of a Nationally Significant Infrastructure Project (NSIP), that being a proposed Strategic Rail Freight Interchange in Oxfordshire, to be known as Oxfordshire Strategic Rail Freight Interchange (OxSRFI).

1.2 Ensuring good access to the Strategic Road Network (SRN) is a prerequisite for the proposed OxSRFI development. Initial investigations into this, and consultation with Oxfordshire County Council (OCC) and National Highways (formerly Highways England), advanced the access strategy such that it is centred on provision of significant improvements to Junction 10 of the M40 motorway, in combination with a provision of a new bypass for the village of Ardley, a new relief road around the north-east quadrant of the village of Middleton Stoney and a Heyford Park link.

1.3 The objectives of this approach are to ensure adequate capacity at M40 Junction 10 to accommodate the required access to the SRN, whilst delivering appropriate new site access infrastructure, along with aiding the delivery of planned growth and development across the wider area. Technical Note 5[1] (TN5) identified and assessed a long list of potential interventions at M40 Junction 10 that could be implemented by the OxSRFI scheme to mitigate the impact of the OxSRFI development at the junction. A short list of options was identified to be taken forward for further consideration.

1.4 As part of the extensive option testing undertaken for TN5, the option for a large single grade-separated gyratory that would replace the separate Ardley, Cherwell and Padbury junctions was considered at a high-level, which was termed Option 3. TN5 concluded that such a junction would not have sufficient capacity to accommodate the 2031 background and development traffic flows and was therefore discounted as a viable option.

1.5 However, following a meeting on the 23 of July 2021, National Highways requested that the option for a large single grade-separated gyratory (Option 3) be given further consideration to examine whether the capacity constraints could be overcome, potentially through the use of multi-lane approaches and circulatory carriageway controlled via splitter islands.

1.6 National Highways provided initial feedback on TN5 via email on 21 September 2021, including audits of the LinSig modelling which supports TN5. A full response to the TN5 feedback will be provided by National Highways in due course. However, the relevant feedback on the LinSig modelling provided in the audits has been considered and incorporated into the modelling presented within this report.

1.7 This technical note has therefore been prepared by ADC Infrastructure Ltd working jointly with BWB Consulting Ltd to consider in greater detail the opportunity to provide a large single grade-separated gyratory at M40 Junction 10.

[1] Technical Note 5 – M40 Junction 10 Options Report, report reference ADC1794-RP-M -V3, ADC June 2021.

2.0 FUTURE BASELINE AT M40 JUNCTION 10

Introduction

2.1 As discussed in TN5, the closest point of access to the SRN from the OxSRFI site is at Junction 10 of the M40, approximately 1.6km to the north of the Main Site when accessed via the B430. At Junction 10 there is also direct access to the A43.

2.2 The existing M40 Junction 10 is a grade-separated 'dumb-bell' interchange with northern (Cherwell) and southern (Ardley) roundabouts connected by two bridges close together over the M40 motorway as shown at **Figure 1**.

2.3 M40 Junction 10 was improved in 2015 using Pinch Point funding, though this was not a long-term fix and assessment work undertaken by National Highways (Highways England, as was) has identified the 2021 to 2026 time period as the tipping point for the junction.



Figure 1: M40 Junction 10

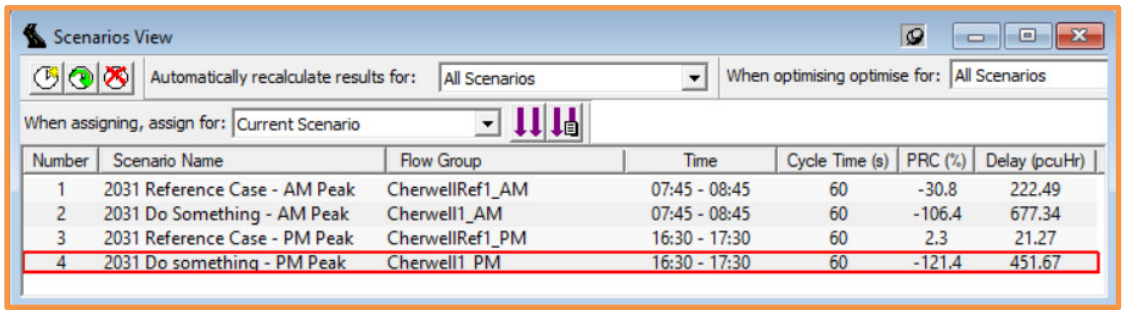
2.4 Assessment work undertaken by National Highways shows that by 2031 both the Cherwell and Ardley roundabouts will operate overcapacity. The M40 southbound on-slip at the Cherwell Roundabout breaks down due to the merge type, whereas the Ardley Roundabout breaks down because of the demand for right-turners from the M40 northbound off-slip.

2.5 TN5 presents a detailed assessment of the existing and future baseline performance of M40 Junction 10. The assessment work detailed in TN5 used 2031 forecast traffic flows for the 'reference case' (i.e. no development) and the 'do something' (i.e. with development) scenarios. The derivation of the traffic flows is detailed in Technical Note 6 (TN6).

Cherwell Roundabout

2.6 The northern section of the M40 J10 dumbbell is known as the Cherwell Roundabout. Cherwell Roundabout provides southbound access to the M40 southbound and also serves the Cherwell Valley motorway service area (MSA).

2.7 Initial feedback on TN5 was provided via email on 21 September 2021, including an audit of the LinSig modelling of the existing Cherwell roundabout. Therefore, the LinSig baseline modelling at the Cherwell roundabout has been updated to include the relevant feedback provided in the HE/Aecom audit. The results of the revised modelling are summarised below and the full model report is contained in **Appendix A**.



Number	Scenario Name	Flow Group	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2031 Reference Case - AM Peak	CherwellRef1_AM	07:45 - 08:45	60	-30.8	222.49
2	2031 Do Something - AM Peak	Cherwell1_AM	07:45 - 08:45	60	-106.4	677.34
3	2031 Reference Case - PM Peak	CherwellRef1_PM	16:30 - 17:30	60	2.3	21.27
4	2031 Do something - PM Peak	Cherwell1_PM	16:30 - 17:30	60	-121.4	451.67

2.8 As shown, in the 2031 morning peak hour the junction is forecast to operate over capacity in the Reference Case scenario, with a negative PRC of -30.8%. The A43 southbound approach is significantly saturated, with a mean maximum queue of 184.6 pcus. Once the development traffic is added, the model results show that the junction performance would deteriorate significantly as more traffic is added to the A43 southbound lane, and the demand for the right-turn to the M40 southbound on-slip is increased. In the 2031 Reference Case evening peak hour, the modelling suggest that the junction would operate acceptably with a PRC of 2.3%. However, there would be no material headroom and hence, once the development traffic is added the performance of the junction deteriorates significantly, as per the morning peak hour.

2.9 Therefore, the existing Cherwell Roundabout junction would not have the capacity to accommodate the background and development traffic in 2031.

Ardley Roundabout

2.10 The southern section of the M40J10 dumbbell is known as the Ardley Roundabout. The Ardley Roundabout is a three-arm priority controlled roundabout with the M40 Junction 10 northbound off-slip and on-slip forming the south-eastern arm. The A43 is the northern arm, bridging over the M40, and the B430 is the western arm routing through Ardley.

2.11 The existing Ardley Roundabout was modelled using the Arcady module of Junctions 9 with the 2031 Reference Case traffic flows. The results of the Reference Case assessment are summarised below (the full model report is contained in **Appendix 7** of TN5).

	AM1				AM2				PM			
	Set ID	Queue (PCU)	Delay (s)	RFC	Set ID	Queue (PCU)	Delay (s)	RFC	Set ID	Queue (PCU)	Delay (s)	RFC
	2031 Ref Case - 2031 Ref											
Arm 1	D1	1.0	5.39	0.49	D2	1.2	6.23	0.53	D3	2.3	11.69	0.69
Arm 2		1.9	4.92	0.65		2.0	4.94	0.66		0.9	3.14	0.47
Arm 3		3.6	9.99	0.76		4.8	12.08	0.81		27.5	49.53	0.99

where Arm 1 is B430, Arm 2 is A43 Bridge and Arm 3 is the M40 slips (AM2 is the relevant AM peak hour)

2.12 As shown, the roundabout is forecast to operate acceptably in the morning peak hour 2031 Reference Case scenario. However, in the 2031 Reference Case evening peak hour scenario the roundabout is forecast to operate over the design threshold of 0.85 RFC, with the M40

northbound off-slip arm of the roundabout operating with a RFC of 0.99, and a queue of 28 pcus and delay of around 50 seconds per pcu.

2.13 As the layout of the existing junction would need to be amended to accommodate the Ardley Bypass that is proposed as part of the OxSRFI highway access strategy, the operation of the existing junction has not been assessed with the Do Something traffic flows.

Summary

2.14 The above analysis demonstrates that the future baseline highway conditions at M40 Junction 10 would be such that the junctions would already be operating over capacity with the Reference Case traffic flows in 2031. Once the development traffic from the proposed OxSRFI scheme is added in the 'Do Something' scenarios, the analysis shows that these existing issues would be further exacerbated and there would be significant congestion at M40 Junction 10.

2.15 Hence, TN5 concluded that a step change in the scale and type of mitigation at the junction is required so that the background and development traffic can be accommodated satisfactorily.

3.0 M40 JUNCTIO0N 10 OPTION DEVELOPMENT AND CAPACITY TESTING

Introduction

3.1 As part of the extensive option testing undertaken for TN5, the option for a large single grade-separated gyratory that would replace the separate Ardley, Cherwell and Padbury junctions was considered at a high-level , termed Option 3. Section 6 of TN5 presents the findings of a LinSig model developed to test this option. No preliminary design work was undertaken and the LinSig model was based upon typical geometry found at such junctions, using the current junction geometries as a proxy.

3.2 TN5 concluded that such a junction would not have sufficient capacity to accommodate the 2031 background and development traffic flows and was therefore discounted.

3.3 However, following a meeting on the 23 of July 2021, National Highways requested that the option for a large single grade-separated gyratory be given further consideration, to examine whether the capacity constraint could be overcome.

3.4 To undertake a more detailed appraisal of a large single grade-separated gyratory and establish its ability to accommodate both the forecast background traffic flows and the proposed development traffic flows, a two-stage approach has been followed.

3.5 Firstly, an option has been considered which seeks to maximise the capacity of the gyratory. The development of this option was undertaken to establish the parameters (number of lanes on each approach, storage capacity of circulating links, flared lane lengths etc) required to achieve a junction that would operate within capacity. This option is referred to as Option 3A.

3.6 Once Option 3A had been satisfactorily developed, the geometric requirements of DMRB CD 116 were applied to the design with the necessary amendments made to demonstrate a geometrically compliant junction. This option is referred to as Option 3B.

3.7 The geometric compliance of Options 3A and 3B are discussed in detail in Section 5 of this Technical Note. The results of the capacity assessments for both options are discussed in this section.

Option 3A

Design considerations – existing bridges

3.8 An early consideration in the development of Option 3A was whether the existing bridges at M40 Junction 10 could be reused. An option to link the existing bridges was dismissed as they are both very different types of construction and it is not considered feasible to link them due to their differing material types, and age, as shown on **Figure 2**.

3.9 The remaining options that could be considered for the existing bridges were as follows:

- Utilise both existing bridges in the southbound circulating carriageway; and
- Widen the south bridge to the south to the add extra lanes by adding additional beams and widening the deck for the southbound circulating carriageway.

3.10 Both options would require a new bridge for the northbound circulating carriageway.



Figure 2: photo showing construction of existing bridge decks

3.11 To utilise both existing bridges in the circulating carriageway, a large number of splitter islands would be required, resulting in a very complex and potentially confusing layout at the MSA node, as shown on the screenshot at **Figure 3**. The number of islands would likely create maintenance issues and the layout would also lead to difficulties when considering walking and cycling connection to the MSA. Hence, this configuration for reusing the existing bridges was dismissed in favour of reusing only the southern bridge, which would need to be widened.



Figure 3: sketch layout utilising both existing bridge decks for southbound circulatory carriageway

Design considerations – A43 southbound entry

3.12 Whilst strictly adhering to the requirements of DMRB was not the priority when developing Option 3A, some consideration of entry path curvature was made. Hence, it was evident early in the process that the alignment of the A43 would be a major constraint in this regard. To the northeast of the M40 Junction 10, the A43 runs almost perpendicular to the motorway and with

little separation, such that it becomes very difficult to develop a suitable entry path whilst also developing the large number of entry and exit lanes required on this approach.

3.13 The high-level assessment work undertaken for the large single grade-separated gyratory option 3 in TN5 assumed that the separation between the A43 southbound approach and the MSA entry would be similar to the existing Cherwell roundabout geometry. Therefore, the circulating link lengths between these nodes in the TN5 modelling were relatively short, with very little storage capacity which meant A43 entry green times had to be limited to prevent excess queuing. Therefore, the Option 3A design work sought to maximise the storage capacity between these nodes, and also between the M40 southbound off-slip and the A43 approach.

Option 3A capacity assessment

3.14 The iterative capacity assessment and design work for Option 3A was concluded and the layout is shown at **drawing number OxSRFI-ADC-GEN-XX-SK-CH-SK06-S1-P1**. The assessment work concluded that all arms of the junctions would require signalisation and both the M40 northbound and southbound off-slips would require four lanes, with the A43 and Ardley Bypass Road approaches requiring five lanes.

3.15 The circulating carriageway would have a minimum of three lanes across both bridge decks, with four-lane sections at the A43 and Ardley Bypass nodes and a five-lane section between the A43 and MSA nodes.

3.16 A screen shot of the LinSig model structure is provided at **Figure 4**.

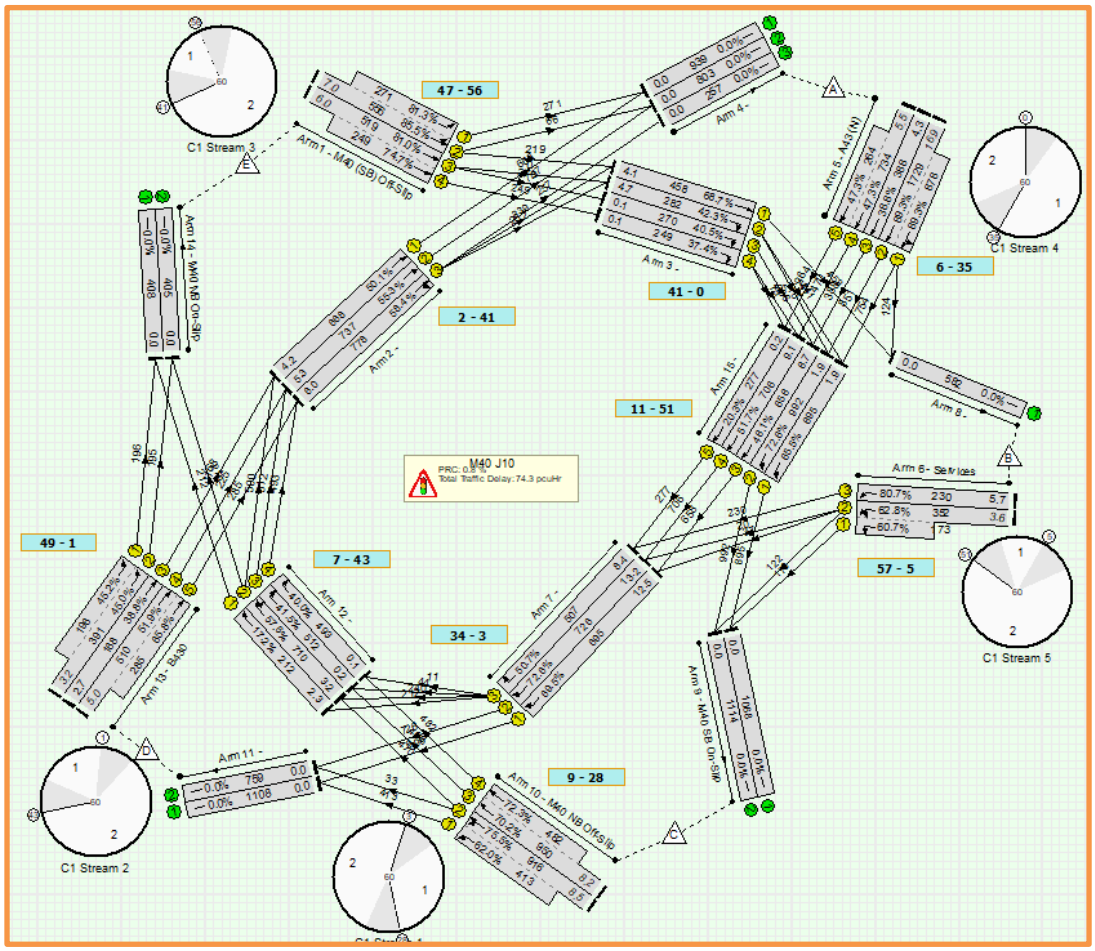
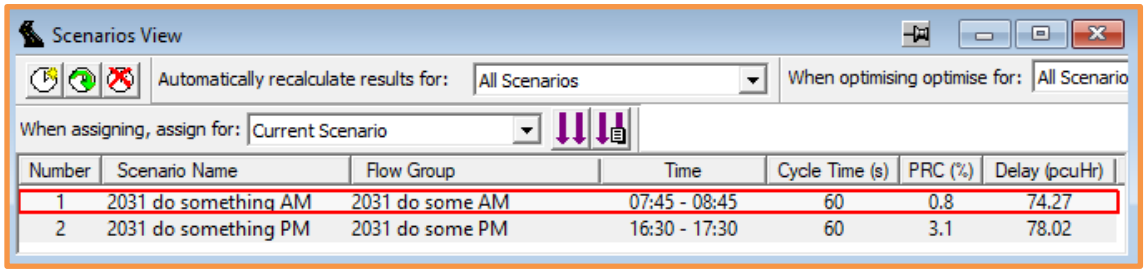


Figure 4: lane/link structure of Option 3A

3.17 Option 3A has been modelled using LinSig and the 2031 Do Something morning and evening peak hour traffic flows (Diagrams 63 and 64 at Appendix D of TN6). To reflect the early optioneering stage of the process, 'directly entered' saturation flows of 2,000 pcus/hour have been used for all entry lanes. Further, based on the advice provided in the feedback on the TN5 modelling, the saturation flows for all circulating lanes have also been set to 2,000 pcus/hour. The results are summarised below and the full model report is contained in **Appendix B**.



Number	Scenario Name	Flow Group	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2031 do something AM	2031 do some AM	07:45 - 08:45	60	0.8	74.27
2	2031 do something PM	2031 do some PM	16:30 - 17:30	60	3.1	78.02

3.18 The results show that, in principle, the Option 3A junction arrangement would operate acceptably in the morning and evening peak hours for 2031 Do Something scenario. In the morning peak hour the PRC would be 0.8%, with the A43 southbound approach operating at 89.3% saturated and the M40 southbound off-slip at 85.5% saturated. The other approaches to the junction are shown to operate comfortably. All internal queueing could be acceptably accommodated, though queuing on the A43 circulatory is at the limit of what could be accommodated before exit blocking occurs. This particular internal queue does create an issue from a geometrical standpoint, and this is discussed in more detail later in this Technical Note.

3.19 In the evening peak hour, the PRC would be 3.1%, with the A43 southbound approach operating at 87.3% saturated and the M40 southbound off-slip at 84.3% saturated. The other approaches to the junction are shown to operate comfortably. As per the morning peak hour, all internal queueing could be acceptably accommodated, though queuing on the A43 circulatory is again at the limit of what could be accommodated before exit blocking occurs.

3.20 As discussed above, whilst the Option 3A layout is shown to operate with a positive PRC, there is very little additional headroom at the junction, with the A43 and M40 southbound off-slip approaches being close to their maximum capacity. The limiting factors for these nodes is the very high flow from the A43 to the M40 southbound (1,729 pcus in the morning peak, 1,046 pcus in the evening peak) and the large 'right-turn' movement towards the MSA and the M40 southbound exits from the new Ardley Bypass (521 pcus in the morning peak, 740 pcus in the evening peak). This right-turn movement must run into a red at the A43 circulatory and therefore it becomes extremely difficult to balance the green time requirement of the large A43 flow against the queue on the circulating carriageway due to the 'right-turn'.

3.21 Since it would not be possible to provide three lanes on the M40 southbound exit, there is no scope to further resolve this issue and therefore the PRC demonstrated by this assessment represents the best-case scenario under these flow sets.

Option 3B

3.22 The work undertaken to develop Option 3A demonstrated the scale of the junction required in terms of the number of lanes, flared lane lengths and internal storage capacity that would be required. This layout was then used as the basis for Option 3B which was amended so that it would be compliant with the requirements of DMRB CD 116. The resulting layout is shown at **drawing number OxSRFI-BWB-GEN-XX-SK-CH-SK024-S1-P01**.

3.23 A detailed discussion on the requirements of DMRB and the implications for the junction arrangement is provided at Section 5 of this Technical Note. In summary, the key changes to the layout in order for it to comply with the requirements of DMRB CD116 are as follows:

- Only four lanes can be provided on the A43 approach.
- Only three lanes can be provided on the M40 southbound and northbound diverges.
- Reduction in the storage capacity on the A43 circulating carriageway.

3.24 A screen shot of the LinSig model structure is provided at **Figure 5**.

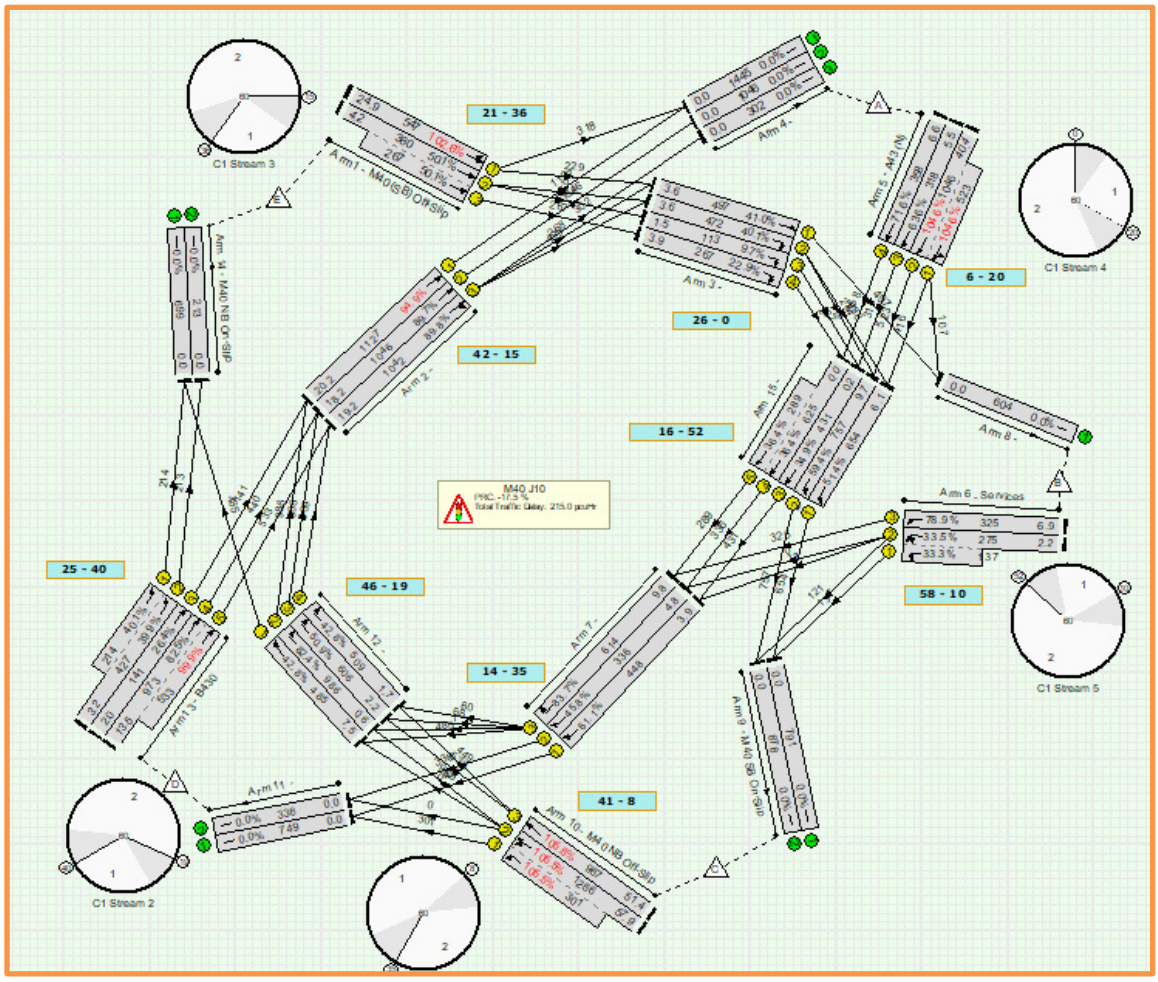
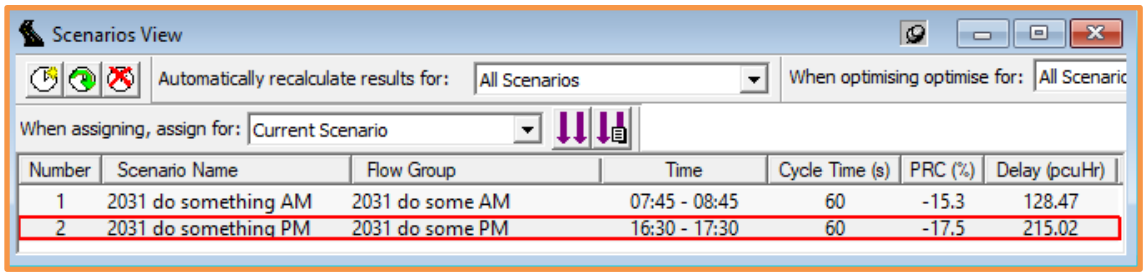


Figure 5: lane/link structure of Option 3B

3.25 Option 3B has been modelled using LinSig and the 2031 Do Something morning and evening peak hour traffic flows (Diagrams 63 and 64 at Appendix D of TN6). The results are summarised below and the full model report is contained in **Appendix C**.



Number	Scenario Name	Flow Group	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2031 do something AM	2031 do some AM	07:45 - 08:45	60	-15.3	128.47
2	2031 do something PM	2031 do some PM	16:30 - 17:30	60	-17.5	215.02

3.26 The results show that the Option 3B junction arrangement would not operate acceptably in the morning and evening peak hours for 2031 Do Something scenario. In the morning peak hour,

the PRC would be -15.3%, with the A43 southbound approach operating at 103.8% saturated, with the reduced storage capacity on the circulating carriageway (when compared to the Option 3A layout) impacting on the available green time for the A43 approach.

3.27 In the evening peak hour, the PRC would be -17.5%, with the A43 southbound approach operating at 104.6% saturated, the M40 southbound off-slip would be 102.6% saturated and the M40 northbound off-slip would be 105.8% saturated. As for the morning peak hour, the reduced storage capacity on the circulating carriageway reduces the available green time for the A43 approach, whilst the capacity issue on both M40 off-slip approaches is due to the reduction in lanes (when compared to the Option 3A layout).

3.28 The model results for the Option 3B layout show that it is not possible to accommodate the internal queueing on the A43 circulatory, with the excess queue limit exceeded in both the morning and evening peak hours which would cause the A43 exit to block. **Figure 6** below shows the storage capacity is on this part of the circulating carriageway. As can be seen on **Figure 6**, right-turning vehicles wishing to exit at the MSA or the M40 southbound are likely to struggle to enter the circulating lanes, with a queueing HGV likely to block both lanes. Whilst a fourth lane on the bridge allocated for right-turning traffic only may ease this issue, it is unlikely to completely resolve it. Option 3A also suffers from the same problem, though it is not shown to be as severe, with the requirement for a splitter island on the A43 approach effectively halving the storage capacity on the circulating carriageway.

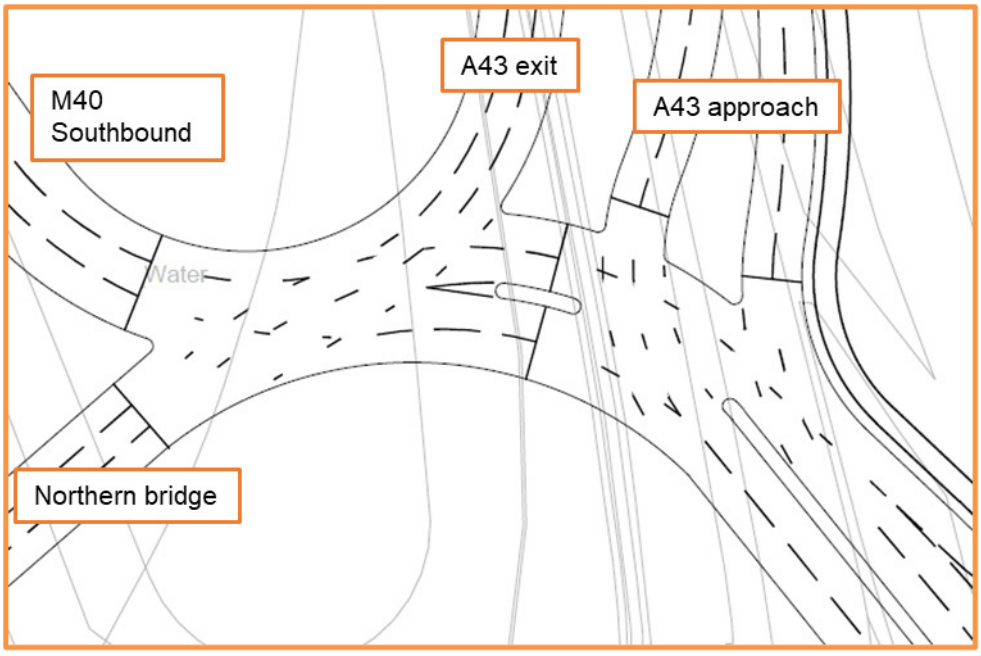


Figure 6: Option 3B A43 and M40 SB off-slip nodes

3.29 The design team consider that the capacity problems on the M40 northbound and southbound approaches could be resolved if a fourth lane could be added to both bridges. Whilst this would be possible in principle for the northern bridge, further investigation would be required for the southern bridge. However, this would not resolve the capacity issues on the A43 approach, which would remain.

Summary

3.30 The above analysis demonstrates that when solely focused on maximising the capacity of the junction, a sufficient number of lanes could be provided such that the junction would operate acceptably with the OxSRFI development in place. However, it is noted that such an

arrangement would not provide any material additional headroom at the junction, with the A43 and M40 southbound off-slip approaches being close to their maximum capacity.

3.31 However, when the geometrical requirements of DMRB CD 116 are applied to the junction arrangement, particularly the requirements for entry path curvature and entry width, the required number of entry lanes cannot be provided on the A43 approach and both M40 diverge approaches. The constrained geometry significantly effects capacity on these approaches, with the junction operating above with negative PRC in both the morning and evening peak hours.

3.32 There are also significant concerns regarding the potential for queuing on the circulating carriageway which could block the A43 northbound exit.

4.0 LONG TERM PLANNING FOR M40 J10

Headroom

4.1 The table below provides a comparison between the forecast capacity at the existing M40 Junction 10 (no OxSRFI development) with the forecast capacity at the junction under Options 3A, 3B, 11, 13, 18 and 19 with the OxSRFI development in place. Reference to TN5 should be made for details of Options 11, 13, 18 and 19.

Existing		Option 3A	Option 3B	Option 11/18		Option 13/19	
Cherwell (PRC)	Ardley (RFC)	Total (PRC)	Total (PRC)	Cherwell (PRC)	Ardley (PRC)	Cherwell (PRC)	Ardley (PRC)
-30.8% AM 2.3% PM	81% AM 99% PM	0.8% AM 3.1% PM	-15.3% AM -17.5% PM	21.7% AM 5.6% PM	13.3% AM 0.5% PM	21.7% AM 5.6% PM	4.5% AM 22.5% PM

4.2 As shown in the table above, the existing Cherwell and Ardley junctions would be over capacity in 2031 and would therefore require significant improvement to facilitate background growth to 2031 and the proposed development. The table also demonstrates that even compared to the best-case option for a single grade separated junction, the identified Options 11, 13, 18 and 19 offer headroom to accommodate future growth.

Future adaptability

4.3 As discussed in Section 3, Option 3A seeks to maximise the capacity for a single large grade separated junction. Under this option the initial modelling results suggest that the junction would operate acceptably in 2031 with the development in place, but with no material headroom. Option 3B then applies the geometrical requirements of DMRB CD 116 and the capacity of the junction significantly reduces such that the junction would suffer from congestion. Whilst it may be possible to agree some departures that would 'buy-back' some capacity and give performance levels similar to Option 3A, the end result is likely to be a junction that still operates at or above capacity.

4.4 Further, given the outcome of the Option 3A assessment work and the geometrical constraints, it is unlikely that a single grade separated junction could be improved again in the future to accommodate additional growth.

4.5 The predominant traffic flows at M40 Junction 10 are the flows travelling between the A43 and M40 and vice versa. Based on the 2031 Do Something traffic flows, the A43 southbound to M40 southbound movement would represent approximately 22% of the overall traffic flow at the junction in both the morning and peak hour period and 14% in the evening peak hour period. The M40 northbound to A43 northbound movement represent approximately 16% and 24% of the overall traffic flow at the junction in the morning and evening peak hour period, respectively.

4.6 Therefore, given the limitations of a single large grade separated junction outlined above, the most appropriate long-term solution for this part of the strategic road network is to remove traffic from the junction through the provision of free-flow links between the A43 and the M40 in both directions. This would remove some 38% of traffic from the junction during the morning and evening peak hour periods. Implementation of these free-flow links, if both were provided would:

- Bring about a significant reduction in journey times on these two key movements as they would not have to go through any junction;
- Provide a step change increase in capacity at the junctions, providing headroom to facilitate long-term growth as well as improving local connectivity by removing a significant amount of SRN traffic from the junction.

4.7 OxSRFI Options 11, 13, 18 and 19 all provide a free-flow connection from the A43 Southbound to M40 Southbound, which would achieve the above benefits in part.

4.8 Provision of a free-flow connection from the A43 Southbound to M40 Southbound would not be possible under Option 3A or Option 3B. As discussed at paragraph 5.10 of TN5, an extended auxiliary lane merge would be needed for the free flow link and hence it would not then be possible to retain the existing slip road and existing merge as they would be in the same location.

4.9 Options 11, 13, 18 and 19 could therefore be the first step to providing free-flow connections in both directions. In that regard, Options 11 and 18 would help to facilitate the future implementation of the M40 to A43 northbound free-flow link as they would change the position of the M40 northbound entry slip road, which in turn would then create space for a northbound free-flow link.

4.10 The future adaptability of Options 3A, 3B, 11, 13, 18 and 19 is summarised in the table below.

Option 3A/3B	Option 11/18	Option 13/19
Very restricted scope for further capacity enhancements	A43SB to M40SB Free flow connection provides step change, M40 NB slip road realigned to create space for a future M40NB to A43NB free flow connection	A43SB to M40SB Free flow connection provides step change

4.11 Therefore, for the reasons discussed above the design team consider that the proposed OxSRFI Options 11, 13, 18 and 19 offer significant long-term benefit over a large complex signal controlled multi-lane roundabout as shown in Options 3A or 3B.

5.0 GEOMETRY ISSUES AND IMPACT ON CAPACITY

Background and Standards

5.1 When DMRB CD 116 superseded TD 16/07, TD 50/04 and other standards in 2019, it became the standard for design of all roundabouts including large, signalised roundabouts.

5.2 While TD 50/04 only required signalised roundabouts to conform to the geometric requirements of TD16 (the previous standard for the geometric design of roundabouts) where an arm operated in a self-regulating (i.e., un-signalled) manner at any time, CD 116 paragraph 2.5 states that signal controlled roundabouts shall be designed using the requirements for normal roundabouts, without the clarification of its predecessor with respect to self-regulating elements.

5.3 This means that a signalised roundabout must comply with the requirements for, among other things:

- Entry Width
- Entry Path Deflection

5.4 Entry width is limited to 15m by paragraph 3.13 of CD 116. For larger signalised roundabouts, it is often necessary to provide numerous entry lanes and paragraph 4.6 of CD 116 covers a key requirement that the design of a signal-controlled roundabout shall allow for the swept turning paths of the design vehicle on all entry, circulatory and exit lanes.

5.5 In practice, this means that it is not possible to provide an entry wider than three lanes which will meet both the swept path and entry width requirements without introducing splitter islands.

5.6 Numerous lanes on entry necessarily translate to numerous lanes on the circulatory carriageway. The combination of these factors means that the size of the roundabout must be significantly increased in order to generate the necessary deflection on the entry path to achieve an entry path radius of 100m or less.

5.7 There is also a point at which it becomes impossible to achieve compliant entry path deflection regardless of the size of the roundabout. This is because of the number of lanes on the circulatory and entries which will always create a path that is greater than 100m radius. This point occurs when the circulatory carriageway is around 5 to 6 lanes wide.

5.8 To produce a design that is geometrically compliant with the requirements of CD 116, it is necessary (and indeed recommended by CD 116) to introduce traffic islands on the entries and circulatory carriageway.

5.9 These traffic islands break up the flows on the entry arms and provide multiple, narrower entries to the roundabout. On the circulatory carriageway, they provide segregation of flows and enable compliant entry path deflection to be achieved.

Option 3A

5.10 Option 3A demonstrates a large, signalised roundabout that is within the capacity requirements for the junction but which does not meet the geometric requirements of CD 116.

5.11 There is little to no entry path deflection and entry widths exceed the maximum in a number of cases.

5.12 This option would require the approval of a number of departures from standard and the designers' view is that these would be difficult to justify given that it is possible to present alternative, compliant layouts.

5.13 The wide approaches and circulatory carriageway with numerous lanes may also be confusing to drivers (especially if road markings are less clear after wearing) with a risk of lane changing and side swipe collisions introduced. It may also be challenging to provide traffic signals in positions where they would not be obscured by high sided vehicles.

Option 3B

5.14 Option 3B demonstrates a geometrically compliant junction. This has seen the introduction of traffic islands on the approaches from the A43 to the north and the proposed link road to the south. In addition there are traffic islands within the circulatory carriageway to segregate traffic flows and ensure compliant entry path deflection is achieved.

5.15 The capacity of the junction has been reduced through the reduction of entry lanes to comply with the standards as follows:

- M40 SB diverge and M40 NB diverge arms are reduced from 4 lanes to 3. Whilst these lanes can be made to work in terms of entry path, the restrictions on entry width (15m) mean that 4 lanes would not accommodate swept paths of large vehicles.
- A43 SB entry arm is reduced from 5 lanes to 4 (2 lots of 2 lanes) as the entry path deflection does not work for 5 lanes.

5.16 While geometrically compliant, this option presents numerous safety and operational issues. The traffic islands are substantial in length due to the entry path beginning 50m from the stop line. This means that advance signage will be crucial to ensure that people are in the correct lane well in advance of the junction.

5.17 The introduction of physical islands on the approaches presents the risk of vehicles changing lanes at late notice, potentially causing side swipe collisions as drivers may not expect lanes to be physically separated on the approach to such a roundabout.

5.18 Islands on the circulatory, especially where a single lane feeds numerous destinations, increases the risk of vehicles trying to perform manoeuvres to change lanes that are not permitted and may result in collisions. Such arrangement are difficult to sign and require a driver to make a decision much earlier than they may otherwise consider necessary.

5.19 In addition, and as discussed in Section 6 of this Technical Note, Option 3B would involve construction within an area of flood plain to the north, which would likely require compensation works.

5.20 The capacity of Option 3B could also be improved through a limited number of departures from entry width and entry path deflection requirements, especially at the M40 northbound and southbound diverges.

5.21 These further options have not been presented as even should the necessary departures be approved, such alternative layouts would still have the same issues with regards to safety and operation and while within the required capacity for the junction (best case as per Option 3A), would not provide any additional headroom for the future.

6.0 ENVIRONMENT AND BUILDABILITY

Environment

6.1 The key environmental constraints in relation to Option 3A and 3B are as follows:

- Watercourse and associated floodplain; and
- Woodland between J10 and the MSA.

6.2 The floodplain and watercourse is shown in **Figure 7** below. Both Options 3A and 3B are likely to impact the floodplain and compensation floodplain would be required. The area of the previous M40 southbound slip road is likely to be the most suitable location for this.

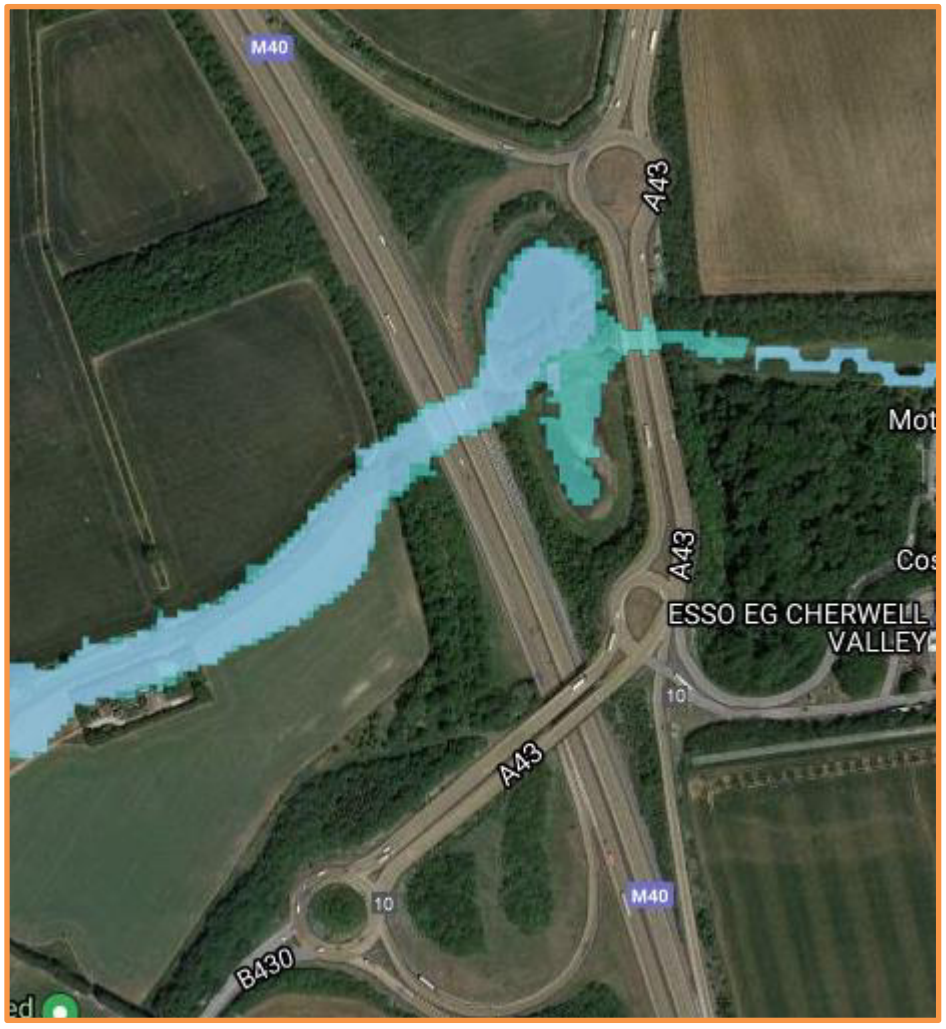


Figure 7: watercourse and floodplain at J10

6.3 Options 11 and 18 would require a new road link across the floodplain west of the M40, at this point the floodplain is narrower and there is land available to provide compensation floodplain.

6.4 Options 3A and 3B as currently drawn would have a significant impact on the woodland between J10 and the MSA.

Buildability

6.5 The current arrangement at Junction 10 is a dumb-bell roundabout junction with two M40 overbridges close together between the roundabouts. Both bridges carry two lanes of traffic.

Given the proposed layout of Options 3A and 3B, it will not be possible to utilise both of these bridges on the circulatory carriageway.

6.6 Instead, the northern bridge would require removing and the southern bridge widening to accommodate the three lanes of traffic required over the M40 on the southern side of the junction.

6.7 A new overbridge would be required to the north as well as new slip roads.

6.8 Given that Options 3A and 3B are significantly different from the current arrangement at junction 10, this provides some advantage with respect to construction phasing and disruption, with a large part of the proposed junction buildable offline with minimal disruption to the existing junction. Traffic could then be switched to the new section while the existing bridges are removed and widened.

6.9 However, both Options 3A and 3B pose a significant challenge to the A43. The Padbury roundabout is currently at a similar level to the existing M40 mainline. The new northern bridge in Options 3A and 3B would need to connect to the existing A43 a significant amount above the existing road level. This will result in a significant length of the existing A43 needing to be realigned vertically to connect to the new bridge and given that it is a high speed road the extent of realignment would extend a significant distance to the north of the reconfigured junction.

6.10 Vertical realignment of the existing A43 over such a distance would be very challenging and would likely require either a full closure for a considerable period (if both carriageways were amended at the same time), or a contraflow for an even longer period to realign the two carriageways at different times. Both options would be extremely disruptive to the SRN.

7.0 LOCAL ACCESS, WALKING, CYCLING AND HORSE RIDING

Local access issues

7.1 As well as providing for strategic road traffic between the M40 and A43, M40 Junction 10 is the local junction on the M40 for access to Ardley, Heyford Park, and, via the Baynard's Green roundabout, the northern side of Bicester. M40 Junction 10 is also the junction for the Cherwell Valley MSA.

Ardley

7.2 Options 3A or 3B would only provide for one road connection to the west of the signalised roundabout and to facilitate the OxSRFI development, this would have to be the Ardley Bypass. Hence unlike Options 11, 13, 18 and 19, Options 3A and 3B would sever the local connection into Ardley along the existing B430 from Junction 10. This would mean that access to Ardley would need to be taken from the Ardley East roundabout on the Ardley Road that runs between Ardley and Bucknell.

7.3 Ardley Road is a minor local road and this would clearly see a significant increase in traffic between the bypass and Ardley village, requiring the road to be improved to accommodate the increased traffic and cater for non-motorised traffic (see below). Further, the junction between Ardley Road and the existing B430 may need to be improved/reconfigured as the Ardley Road east-west direction would become dominant flow.

Bucknell

7.4 Provision of Options 3A or 3B, together with the Ardley East junction on Ardley Road, would see the Ardley Road and Bicester Road route become the most direct route between Bicester and M40 Junction 10, although the North West Bicester development works would make this route less attractive. Whilst the traffic modelling would need to be run to confirm the impact in Bucknell, it would stand to reason that Options 3A or 3B could increase traffic flows through the village due to the enhanced connectivity around Junction 10.

7.5 This same issue is likely to be the case with Options 11 or 13, hence why Options 18 and 19 are also being investigated.

Cherwell Valley MSA

7.6 Options 3A or 3B would provide direct access to the MSA from the signalised roundabout. For M40 users this would mean that access to the MSA would be from the single large junction once leaving the motorway.

7.7 Options 11, 13, 18 and 19 would require road users to use several individual junctions to use the MSA as follows:

Direction	Access to MSA	Exit from MSA
M40 Southbound	Via Padbury and Cherwell junctions (as existing)	Via Cherwell, Ardley and Ardley East (two additional junctions)
M40 Northbound	Via Ardley East, Ardley, Cherwell (one extra junction)	Via Cherwell and Ardley (as existing)

Direction	Access to MSA	Exit from MSA
A43 Southbound	Via Padbury and Cherwell junctions (as existing but with a simplified Padbury junction)	n/a
A43 Northbound	n/a	Via Cherwell and Padbury junctions (as existing but with a simplified Padbury junction)

7.8 The modelling results presented in Section 3 of this Technical Note show that a DMRB compliant single large grade-separated junction would not operate with sufficient capacity to cater for the background and proposed development traffic in 2031. Further, it is unlikely that any material additional capacity could be provided at a single junction to cater for future long-term growth. Hence, ongoing issues of congestion, queueing and delay are likely to impact on the accessibility of the MSA and its attractiveness to drivers as a suitable facility.

7.9 The design team is aware that MSAs accessed from similar large, signalised roundabouts can suffer acute congestion at times – the notable examples being on the M5 at Gordano (J19) and M11 at Birchanger (J8). Hence the step change in capacity created by options 11, 13, 18 and 19 would be of significant long-term benefit to the MSA.

Walking and cycling

Connectivity through Junction 10

7.10 Potential facilities for pedestrian and cycle connectivity for Option 3A and Option 3B are shown on **drawing number OxSRFI-ADC-GEN-XX-SK-CH-SK06-S1-P1** and **drawing number OxSRFI-BWB-GEN-XX-SK-CH-SK024-S1-P01**, respectively. Both schemes could provide a link between Ardley and the MSA from the existing B430 and providing a footway/cycleway connection along the southern side of the widened bridge, with Toucan crossings facilities.

7.11 Whilst not currently shown on drawings presented in TN5, pedestrian and cycle connectivity through Junction 10 could be provided under options 11, 13, 18 and 19 in much the same way as for Options 3A and 3B. Hence, there would be no material difference in the provision of safe, direct connectivity under any of the options under consideration.

Ardley Road

7.12 As noted above, for Options 3A and 3B, Ardley Road between the proposed Ardley Bypass and Ardley would become the primary route into Ardley from the M40, A43 and B430. Ardley Road currently functions as a local road between local areas and is relatively lightly trafficked making it suitable for cyclists. Using Ardley Road as the principal access to Ardley would therefore have a negative impact on cyclists that would need to be addressed.

8.0 SUMMARY AND CONCLUSIONS

8.1 ADC Infrastructure Ltd and BWB Consulting Ltd are appointed by Oxfordshire Railfreight Ltd (the Applicant) to assess and design the transport and infrastructure requirements of a Nationally Significant Infrastructure Project (NSIP), that being a proposed Strategic Rail Freight Interchange in Oxfordshire, to be known as Oxfordshire Strategic Rail Freight Interchange (OxSRFI).

8.2 As part of the ongoing work to define the access and mitigation strategy for the proposed development, Technical Note 5 was prepared by ADC Infrastructure Ltd and BWB Consulting Ltd, considering 19 different potential interventions at M40 Junction 10 that could be implemented by the OxSRFI scheme to mitigate the impact of the development. A short list of four options were identified (Options 11, 13, 18 and 19), with the option for a single large grade-separated junction (Option 3) being discounted on capacity grounds.

8.3 However, National Highways requested that the option for a large single grade-separated gyratory be given further consideration to examine whether the capacity constraints could be overcome.

8.4 The assessment of the future baseline position at M40 Junction 10 demonstrates that the Cherwell and Ardley roundabouts that form M40 Junction 10 would already be operating over capacity in 2031 without the OxSRFI development. Once the development traffic from the proposed OxSRFI scheme is added, the analysis shows that these existing issues would be further exacerbated and there would be significant congestion at M40 Junction 10.

8.5 A two-stage approach has been followed to further consider a large single grade-separated gyratory at M40 Junction 10, resulting in two options; Option 3A which seeks to maximise capacity and Option 3B which applies the requirements of DMRB CD 116 to the Option 3A layout.

8.6 The analysis of the resulting layouts demonstrates that when solely focused on delivering the required capacity, a junction of sufficient size could be provided such that the junction would operate acceptably with the OxSRFI development in place. However, such an arrangement would not provide any material additional headroom, with the A43 and M40 southbound off-slip approaches being close to their maximum capacity. There are also concerns regarding the potential for queuing on the circulating carriageway to block the A43 northbound exit.

8.7 When the geometrical requirements of DMRB CD 116 are applied to the Option 3A arrangement, particularly the requirements for entry path curvature and entry width, the required number of entry lanes cannot be provided on the A43 approach and both M40 diverge approaches. The constrained geometry significantly effects capacity on these approaches, with the Option 3B junction operating above capacity in both the morning and evening peak hours. The concerns regarding the potential for queuing on the circulating carriageway to block the A43 northbound exit are exacerbated by Option 3B.

8.8 Whilst it may be possible to agree some departures for Option 3B that would 'buy-back' some capacity and give performance levels similar to Option 3A, the end result is likely to be a junction that operates at or above capacity. Further, given the outcome of the Option 3A assessment work and the geometrical constraints, it is unlikely that a single grade separated junction could be improved again in the future to accommodate additional growth.

8.9 The predominant traffic flows at M40 Junction 10 are the flows travelling between the A43 and M40 and vice versa. Based on the 2031 Do Something traffic flows, the A43 southbound to M40

southbound movement would represent approximately 22% of the overall traffic flow at the junction in both the morning and peak hour period and 14% in the evening peak hour period. The M40 northbound to A43 northbound movement represent approximately 16% and 24% of the overall traffic flow at the junction in the morning and evening peak hour period, respectively.

8.10 Given the limitations of a single large grade separated junction outlined above, and the predominant traffic flows, the design team consider that the most appropriate long-term solution for this part of the strategic road network is to remove traffic from the junction through the provision of free-flow links between the A43 and the M40 in both directions.

8.11 OxSRFI Options 11, 13, 18 and 19 (identified in Technical Note 5) all provide a free-flow connection from the A43 Southbound to M40 Southbound, removing significant traffic from M40 Junction 10 and hence delivering headroom for future growth. Provision of a free-flow connection from the A43 Southbound to M40 Southbound would not be possible under Option 3A or Option 3B.

8.12 In contrast with the large complex signal controlled multi-lane roundabout, Options 11, 13, 18 and 19 would therefore be the first step to providing free-flow connections in both directions. Further, options 11 and 18 would help to facilitate the future implementation of the M40 to A43 northbound free-flow link as they would change the position of the northbound entry slip road, which in turn would then create space for a northbound free-flow link.

8.13 The key environmental constraints are considered to be:

- Both Options 3A and 3B are likely to impact the floodplain and compensation floodplain would be required.
- Options 3A and 3B would have a significant impact on the woodland between J10 and the MSA.

8.14 In terms of buildability, Options 3A and 3B are significantly different from the current arrangement at Junction 10 which would allow a large part of the proposed junction to be built offline with minimal disruption to the existing junction. Traffic could then be switched to the new section while the existing bridges are removed and widened. However, both Options 3A and 3B pose a challenge to the A43. The new northern bridge in Options 3A and 3B would need to connect to the existing A43 a significant amount above the existing road level. This will result in a large length of the existing A43 needing to be realigned vertically to connect to the new bridge.

8.15 Vertical realignment of the existing A43 over such a distance would be very challenging and would likely require either a full closure for a considerable period, or a contraflow for an even longer period to realign the two carriageways at different times. Both options would be extremely disruptive to the SRN.

8.16 In terms of local access, whilst the Option 3A and 3B layouts offer some minor advantages in terms of access to the MSA, there are wider concerns regarding access to Ardley and Bucknell, with Ardley particularly affected as a direct connection to M40 Junction 10 would not be possible, with access switching to Ardley Road and the new bypass.

8.17 Therefore, for the reasons discussed above the design team consider that the proposed OxSRFI Options 11, 13, 18 and 19 offer significant long-term benefit over a large complex signal controlled multi-lane roundabout as shown in Options 3A or 3B.

DRAWINGS



Rev	Description	Date

Client:

Oxfordshire Rail Freight Interchange Ltd

Project:

OxSRFI
OXFORDSHIRE
STRATEGIC RAIL FREIGHT INTERCHANGE

Title:

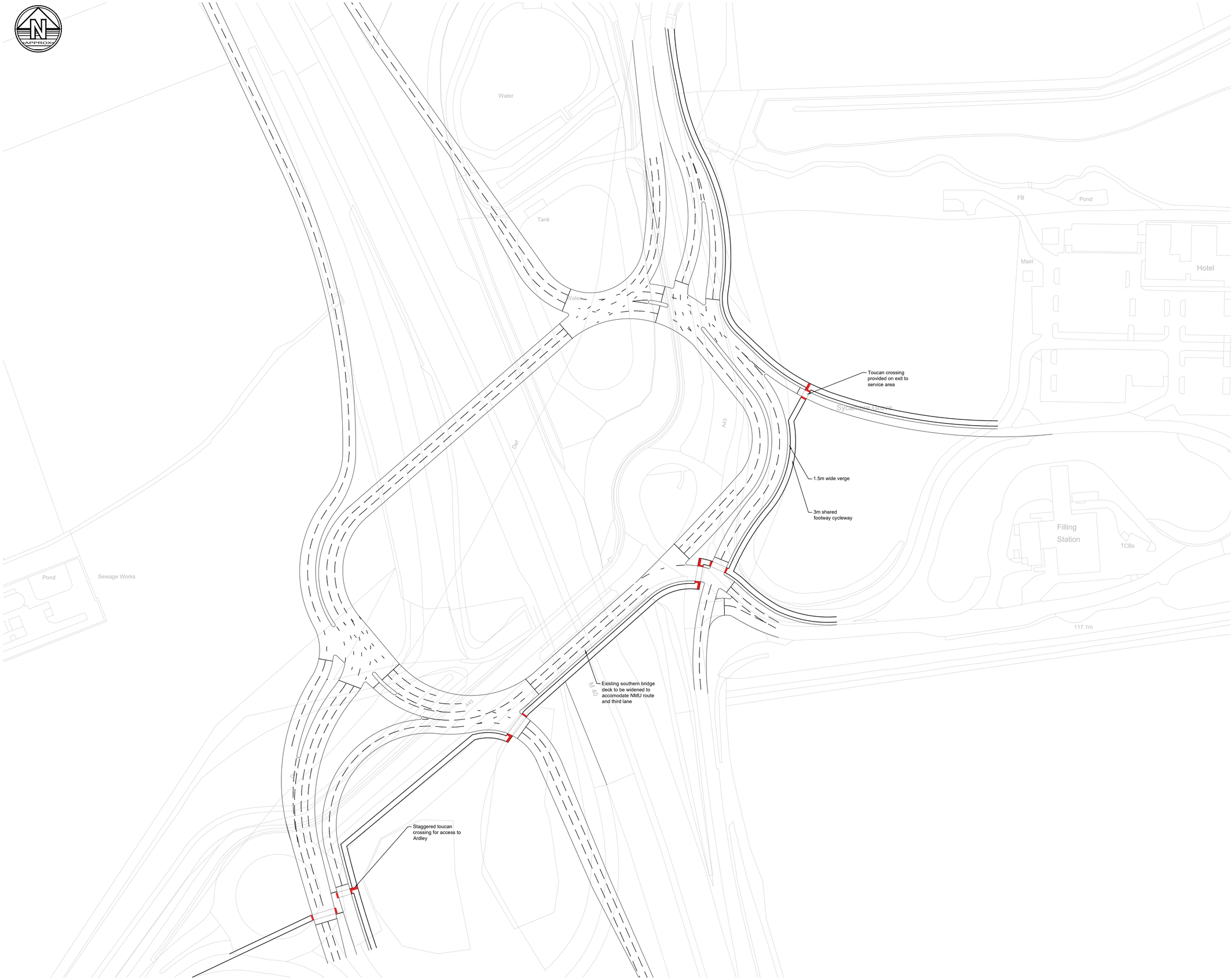
M40 Junction 10 - Sketch option 3a

ADC INFRASTRUCTURE

ADC Ref:	Drawn:	Reviewed:
ADC1794	M. Higgins	S. Dunhill

Drg Size:	Scale:	Date:
A1	1:1000	10/09/2021

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-ADC-GEN-XX-SK-CH-SK06	S1	P1



Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

Rev	Date	Details of issue / revision	Drw	Rev
P01	13.09.21	Preliminary Issue	SC	SRH

Issues & Revisions

BWB A CAF GROUP COMPANY
☐ Birmingham | 0121 233 3322
☐ Leeds | 0113 233 8000
☐ London | 020 7407 3879
☐ Manchester | 0161 233 4260
■ Nottingham | 0115 924 1100
www.bwbconsulting.com

Client

OXFORDSHIRE RAILFREIGHT LTD.

Project Title

OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title

M40 J10 OPTION 3B GENERAL ARRANGEMENT

Drawn:	S Carter		Reviewed:	S Hilditch	
BWB Ref:	NTH2479	Date:	13.09.21	Scale@A1:	1:1000

Drawing Status: **PRELIMINARY**

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-BWB-GEN-XX-SK-CH-SK024	S1	P01

© Copyright BWB Consulting Ltd

Y:\NTH\NTH2479_Oxfordshire RFI\02. Project Delivery\01. WIP\Sketches\OxSRFI-BWB-GEN-XX-SK-CH-SK024_M40 J10 Single Roundabout with Bridge Widening.dwg

APPENDIX A

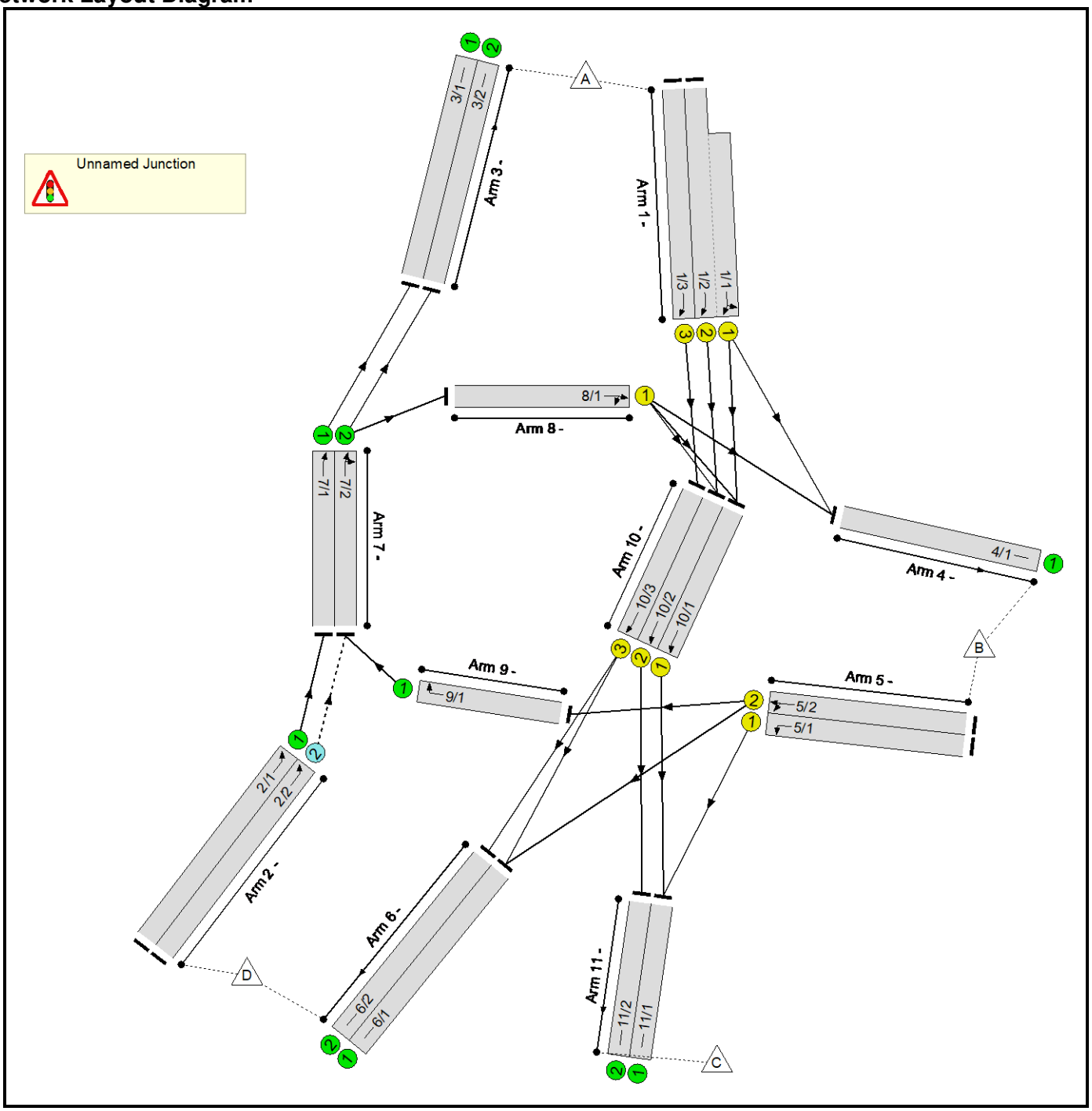
Cherwell Roundabout existing layout – revised LinSig results

Full Input Data And Results

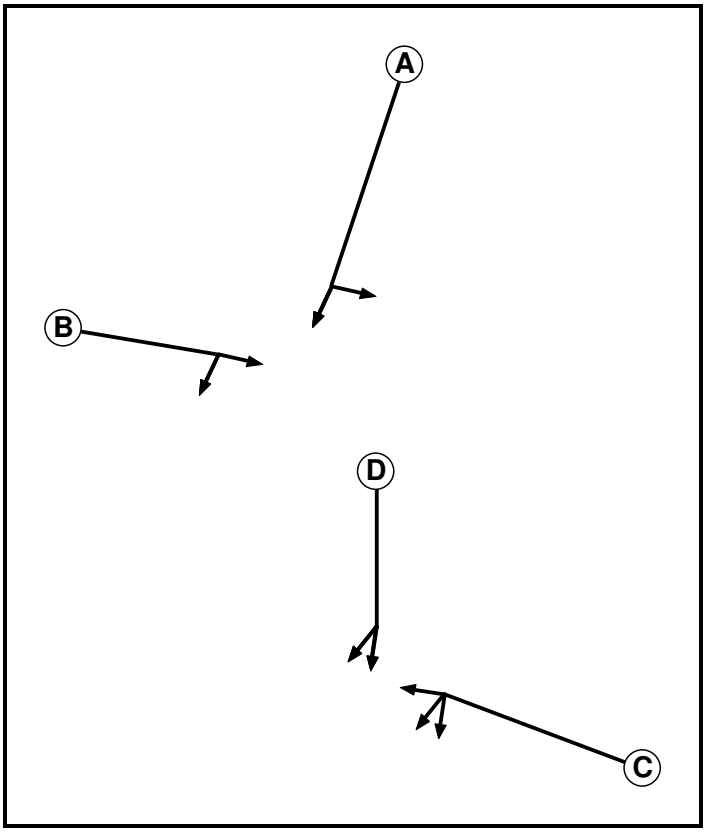
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Existing Cherwell Roundabout**
Location:	
Additional detail:	Amended to include Aecom comments on Sat Flows
File name:	2031_DS_M40J10_Cherwell_reference case.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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

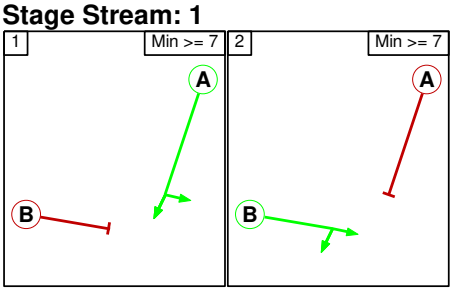
		Starting Phase			
		A	B	C	D
Terminating Phase	A		6	-	-
	B	6		-	-
	C	-	-		6
	D	-	-	6	

Phases in Stage

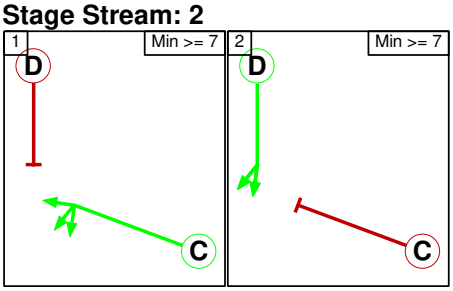
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Prohibited Stage Change

Stage Stream: 1

	To Stage		
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

	To Stage		
		1	2
From Stage	1		6
	2	6	

Lane Input Data

Junction: Unnamed Junction												
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	U	A	2	3	13.9	Geom	-	3.65	0.00	Y	Arm 4 Left	20.00
											Arm 10 Ahead	Inf
1/2	U	A	2	3	60.0	Geom	-	3.65	0.00	N	Arm 10 Ahead	Inf
1/3	U	A	2	3	60.0	Geom	-	3.65	0.00	N	Arm 10 Ahead	Inf
2/1	U		2	3	60.0	Inf	-	-	-	-	-	-
2/2	O		2	3	60.0	Inf	-	-	-	-	-	-
3/1	U		2	3	60.0	Inf	-	-	-	-	-	-
3/2	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 11 Left	30.00
5/2	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 6 Left	40.00
											Arm 9 Ahead	Inf
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	7.0	Inf	-	-	-	-	-	-
7/2	U		2	3	7.0	Inf	-	-	-	-	-	-
8/1	U	B	2	3	5.2	Geom	-	3.65	0.00	Y	Arm 4 Ahead	40.00
											Arm 10 Right	40.00
9/1	U		2	3	7.8	Inf	-	-	-	-	-	-
10/1	U	D	2	3	8.7	Geom	-	3.65	0.00	Y	Arm 11 Ahead	Inf
10/2	U	D	2	3	8.7	Geom	-	3.65	0.00	N	Arm 11 Ahead	Inf
10/3	U	D	2	3	8.7	Geom	-	3.65	0.00	N	Arm 6 Ahead	Inf
11/1	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Cherwell1_AM'	07:45	08:45	01:00	
2: 'Cherwell1_PM'	16:30	17:30	01:00	
3: 'CherwellRef1_AM'	07:45	08:45	01:00	
4: 'CherwellRef1_PM'	16:30	17:30	01:00	

Scenario 1: '2031 Reference Case - AM Peak' (FG3: 'CherwellRef1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	343	1605	1169	3117
	B	85	0	295	202	582
	C	0	0	0	0	0
	D	1458	239	101	0	1798
	Tot.	1543	582	2001	1371	5497

Traffic Lane Flows

Lane	Scenario 1: 2031 Reference Case - AM Peak
Junction: Unnamed Junction	
1/1 (short)	769
1/2 (with short)	1948(In) 1179(Out)
1/3	1169
2/1	1458
2/2	340
3/1	1458
3/2	85
4/1	582
5/1	295
5/2	287
6/1	787
6/2	584
7/1	1458
7/2	425
8/1	340
9/1	85
10/1	426
10/2	1280
10/3	1169
11/1	721
11/2	1280

Lane Saturation Flows

Junction: Unnamed Junction								
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	3.65	0.00	Y	Arm 4 Left	20.00	44.6 %	1916	1916
				Arm 10 Ahead	Inf	55.4 %		
1/2	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
1/3	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	3.50	0.00	Y	Arm 11 Left	30.00	100.0 %	1871	1871
5/2	3.50	0.00	Y	Arm 6 Left	40.00	70.4 %	1914	1914
				Arm 9 Ahead	Inf	29.6 %		
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	3.65	0.00	Y	Arm 4 Ahead	40.00	70.3 %	1908	1908
				Arm 10 Right	40.00	29.7 %		
9/1	Infinite Saturation Flow						Inf	Inf
10/1	3.65	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1980	1980
10/2	3.65	0.00	N	Arm 11 Ahead	Inf	100.0 %	2120	2120
10/3	3.65	0.00	N	Arm 6 Ahead	Inf	100.0 %	2120	2120
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2031 Do Something - AM Peak' (FG1: 'Cherwell1_AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	343	1605	1641	3589
	B	85	0	295	202	582
	C	0	0	0	0	0
	D	1577	239	282	0	2098
	Tot.	1662	582	2182	1843	6269

Traffic Lane Flows

Lane	Scenario 2: 2031 Do Something - AM Peak
Junction: Unnamed Junction	
1/1 (short)	794
1/2 (with short)	1948(In) 1154(Out)
1/3	1641
2/1	1577
2/2	521
3/1	1577
3/2	85
4/1	582
5/1	295
5/2	287
6/1	1023
6/2	820
7/1	1577
7/2	606
8/1	521
9/1	85
10/1	502
10/2	1385
10/3	1641
11/1	797
11/2	1385

Lane Saturation Flows

Junction: Unnamed Junction								
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	3.65	0.00	Y	Arm 4 Left	20.00	43.2 %	1918	1918
				Arm 10 Ahead	Inf	56.8 %		
1/2	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
1/3	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	3.50	0.00	Y	Arm 11 Left	30.00	100.0 %	1871	1871
5/2	3.50	0.00	Y	Arm 6 Left	40.00	70.4 %	1914	1914
				Arm 9 Ahead	Inf	29.6 %		
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	3.65	0.00	Y	Arm 4 Ahead	40.00	45.9 %	1908	1908
				Arm 10 Right	40.00	54.1 %		
9/1	Infinite Saturation Flow						Inf	Inf
10/1	3.65	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1980	1980
10/2	3.65	0.00	N	Arm 11 Ahead	Inf	100.0 %	2120	2120
10/3	3.65	0.00	N	Arm 6 Ahead	Inf	100.0 %	2120	2120
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2031 Reference Case - PM Peak' (FG4: 'CherwellRef1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	336	939	800	2075
	B	129	0	258	213	600
	C	0	0	0	0	0
	D	2071	268	88	0	2427
	Tot.	2200	604	1285	1013	5102

Traffic Lane Flows

Lane	Scenario 3: 2031 Reference Case - PM Peak
Junction: Unnamed Junction	
1/1 (short)	483
1/2 (with short)	1275(In) 792(Out)
1/3	800
2/1	2071
2/2	356
3/1	2071
3/2	129
4/1	604
5/1	258
5/2	342
6/1	613
6/2	400
7/1	2071
7/2	485
8/1	356
9/1	129
10/1	149
10/2	878
10/3	800
11/1	407
11/2	878

Lane Saturation Flows

Junction: Unnamed Junction								
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	3.65	0.00	Y	Arm 4 Left	20.00	69.6 %	1882	1882
				Arm 10 Ahead	Inf	30.4 %		
1/2	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
1/3	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	3.50	0.00	Y	Arm 11 Left	30.00	100.0 %	1871	1871
5/2	3.50	0.00	Y	Arm 6 Left	40.00	62.3 %	1920	1920
				Arm 9 Ahead	Inf	37.7 %		
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	3.65	0.00	Y	Arm 4 Ahead	40.00	75.3 %	1908	1908
				Arm 10 Right	40.00	24.7 %		
9/1	Infinite Saturation Flow						Inf	Inf
10/1	3.65	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1980	1980
10/2	3.65	0.00	N	Arm 11 Ahead	Inf	100.0 %	2120	2120
10/3	3.65	0.00	N	Arm 6 Ahead	Inf	100.0 %	2120	2120
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2031 Do something - PM Peak' (FG2: 'Cherwell1_PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	336	939	1056	2331
	B	129	0	258	213	600
	C	0	0	0	0	0
	D	2346	268	472	0	3086
	Tot.	2475	604	1669	1269	6017

Traffic Lane Flows

Lane	Scenario 4: 2031 Do something - PM Peak
Junction: Unnamed Junction	
1/1 (short)	602
1/2 (with short)	1275(In) 673(Out)
1/3	1056
2/1	2346
2/2	740
3/1	2346
3/2	129
4/1	604
5/1	258
5/2	342
6/1	741
6/2	528
7/1	2346
7/2	869
8/1	740
9/1	129
10/1	298
10/2	1113
10/3	1056
11/1	556
11/2	1113

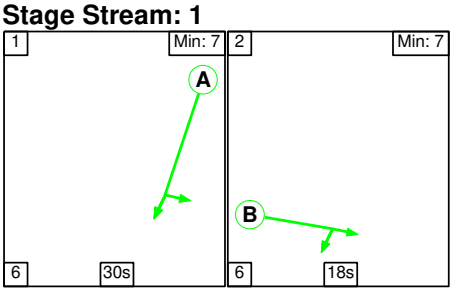
Lane Saturation Flows

Junction: Unnamed Junction								
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	3.65	0.00	Y	Arm 4 Left	20.00	55.8 %	1900	1900
				Arm 10 Ahead	Inf	44.2 %		
1/2	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
1/3	3.65	0.00	N	Arm 10 Ahead	Inf	100.0 %	2120	2120
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1	Infinite Saturation Flow						Inf	Inf
3/2	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	3.50	0.00	Y	Arm 11 Left	30.00	100.0 %	1871	1871
5/2	3.50	0.00	Y	Arm 6 Left	40.00	62.3 %	1920	1920
				Arm 9 Ahead	Inf	37.7 %		
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
7/2	Infinite Saturation Flow						Inf	Inf
8/1	3.65	0.00	Y	Arm 4 Ahead	40.00	36.2 %	1908	1908
				Arm 10 Right	40.00	63.8 %		
9/1	Infinite Saturation Flow						Inf	Inf
10/1	3.65	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1980	1980
10/2	3.65	0.00	N	Arm 11 Ahead	Inf	100.0 %	2120	2120
10/3	3.65	0.00	N	Arm 6 Ahead	Inf	100.0 %	2120	2120
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf

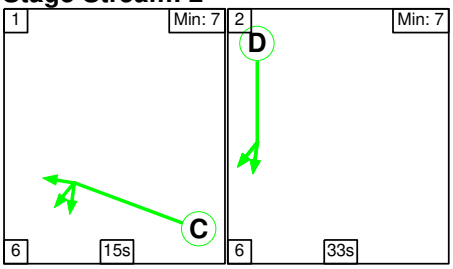
Scenario 1: '2031 Reference Case - AM Peak' (FG3: 'CherwellRef1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

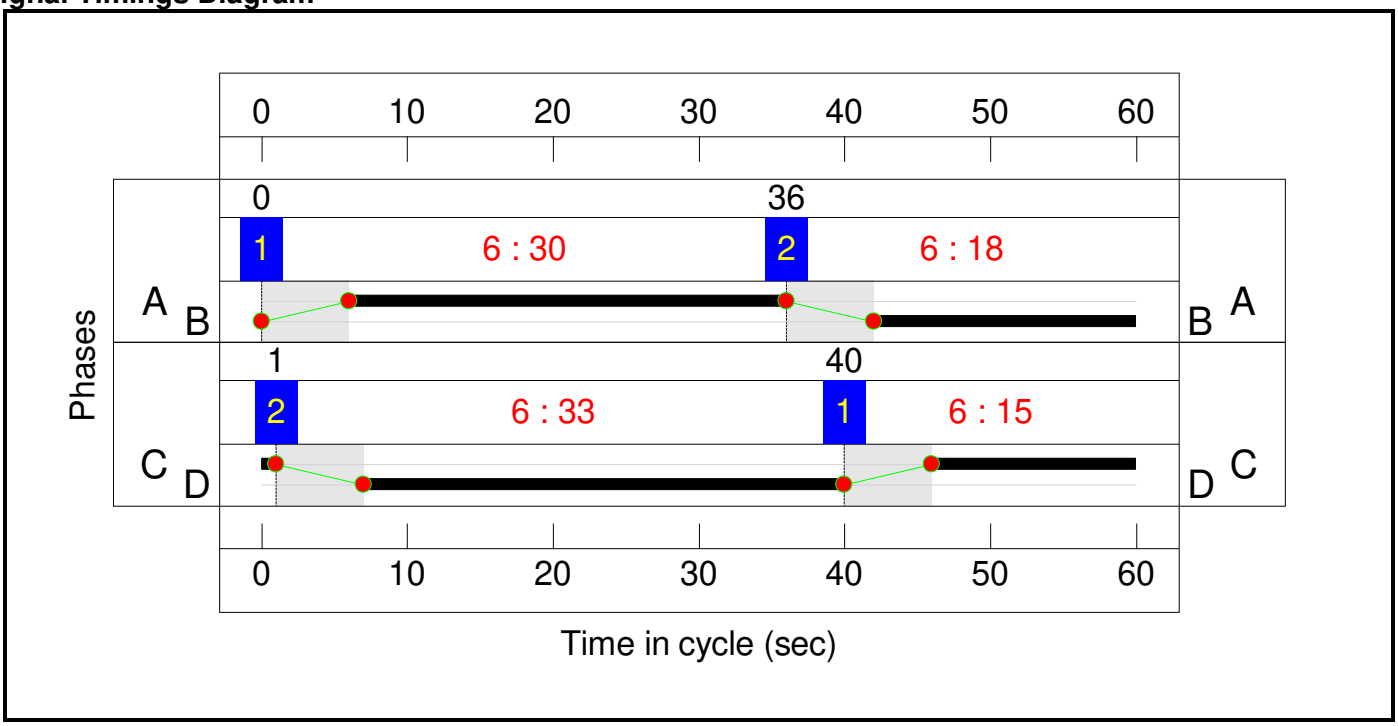
Stage Stream: 1

Stage	1	2
Duration	30	18
Change Point	0	36

Stage Stream: 2

Stage	1	2
Duration	15	33
Change Point	40	1

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: Existing Cherwell Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**117.7%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**117.7%**
1/2+1/1	Left Ahead	U	1	N/A	A		1	30	-	1948	2120:1916	1001+653	117.7 : 117.7%
1/3	Ahead	U	1	N/A	A		1	30	-	1169	2120	1095	106.7%
2/2	Ahead	O	N/A	N/A	-		-	-	-	340	Inf	972	35.0%
5/1	Left	U	2	N/A	C		1	15	-	295	1871	499	59.1%
5/2	Left Ahead	U	2	N/A	C		1	15	-	287	1914	510	56.2%
8/1	Ahead Right	U	1	N/A	B		1	18	-	340	1908	604	56.3%
10/1	Ahead	U	2	N/A	D		1	33	-	426	1980	1122	32.3%
10/2	Ahead	U	2	N/A	D		1	33	-	1280	2120	1201	91.8%
10/3	Ahead	U	2	N/A	D		1	33	-	1169	2120	1201	91.2%

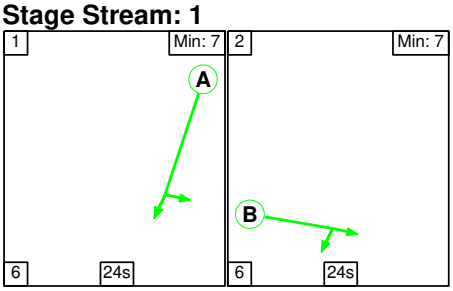
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Existing Cherwell Roundabout	**-**	**-**	**340**	**0**	**0**	**26.5**	**196.0**	**0.0**	**222.5**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**340**	**0**	**0**	**26.5**	**196.0**	**0.0**	**222.5**	**-**	**-**	**-**	**-**
1/2+1/1	1948	1655	-	-	-	14.7	149.9	-	164.6	304.2	34.7	149.9	184.6
1/3	1169	1095	-	-	-	6.7	43.5	-	50.2	154.7	20.7	43.5	64.3
2/2	340	340	340	0	0	0.0	0.3	-	0.3	2.8	0.0	0.3	0.3
5/1	295	295	-	-	-	1.6	0.7	-	2.3	27.9	4.3	0.7	5.0
5/2	287	287	-	-	-	1.5	0.6	-	2.2	27.0	4.1	0.6	4.7
8/1	340	340	-	-	-	1.6	0.6	-	2.3	23.8	4.6	0.6	5.3
10/1	362	362	-	-	-	0.0	0.2	-	0.2	2.4	0.0	0.2	0.2
10/2	1103	1103	-	-	-	0.5	0.0	-	0.5	1.5	1.7	0.0	1.7
10/3	1095	1095	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1	Stream: 1	PRC for Signalled Lanes (%):	-30.8	Total Delay for Signalled Lanes (pcuHr):	217.08	Cycle Time (s):	60
C1	Stream: 2	PRC for Signalled Lanes (%):	-2.0	Total Delay for Signalled Lanes (pcuHr):	5.14	Cycle Time (s):	60
		PRC Over All Lanes (%):	-30.8	Total Delay Over All Lanes(pcuHr):	222.49		

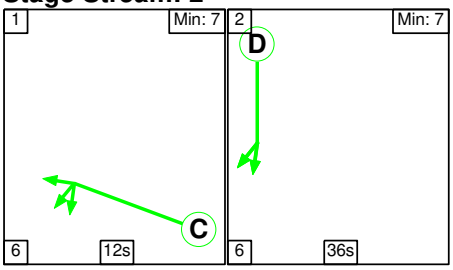
Scenario 2: '2031 Do Something - AM Peak' (FG1: 'Cherwell1_AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

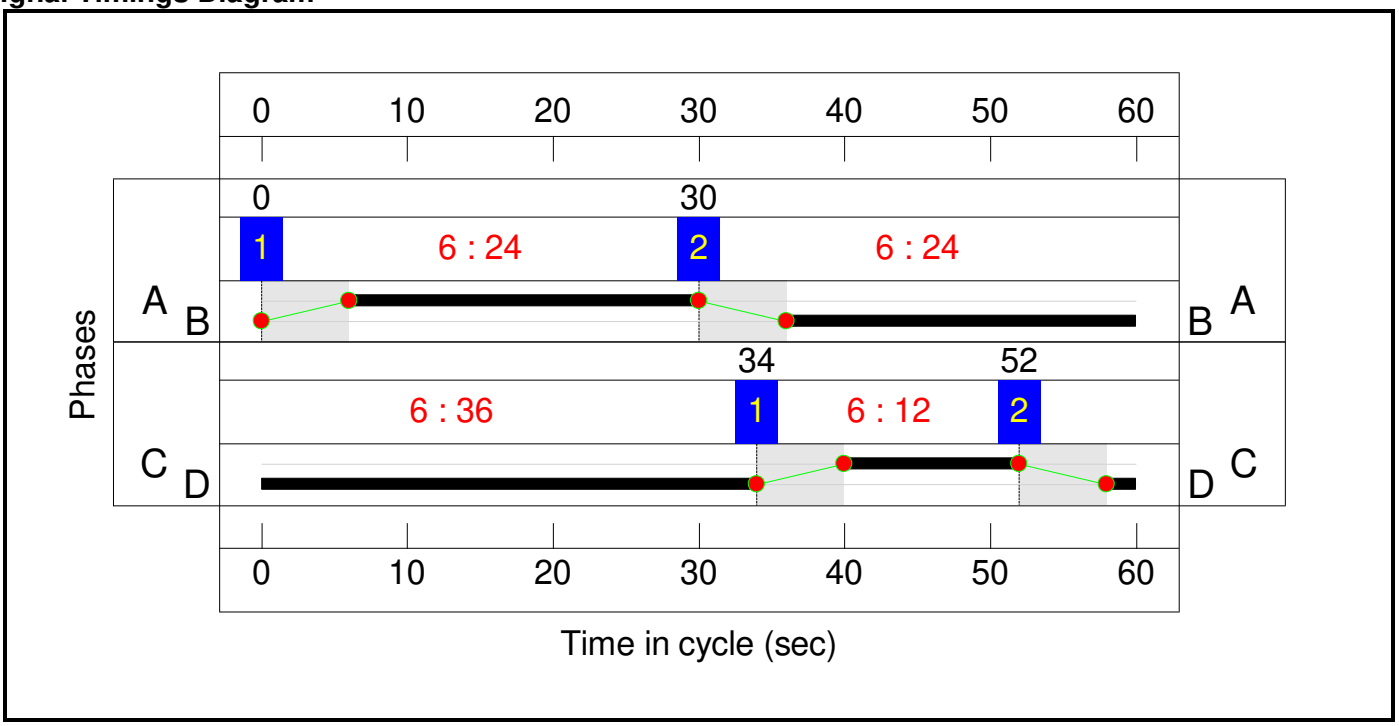
Stage Stream: 1

Stage	1	2
Duration	24	24
Change Point	0	30

Stage Stream: 2

Stage	1	2
Duration	12	36
Change Point	34	52

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: Existing Cherwell Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**185.8%**
Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**185.8%**
1/2+1/1	Left Ahead	U	1	N/A	A		1	24	-	1948	2120:1918	877+604	131.5 : 131.5%
1/3	Ahead	U	1	N/A	A		1	24	-	1641	2120	883	185.8%
2/2	Ahead	O	N/A	N/A	-		-	-	-	521	Inf	972	53.6%
5/1	Left	U	2	N/A	C		1	12	-	295	1871	405	72.8%
5/2	Left Ahead	U	2	N/A	C		1	12	-	287	1914	415	69.2%
8/1	Ahead Right	U	1	N/A	B		1	24	-	521	1908	795	65.5%
10/1	Ahead	U	2	N/A	D		1	36	-	502	1980	1221	32.3%
10/2	Ahead	U	2	N/A	D		1	36	-	1385	2120	1307	84.8%
10/3	Ahead	U	2	N/A	D		1	36	-	1641	2120	1307	67.6%

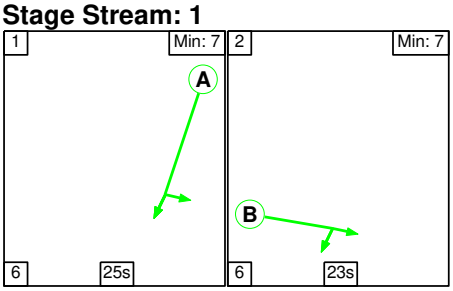
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Existing Cherwell Roundabout	-	-	**521**	**0**	**0**	**57.8**	**619.6**	**0.0**	**677.3**	-	-	-	-
Unnamed Junction	-	-	**521**	**0**	**0**	**57.8**	**619.6**	**0.0**	**677.3**	-	-	-	-
1/2+1/1	1948	1481	-	-	-	21.9	235.5	-	257.4	475.7	35.6	235.5	271.1
1/3	1641	883	-	-	-	29.3	379.9	-	409.3	897.8	40.3	379.9	420.2
2/2	521	521	521	0	0	0.0	0.6	-	0.6	4.0	0.0	0.6	0.6
5/1	295	295	-	-	-	1.8	1.3	-	3.1	37.8	4.5	1.3	5.8
5/2	287	287	-	-	-	1.7	1.1	-	2.8	35.5	4.4	1.1	5.5
8/1	521	521	-	-	-	2.0	0.9	-	3.0	20.6	6.9	0.9	7.9
10/1	394	394	-	-	-	0.1	0.2	-	0.4	3.5	0.8	0.2	1.0
10/2	1108	1108	-	-	-	0.8	0.0	-	0.8	2.6	3.8	0.0	3.8
10/3	883	883	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1	Stream: 1	PRC for Signalled Lanes (%):	-106.4	Total Delay for Signalled Lanes (pcuHr):	669.67	Cycle Time (s):	60
C1	Stream: 2	PRC for Signalled Lanes (%):	6.2	Total Delay for Signalled Lanes (pcuHr):	7.09	Cycle Time (s):	60
		PRC Over All Lanes (%):	-106.4	Total Delay Over All Lanes(pcuHr):	677.34		

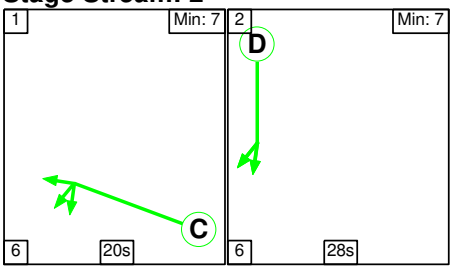
Scenario 3: '2031 Reference Case - PM Peak' (FG4: 'CherwellRef1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

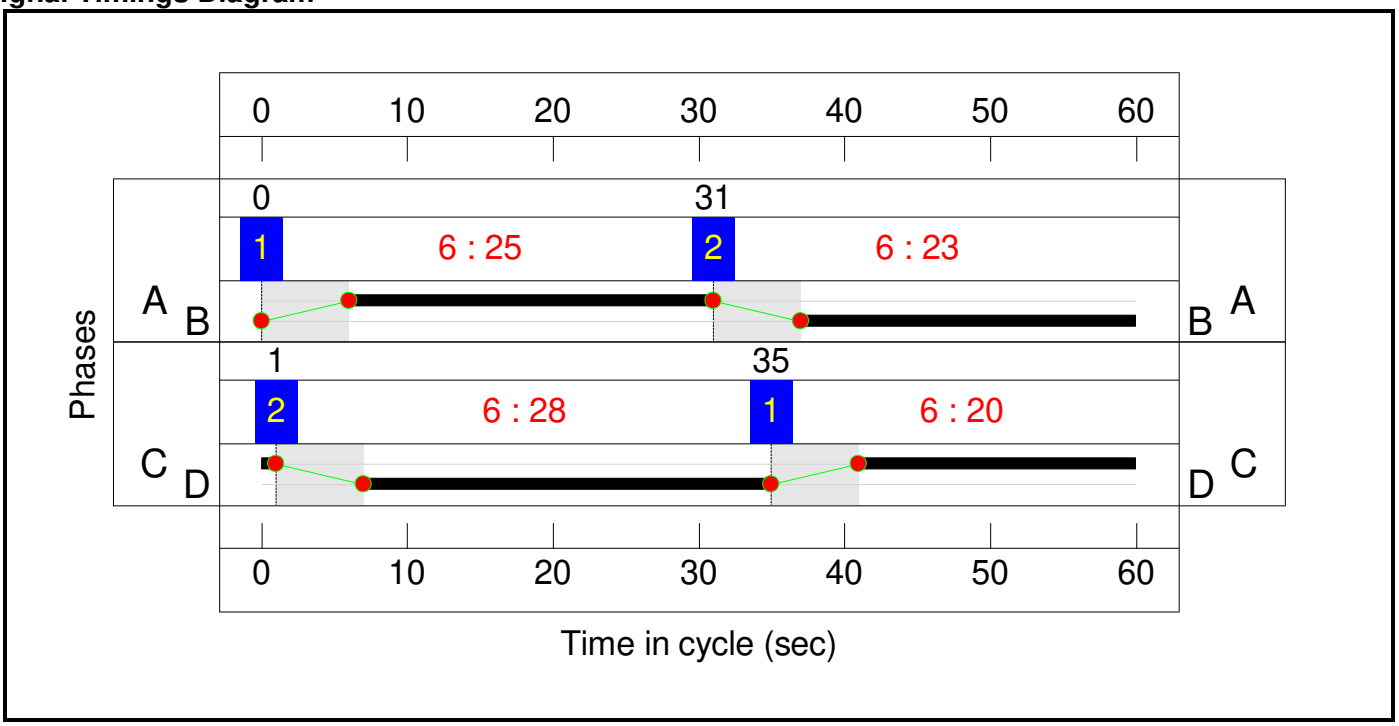
Stage Stream: 1

Stage	1	2
Duration	25	23
Change Point	0	31

Stage Stream: 2

Stage	1	2
Duration	20	28
Change Point	35	1

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: Existing Cherwell Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.0%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.0%**
1/2+1/1	Left Ahead	U	1	N/A	A		1	25	-	1275	2120:1882	900+549	88.0 : 88.0%
1/3	Ahead	U	1	N/A	A		1	25	-	800	2120	919	87.1%
2/2	Ahead	O	N/A	N/A	-		-	-	-	356	Inf	957	37.2%
5/1	Left	U	2	N/A	C		1	20	-	258	1871	655	39.4%
5/2	Left Ahead	U	2	N/A	C		1	20	-	342	1920	672	50.9%
8/1	Ahead Right	U	1	N/A	B		1	23	-	356	1908	763	46.6%
10/1	Ahead	U	2	N/A	D		1	28	-	149	1980	957	15.6%
10/2	Ahead	U	2	N/A	D		1	28	-	878	2120	1025	85.7%
10/3	Ahead	U	2	N/A	D		1	28	-	800	2120	1025	78.1%

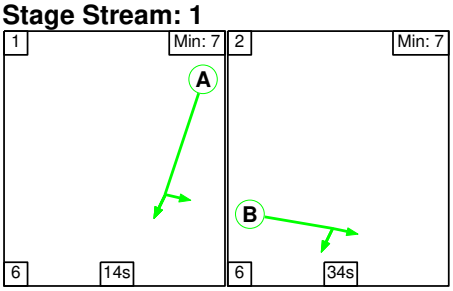
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Existing Cherwell Roundabout	**-**	**-**	**356**	**0**	**0**	**12.9**	**8.4**	**0.0**	**21.3**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**356**	**0**	**0**	**12.9**	**8.4**	**0.0**	**21.3**	**-**	**-**	**-**	**-**
1/2+1/1	1275	1275	-	-	-	5.1	3.5	-	8.6	24.4	11.9	3.5	15.4
1/3	800	800	-	-	-	3.4	3.2	-	6.6	29.9	12.0	3.2	15.2
2/2	356	356	356	0	0	0.0	0.3	-	0.3	3.0	0.0	0.3	0.3
5/1	258	258	-	-	-	1.1	0.3	-	1.4	19.2	3.2	0.3	3.5
5/2	342	342	-	-	-	1.5	0.5	-	2.0	20.9	4.5	0.5	5.0
8/1	356	356	-	-	-	1.3	0.4	-	1.7	17.7	4.4	0.4	4.8
10/1	149	149	-	-	-	0.0	0.1	-	0.1	2.5	0.0	0.1	0.1
10/2	878	878	-	-	-	0.5	0.0	-	0.5	2.0	1.4	0.0	1.4
10/3	800	800	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1	Stream: 1	PRC for Signalled Lanes (%):	2.3	Total Delay for Signalled Lanes (pcuHr):	17.03	Cycle Time (s):	60
C1	Stream: 2	PRC for Signalled Lanes (%):	5.0	Total Delay for Signalled Lanes (pcuHr):	3.94	Cycle Time (s):	60
		PRC Over All Lanes (%):	2.3	Total Delay Over All Lanes(pcuHr):	21.27		

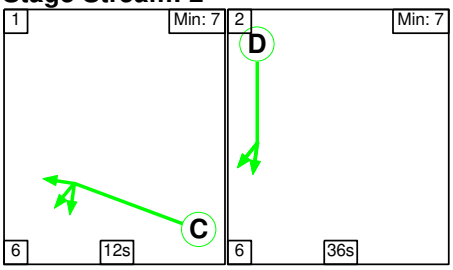
Scenario 4: '2031 Do something - PM Peak' (FG2: 'Cherwell1_PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

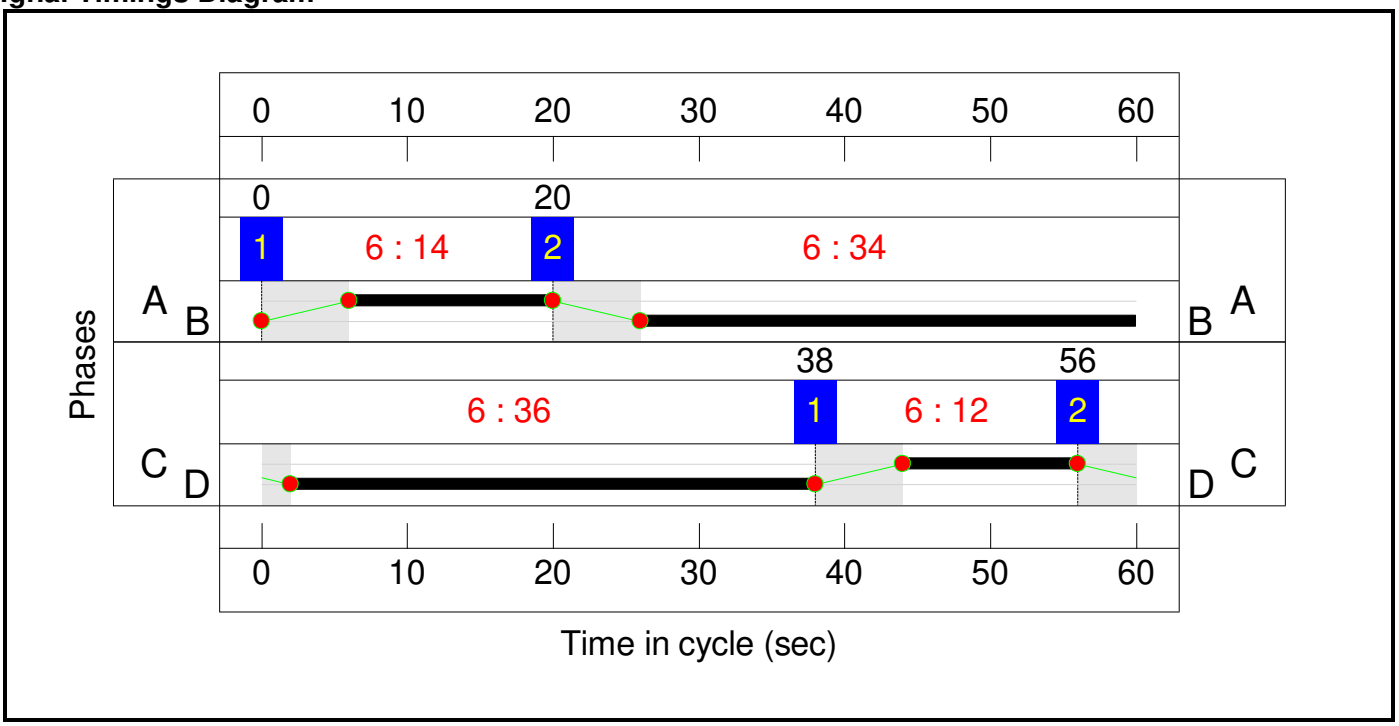
Stage Stream: 1

Stage	1	2
Duration	14	34
Change Point	0	20

Stage Stream: 2

Stage	1	2
Duration	12	36
Change Point	38	56

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: Existing Cherwell Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**199.2%**
Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**199.2%**
1/2+1/1	Left Ahead	U	1	N/A	A		1	14	-	1275	2120:1900	530+475	127.0 : 126.7%
1/3	Ahead	U	1	N/A	A		1	14	-	1056	2120	530	199.2%
2/2	Ahead	O	N/A	N/A	-		-	-	-	740	Inf	957	77.3%
5/1	Left	U	2	N/A	C		1	12	-	258	1871	405	63.6%
5/2	Left Ahead	U	2	N/A	C		1	12	-	342	1920	416	82.2%
8/1	Ahead Right	U	1	N/A	B		1	34	-	740	1908	1113	66.5%
10/1	Ahead	U	2	N/A	D		1	36	-	298	1980	1221	19.8%
10/2	Ahead	U	2	N/A	D		1	36	-	1113	2120	1307	74.2%
10/3	Ahead	U	2	N/A	D		1	36	-	1056	2120	1307	40.5%

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: Existing Cherwell Roundabout	-	-	**740**	**0**	**0**	**44.5**	**407.2**	**0.0**	**451.7**	-	-	-	-
Unnamed Junction	-	-	**740**	**0**	**0**	**44.5**	**407.2**	**0.0**	**451.7**	-	-	-	-
1/2+1/1	1275	1005	-	-	-	15.8	137.3	-	153.2	432.5	16.7	137.3	154.1
1/3	1056	530	-	-	-	21.9	264.0	-	285.9	974.8	28.4	264.0	292.4
2/2	740	740	740	0	0	0.0	1.7	-	1.7	8.2	0.0	1.7	1.7
5/1	258	258	-	-	-	1.5	0.9	-	2.4	33.4	3.9	0.9	4.7
5/2	342	342	-	-	-	2.1	2.2	-	4.3	45.4	5.4	2.2	7.6
8/1	740	740	-	-	-	1.7	1.0	-	2.7	13.3	8.2	1.0	9.2
10/1	242	242	-	-	-	0.1	0.1	-	0.2	2.9	0.3	0.1	0.4
10/2	970	970	-	-	-	1.2	0.0	-	1.2	4.6	4.5	0.0	4.5
10/3	530	530	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1	Stream: 1	PRC for Signalled Lanes (%):	-121.4	Total Delay for Signalled Lanes (pcuHr):	441.84	Cycle Time (s):	60
C1	Stream: 2	PRC for Signalled Lanes (%):	9.5	Total Delay for Signalled Lanes (pcuHr):	8.15	Cycle Time (s):	60
		PRC Over All Lanes (%):	-121.4	Total Delay Over All Lanes(pcuHr):	451.67		

APPENDIX 2

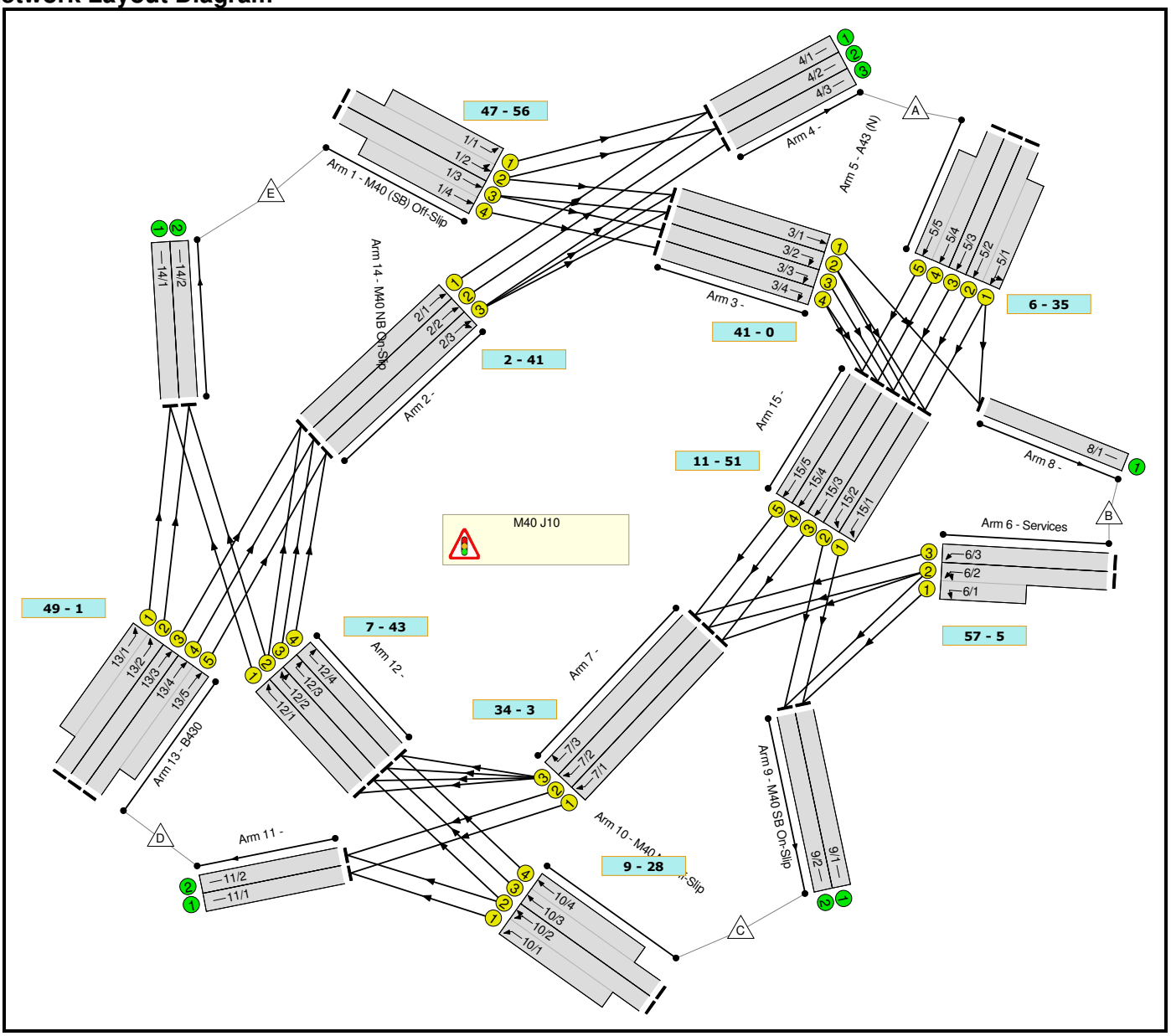
Option 3A – LinSig results

Full Input Data And Results

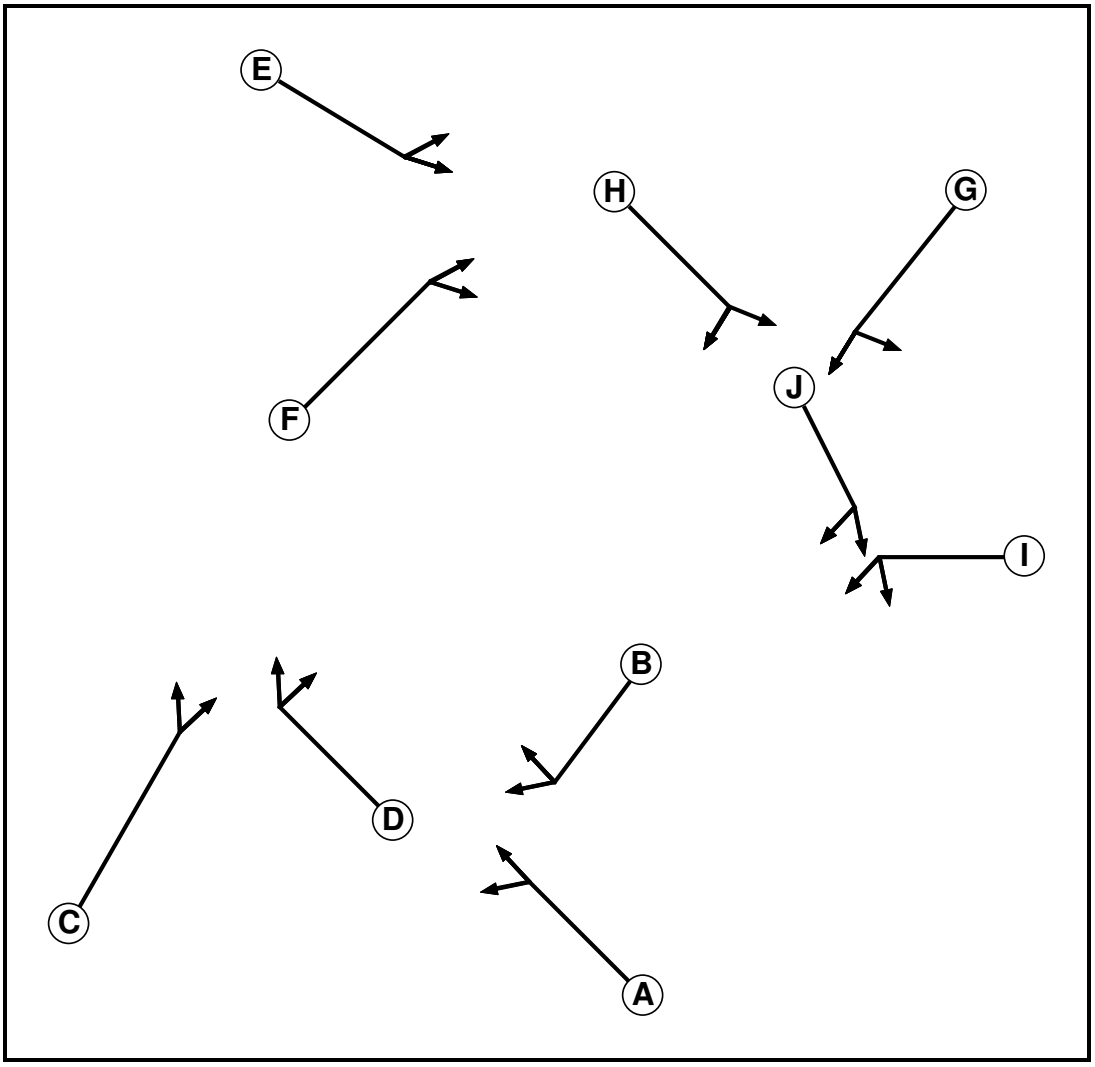
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Single grade-separated roundabout - Option 3A**
Location:	
Additional detail:	
File name:	210927 M4J10 two bridge roundabout 3A.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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
E	Traffic	3		7	7
F	Traffic	3		7	7
G	Traffic	4		7	7
H	Traffic	4		7	7
I	Traffic	5		7	7
J	Traffic	5		7	7

Phase Intergreens Matrix

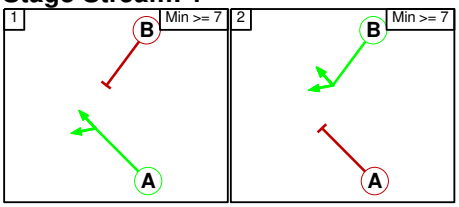
		Starting Phase									
		A	B	C	D	E	F	G	H	I	J
Terminating Phase	A		6	-	-	-	-	-	-	-	-
	B	6		-	-	-	-	-	-	-	-
	C	-	-		6	-	-	-	-	-	-
	D	-	-	6		-	-	-	-	-	-
	E	-	-	-	-		6	-	-	-	-
	F	-	-	-	-	6		-	-	-	-
	G	-	-	-	-	-	-		6	-	-
	H	-	-	-	-	-	-	6		-	-
	I	-	-	-	-	-	-	-	-		6
	J	-	-	-	-	-	-	-	-	6	

Phases in Stage

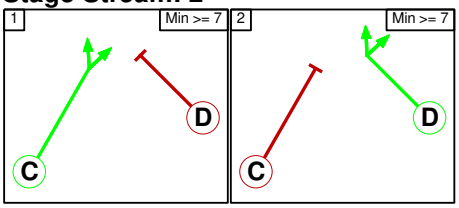
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F
4	1	G
4	2	H
5	1	I
5	2	J

Stage Diagram

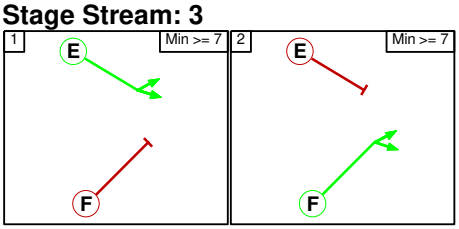
Stage Stream: 1



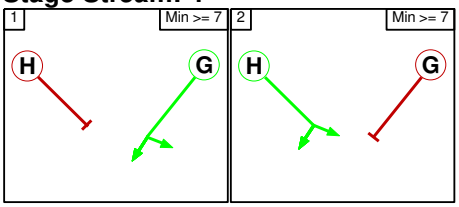
Stage Stream: 2



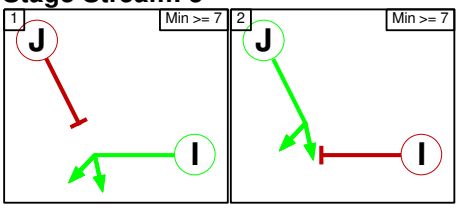
Stage Stream: 3



Stage Stream: 4



Stage Stream: 5



Prohibited Stage Change

Stage Stream: 1

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 3

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 4

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 5

		To Stage	
		1	2
From Stage	1		6
	2	6	

Lane Input Data

Junction: M40 J10

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 (M40 (SB) Off-Slip)	U	E	2	3	19.1	User	2000	-	-	-	-	-
1/2 (M40 (SB) Off-Slip)	U	E	2	3	60.0	User	2000	-	-	-	-	-
1/3 (M40 (SB) Off-Slip)	U	E	2	3	60.0	User	2000	-	-	-	-	-
1/4 (M40 (SB) Off-Slip)	U	E	2	3	10.4	User	2000	-	-	-	-	-
2/1	U	F	2	3	34.8	User	2000	-	-	-	-	-
2/2	U	F	2	3	34.8	User	2000	-	-	-	-	-
2/3	U	F	2	3	34.8	User	2000	-	-	-	-	-
3/1	U	H	2	3	10.4	User	2000	-	-	-	-	-
3/2	U	H	2	3	10.4	User	2000	-	-	-	-	-
3/3	U	H	2	3	10.4	User	2000	-	-	-	-	-
3/4	U	H	2	3	10.4	User	2000	-	-	-	-	-
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
4/2	U		2	3	60.0	Inf	-	-	-	-	-	-
4/3	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (A43 (N))	U	G	2	3	15.7	User	2000	-	-	-	-	-
5/2 (A43 (N))	U	G	2	3	60.0	User	2000	-	-	-	-	-
5/3 (A43 (N))	U	G	2	3	60.0	User	2000	-	-	-	-	-
5/4 (A43 (N))	U	G	2	3	60.0	User	2000	-	-	-	-	-
5/5 (A43 (N))	U	G	2	3	15.7	User	2000	-	-	-	-	-
6/1 (Services)	U	I	2	3	7.0	User	1900	-	-	-	-	-
6/2 (Services)	U	I	2	3	60.0	User	1900	-	-	-	-	-
6/3 (Services)	U	I	2	3	60.0	User	1900	-	-	-	-	-
7/1	U	B	2	3	21.7	User	2000	-	-	-	-	-
7/2	U	B	2	3	21.7	User	2000	-	-	-	-	-
7/3	U	B	2	3	21.7	User	2000	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-
9/1 (M40 SB On-Slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
9/2 (M40 SB On-Slip)	U		2	3	60.0	Inf	-	-	-	-	-	-

10/1 (M40 NB Off-Slip)	U	A	2	3	17.4	User	2000	-	-	-	-	-
10/2 (M40 NB Off-Slip)	U	A	2	3	60.0	User	2000	-	-	-	-	-
10/3 (M40 NB Off-Slip)	U	A	2	3	60.0	User	2000	-	-	-	-	-
10/4 (M40 NB Off-Slip)	U	A	2	3	17.4	User	2000	-	-	-	-	-
11/1	U		2	3	10.4	Inf	-	-	-	-	-	-
11/2	U		2	3	10.4	Inf	-	-	-	-	-	-
12/1	U	D	2	3	13.9	User	2000	-	-	-	-	-
12/2	U	D	2	3	13.9	User	2000	-	-	-	-	-
12/3	U	D	2	3	13.9	User	2000	-	-	-	-	-
12/4	U	D	2	3	13.9	User	2000	-	-	-	-	-
13/1 (B430)	U	C	2	3	21.7	User	2000	-	-	-	-	-
13/2 (B430)	U	C	2	3	60.0	User	2000	-	-	-	-	-
13/3 (B430)	U	C	2	3	60.0	User	2000	-	-	-	-	-
13/4 (B430)	U	C	2	3	60.0	User	2000	-	-	-	-	-
13/5 (B430)	U	C	2	3	21.7	User	2000	-	-	-	-	-
14/1 (M40 NB On-Slip)	U		2	3	10.4	Inf	-	-	-	-	-	-
14/2 (M40 NB On-Slip)	U		2	3	10.4	Inf	-	-	-	-	-	-
15/1	U	J	2	3	22.6	User	2000	-	-	-	-	-
15/2	U	J	2	3	22.6	User	2000	-	-	-	-	-
15/3	U	J	2	3	22.6	User	2000	-	-	-	-	-
15/4	U	J	2	3	22.6	User	2000	-	-	-	-	-
15/5	U	J	2	3	22.6	User	2000	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
5: '2031 do some AM'	07:45	08:45	01:00	
6: '2031 do some PM'	16:30	17:30	01:00	

Scenario 1: '2031 do something AM' (FG5: '2031 do some AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	124	1605	858	264	2851
	B	85	0	295	57	145	582
	C	1169	211	40	446	0	1866
	D	408	28	242	0	391	1069
	E	337	219	0	506	13	1075
	Tot.	1999	582	2182	1867	813	7443

Traffic Lane Flows

Lane	Scenario 1: 2031 do something AM
Junction: M40 J10	
1/1 (short)	271
1/2 (with short)	556(In) 285(Out)
1/3 (with short)	519(In) 270(Out)
1/4 (short)	249
2/1	668
2/2	737
2/3	778
3/1	458
3/2	282
3/3	270
3/4	249
4/1	939
4/2	803
4/3	257
5/1 (short)	878
5/2 (with short)	1729(In) 851(Out)
5/3	388
5/4 (with short)	734(In) 470(Out)
5/5 (short)	264
6/1 (short)	173
6/2 (with short)	352(In) 179(Out)
6/3	230
7/1	695
7/2	726
7/3	507
8/1	582
9/1	1068
9/2	1114
10/1 (short)	413
10/2 (with short)	916(In) 503(Out)
10/3 (with short)	950(In) 468(Out)
10/4 (short)	482
11/1	1108

11/2	759
12/1	212
12/2	710
12/3	512
12/4	493
13/1 (short)	196
13/2 (with short)	391(In) 195(Out)
13/3	168
13/4 (with short)	510(In) 225(Out)
13/5 (short)	285
14/1	408
14/2	405
15/1	895
15/2	992
15/3	658
15/4	706
15/5	277

Lane Saturation Flows

Junction: M40 J10								
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 (M40 (SB) Off-Slip Lane 1)	This lane uses a directly entered Saturation Flow						2000	2000
1/2 (M40 (SB) Off-Slip Lane 2)	This lane uses a directly entered Saturation Flow						2000	2000
1/3 (M40 (SB) Off-Slip Lane 3)	This lane uses a directly entered Saturation Flow						2000	2000
1/4 (M40 (SB) Off-Slip Lane 4)	This lane uses a directly entered Saturation Flow						2000	2000
2/1	This lane uses a directly entered Saturation Flow						2000	2000
2/2	This lane uses a directly entered Saturation Flow						2000	2000
2/3	This lane uses a directly entered Saturation Flow						2000	2000
3/1	This lane uses a directly entered Saturation Flow						2000	2000
3/2	This lane uses a directly entered Saturation Flow						2000	2000
3/3	This lane uses a directly entered Saturation Flow						2000	2000
3/4	This lane uses a directly entered Saturation Flow						2000	2000
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
4/3	Infinite Saturation Flow						Inf	Inf
5/1 (A43 (N) Lane 1)	This lane uses a directly entered Saturation Flow						2000	2000
5/2 (A43 (N) Lane 2)	This lane uses a directly entered Saturation Flow						2000	2000
5/3 (A43 (N) Lane 3)	This lane uses a directly entered Saturation Flow						2000	2000
5/4 (A43 (N) Lane 4)	This lane uses a directly entered Saturation Flow						2000	2000
5/5 (A43 (N) Lane 5)	This lane uses a directly entered Saturation Flow						2000	2000
6/1 (Services Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Services Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
6/3 (Services Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
7/1	This lane uses a directly entered Saturation Flow						2000	2000
7/2	This lane uses a directly entered Saturation Flow						2000	2000
7/3	This lane uses a directly entered Saturation Flow						2000	2000
8/1	Infinite Saturation Flow						Inf	Inf
9/1 (M40 SB On-Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (M40 SB On-Slip Lane 2)	Infinite Saturation Flow						Inf	Inf
10/1 (M40 NB Off-Slip Lane 1)	This lane uses a directly entered Saturation Flow						2000	2000

10/2 (M40 NB Off-Slip Lane 2)	This lane uses a directly entered Saturation Flow	2000	2000
10/3 (M40 NB Off-Slip Lane 3)	This lane uses a directly entered Saturation Flow	2000	2000
10/4 (M40 NB Off-Slip Lane 4)	This lane uses a directly entered Saturation Flow	2000	2000
11/1	Infinite Saturation Flow	Inf	Inf
11/2	Infinite Saturation Flow	Inf	Inf
12/1	This lane uses a directly entered Saturation Flow	2000	2000
12/2	This lane uses a directly entered Saturation Flow	2000	2000
12/3	This lane uses a directly entered Saturation Flow	2000	2000
12/4	This lane uses a directly entered Saturation Flow	2000	2000
13/1 (B430 Lane 1)	This lane uses a directly entered Saturation Flow	2000	2000
13/2 (B430 Lane 2)	This lane uses a directly entered Saturation Flow	2000	2000
13/3 (B430 Lane 3)	This lane uses a directly entered Saturation Flow	2000	2000
13/4 (B430 Lane 4)	This lane uses a directly entered Saturation Flow	2000	2000
13/5 (B430 Lane 5)	This lane uses a directly entered Saturation Flow	2000	2000
14/1 (M40 NB On-Slip Lane 1)	Infinite Saturation Flow	Inf	Inf
14/2 (M40 NB On-Slip Lane 2)	Infinite Saturation Flow	Inf	Inf
15/1	This lane uses a directly entered Saturation Flow	2000	2000
15/2	This lane uses a directly entered Saturation Flow	2000	2000
15/3	This lane uses a directly entered Saturation Flow	2000	2000
15/4	This lane uses a directly entered Saturation Flow	2000	2000
15/5	This lane uses a directly entered Saturation Flow	2000	2000

Scenario 2: '2031 do something PM' (FG6: '2031 do some PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	107	939	405	271	1722
	B	129	0	258	17	196	600
	C	1657	248	67	301	0	2273
	D	689	20	405	0	427	1541
	E	318	229	0	362	18	927
	Tot.	2793	604	1669	1085	912	7063

Traffic Lane Flows

Lane	Scenario 2: 2031 do something PM
Junction: M40 J10	
1/1 (short)	266
1/2 (with short)	547(In) 281(Out)
1/3 (with short)	380(In) 213(Out)
1/4 (short)	167
2/1	1062
2/2	1075
2/3	1078
3/1	497
3/2	472
3/3	213
3/4	167
4/1	1328
4/2	1127
4/3	338
5/1 (short)	524
5/2 (with short)	1046(In) 522(Out)
5/3	136
5/4 (with short)	540(In) 269(Out)
5/5 (short)	271
6/1 (short)	135
6/2 (with short)	275(In) 140(Out)
6/3	325
7/1	363
7/2	421
7/3	614
8/1	604
9/1	824
9/2	845
10/1 (short)	301
10/2 (with short)	975(In) 674(Out)
10/3 (with short)	1298(In) 701(Out)
10/4 (short)	597
11/1	664

11/2	421
12/1	307
12/2	906
12/3	740
12/4	633
13/1 (short)	214
13/2 (with short)	427(In) 213(Out)
13/3	334
13/4 (with short)	780(In) 335(Out)
13/5 (short)	445
14/1	521
14/2	391
15/1	689
15/2	722
15/3	349
15/4	418
15/5	289

Lane Saturation Flows

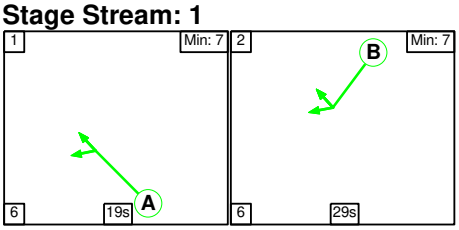
Junction: M40 J10								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (M40 (SB) Off-Slip Lane 1)	This lane uses a directly entered Saturation Flow						2000	2000
1/2 (M40 (SB) Off-Slip Lane 2)	This lane uses a directly entered Saturation Flow						2000	2000
1/3 (M40 (SB) Off-Slip Lane 3)	This lane uses a directly entered Saturation Flow						2000	2000
1/4 (M40 (SB) Off-Slip Lane 4)	This lane uses a directly entered Saturation Flow						2000	2000
2/1	This lane uses a directly entered Saturation Flow						2000	2000
2/2	This lane uses a directly entered Saturation Flow						2000	2000
2/3	This lane uses a directly entered Saturation Flow						2000	2000
3/1	This lane uses a directly entered Saturation Flow						2000	2000
3/2	This lane uses a directly entered Saturation Flow						2000	2000
3/3	This lane uses a directly entered Saturation Flow						2000	2000
3/4	This lane uses a directly entered Saturation Flow						2000	2000
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
4/3	Infinite Saturation Flow						Inf	Inf
5/1 (A43 (N) Lane 1)	This lane uses a directly entered Saturation Flow						2000	2000
5/2 (A43 (N) Lane 2)	This lane uses a directly entered Saturation Flow						2000	2000
5/3 (A43 (N) Lane 3)	This lane uses a directly entered Saturation Flow						2000	2000
5/4 (A43 (N) Lane 4)	This lane uses a directly entered Saturation Flow						2000	2000
5/5 (A43 (N) Lane 5)	This lane uses a directly entered Saturation Flow						2000	2000
6/1 (Services Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Services Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
6/3 (Services Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
7/1	This lane uses a directly entered Saturation Flow						2000	2000
7/2	This lane uses a directly entered Saturation Flow						2000	2000
7/3	This lane uses a directly entered Saturation Flow						2000	2000
8/1	Infinite Saturation Flow						Inf	Inf
9/1 (M40 SB On-Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (M40 SB On-Slip Lane 2)	Infinite Saturation Flow						Inf	Inf
10/1 (M40 NB Off-Slip Lane 1)	This lane uses a directly entered Saturation Flow						2000	2000

10/2 (M40 NB Off-Slip Lane 2)	This lane uses a directly entered Saturation Flow	2000	2000
10/3 (M40 NB Off-Slip Lane 3)	This lane uses a directly entered Saturation Flow	2000	2000
10/4 (M40 NB Off-Slip Lane 4)	This lane uses a directly entered Saturation Flow	2000	2000
11/1	Infinite Saturation Flow	Inf	Inf
11/2	Infinite Saturation Flow	Inf	Inf
12/1	This lane uses a directly entered Saturation Flow	2000	2000
12/2	This lane uses a directly entered Saturation Flow	2000	2000
12/3	This lane uses a directly entered Saturation Flow	2000	2000
12/4	This lane uses a directly entered Saturation Flow	2000	2000
13/1 (B430 Lane 1)	This lane uses a directly entered Saturation Flow	2000	2000
13/2 (B430 Lane 2)	This lane uses a directly entered Saturation Flow	2000	2000
13/3 (B430 Lane 3)	This lane uses a directly entered Saturation Flow	2000	2000
13/4 (B430 Lane 4)	This lane uses a directly entered Saturation Flow	2000	2000
13/5 (B430 Lane 5)	This lane uses a directly entered Saturation Flow	2000	2000
14/1 (M40 NB On-Slip Lane 1)	Infinite Saturation Flow	Inf	Inf
14/2 (M40 NB On-Slip Lane 2)	Infinite Saturation Flow	Inf	Inf
15/1	This lane uses a directly entered Saturation Flow	2000	2000
15/2	This lane uses a directly entered Saturation Flow	2000	2000
15/3	This lane uses a directly entered Saturation Flow	2000	2000
15/4	This lane uses a directly entered Saturation Flow	2000	2000
15/5	This lane uses a directly entered Saturation Flow	2000	2000

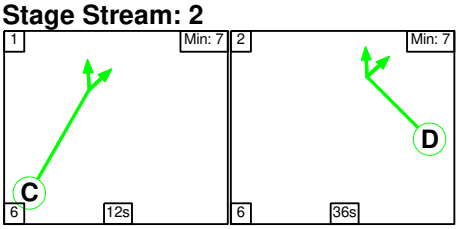
Scenario 1: '2031 do something AM' (FG5: '2031 do some AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

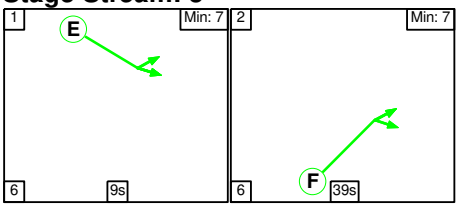
Stage Stream: 1



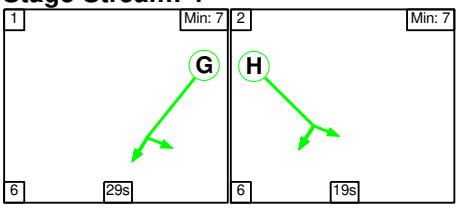
Stage Stream: 2



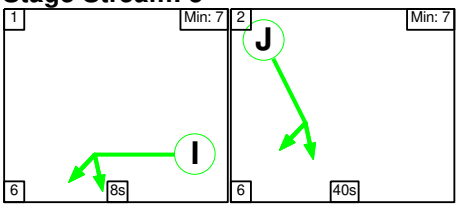
Stage Stream: 3



Stage Stream: 4



Stage Stream: 5



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	19	29
Change Point	3	28

Stage Stream: 2

Stage	1	2
Duration	12	36
Change Point	43	1

Stage Stream: 3

Stage	1	2
Duration	9	39
Change Point	41	56

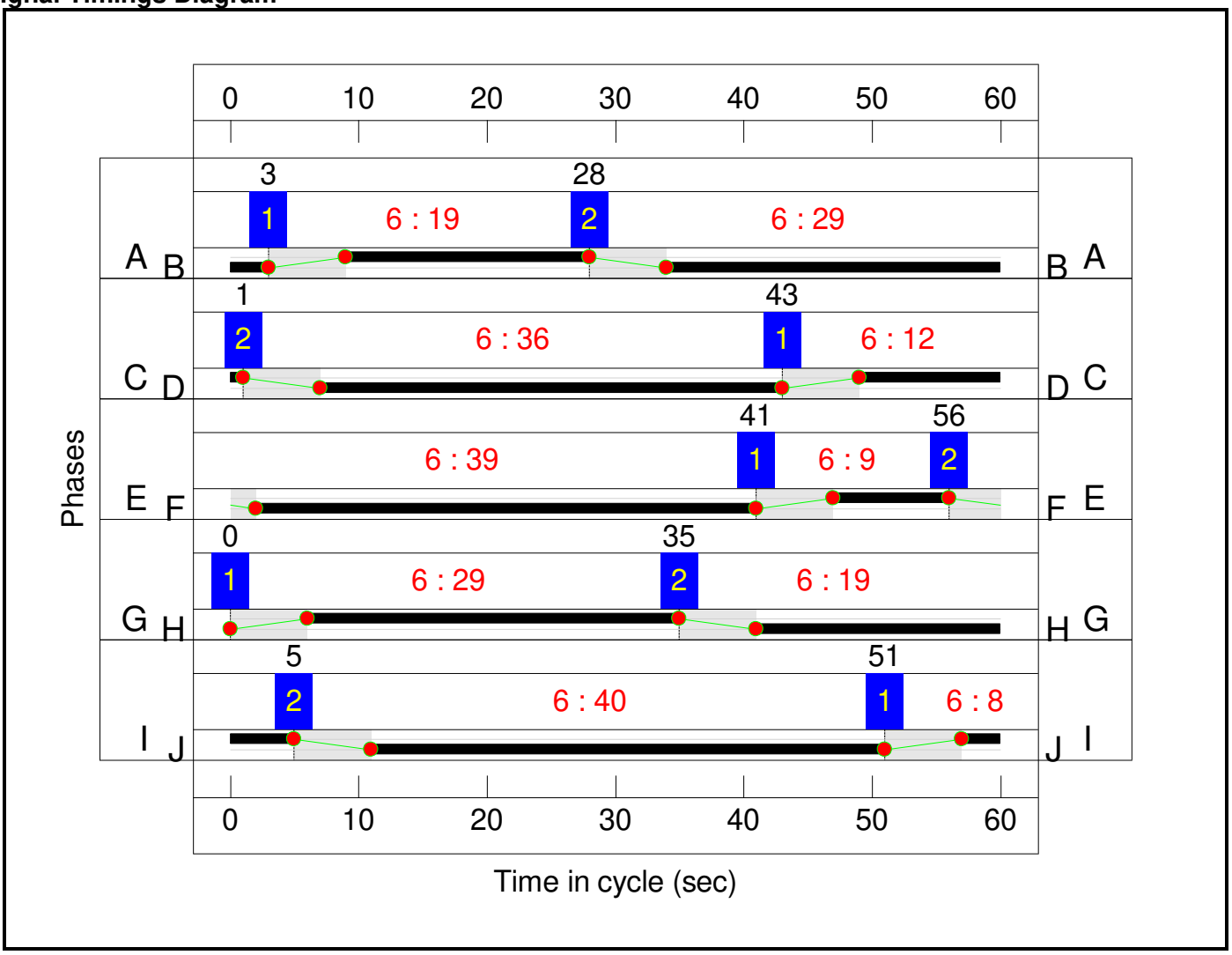
Stage Stream: 4

Stage	1	2
Duration	29	19
Change Point	0	35

Stage Stream: 5

Stage	1	2
Duration	8	40
Change Point	51	5

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: Single grade-seperated roundabout - Option 3A	-	-	**N/A**	-	-		-	-	-	-	-	-	**89.3%**
M40 J10	-	-	**N/A**	-	-		-	-	-	-	-	-	**89.3%**
1/2+1/1	M40 (SB) Off-Slip Ahead Left	U	3	N/A	E		1	9	-	556	2000:2000	333+333	85.5 : 81.3%
1/3+1/4	M40 (SB) Off-Slip Ahead	U	3	N/A	E		1	9	-	519	2000:2000	333+333	81.0 : 74.7%
2/1	Ahead	U	3	N/A	F		1	39	-	668	2000	1333	50.1%
2/2	Ahead	U	3	N/A	F		1	39	-	737	2000	1333	55.3%
2/3	Right Ahead	U	3	N/A	F		1	39	-	778	2000	1333	58.4%
3/1	Ahead	U	4	N/A	H		1	19	-	458	2000	667	68.7%
3/2	Right	U	4	N/A	H		1	19	-	282	2000	667	42.3%
3/3	Right	U	4	N/A	H		1	19	-	270	2000	667	40.5%
3/4	Right	U	4	N/A	H		1	19	-	249	2000	667	37.4%
5/2+5/1	A43 (N) Left Ahead	U	4	N/A	G		1	29	-	1729	2000:2000	953+984	89.3 : 89.3%
5/3	A43 (N) Ahead	U	4	N/A	G		1	29	-	388	2000	1000	38.8%
5/4+5/5	A43 (N) Ahead	U	4	N/A	G		1	29	-	734	2000:2000	993+558	47.3 : 47.3%
6/2+6/1	Services Left Left2	U	5	N/A	I		1	8	-	352	1900:1900	285+285	62.8 : 60.7%
6/3	Services Left	U	5	N/A	I		1	8	-	230	1900	285	80.7%
7/1	Ahead	U	1	N/A	B		1	29	-	695	2000	1000	69.5%
7/2	Ahead	U	1	N/A	B		1	29	-	726	2000	1000	72.6%
7/3	Right	U	1	N/A	B		1	29	-	507	2000	1000	50.7%
10/2+10/1	M40 NB Off-Slip Left Ahead	U	1	N/A	A		1	19	-	916	2000:2000	667+667	75.5 : 62.0%
10/3+10/4	M40 NB Off-Slip Ahead	U	1	N/A	A		1	19	-	950	2000:2000	667+667	70.2 : 72.3%
12/1	Ahead	U	2	N/A	D		1	36	-	212	2000	1233	17.2%

12/2	Right Ahead	U	2	N/A	D		1	36	-	710	2000	1233	57.6%
12/3	Right	U	2	N/A	D		1	36	-	512	2000	1233	41.5%
12/4	Right	U	2	N/A	D		1	36	-	493	2000	1233	40.0%
13/2+13/1	B430 Ahead	U	2	N/A	C		1	12	-	391	2000:2000	433+433	45.0 : 45.2%
13/3	B430 Ahead	U	2	N/A	C		1	12	-	168	2000	433	38.8%
13/4+13/5	B430 Ahead	U	2	N/A	C		1	12	-	510	2000:2000	433+433	51.9 : 65.8%
15/1	Ahead	U	5	N/A	J		1	40	-	895	2000	1367	65.5%
15/2	Ahead	U	5	N/A	J		1	40	-	992	2000	1367	72.6%
15/3	Ahead	U	5	N/A	J		1	40	-	658	2000	1367	48.1%
15/4	Ahead	U	5	N/A	J		1	40	-	706	2000	1367	51.7%
15/5	Ahead	U	5	N/A	J		1	40	-	277	2000	1367	20.3%

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: Single grade-seperated roundabout - Option 3A	**-**	**-**	**0**	**0**	**0**	**54.1**	**20.2**	**0.0**	**74.3**	**-**	**-**	**-**	**-**
M40 J10	**-**	**-**	**0**	**0**	**0**	**54.1**	**20.2**	**0.0**	**74.3**	**-**	**-**	**-**	**-**
1/2+1/1	556	556	-	-	-	3.7	2.4	-	6.1 (3.2+3.0)	39.8 (39.9:39.7)	4.6	2.4	7.0
1/3+1/4	519	519	-	-	-	3.5	1.7	-	5.2 (2.7+2.5)	35.9 (36.0:35.7)	4.3	1.7	6.0
2/1	668	668	-	-	-	0.5	0.5	-	1.0	5.6	3.7	0.5	4.2
2/2	737	737	-	-	-	0.6	0.6	-	1.2	5.8	4.7	0.6	5.3
2/3	778	778	-	-	-	0.6	0.7	-	1.3	5.8	5.3	0.7	6.0
3/1	458	458	-	-	-	1.0	0.0	-	1.0	8.0	4.1	0.0	4.1
3/2	282	282	-	-	-	2.3	0.0	-	2.3	29.2	4.7	0.0	4.7
3/3	270	270	-	-	-	0.1	0.0	-	0.1	0.9	0.1	0.0	0.1
3/4	249	249	-	-	-	0.0	0.0	-	0.0	0.7	0.1	0.0	0.1
5/2+5/1	1729	1729	-	-	-	6.3	4.0	-	10.4 (5.1+5.3)	21.6 (21.4:21.7)	12.9	4.0	16.9
5/3	388	388	-	-	-	1.0	0.3	-	1.3	12.2	4.0	0.3	4.3
5/4+5/5	734	734	-	-	-	1.9	0.4	-	2.4 (1.6+0.8)	11.6 (12.0:10.9)	5.1	0.4	5.5
6/2+6/1	352	352	-	-	-	2.3	0.8	-	3.1 (1.6+1.5)	32.1 (32.1:32.1)	2.8	0.8	3.6
6/3	230	230	-	-	-	1.6	2.0	-	3.5	55.2	3.7	2.0	5.7
7/1	695	695	-	-	-	2.9	1.1	-	4.0	20.9	11.3	1.1	12.5
7/2	726	726	-	-	-	2.9	1.3	-	4.2	20.9	11.9	1.3	13.2
7/3	507	507	-	-	-	2.8	0.5	-	3.3	23.3	7.9	0.5	8.4
10/2+10/1	916	916	-	-	-	4.4	1.1	-	5.5 (3.1+2.4)	21.7 (22.1:21.1)	7.4	1.1	8.5
10/3+10/4	950	950	-	-	-	4.6	1.2	-	5.8 (2.9+3.0)	22.2 (22.1:22.2)	7.0	1.2	8.2
12/1	212	212	-	-	-	0.8	0.0	-	0.8	12.7	2.3	0.0	2.3
12/2	710	710	-	-	-	1.0	0.0	-	1.0	5.3	3.2	0.0	3.2

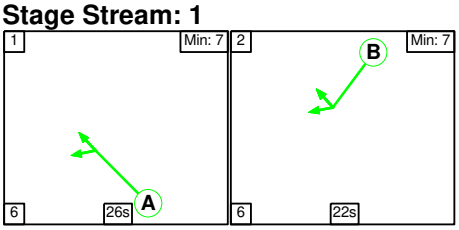
12/3	512	512	-	-	-	0.1	0.0	-	0.1	0.5	0.2	0.0	0.2
12/4	493	493	-	-	-	0.0	0.0	-	0.0	0.1	0.1	0.0	0.1
13/2+13/1	391	391	-	-	-	2.2	0.4	-	2.6 (1.3+1.3)	24.2 (24.2:24.2)	2.8	0.4	3.2
13/3	168	168	-	-	-	0.9	0.3	-	1.3	26.9	2.4	0.3	2.7
13/4+13/5	510	510	-	-	-	3.0	0.7	-	3.7 (1.6+2.1)	26.2 (25.8:26.5)	4.3	0.7	5.0
15/1	895	895	-	-	-	0.5	0.0	-	0.5	2.0	1.9	0.0	1.9
15/2	992	992	-	-	-	0.5	0.0	-	0.5	1.8	1.9	0.0	1.9
15/3	658	658	-	-	-	1.1	0.0	-	1.1	5.7	8.7	0.0	8.7
15/4	706	706	-	-	-	0.9	0.0	-	0.9	4.7	9.1	0.0	9.1
15/5	277	277	-	-	-	0.0	0.0	-	0.0	0.4	0.2	0.0	0.2

C1	Stream: 1	PRC for Signalled Lanes (%):	19.3	Total Delay for Signalled Lanes (pcuHr):	22.89	Cycle Time (s): 60
C1	Stream: 2	PRC for Signalled Lanes (%):	36.8	Total Delay for Signalled Lanes (pcuHr):	9.48	Cycle Time (s): 60
C1	Stream: 3	PRC for Signalled Lanes (%):	5.3	Total Delay for Signalled Lanes (pcuHr):	14.80	Cycle Time (s): 60
C1	Stream: 4	PRC for Signalled Lanes (%):	0.8	Total Delay for Signalled Lanes (pcuHr):	17.45	Cycle Time (s): 60
C1	Stream: 5	PRC for Signalled Lanes (%):	11.5	Total Delay for Signalled Lanes (pcuHr):	9.64	Cycle Time (s): 60
		PRC Over All Lanes (%):	0.8	Total Delay Over All Lanes(pcuHr):	74.27	

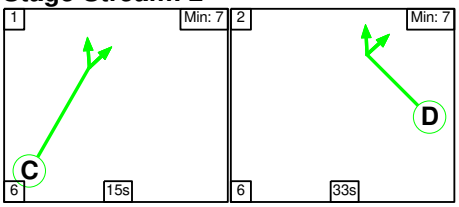
Scenario 2: '2031 do something PM' (FG6: '2031 do some PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

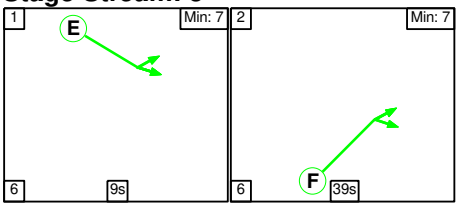
Stage Stream: 1



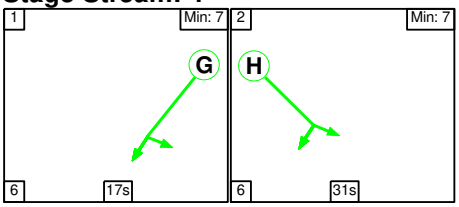
Stage Stream: 2



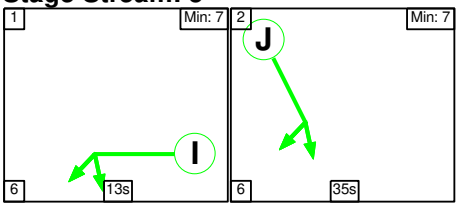
Stage Stream: 3



Stage Stream: 4



Stage Stream: 5



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	26	22
Change Point	45	17

Stage Stream: 2

Stage	1	2
Duration	15	33
Change Point	20	41

Stage Stream: 3

Stage	1	2
Duration	9	39
Change Point	18	33

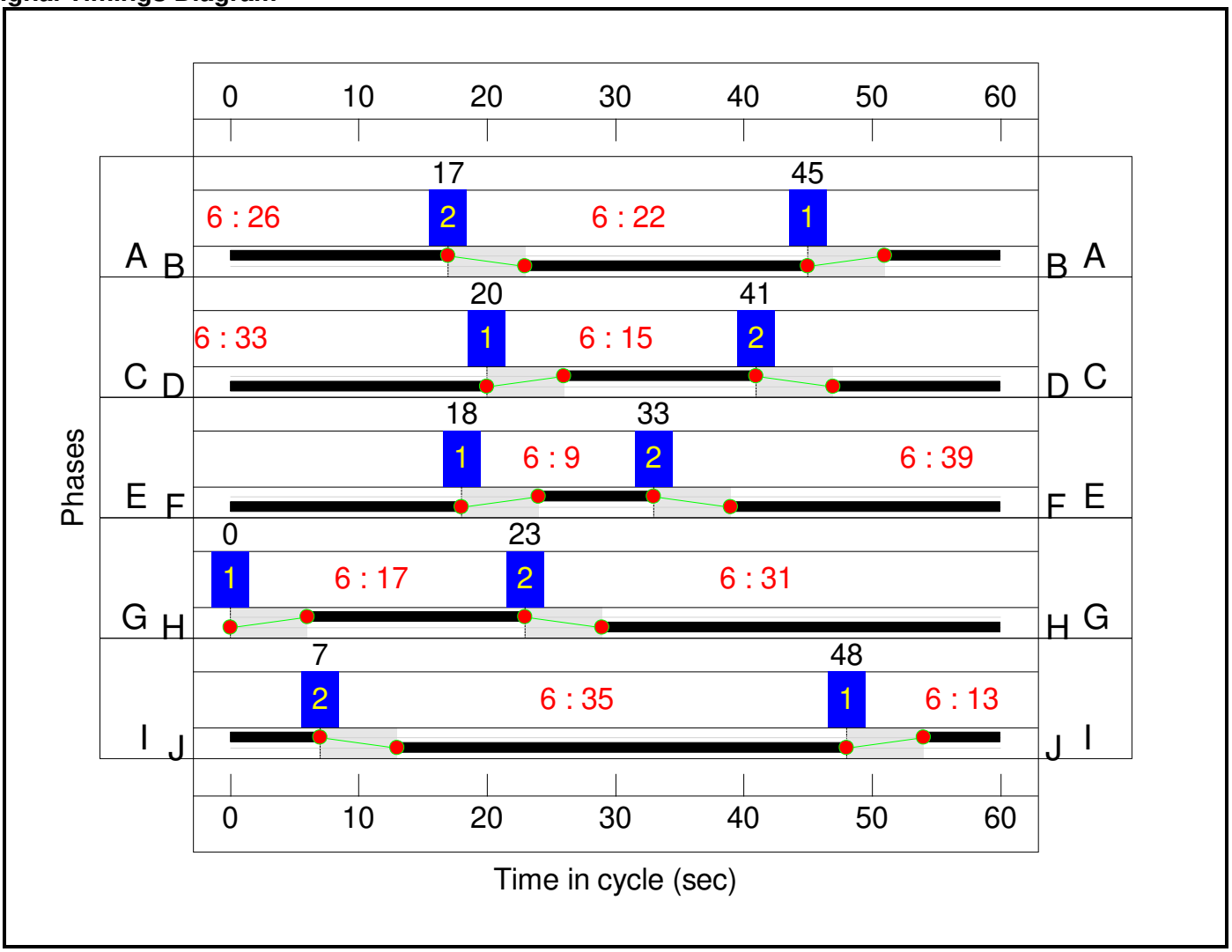
Stage Stream: 4

Stage	1	2
Duration	17	31
Change Point	0	23

Stage Stream: 5

Stage	1	2
Duration	13	35
Change Point	48	7

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: Single grade-seperated roundabout - Option 3A	-	-	**N/A**	-	-		-	-	-	-	-	-	**87.3%**
M40 J10	-	-	**N/A**	-	-		-	-	-	-	-	-	**87.3%**
1/2+1/1	M40 (SB) Off-Slip Ahead Left	U	3	N/A	E		1	9	-	547	2000:2000	333+333	84.3 : 79.8%
1/3+1/4	M40 (SB) Off-Slip Ahead	U	3	N/A	E		1	9	-	380	2000:2000	333+333	63.9 : 50.1%
2/1	Ahead	U	3	N/A	F		1	39	-	1062	2000	1333	79.7%
2/2	Ahead	U	3	N/A	F		1	39	-	1075	2000	1333	80.6%
2/3	Right Ahead	U	3	N/A	F		1	39	-	1078	2000	1333	80.9%
3/1	Ahead	U	4	N/A	H		1	31	-	497	2000	1067	46.6%
3/2	Right	U	4	N/A	H		1	31	-	472	2000	1067	44.3%
3/3	Right	U	4	N/A	H		1	31	-	213	2000	1067	20.0%
3/4	Right	U	4	N/A	H		1	31	-	167	2000	1067	15.7%
5/2+5/1	A43 (N) Left Ahead	U	4	N/A	G		1	17	-	1046	2000:2000	600+600	87.0 : 87.3%
5/3	A43 (N) Ahead	U	4	N/A	G		1	17	-	136	2000	600	22.7%
5/4+5/5	A43 (N) Ahead	U	4	N/A	G		1	17	-	540	2000:2000	600+600	44.8 : 45.2%
6/2+6/1	Services Left Left2	U	5	N/A	I		1	13	-	275	1900:1900	436+421	32.1 : 32.1%
6/3	Services Left	U	5	N/A	I		1	13	-	325	1900	443	73.3%
7/1	Ahead	U	1	N/A	B		1	22	-	363	2000	767	47.3%
7/2	Ahead	U	1	N/A	B		1	22	-	421	2000	767	54.9%
7/3	Right	U	1	N/A	B		1	22	-	614	2000	767	80.1%
10/2+10/1	M40 NB Off-Slip Left Ahead	U	1	N/A	A		1	26	-	975	2000:2000	900+402	74.9 : 74.9%
10/3+10/4	M40 NB Off-Slip Ahead	U	1	N/A	A		1	26	-	1298	2000:2000	900+766	77.9 : 77.9%
12/1	Ahead	U	2	N/A	D		1	33	-	307	2000	1133	27.1%

12/2	Right Ahead	U	2	N/A	D		1	33	-	906	2000	1133	79.9%
12/3	Right	U	2	N/A	D		1	33	-	740	2000	1133	65.3%
12/4	Right	U	2	N/A	D		1	33	-	633	2000	1133	55.9%
13/2+13/1	B430 Ahead	U	2	N/A	C		1	15	-	427	2000:2000	533+533	39.9 : 40.1%
13/3	B430 Ahead	U	2	N/A	C		1	15	-	334	2000	533	62.6%
13/4+13/5	B430 Ahead	U	2	N/A	C		1	15	-	780	2000:2000	533+533	62.8 : 83.4%
15/1	Ahead	U	5	N/A	J		1	35	-	689	2000	1200	57.4%
15/2	Ahead	U	5	N/A	J		1	35	-	722	2000	1200	60.2%
15/3	Ahead	U	5	N/A	J		1	35	-	349	2000	1200	29.1%
15/4	Ahead	U	5	N/A	J		1	35	-	418	2000	1200	34.8%
15/5	Ahead	U	5	N/A	J		1	35	-	289	2000	1200	24.1%

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: Single grade-seperated roundabout - Option 3A	**-**	**-**	**0**	**0**	**0**	**55.0**	**23.1**	**0.0**	**78.0**	**-**	**-**	**-**	**-**
M40 J10	**-**	**-**	**0**	**0**	**0**	**55.0**	**23.1**	**0.0**	**78.0**	**-**	**-**	**-**	**-**
1/2+1/1	547	547	-	-	-	3.7	2.2	-	5.9 (3.0+2.8)	38.7 (38.8:38.5)	4.5	2.2	6.7
1/3+1/4	380	380	-	-	-	2.4	0.7	-	3.1 (1.7+1.3)	29.3 (29.6:29.0)	3.3	0.7	3.9
2/1	1062	1062	-	-	-	2.6	1.9	-	4.5	15.3	11.4	1.9	13.3
2/2	1075	1075	-	-	-	2.8	2.0	-	4.9	16.4	12.2	2.0	14.3
2/3	1078	1078	-	-	-	2.2	2.1	-	4.3	14.3	12.3	2.1	14.4
3/1	497	497	-	-	-	0.9	0.0	-	0.9	6.3	6.2	0.0	6.2
3/2	472	472	-	-	-	0.9	0.0	-	0.9	7.0	2.3	0.0	2.3
3/3	213	213	-	-	-	0.1	0.0	-	0.1	1.0	3.1	0.0	3.1
3/4	167	167	-	-	-	0.0	0.0	-	0.0	1.0	2.3	0.0	2.3
5/2+5/1	1046	1046	-	-	-	5.8	3.3	-	9.0 (4.5+4.5)	31.1 (31.1:31.1)	8.2	3.3	11.4
5/3	136	136	-	-	-	0.6	0.1	-	0.7	19.7	1.7	0.1	1.8
5/4+5/5	540	540	-	-	-	2.6	0.4	-	3.0 (1.5+1.5)	19.7 (19.7:19.7)	3.6	0.4	4.0
6/2+6/1	275	275	-	-	-	1.5	0.2	-	1.7 (0.9+0.8)	22.1 (22.2:22.1)	1.9	0.2	2.1
6/3	325	325	-	-	-	1.9	1.3	-	3.3	36.2	5.0	1.3	6.3
7/1	363	363	-	-	-	1.9	0.4	-	2.3	23.1	4.9	0.4	5.3
7/2	421	421	-	-	-	1.3	0.6	-	1.9	16.3	5.6	0.6	6.2
7/3	614	614	-	-	-	2.7	2.0	-	4.7	27.3	10.0	2.0	12.0
10/2+10/1	975	975	-	-	-	3.5	1.5	-	4.9 (3.6+1.3)	18.2 (19.1:16.1)	9.2	1.5	10.7
10/3+10/4	1298	1298	-	-	-	4.9	1.7	-	6.6 (3.7+2.9)	18.3 (18.8:17.8)	9.7	1.7	11.5
12/1	307	307	-	-	-	1.1	0.0	-	1.1	13.4	5.1	0.0	5.1
12/2	906	906	-	-	-	1.0	0.0	-	1.0	4.1	4.3	0.0	4.3

12/3	740	740	-	-	-	0.4	0.0	-	0.4	1.7	1.1	0.0	1.1
12/4	633	633	-	-	-	0.3	0.0	-	0.3	1.8	1.0	0.0	1.0
13/2+13/1	427	427	-	-	-	2.1	0.3	-	2.5 (1.2+1.2)	20.9 (20.9:20.9)	2.9	0.3	3.2
13/3	334	334	-	-	-	1.8	0.8	-	2.6	28.3	4.8	0.8	5.7
13/4+13/5	780	780	-	-	-	4.4	1.3	-	5.7 (2.4+3.3)	26.4 (25.6:27.0)	6.9	1.3	8.3
15/1	689	689	-	-	-	0.9	0.0	-	0.9	4.5	9.1	0.0	9.1
15/2	722	722	-	-	-	0.7	0.0	-	0.7	3.5	10.6	0.0	10.6
15/3	349	349	-	-	-	0.1	0.0	-	0.1	0.6	0.2	0.0	0.2
15/4	418	418	-	-	-	0.0	0.0	-	0.0	0.3	0.1	0.0	0.1
15/5	289	289	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1	Stream: 1	PRC for Signalled Lanes (%):	12.4	Total Delay for Signalled Lanes (pcuHr):	20.45	Cycle Time (s): 60
C1	Stream: 2	PRC for Signalled Lanes (%):	7.9	Total Delay for Signalled Lanes (pcuHr):	13.66	Cycle Time (s): 60
C1	Stream: 3	PRC for Signalled Lanes (%):	6.8	Total Delay for Signalled Lanes (pcuHr):	22.66	Cycle Time (s): 60
C1	Stream: 4	PRC for Signalled Lanes (%):	3.1	Total Delay for Signalled Lanes (pcuHr):	14.65	Cycle Time (s): 60
C1	Stream: 5	PRC for Signalled Lanes (%):	22.8	Total Delay for Signalled Lanes (pcuHr):	6.60	Cycle Time (s): 60
		PRC Over All Lanes (%):	3.1	Total Delay Over All Lanes(pcuHr):	78.02	

APPENDIX 3

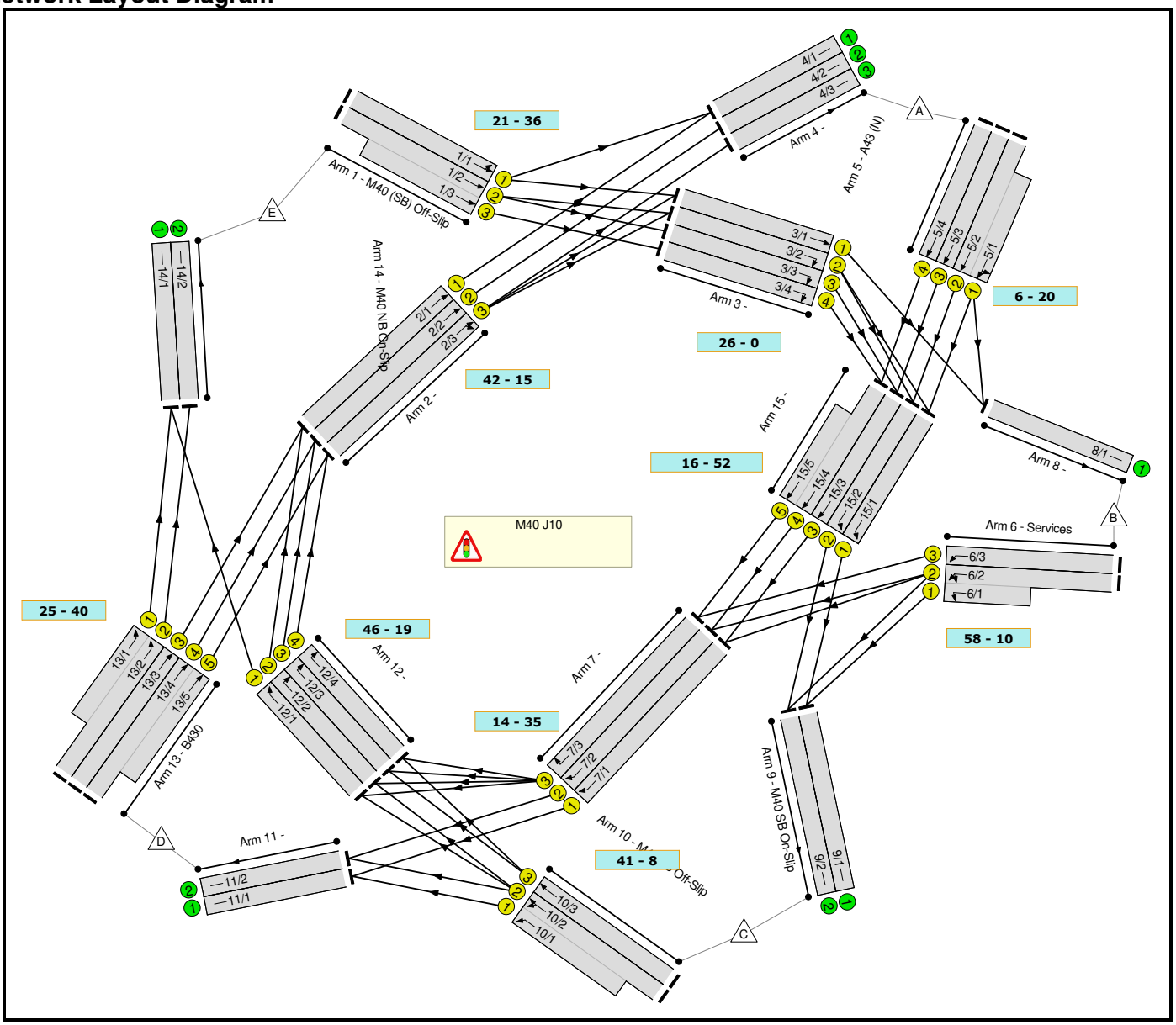
Option 3B – LinSig results

Full Input Data And Results

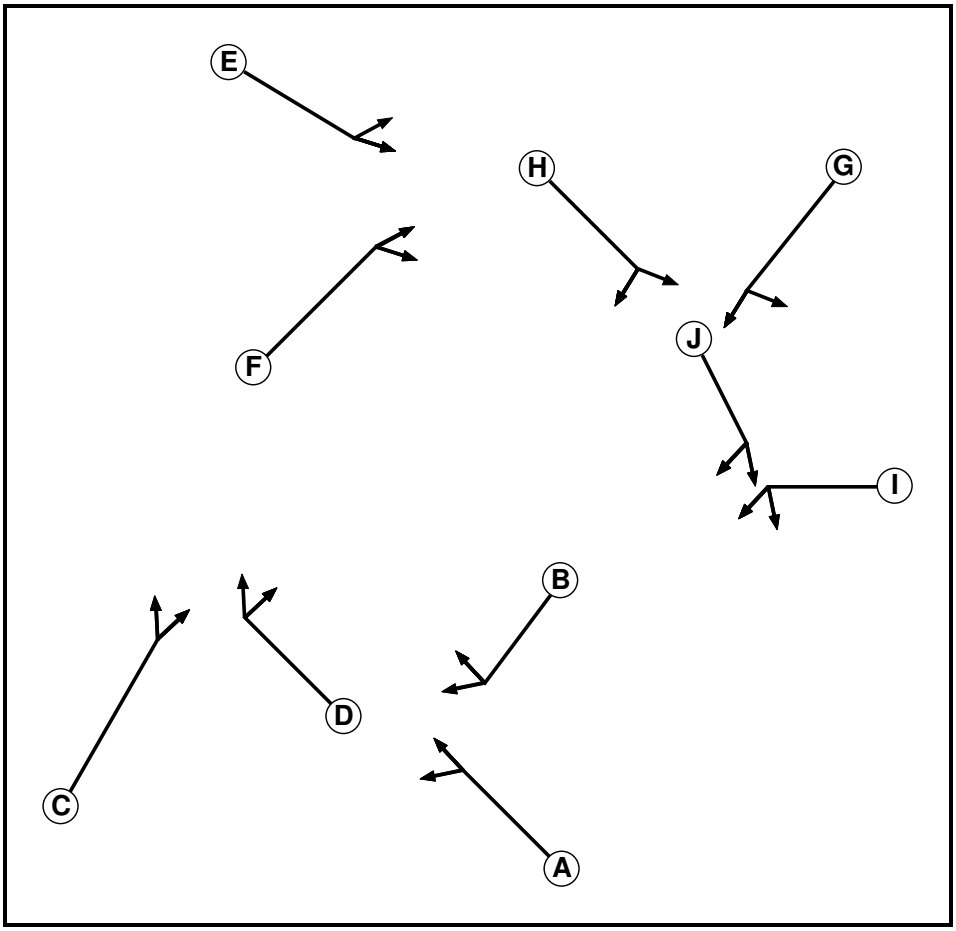
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Single grade-separated roundabout - Option 3B**
Location:	
Additional detail:	
File name:	210928 M4J10 two bridge roundabout 3B.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



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
E	Traffic	3		7	7
F	Traffic	3		7	7
G	Traffic	4		7	7
H	Traffic	4		7	7
I	Traffic	5		7	7
J	Traffic	5		7	7

Phase Intergreens Matrix

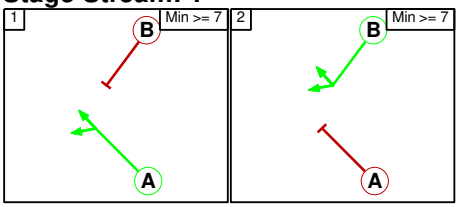
		Starting Phase									
		A	B	C	D	E	F	G	H	I	J
Terminating Phase	A		6	-	-	-	-	-	-	-	-
	B	6		-	-	-	-	-	-	-	-
	C	-	-		6	-	-	-	-	-	-
	D	-	-	6		-	-	-	-	-	-
	E	-	-	-	-		6	-	-	-	-
	F	-	-	-	-	6		-	-	-	-
	G	-	-	-	-	-	-		6	-	-
	H	-	-	-	-	-	-	6		-	-
	I	-	-	-	-	-	-	-	-		6
	J	-	-	-	-	-	-	-	-	6	

Phases in Stage

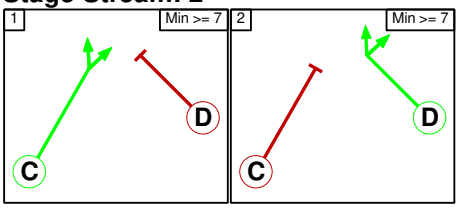
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F
4	1	G
4	2	H
5	1	I
5	2	J

Stage Diagram

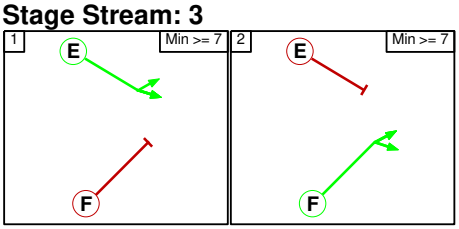
Stage Stream: 1



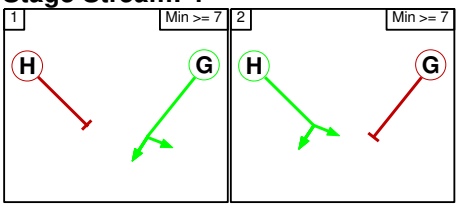
Stage Stream: 2



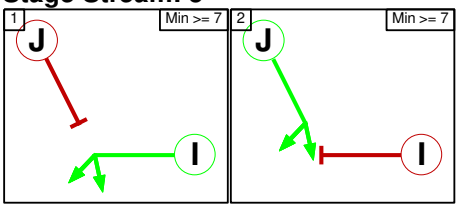
Stage Stream: 3



Stage Stream: 4



Stage Stream: 5



Prohibited Stage Change

Stage Stream: 1

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 3

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 4

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 5

		To Stage	
		1	2
From Stage	1		6
	2	6	

Lane Input Data

Junction: M40 J10

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 (M40 (SB) Off-Slip)	U	E	2	3	60.0	User	2000	-	-	-	-	-
1/2 (M40 (SB) Off-Slip)	U	E	2	3	60.0	User	2000	-	-	-	-	-
1/3 (M40 (SB) Off-Slip)	U	E	2	3	12.2	User	2000	-	-	-	-	-
2/1	U	F	2	3	45.2	User	2000	-	-	-	-	-
2/2	U	F	2	3	45.2	User	2000	-	-	-	-	-
2/3	U	F	2	3	45.2	User	2000	-	-	-	-	-
3/1	U	H	2	3	9.0	User	2000	-	-	-	-	-
3/2	U	H	2	3	9.0	User	2000	-	-	-	-	-
3/3	U	H	2	3	9.0	User	2000	-	-	-	-	-
3/4	U	H	2	3	9.0	User	2000	-	-	-	-	-
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
4/2	U		2	3	60.0	Inf	-	-	-	-	-	-
4/3	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (A43 (N))	U	G	2	3	15.7	User	2000	-	-	-	-	-
5/2 (A43 (N))	U	G	2	3	60.0	User	2000	-	-	-	-	-
5/3 (A43 (N))	U	G	2	3	60.0	User	2000	-	-	-	-	-
5/4 (A43 (N))	U	G	2	3	60.0	User	2000	-	-	-	-	-
6/1 (Services)	U	I	2	3	7.0	User	1900	-	-	-	-	-
6/2 (Services)	U	I	2	3	60.0	User	1900	-	-	-	-	-
6/3 (Services)	U	I	2	3	60.0	User	1900	-	-	-	-	-
7/1	U	B	2	3	19.1	User	2000	-	-	-	-	-
7/2	U	B	2	3	19.1	User	2000	-	-	-	-	-
7/3	U	B	2	3	19.1	User	2000	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-
9/1 (M40 SB On-Slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
9/2 (M40 SB On-Slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (M40 NB Off-Slip)	U	A	2	3	20.9	User	2000	-	-	-	-	-
10/2 (M40 NB Off-Slip)	U	A	2	3	60.0	User	2000	-	-	-	-	-

10/3 (M40 NB Off-Slip)	U	A	2	3	60.0	User	2000	-	-	-	-	-
11/1	U		2	3	10.4	Inf	-	-	-	-	-	-
11/2	U		2	3	10.4	Inf	-	-	-	-	-	-
12/1	U	D	2	3	13.9	User	2000	-	-	-	-	-
12/2	U	D	2	3	13.9	User	2000	-	-	-	-	-
12/3	U	D	2	3	13.9	User	2000	-	-	-	-	-
12/4	U	D	2	3	13.9	User	2000	-	-	-	-	-
13/1 (B430)	U	C	2	3	8.7	User	2000	-	-	-	-	-
13/2 (B430)	U	C	2	3	60.0	User	2000	-	-	-	-	-
13/3 (B430)	U	C	2	3	60.0	User	2000	-	-	-	-	-
13/4 (B430)	U	C	2	3	60.0	User	2000	-	-	-	-	-
13/5 (B430)	U	C	2	3	17.4	User	2000	-	-	-	-	-
14/1 (M40 NB On-Slip)	U		2	3	10.4	Inf	-	-	-	-	-	-
14/2 (M40 NB On-Slip)	U		2	3	10.4	Inf	-	-	-	-	-	-
15/1	U	J	2	3	30.4	User	2000	-	-	-	-	-
15/2	U	J	2	3	30.4	User	2000	-	-	-	-	-
15/3	U	J	2	3	30.4	User	2000	-	-	-	-	-
15/4	U	J	2	3	30.4	User	2000	-	-	-	-	-
15/5	U	J	2	3	8.7	User	2000	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
5: '2031 do some AM'	07:45	08:45	01:00	
6: '2031 do some PM'	16:30	17:30	01:00	

Scenario 1: '2031 do something AM' (FG5: '2031 do some AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	124	1605	858	264	2851
	B	85	0	295	57	145	582
	C	1169	211	40	446	0	1866
	D	408	28	242	0	391	1069
	E	337	219	0	506	13	1075
	Tot.	1999	582	2182	1867	813	7443

Traffic Lane Flows

Lane	Scenario 1: 2031 do something AM
Junction: M40 J10	
1/1	556
1/2 (with short)	519(In) 170(Out)
1/3 (short)	349
2/1	736
2/2	722
2/3	725
3/1	458
3/2	282
3/3	170
3/4	349
4/1	1073
4/2	722
4/3	204
5/1 (short)	865
5/2 (with short)	1729(In) 864(Out)
5/3	549
5/4	573
6/1 (short)	173
6/2 (with short)	352(In) 179(Out)
6/3	230
7/1	719
7/2	702
7/3	507
8/1	582
9/1	1055
9/2	1127
10/1 (short)	446
10/2 (with short)	1172(In) 726(Out)
10/3	694
11/1	1165
11/2	702
12/1	422
12/2	726
12/3	404
12/4	375
13/1 (short)	196

13/2 (with short)	391(In) 195(Out)
13/3	10
13/4 (with short)	668(In) 318(Out)
13/5 (short)	350
14/1	618
14/2	195
15/1	882
15/2	1005
15/3	719
15/4 (with short)	922(In) 645(Out)
15/5 (short)	277

Lane Saturation Flows

Junction: M40 J10								
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 (M40 (SB) Off-Slip Lane 1)	This lane uses a directly entered Saturation Flow						2000	2000
1/2 (M40 (SB) Off-Slip Lane 2)	This lane uses a directly entered Saturation Flow						2000	2000
1/3 (M40 (SB) Off-Slip Lane 3)	This lane uses a directly entered Saturation Flow						2000	2000
2/1	This lane uses a directly entered Saturation Flow						2000	2000
2/2	This lane uses a directly entered Saturation Flow						2000	2000
2/3	This lane uses a directly entered Saturation Flow						2000	2000
3/1	This lane uses a directly entered Saturation Flow						2000	2000
3/2	This lane uses a directly entered Saturation Flow						2000	2000
3/3	This lane uses a directly entered Saturation Flow						2000	2000
3/4	This lane uses a directly entered Saturation Flow						2000	2000
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
4/3	Infinite Saturation Flow						Inf	Inf
5/1 (A43 (N) Lane 1)	This lane uses a directly entered Saturation Flow						2000	2000
5/2 (A43 (N) Lane 2)	This lane uses a directly entered Saturation Flow						2000	2000
5/3 (A43 (N) Lane 3)	This lane uses a directly entered Saturation Flow						2000	2000
5/4 (A43 (N) Lane 4)	This lane uses a directly entered Saturation Flow						2000	2000
6/1 (Services Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Services Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
6/3 (Services Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
7/1	This lane uses a directly entered Saturation Flow						2000	2000
7/2	This lane uses a directly entered Saturation Flow						2000	2000
7/3	This lane uses a directly entered Saturation Flow						2000	2000
8/1	Infinite Saturation Flow						Inf	Inf
9/1 (M40 SB On-Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (M40 SB On-Slip Lane 2)	Infinite Saturation Flow						Inf	Inf
10/1 (M40 NB Off-Slip Lane 1)	This lane uses a directly entered Saturation Flow						2000	2000
10/2 (M40 NB Off-Slip Lane 2)	This lane uses a directly entered Saturation Flow						2000	2000
10/3 (M40 NB Off-Slip Lane 3)	This lane uses a directly entered Saturation Flow						2000	2000
11/1	Infinite Saturation Flow						Inf	Inf

11/2	Infinite Saturation Flow	Inf	Inf
12/1	This lane uses a directly entered Saturation Flow	2000	2000
12/2	This lane uses a directly entered Saturation Flow	2000	2000
12/3	This lane uses a directly entered Saturation Flow	2000	2000
12/4	This lane uses a directly entered Saturation Flow	2000	2000
13/1 (B430 Lane 1)	This lane uses a directly entered Saturation Flow	2000	2000
13/2 (B430 Lane 2)	This lane uses a directly entered Saturation Flow	2000	2000
13/3 (B430 Lane 3)	This lane uses a directly entered Saturation Flow	2000	2000
13/4 (B430 Lane 4)	This lane uses a directly entered Saturation Flow	2000	2000
13/5 (B430 Lane 5)	This lane uses a directly entered Saturation Flow	2000	2000
14/1 (M40 NB On-Slip Lane 1)	Infinite Saturation Flow	Inf	Inf
14/2 (M40 NB On-Slip Lane 2)	Infinite Saturation Flow	Inf	Inf
15/1	This lane uses a directly entered Saturation Flow	2000	2000
15/2	This lane uses a directly entered Saturation Flow	2000	2000
15/3	This lane uses a directly entered Saturation Flow	2000	2000
15/4	This lane uses a directly entered Saturation Flow	2000	2000
15/5	This lane uses a directly entered Saturation Flow	2000	2000

Scenario 2: '2031 do something PM' (FG6: '2031 do some PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	107	939	405	271	1722
	B	129	0	258	17	196	600
	C	1657	248	67	301	0	2273
	D	689	20	405	0	427	1541
	E	318	229	0	362	18	927
	Tot.	2793	604	1669	1085	912	7063

Traffic Lane Flows

Lane	Scenario 2: 2031 do something PM
Junction: M40 J10	
1/1	547
1/2 (with short)	380(In) 113(Out)
1/3 (short)	267
2/1	1127
2/2	1046
2/3	1042
3/1	497
3/2	472
3/3	113
3/4	267
4/1	1445
4/2	1046
4/3	302
5/1 (short)	523
5/2 (with short)	1046(In) 523(Out)
5/3	318
5/4	358
6/1 (short)	137
6/2 (with short)	275(In) 138(Out)
6/3	325
7/1	448
7/2	336
7/3	614
8/1	604
9/1	791
9/2	878
10/1 (short)	301
10/2 (with short)	1286(In) 985(Out)
10/3	987
11/1	749
11/2	336
12/1	485
12/2	986
12/3	606
12/4	509
13/1 (short)	214

13/2 (with short)	427(In) 213(Out)
13/3	141
13/4 (with short)	973(In) 440(Out)
13/5 (short)	533
14/1	699
14/2	213
15/1	654
15/2	757
15/3	431
15/4 (with short)	625(In) 336(Out)
15/5 (short)	289

Lane Saturation Flows

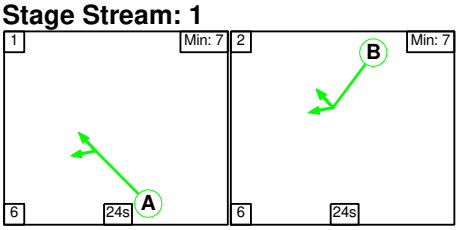
Junction: M40 J10								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (M40 (SB) Off-Slip Lane 1)	This lane uses a directly entered Saturation Flow						2000	2000
1/2 (M40 (SB) Off-Slip Lane 2)	This lane uses a directly entered Saturation Flow						2000	2000
1/3 (M40 (SB) Off-Slip Lane 3)	This lane uses a directly entered Saturation Flow						2000	2000
2/1	This lane uses a directly entered Saturation Flow						2000	2000
2/2	This lane uses a directly entered Saturation Flow						2000	2000
2/3	This lane uses a directly entered Saturation Flow						2000	2000
3/1	This lane uses a directly entered Saturation Flow						2000	2000
3/2	This lane uses a directly entered Saturation Flow						2000	2000
3/3	This lane uses a directly entered Saturation Flow						2000	2000
3/4	This lane uses a directly entered Saturation Flow						2000	2000
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
4/3	Infinite Saturation Flow						Inf	Inf
5/1 (A43 (N) Lane 1)	This lane uses a directly entered Saturation Flow						2000	2000
5/2 (A43 (N) Lane 2)	This lane uses a directly entered Saturation Flow						2000	2000
5/3 (A43 (N) Lane 3)	This lane uses a directly entered Saturation Flow						2000	2000
5/4 (A43 (N) Lane 4)	This lane uses a directly entered Saturation Flow						2000	2000
6/1 (Services Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Services Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
6/3 (Services Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
7/1	This lane uses a directly entered Saturation Flow						2000	2000
7/2	This lane uses a directly entered Saturation Flow						2000	2000
7/3	This lane uses a directly entered Saturation Flow						2000	2000
8/1	Infinite Saturation Flow						Inf	Inf
9/1 (M40 SB On-Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (M40 SB On-Slip Lane 2)	Infinite Saturation Flow						Inf	Inf
10/1 (M40 NB Off-Slip Lane 1)	This lane uses a directly entered Saturation Flow						2000	2000
10/2 (M40 NB Off-Slip Lane 2)	This lane uses a directly entered Saturation Flow						2000	2000
10/3 (M40 NB Off-Slip Lane 3)	This lane uses a directly entered Saturation Flow						2000	2000
11/1	Infinite Saturation Flow						Inf	Inf

11/2	Infinite Saturation Flow	Inf	Inf
12/1	This lane uses a directly entered Saturation Flow	2000	2000
12/2	This lane uses a directly entered Saturation Flow	2000	2000
12/3	This lane uses a directly entered Saturation Flow	2000	2000
12/4	This lane uses a directly entered Saturation Flow	2000	2000
13/1 (B430 Lane 1)	This lane uses a directly entered Saturation Flow	2000	2000
13/2 (B430 Lane 2)	This lane uses a directly entered Saturation Flow	2000	2000
13/3 (B430 Lane 3)	This lane uses a directly entered Saturation Flow	2000	2000
13/4 (B430 Lane 4)	This lane uses a directly entered Saturation Flow	2000	2000
13/5 (B430 Lane 5)	This lane uses a directly entered Saturation Flow	2000	2000
14/1 (M40 NB On-Slip Lane 1)	Infinite Saturation Flow	Inf	Inf
14/2 (M40 NB On-Slip Lane 2)	Infinite Saturation Flow	Inf	Inf
15/1	This lane uses a directly entered Saturation Flow	2000	2000
15/2	This lane uses a directly entered Saturation Flow	2000	2000
15/3	This lane uses a directly entered Saturation Flow	2000	2000
15/4	This lane uses a directly entered Saturation Flow	2000	2000
15/5	This lane uses a directly entered Saturation Flow	2000	2000

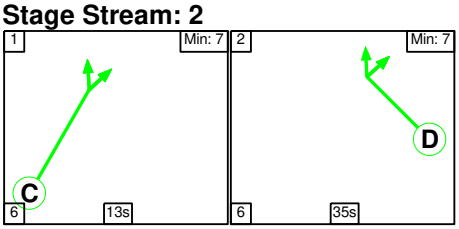
Scenario 1: '2031 do something AM' (FG5: '2031 do some AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

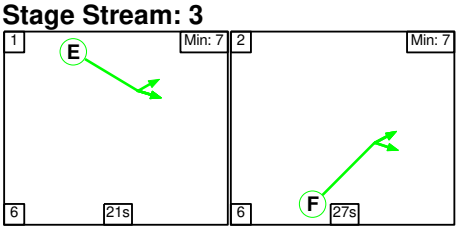
Stage Stream: 1



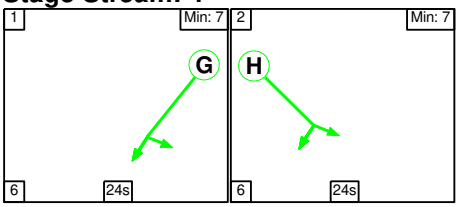
Stage Stream: 2



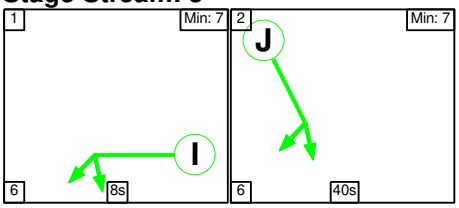
Stage Stream: 3



Stage Stream: 4



Stage Stream: 5



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	24	24
Change Point	53	23

Stage Stream: 2

Stage	1	2
Duration	13	35
Change Point	39	58

Stage Stream: 3

Stage	1	2
Duration	21	27
Change Point	29	56

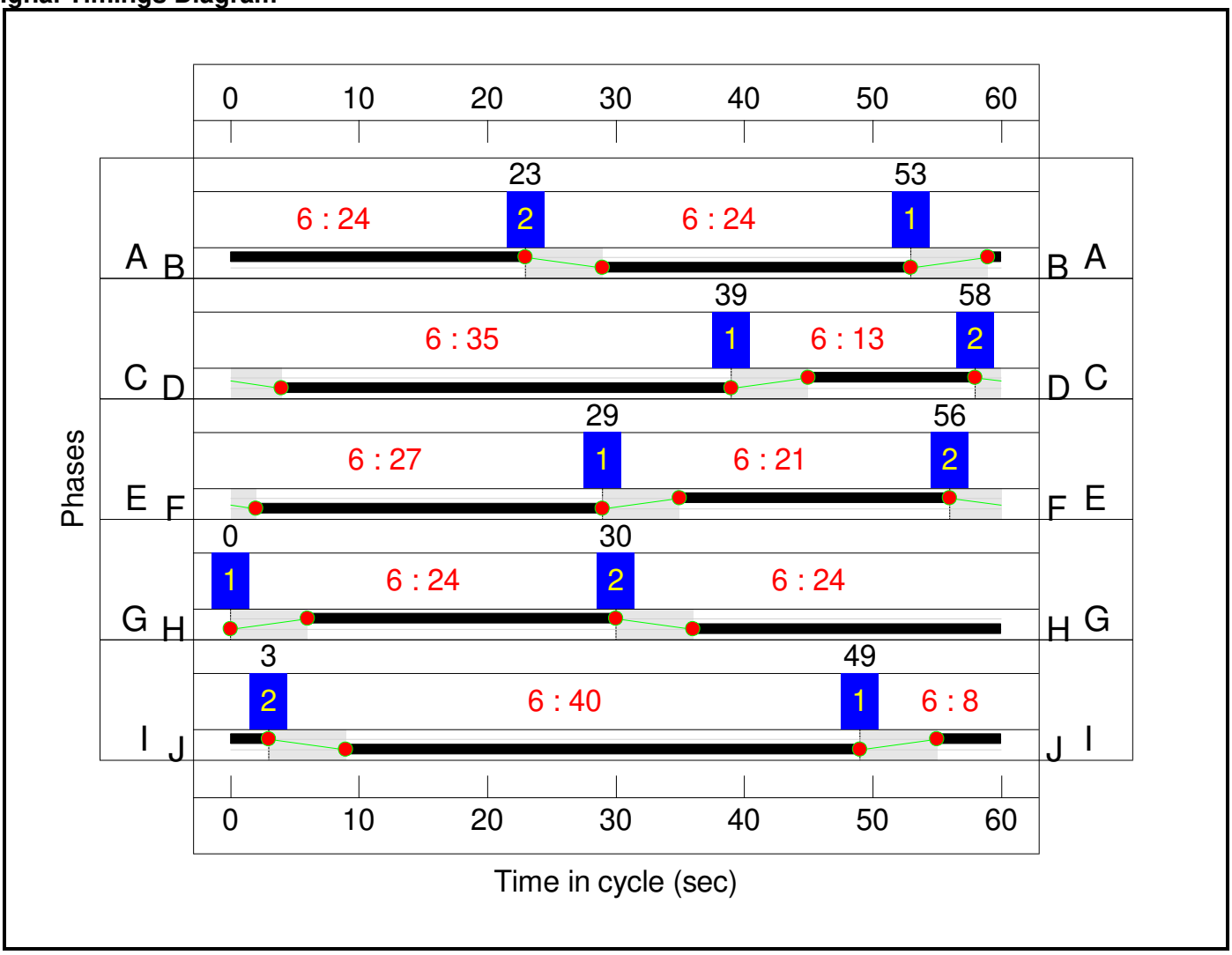
Stage Stream: 4

Stage	1	2
Duration	24	24
Change Point	0	30

Stage Stream: 5

Stage	1	2
Duration	8	40
Change Point	49	3

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: Single grade-seperated roundabout - Option 3B	-	-	**N/A**	-	-		-	-	-	-	-	-	**103.8%**
M40 J10	-	-	**N/A**	-	-		-	-	-	-	-	-	**103.8%**
1/1	M40 (SB) Off-Slip Ahead Left	U	3	N/A	E		1	21	-	556	2000	733	75.8%
1/2+1/3	M40 (SB) Off-Slip Ahead	U	3	N/A	E		1	21	-	519	2000:2000	357+732	47.7 : 47.7%
2/1	Ahead	U	3	N/A	F		1	27	-	736	2000	933	78.9%
2/2	Ahead	U	3	N/A	F		1	27	-	722	2000	933	77.4%
2/3	Right Ahead	U	3	N/A	F		1	27	-	725	2000	933	77.7%
3/1	Ahead	U	4	N/A	H		1	24	-	458	2000	833	55.0%
3/2	Right	U	4	N/A	H		1	24	-	282	2000	833	33.8%
3/3	Right	U	4	N/A	H		1	24	-	170	2000	833	20.4%
3/4	Right	U	4	N/A	H		1	24	-	349	2000	833	41.9%
5/2+5/1	A43 (N) Left Ahead	U	4	N/A	G		1	24	-	1729	2000:2000	833+833	103.7 : 103.8%
5/3	A43 (N) Ahead	U	4	N/A	G		1	24	-	549	2000	833	65.9%
5/4	A43 (N) Ahead	U	4	N/A	G		1	24	-	573	2000	833	68.8%
6/2+6/1	Services Left Left2	U	5	N/A	I		1	8	-	352	1900:1900	285+285	62.8 : 60.7%
6/3	Services Left	U	5	N/A	I		1	8	-	230	1900	285	80.7%
7/1	Ahead	U	1	N/A	B		1	24	-	719	2000	833	86.3%
7/2	Ahead	U	1	N/A	B		1	24	-	702	2000	833	84.2%
7/3	Right	U	1	N/A	B		1	24	-	507	2000	833	60.8%
10/2+10/1	M40 NB Off-Slip Left Ahead	U	1	N/A	A		1	24	-	1172	2000:2000	833+521	87.1 : 85.6%
10/3	M40 NB Off-Slip Ahead	U	1	N/A	A		1	24	-	694	2000	833	83.3%
12/1	Ahead	U	2	N/A	D		1	35	-	422	2000	1200	35.2%

12/2	Right	U	2	N/A	D		1	35	-	726	2000	1200	60.5%
12/3	Right	U	2	N/A	D		1	35	-	404	2000	1200	33.7%
12/4	Right	U	2	N/A	D		1	35	-	375	2000	1200	31.3%
13/2+13/1	B430 Ahead	U	2	N/A	C		1	13	-	391	2000:2000	467+467	41.8 : 42.0%
13/3	B430 Ahead	U	2	N/A	C		1	13	-	10	2000	467	2.1%
13/4+13/5	B430 Ahead	U	2	N/A	C		1	13	-	668	2000:2000	467+467	68.1 : 75.0%
15/1	Ahead	U	5	N/A	J		1	40	-	882	2000	1367	62.6%
15/2	Ahead	U	5	N/A	J		1	40	-	1005	2000	1367	71.3%
15/3	Ahead	U	5	N/A	J		1	40	-	719	2000	1367	52.6%
15/4+15/5	Ahead	U	5	N/A	J		1	40	-	922	2000:2000	1137+488	56.7 : 56.7%

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: Single grade-seperated roundabout - Option 3B	**-**	**-**	**0**	**0**	**0**	**61.4**	**67.1**	**0.0**	**128.5**	**-**	**-**	**-**	**-**
M40 J10	**-**	**-**	**0**	**0**	**0**	**61.4**	**67.1**	**0.0**	**128.5**	**-**	**-**	**-**	**-**
1/1	556	556	-	-	-	2.6	1.5	-	4.1	26.6	8.0	1.5	9.6
1/2+1/3	519	519	-	-	-	2.0	0.5	-	2.5 (0.8+1.7)	17.3 (16.3:17.7)	4.5	0.5	4.9
2/1	736	736	-	-	-	4.1	1.8	-	5.9	29.0	8.2	1.8	10.0
2/2	722	722	-	-	-	2.4	1.7	-	4.1	20.6	9.6	1.7	11.3
2/3	725	725	-	-	-	2.4	1.7	-	4.1	20.3	9.6	1.7	11.4
3/1	458	458	-	-	-	1.7	0.0	-	1.7	13.4	5.8	0.0	5.8
3/2	282	282	-	-	-	1.8	0.0	-	1.8	23.1	4.7	0.0	4.7
3/3	170	170	-	-	-	0.0	0.0	-	0.0	0.1	0.0	0.0	0.0
3/4	349	349	-	-	-	0.0	0.0	-	0.0	0.1	0.0	0.0	0.0
5/2+5/1	1729	1667	-	-	-	10.1	41.6	-	51.7 (25.6+26.1)	107.7 (106.6:108.7)	14.9	41.6	56.5
5/3	549	549	-	-	-	2.1	1.0	-	3.1	20.4	7.3	1.0	8.3
5/4	573	573	-	-	-	2.3	1.1	-	3.4	21.2	7.8	1.1	8.9
6/2+6/1	352	352	-	-	-	2.3	0.8	-	3.1 (1.6+1.5)	32.1 (32.1:32.1)	2.8	0.8	3.6
6/3	230	230	-	-	-	1.6	2.0	-	3.5	55.2	3.7	2.0	5.7
7/1	719	719	-	-	-	2.0	3.0	-	5.0	25.0	11.5	3.0	14.5
7/2	702	702	-	-	-	2.9	2.6	-	5.5	28.2	11.5	2.6	14.1
7/3	507	507	-	-	-	2.2	0.8	-	2.9	20.9	7.9	0.8	8.6
10/2+10/1	1172	1172	-	-	-	4.9	3.1	-	8.0 (5.2+2.8)	24.5 (25.6:22.7)	10.9	3.1	14.0
10/3	694	694	-	-	-	3.0	2.4	-	5.4	28.1	10.2	2.4	12.6
12/1	422	422	-	-	-	1.9	0.0	-	1.9	16.5	5.0	0.0	5.0
12/2	726	726	-	-	-	0.0	0.0	-	0.0	0.0	0.6	0.0	0.6
12/3	404	404	-	-	-	0.1	0.0	-	0.1	0.7	0.3	0.0	0.3

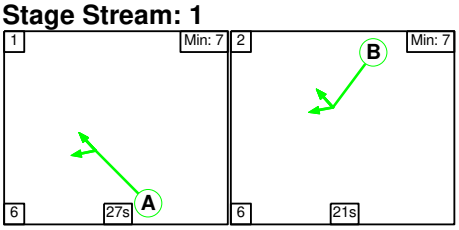
12/4	375	375	-	-	-	0.0	0.0	-	0.0	0.3	0.2	0.0	0.2
13/2+13/1	391	391	-	-	-	2.1	0.4	-	2.5 (1.2+1.2)	22.9 (22.9:22.9)	2.7	0.4	3.1
13/3	10	10	-	-	-	0.1	0.0	-	0.1	22.0	0.1	0.0	0.1
13/4+13/5	668	668	-	-	-	3.9	1.2	-	5.2 (2.4+2.7)	27.9 (27.7:28.1)	5.3	1.2	6.6
15/1	855	855	-	-	-	0.5	0.0	-	0.5	1.9	1.7	0.0	1.7
15/2	974	974	-	-	-	0.5	0.0	-	0.5	1.7	1.7	0.0	1.7
15/3	719	719	-	-	-	0.5	0.0	-	0.5	2.3	2.0	0.0	2.0
15/4+15/5	922	922	-	-	-	1.4	0.0	-	1.4 (1.3+0.0)	5.4 (7.5:0.5)	5.2	0.0	5.2

C1	Stream: 1	PRC for Signalled Lanes (%):	3.3	Total Delay for Signalled Lanes (pcuHr):	26.82	Cycle Time (s):	60
C1	Stream: 2	PRC for Signalled Lanes (%):	20.0	Total Delay for Signalled Lanes (pcuHr):	9.77	Cycle Time (s):	60
C1	Stream: 3	PRC for Signalled Lanes (%):	14.1	Total Delay for Signalled Lanes (pcuHr):	20.74	Cycle Time (s):	60
C1	Stream: 4	PRC for Signalled Lanes (%):	-15.3	Total Delay for Signalled Lanes (pcuHr):	61.70	Cycle Time (s):	60
C1	Stream: 5	PRC for Signalled Lanes (%):	11.5	Total Delay for Signalled Lanes (pcuHr):	9.45	Cycle Time (s):	60
		PRC Over All Lanes (%):	-15.3	Total Delay Over All Lanes(pcuHr):	128.47		

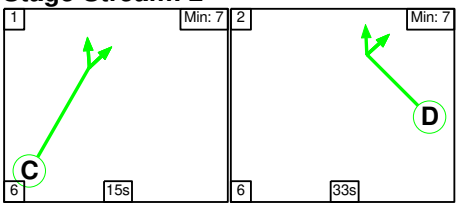
Scenario 2: '2031 do something PM' (FG6: '2031 do some PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

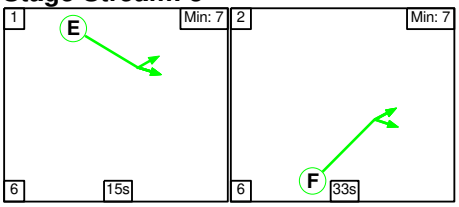
Stage Stream: 1



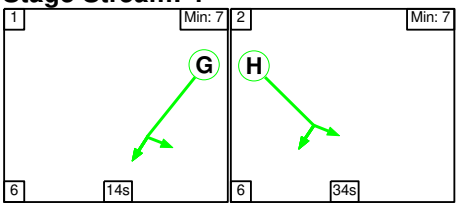
Stage Stream: 2



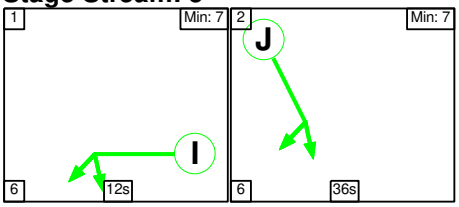
Stage Stream: 3



Stage Stream: 4



Stage Stream: 5



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	27	21
Change Point	35	8

Stage Stream: 2

Stage	1	2
Duration	15	33
Change Point	19	40

Stage Stream: 3

Stage	1	2
Duration	15	33
Change Point	15	36

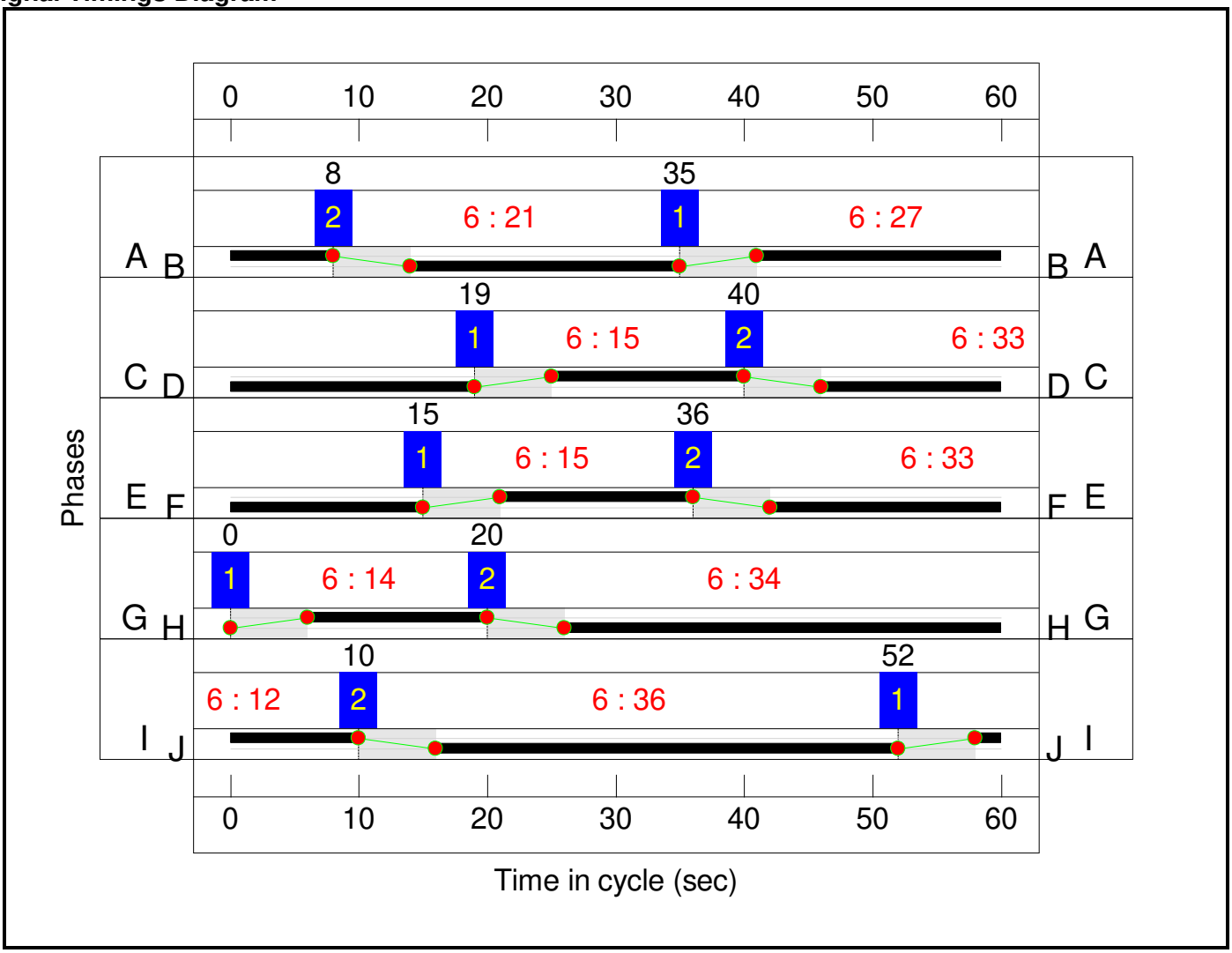
Stage Stream: 4

Stage	1	2
Duration	14	34
Change Point	0	20

Stage Stream: 5

Stage	1	2
Duration	12	36
Change Point	52	10

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: Single grade-seperated roundabout - Option 3B	-	-	**N/A**	-	-		-	-	-	-	-	-	**105.8%**
M40 J10	-	-	**N/A**	-	-		-	-	-	-	-	-	**105.8%**
1/1	M40 (SB) Off-Slip Ahead Left	U	3	N/A	E		1	15	-	547	2000	533	102.6%
1/2+1/3	M40 (SB) Off-Slip Ahead	U	3	N/A	E		1	15	-	380	2000:2000	226+533	50.1 : 50.1%
2/1	Ahead	U	3	N/A	F		1	33	-	1127	2000	1133	94.9%
2/2	Ahead	U	3	N/A	F		1	33	-	1046	2000	1133	89.7%
2/3	Right Ahead	U	3	N/A	F		1	33	-	1042	2000	1133	89.8%
3/1	Ahead	U	4	N/A	H		1	34	-	497	2000	1167	41.0%
3/2	Right	U	4	N/A	H		1	34	-	472	2000	1167	40.1%
3/3	Right	U	4	N/A	H		1	34	-	113	2000	1167	9.7%
3/4	Right	U	4	N/A	H		1	34	-	267	2000	1167	22.9%
5/2+5/1	A43 (N) Left Ahead	U	4	N/A	G		1	14	-	1046	2000:2000	500+500	104.6 : 104.6%
5/3	A43 (N) Ahead	U	4	N/A	G		1	14	-	318	2000	500	63.6%
5/4	A43 (N) Ahead	U	4	N/A	G		1	14	-	358	2000	500	71.6%
6/2+6/1	Services Left Left2	U	5	N/A	I		1	12	-	275	1900:1900	412+412	33.5 : 33.3%
6/3	Services Left	U	5	N/A	I		1	12	-	325	1900	412	78.9%
7/1	Ahead	U	1	N/A	B		1	21	-	448	2000	733	61.1%
7/2	Ahead	U	1	N/A	B		1	21	-	336	2000	733	45.8%
7/3	Right	U	1	N/A	B		1	21	-	614	2000	733	83.7%
10/2+10/1	M40 NB Off-Slip Left Ahead	U	1	N/A	A		1	27	-	1286	2000:2000	933+285	105.5 : 105.5%
10/3	M40 NB Off-Slip Ahead	U	1	N/A	A		1	27	-	987	2000	933	105.8%
12/1	Ahead	U	2	N/A	D		1	33	-	485	2000	1133	42.8%
12/2	Right	U	2	N/A	D		1	33	-	986	2000	1133	82.4%

12/3	Right	U	2	N/A	D		1	33	-	606	2000	1133	50.9%
12/4	Right	U	2	N/A	D		1	33	-	509	2000	1133	42.8%
13/2+13/1	B430 Ahead	U	2	N/A	C		1	15	-	427	2000:2000	533+533	39.9 : 40.1%
13/3	B430 Ahead	U	2	N/A	C		1	15	-	141	2000	533	26.4%
13/4+13/5	B430 Ahead	U	2	N/A	C		1	15	-	973	2000:2000	533+533	82.5 : 99.9%
15/1	Ahead	U	5	N/A	J		1	36	-	654	2000	1233	51.4%
15/2	Ahead	U	5	N/A	J		1	36	-	757	2000	1233	59.4%
15/3	Ahead	U	5	N/A	J		1	36	-	431	2000	1233	34.9%
15/4+15/5	Ahead	U	5	N/A	J		1	36	-	625	2000:2000	924+795	36.4 : 36.4%

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: Single grade-seperated roundabout - Option 3B	**-**	**-**	**0**	**0**	**0**	**63.4**	**151.6**	**0.0**	**215.0**	**-**	**-**	**-**	**-**
M40 J10	**-**	**-**	**0**	**0**	**0**	**63.4**	**151.6**	**0.0**	**215.0**	**-**	**-**	**-**	**-**
1/1	547	533	-	-	-	3.7	15.6	-	19.3	126.9	9.3	15.6	24.9
1/2+1/3	380	380	-	-	-	1.9	0.5	-	2.4 (0.7+1.7)	22.9 (21.9:23.4)	3.7	0.5	4.2
2/1	1075	1075	-	-	-	4.5	7.4	-	11.9	39.7	12.8	7.4	20.2
2/2	1017	1017	-	-	-	2.8	4.1	-	6.9	24.5	14.1	4.1	18.2
2/3	1018	1018	-	-	-	2.5	4.1	-	6.6	23.4	15.1	4.1	19.2
3/1	478	478	-	-	-	0.5	0.0	-	0.5	4.0	3.6	0.0	3.6
3/2	468	468	-	-	-	1.4	0.0	-	1.4	10.6	3.6	0.0	3.6
3/3	113	113	-	-	-	0.1	0.0	-	0.1	1.9	1.5	0.0	1.5
3/4	267	267	-	-	-	0.1	0.0	-	0.1	2.0	3.9	0.0	3.9
5/2+5/1	1046	1000	-	-	-	7.9	31.3	-	39.2 (19.6+19.6)	135.0 (135.0:135.0)	9.1	31.3	40.4
5/3	318	318	-	-	-	1.8	0.9	-	2.6	29.9	4.7	0.9	5.5
5/4	358	358	-	-	-	2.0	1.2	-	3.3	33.0	5.4	1.2	6.6
6/2+6/1	275	275	-	-	-	1.5	0.3	-	1.8 (0.9+0.9)	23.1 (23.2:23.1)	1.9	0.3	2.2
6/3	325	325	-	-	-	2.0	1.8	-	3.8	42.2	5.1	1.8	6.9
7/1	448	448	-	-	-	1.5	0.8	-	2.3	18.3	3.1	0.8	3.9
7/2	336	336	-	-	-	2.1	0.4	-	2.5	26.7	4.3	0.4	4.8
7/3	614	614	-	-	-	1.4	2.5	-	3.8	22.5	7.3	2.5	9.8
10/2+10/1	1286	1234	-	-	-	6.1	41.5	-	47.6 (37.1+10.5)	133.3 (135.4:126.2)	16.4	41.5	57.9
10/3	987	933	-	-	-	6.2	34.1	-	40.3	147.0	17.3	34.1	51.4
12/1	485	485	-	-	-	2.8	0.0	-	2.8	20.6	7.5	0.0	7.5
12/2	934	934	-	-	-	0.0	0.0	-	0.0	0.1	0.6	0.0	0.6
12/3	577	577	-	-	-	0.4	0.0	-	0.4	2.6	2.2	0.0	2.2

12/4	485	485	-	-	-	0.4	0.0	-	0.4	2.7	1.7	0.0	1.7
13/2+13/1	427	427	-	-	-	2.1	0.3	-	2.5 (1.2+1.2)	20.9 (20.9:20.9)	2.9	0.3	3.2
13/3	141	141	-	-	-	0.7	0.2	-	0.9	22.0	1.8	0.2	2.0
13/4+13/5	973	973	-	-	-	5.8	4.7	-	10.5 (4.7+5.8)	38.9 (38.1:39.5)	8.7	4.7	13.5
15/1	634	634	-	-	-	0.5	0.0	-	0.5	2.7	6.1	0.0	6.1
15/2	732	732	-	-	-	0.6	0.0	-	0.6	3.1	9.7	0.0	9.7
15/3	431	431	-	-	-	0.0	0.0	-	0.0	0.1	0.2	0.0	0.2
15/4+15/5	625	625	-	-	-	0.0	0.0	-	0.0 (0.0+0.0)	0.1 (0.1:0.0)	0.0	0.0	0.0

C1	Stream: 1	PRC for Signalled Lanes (%):	-17.5	Total Delay for Signalled Lanes (pcuHr):	96.52	Cycle Time (s): 60
C1	Stream: 2	PRC for Signalled Lanes (%):	-11.0	Total Delay for Signalled Lanes (pcuHr):	17.41	Cycle Time (s): 60
C1	Stream: 3	PRC for Signalled Lanes (%):	-14.0	Total Delay for Signalled Lanes (pcuHr):	47.11	Cycle Time (s): 60
C1	Stream: 4	PRC for Signalled Lanes (%):	-16.2	Total Delay for Signalled Lanes (pcuHr):	47.26	Cycle Time (s): 60
C1	Stream: 5	PRC for Signalled Lanes (%):	14.0	Total Delay for Signalled Lanes (pcuHr):	6.72	Cycle Time (s): 60
		PRC Over All Lanes (%):	-17.5	Total Delay Over All Lanes(pcuHr):	215.02	

APPENDIX 20

TN9: M40 JUNCTION 10 OPTION 25

OXFORDSHIRE RAILFREIGHT INTERCHANGE LIMITED

TECHNICAL NOTE 9: M40 JUNCTION 10 OPTION 25

ADC Infrastructure Limited
4th Floor
City Buildings
34-36 Carrington Street
Nottingham
NG1 7FG

www.ADCinfrastructure.com

project number: ADC1794				report reference: ADC1794-RP-T
version	date	lead author(s)	reviewer(s)	comments
1	23/03/2022	[redacted]		nternal draft
2	01/04/2022			raft issued to project team
3	08/04/2022			ssued to TWG

CONTENTS PAGE

1.0	**INTRODUCTION**	**4**
2.0	**M40 TO A43 NORTHBOUND FREE-FLOW LINK OPTIONIONEERING**	**6**
	M40 Junction 10 – OxSRFI mitigation current status	6
	M40 to A43 northbound link Options 20 to 23	6
3.0	**M40 JUNCTION 10 – CHANGE OF STRATEGY AND PREFERRED OPTION**	**12**
	Option 23 – further analysis	12
	Option 24	13
	Option 25 – preferred option	13
	Design methodology	14
	Baynard's Green and the new B4100/link road junction	15
	Padbury roundabout	18
	Ardley roundabout	20
4.0	**ANALYSIS OF M40 JUNCTION 10 PERFORMANCE**	**22**
	Journey time	22
	Headroom	23
	Conflict assessments	23
	Future adaptability	26
5.0	**GEOMETRY ASSESSMENT**	**27**
	Link road geometry	27
	Merge and diverge assessment	28
	Ardley Bypass	29
	Detailed junction geometry	29
6.0	**ENVIRONMENT AND BUILDABILITY**	**30**
	Environment	30
	Buildability	32
7.0	**LOCAL ACCESS, WALKING AND CYCLING**	**33**
	Local access and Cherwell MSA	33
	Walking and cycling	33
8.0	**SUMMARY AND CONCLUSIONS**	**34**

DRAWINGS

OxSRFI-BWB-GEN-ZZ-SK-CH-SK031-S1-P04	M40 J10 Strategic Option 25
OxSRFI-BWB-GEN-XX-SK-CH-SK042-S1-P01	M40 Junction 10 Overall General Arrangement
OxSRFI-BWB-GEN-XX-SK-CH-SK021-S1-P04	A43 to M40 SB Link GA and Vertical Alignment
OxSRFI-BWB-GEN-XX-SK-CH-SK035-S1-P02	M40 to A43 NB Link GA and Vertical Alignment
OxSRFI-BWB-GEN-XX-SK-CH-SK036-S1-P03	Baynard's Green Link & J10 SB Merge GA and Vertical Alignment
OxSRFI-BWB-GEN-XX-SK-CH-SK037-S1-P02	J10 NB Merge GA and Vertical Alignment
OxSRFI-BWB-GEN-XX-SK-CH-SK038-S1-P02	Ardley Bypass GA and Vertical Alignment
OxSRFI-BWB-GEN-XX-SK-CH-SK039-S1-P02	Ardley Road and NB Exit Slip GA and Vertical Alignment

APPENDICES

Appendix A	Option 25 – LinSig results
Appendix B	Journey time comparisons
Appendix C	M40 Junction 10 merge and diverge 2031 traffic flows

1.0 INTRODUCTION

1.1 ADC Infrastructure Ltd and BWB Consulting Ltd are appointed by Oxfordshire Railfreight Ltd (the Applicant) to assess and design the transport and infrastructure requirements of a Nationally Significant Infrastructure Project (NSIP), that being a proposed Strategic Rail Freight Interchange in Oxfordshire, to be known as Oxfordshire Strategic Rail Freight Interchange (OxSRFI).

1.2 Ensuring good access to the Strategic Road Network (SRN) is a prerequisite for the proposed OxSRFI development. Initial investigations into this, and consultation with Oxfordshire County Council (OCC) and National Highways (formerly Highways England), advanced the access strategy such that it is centred on provision of significant improvements to Junction 10 of the M40 motorway, in combination with a provision of a new bypass for the village of Ardley, a new relief road around the north-east quadrant of the village of Middleton Stoney and a Heyford Park link.

1.3 The objectives of this approach are to ensure adequate capacity at M40 Junction 10 to accommodate the required access to the SRN, whilst delivering appropriate new site access infrastructure, along with aiding the delivery of planned growth and development across the wider area. Technical Note 5[1] (TN5) identified and assessed a long list of potential interventions at M40 Junction 10 that could be implemented by the OxSRFI scheme to mitigate the impact of the OxSRFI development at the junction. A short list of four options (Options 11, 13, 18 and 19) was identified to be taken forward for further consideration. All four options included provision of a southbound free-flow link between the A43 and the M40, removing traffic on this route from the Padbury and Cherwell roundabout complex at M40 Junction 10.

1.4 Following a meeting on the 23 of July 2021, National Highways requested that the option for a large single grade-separated gyratory (Option 3) be given further consideration to examine whether identified capacity constraints could be overcome. Hence, ADC Infrastructure and BWB Consulting jointly prepared and issued Technical Note 8[2] (TN8) which considers in greater detail the opportunity to provide a large single grade-separated gyratory at M40 Junction 10. TN8 concluded that the proposed OxSRFI Options 11, 13, 18 and 19 presented in TN5 offer long-term benefit over a large complex signal controlled roundabout.

1.5 National Highways provided initial feedback on the preferred options (Option 11, 13, 18 and 19) presented in TN5 via email on 21 September 2021, including DMRB compliance checks and audits of the LinSig modelling which supports TN5. It was agreed at the Transport Working Group meeting held on 24 September 2021 that to assist National Highways with their ongoing review of TN5, along with TN8, the Applicant would prepare a response to the feedback provided by email on 21 September 2021. Hence, ADC Infrastructure and BWB Consulting jointly prepared and issued a Technical Note 5 Addendum Report[3] (TN5 Addendum) which provided that response.

1.6 Following a Transport Working Group meeting on 17 November 2021, work was undertaken to prepare network models in LinSig such that an analysis of journey times through M40 Junction 10 could be undertaken. Network LinSig models for the reference case, Option 18, Option 19 and Option 3c (a further development of Option 3) arrangements for M40 Junction 10 were submitted to the Transport Working Group via email on 21 November 2021 with an analysis of

[1] Technical Note 5 – M40 Junction 10 Options Report, report reference ADC1794-RP-M -V3, 14 June 2021.
[2] Technical Note 8 – M40 Junction 10 Options 3A and 3B, report reference ADC1794-RP-Q-V4, 06 October 2021.
[3] Technical Note 5 Addendum – M40 Junction 10 Options Report Addendum: Response to National Highways Initial Comments on Options 11, 13, 18 and 19, report reference ADC1794-RP-M1, 08 October 2021.

journey times. This showed that all three mitigation options would provide betterment when compared to the reference case, particularly in the morning peak hour. The journey time analysis results also showed that Options 18 and 19 would provide benefit over Option 3c, with little difference between Options 18 and 19.

1.7 Following additional feedback from National Highways via emails on 15 and 19 November 2021, the network models were refined, and the journey time analysis was updated and expanded to include off-peak and inter-peak hour periods. A high-level assessment of the options with regards to conflicts points (relating to road safety) was also undertaken. The refined network models and analysis was submitted to the Transport Working Group via email on 8 December 2021.

1.8 A scoring system for the junction options was proposed by National Highways, which was developed and agreed with OCC and the Applicant. Options 3c, 11, 13, 18 and 19 were appraised by National Highways in consultation with OCC using the scoring system. The conclusion of the scoring assessment was that the additional off-peak and inter-peak journey time assessment and conflict assessment work further supports the conclusion that either Option 18 or 19 are the preferred option to take forwards.

1.9 In an email dated 17 January 2022, National Highways confirmed that Options 18/19 are the preferred options to be taken forward. OCC confirmed that they had no objection to Options 18/19 being taken forward in an email dated 19 January 2022.

1.10 Both Option 18 and Option 19 include a new free-flow link between the A43 south of the Baynard's Green roundabout and the M40 southbound. The key difference between Options 18 and 19 was the relocation of the M40 northbound on-slip at Ardley roundabout. Under Option 18, the M40 northbound on-slip at Ardley roundabout would be moved to the north of the junction.

1.11 As part of the further assessment work required for Options 18 and 19, National Highways requested that analysis was undertaken to see whether a M40 to A43 northbound free-flow link road could be reasonably achieved in the future in terms of geometrical compliance with DMRB, formation of appropriate junctions, and environmental impact.

1.12 ADC Infrastructure Ltd and BWB Consulting Ltd have jointly investigated how the northbound free-flow link between the M40 northbound and the A43 northbound could be achieved. This technical note has therefore been prepared by ADC Infrastructure Ltd working jointly with BWB Consulting Ltd to present the options considered and how the OxSRFI proposals for M40 J10 could be changed.

1.13 It is concluded that:

- Providing a northbound M40 to A43 free-flow link is feasible within the scale of the OxSRFI improvements to M40 Junction 10.
- Providing a northbound M40 to A43 free-flow link enables the previously proposed Ardley East junction and proposed new south facing slip roads to be removed from the scheme, with reduced potential for environmental impacts.
- A new option, Option 25, is developed, that overall performs better than previous options with regards to headroom, journey times, has a similar new of conflict points, and would offer buildability advantages.

1.14 Therefore, it is proposed that Option 25 it taken forward as the preferred option instead of Options 18 and 19.

2.0 M40 TO A43 NORTHBOUND FREE-FLOW LINK OPTIONIONEERING

M40 Junction 10 – OxSRFI mitigation current status

2.1 Following extensive option testing and review, National Highways and OCC have confirmed that the proposed mitigation Options 18 and 19 are preferred and can be taken forward for further development.

2.2 Options 18 and Option 19 include a new southbound free-flow link between the A43, south of the Baynard's Green roundabout, and the M40. As shown on **Figure 1** below, the key difference between Options 18 and 19 is the relocation of the M40 northbound on-slip at Ardley roundabout. Under Option 18, the M40 northbound on-slip would be relocated to the north of the roundabout.

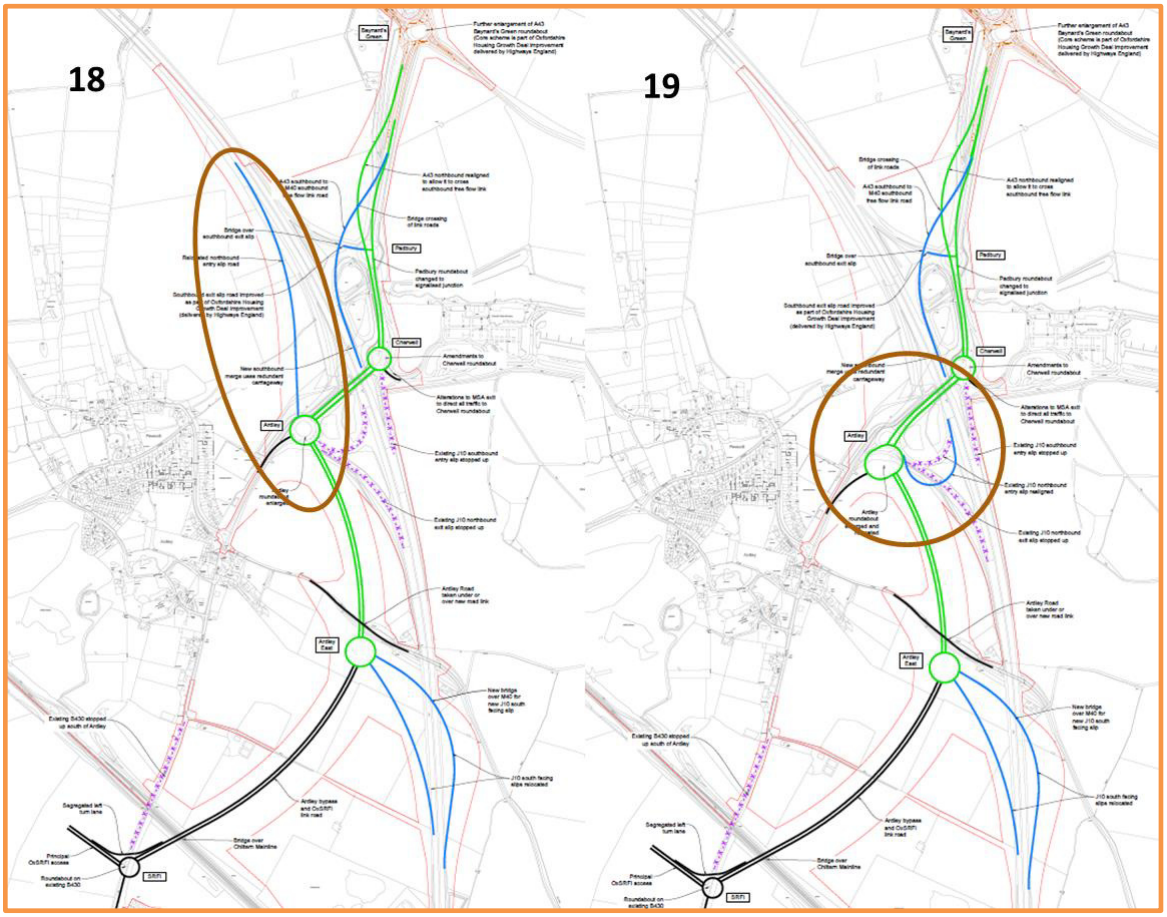


Figure 1: Key strategic difference between Options 18 and 19 (relocated M40 NB merge)

M40 to A43 northbound link Options 20 to 23

2.3 National Highways acknowledge the strategic advantages and the additional headroom that a northbound M40-A43 free-flow link could provide, and they have asked that the Applicant undertake an assessment to review if such a facility could be implemented at some point in the future, and advise on how this affects the selection of Options 18 or 19.

2.4 For this assessment BWB and ADC have considered several further options which are described below. For all free-flow options the start of the free-flow link road is to the immediate north of the existing J10 bridges, as commencing the free-flow link road south of the bridges would significantly increase the length of the link road, require complex engineering to take the link

over or under the existing Ardley roundabout, would adversely impact the delivery of the Ardley Bypass and would be likely to result in negative environmental impacts.

Option 20

2.5 The first northbound free-flow link option considered would provide an at grade-roundabout with the M40 southbound off-slip and the realigned A43 northbound, as shown at **Figure 2** below. Under this arrangement, the Padbury roundabout would be replaced by a traffic signal controlled junction.

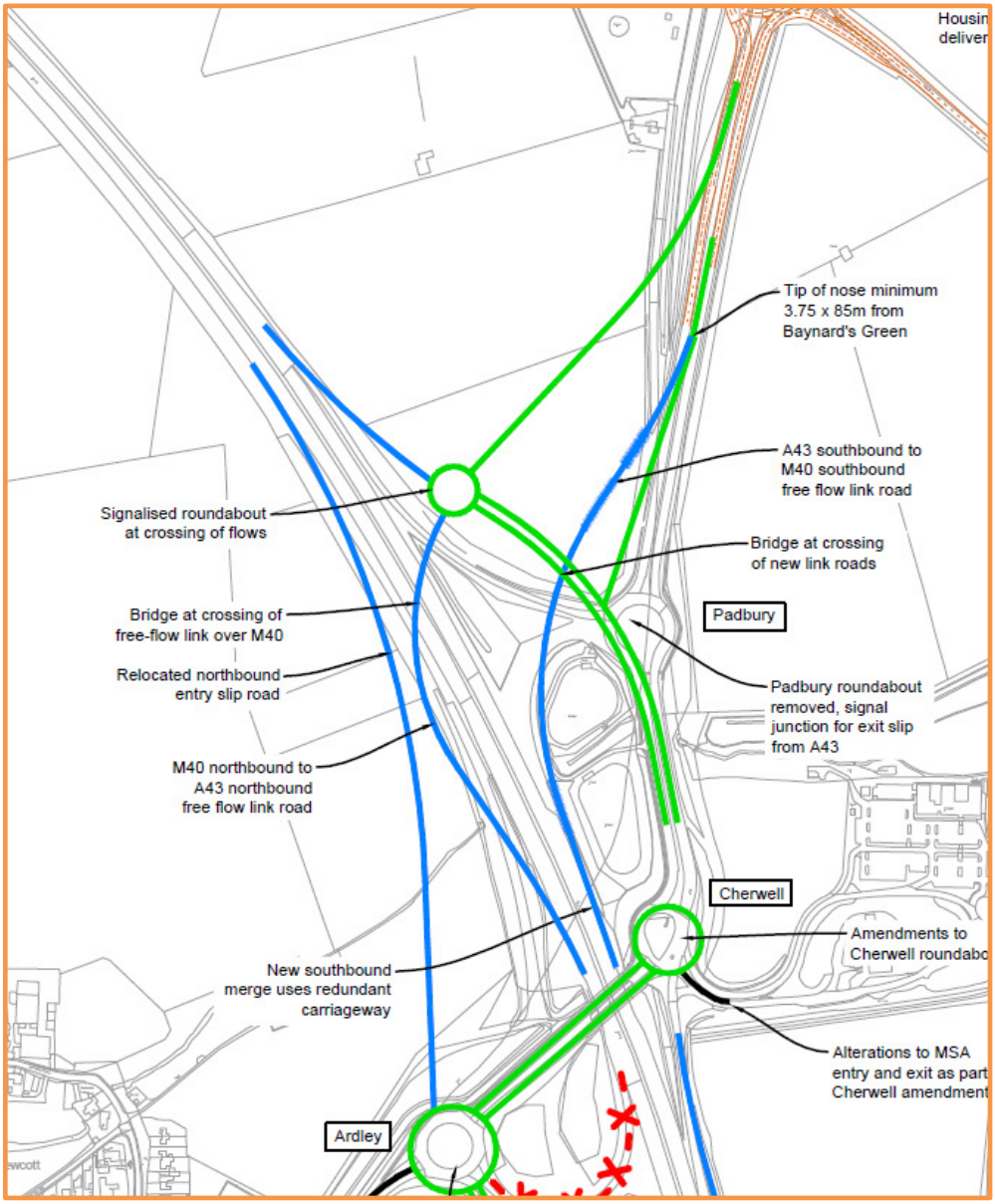


Figure 2: Option 20

2.6 The following issues were identified with Option 20:

- The overall footprint of the M40 Junction 10 complex is increased, as is the required land take, which could lead to environmental impacts.
- This option does not provide a full northbound free-flow link between the M40 and A43, and hence improvements to journey times on this route would be limited.
- The balance of traffic flows at the new M40 southbound exit roundabout mean that it would not be possible to provide a reasonable junction arrangement and therefore, the new roundabout could become a potential “bottleneck”. There would be a risk of traffic

queueing on the shortened M40 southbound exit slip-road which could queue back to the mainline which would be present road safety concerns.

- Traffic on the M40 southbound approach to Junction 10 would have two junctions to navigate (the new roundabout and a signal junction at Padbury) and hence there would be further impacts to journey time on this route.
- The new bridge over the M40 mainline is on a significant skew, making it more challenging to construct.

2.7 Therefore, this option was not considered suitable for further consideration.

Option 21

2.8 Option 21 is shown at **Figure 3** below. This option provides a full northbound free-flow link from the M40 to the A43, which merges with the A43 northbound traffic from Padbury roundabout on approach to the Baynard's Green roundabout. However, under this option a new three-arm roundabout would still be required to accommodate the A43 northbound movement from Padbury roundabout and the M40 southbound off-slip movement.

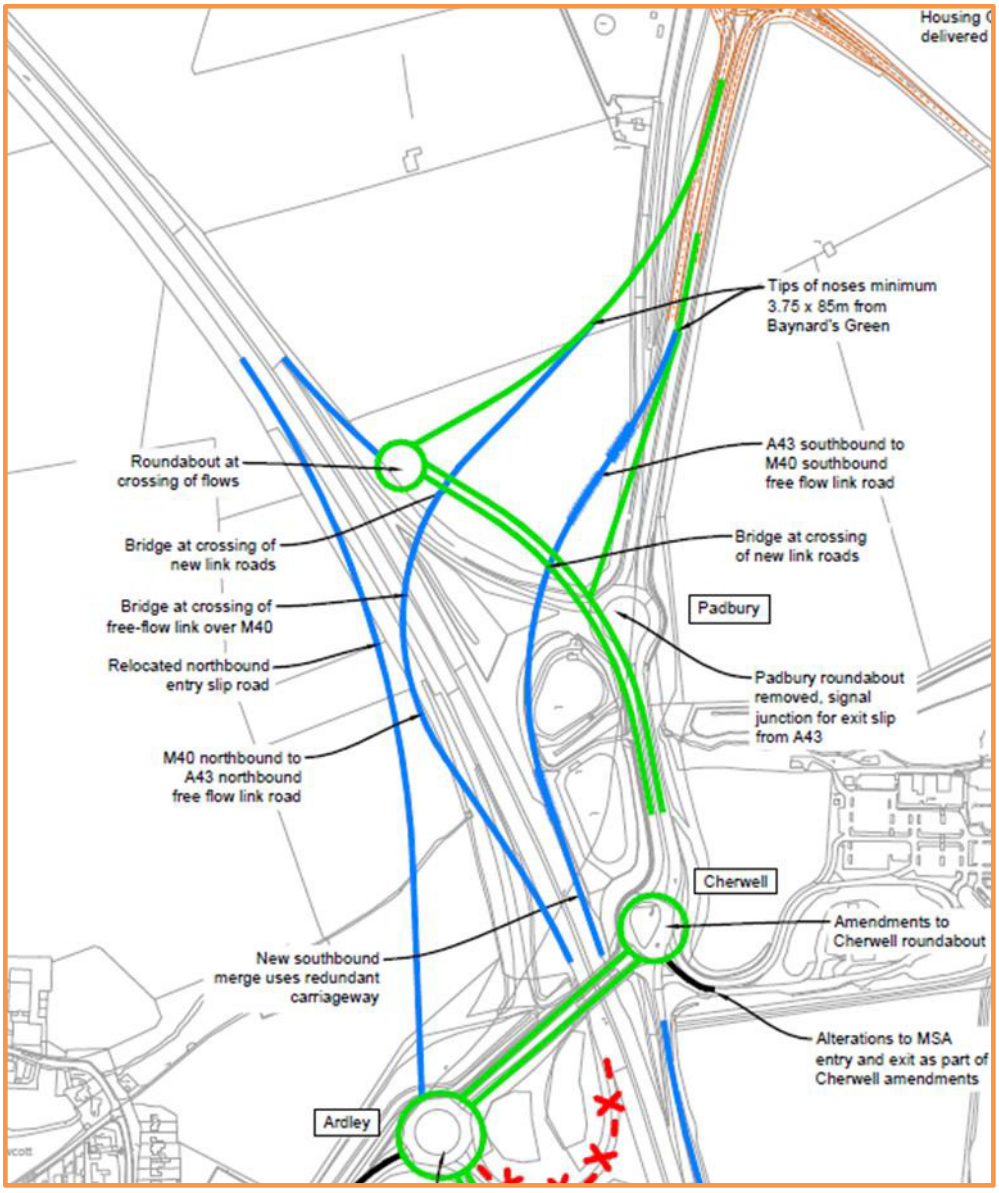


Figure 3: Option 21

2.9 The following issues were identified with Option 21:

- The overall footprint of the M40 Junction 10 complex is increased, as is the required land take. This could lead to environmental impacts.
- A new roundabout junction would be required at the M40 southbound exit. Due to the alignment of the full northbound free-flow link, the length of the M40 southbound exit slip road would be further reduced, increasing the risk that queueing traffic could reach the end of the slip road and queue back to the mainline which would be present road safety concerns.
- The A43 northbound weaving length on the approach to the Baynard's Green roundabout would be very short and could result in road safety concerns.
- The bridge over the M40 mainline is on a significant skew, making it more challenging to construct.

2.10 Hence, this option was not considered suitable for further consideration.

Option 22

2.11 Option 22 is shown at **Figure 4** below.

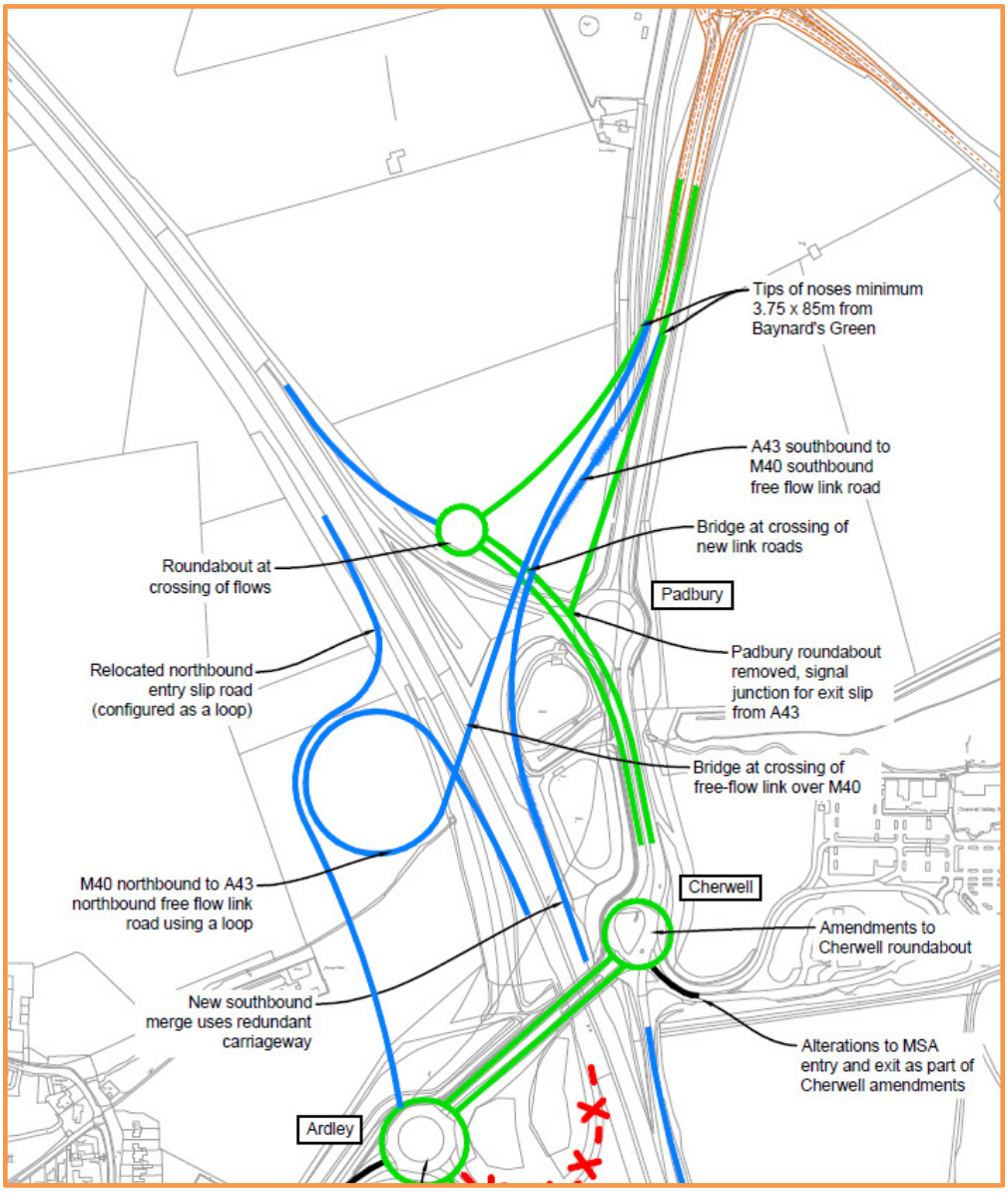


Figure 4: Option 22

2.12 This option also provides a full northbound free-flow link from the M40 to the A43, merging with the A43 northbound traffic from Padbury roundabout on approach to the Baynard's Green roundabout. Option 22 would provide a loop west of the M40 mainline, allowing a much tighter alignment of the free-flow link as it crosses the motorway and merges with the A43.

2.13 Option 22 would enable the footprint of the junction to be materially reduced when compared to Options 20 and 21. However, the other issues identified with Option 21 would remain and therefore, Option 22 was also not considered suitable for further consideration.

Option 23

2.14 Option 23 is shown at **Figure 5** below. This option provides a full northbound free-flow link from the M40 to the A43, with the slip-road loop west of the M40 mainline facilitating a tighter alignment of the free-flow link as it crosses the motorway and merges with the A43. However, rather than seeking to merge the new northbound free-flow link with the existing A43 on approach to Baynard's Green roundabout, Option 23 separates the M40/A43 traffic from the local traffic, creating a new link between the B4100 east of Baynard's Green and Padbury roundabout. A new junction would be created with the B4100.

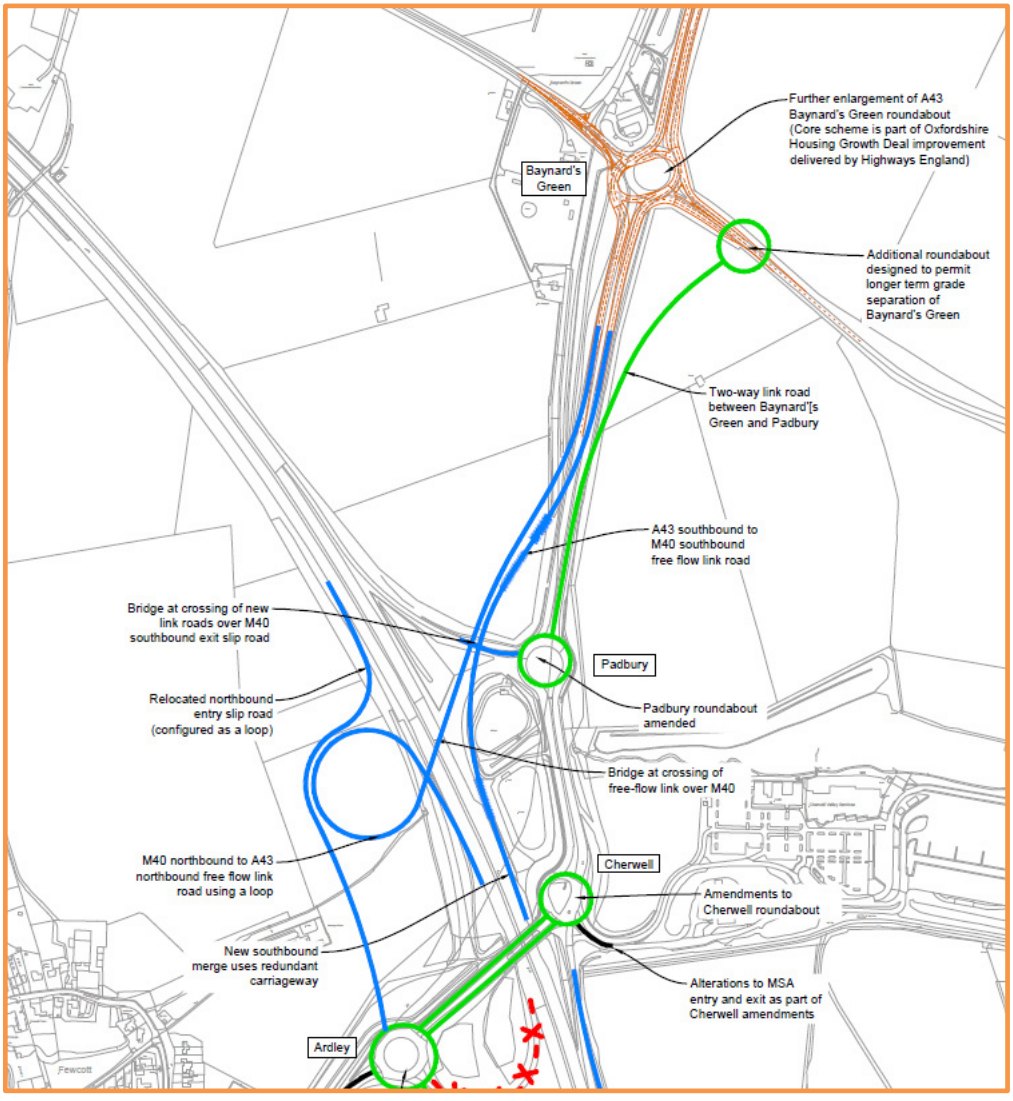


Figure 5: Option 23

2.15 In comparison to Options 20, 21 and 22, Option 23 would have a reduced junction footprint whilst removing both the requirement for an additional junction on the M40 southbound exit,

and also the requirement for the compromised merge and short weaving section on the approach to Baynard's Green roundabout.

2.16 Hence, Option 23 was found to be the most appropriate long-term solution for delivering the northbound free-flow link. Option 18 could be designed and delivered by OxSRFI such that the future upgrade of the junction complex to Option 23 would not be compromised.

3.0 M40 JUNCTION 10 – CHANGE OF STRATEGY AND PREFERRED OPTION

Option 23 – further analysis

3.1 Section 2 of this report identified Option 23 as the most appropriate long-term solution for delivering a M40 to A43 northbound free-flow link. Option 18 could be designed and delivered by OxSRFI such that the future upgrade to Option 23 would not be compromised.

3.2 However, delivering Option 18 and then amending to Option 23 in the future would result in redundant infrastructure being implemented by OxSRFI. This would include the A43 northbound link road bridge across the A43 southbound free-flow link. Further, Option 18 requires enlargements to Cherwell and Ardley roundabouts which would no longer be appropriate under Option 23. These pieces of redundant infrastructure are identified on **Figure 6** below.

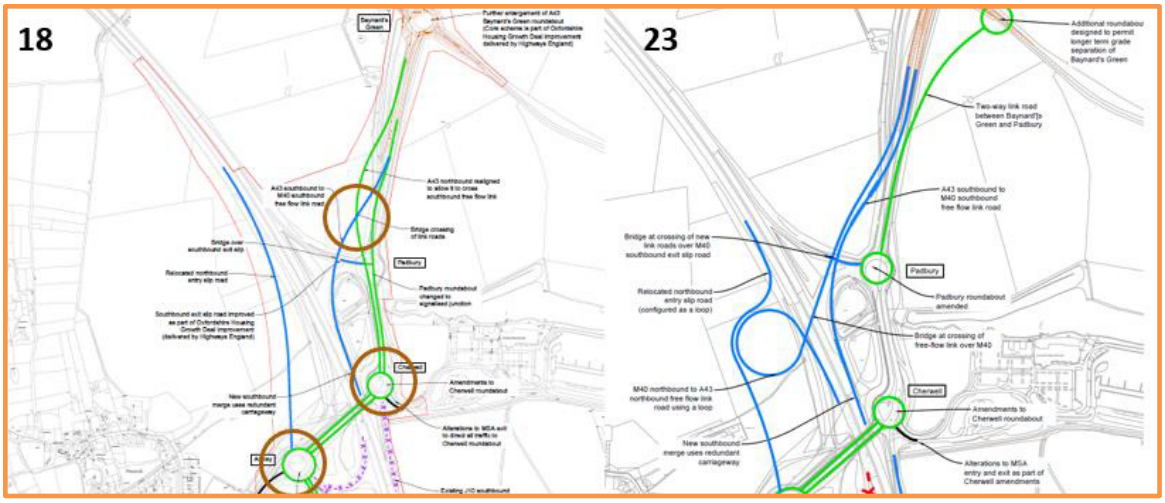


Figure 6: redundant infrastructure between options 18 and 23

3.3 Further to the above, with the northbound M40 to A43 traffic removed from the M40 Junction 10 complex, along with the southbound A43 to M40 traffic, congestion issues at the Ardley, Cherwell and Padbury roundabouts would be significantly eased. The requirement to remove further traffic from the M40 Junction 10 complex, and in particular the Cherwell roundabout that was identified as being required under Options 18 and 19 to accommodate the OxSRFI development traffic, by providing a traffic signal controlled roundabout (known as Ardley East) on the proposed Ardley Bypass to accommodate new M40 south-facing slip roads would be eliminated. Therefore, the Ardley East roundabout would no longer be required. With the northbound M40 to A43 traffic and southbound A43 to M40 traffic removed from the Ardley and Cherwell roundabouts, it would be possible to amend these junctions so that they would be able to accommodate the additional demand from the OxSRFI development.

3.4 Not providing the Ardley East roundabout is considered to lessen or remove some of the potential environmental impacts associated with the Ardley Bypass. The complex 3D interface created by the new bridge over M40 for the new southbound on-slip was likely to require the Ardley Bypass to be elevated and taken over Ardley Road which could have significant adverse noise and visual impacts on Ardley village.

3.5 Given the above, the options 20 to 23 were reviewed further to see how they could be adapted if the Ardley East roundabout and associated new M40 south facing slip roads were removed.

3.6 This change of strategy for the overall M40 Junction 10 and Ardley Bypass solution was undertaken to see what further options could be developed, with the following objectives:

- maximise the benefits of the northbound and southbound M40-A43 free-flow links;
- minimise the environmental impact of the Ardley Bypass and M40 Junction 10 complex;
- minimise the construction of redundant infrastructure;
- minimise the overall land-take requirements; and minimise the impact on scale and construction cost when compared to Options 18/19.

3.7 Two further options were investigated:

Option 24

3.8 A further iteration of the M40 Junction 10 mitigation proposals was considered, Option 24, which would retain the proposals for the looped M40 to A43 northbound link and omit the Ardley East roundabout. This option would not provide the new link between the B4100 east of Baynard's Green and Padbury roundabout and would instead merge the full northbound free-flow link with the A43 northbound traffic from Padbury roundabout, as per Options 21 and 22. However, the issues identified for Options 21 and 22 would remain and therefore, Option 24 was also not considered suitable for further consideration.

Option 25 – preferred option

3.9 Option 25 builds on the benefits identified with Option 23 and meets the above objectives. The strategic layout of Option 25, including the site access roundabout and the Ardley Bypass, is shown on BWB Consulting drawing **OxSRFI-BWB-GEN-ZZ-SK-CH-SK031** and an extract is shown at **Figure 7**.

3.10 The key elements of the Option 25 arrangement shown at **Figure 7** have been designed to achieve the identified objectives as follows:

- The scheme eliminates the requirement for the Ardley East roundabout and the new south facing M40 slip roads.
- The Ardley Bypass would therefore be at or below the existing levels, passing under Ardley Road, eliminating the complex engineering works required to achieve the 3D layout and thereby minimising environmental impacts on Ardley village.
- The northbound and southbound M40-A43 free-flow links significantly reduce traffic flows through the M40 Junction 10 complex and materially improve journey times on the SRN.
- The required number of new structures over the M40 is the same as Options 18 and 19, therefore minimising the impact on scheme cost.
- The number of new junctions required remains the same as Options 18 and 19, therefore minimising the impact on scheme cost.
- The Cherwell roundabout can, with minor improvements, accommodate the OxSRFI traffic due to the removal of northbound and southbound traffic between the M40 and the A43.
- No changes to the Padbury roundabout are envisaged as the capacity is increased by the committed OCC Housing Growth deal improvement scheme.
- The overall scheme footprint is minimised, and Option 25 would mean that significant infrastructure is not built that could become redundant if the northbound free-flow link were built in the future.

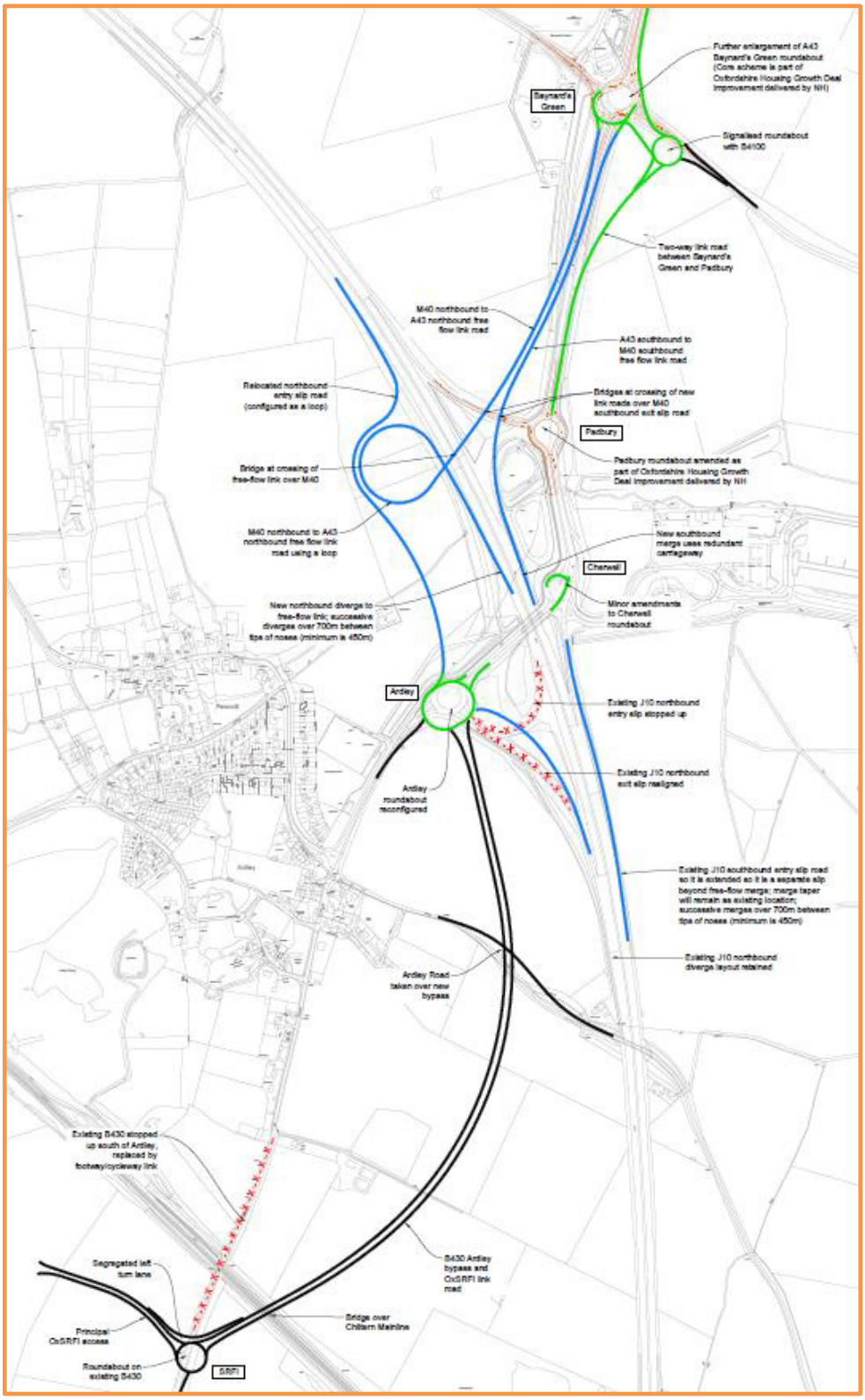


Figure 7: Option 25 - M40 Junction 10, Baynard's Green and Ardley Bypass

Design methodology

3.11 As discussed in Section 2, provision of the A43 to M40 southbound free-flow link together with the M40 to A43 northbound free-flow link removes as significant volume of traffic from the M40

Junction 10 complex (approximately 32% of total traffic at the junction in the morning and evening peak hour periods[4]).

3.12 The Option 18 LinSig network model has been amended to represent the Option 25 layout. This network model has then been used as the design tool to inform the required arrangement at each of the junctions within the modelled network, including junction type, method of control, scale and number of approach/exit lanes. This has followed an iterative process with geometrical design input from BWB Consulting Ltd.

3.13 The following sections discuss the design decisions taken at each location and presents the preferred layout.

Baynard's Green and the new B4100/link road junction

3.14 A major driver of the design of the B4100/new link road junction, alongside provision of a junction which operates efficiently within capacity, is the requirement to minimise the required land-take, and hence the distance between the new junction and the Baynard's Green roundabout must be minimised whist also providing sufficient distance for queueing vehicles. Two options for the new B4100/new link road junction have been considered; a traffic signal controlled T-junction and a traffic signal controlled roundabout.

B4100/new link road T-junction option

3.15 Option testing using the LinSig network model was undertaken for a traffic signal controlled T-junction option. The option testing identified that a large junction would be required, as shown on **Figure 8** below. The T-junction would require two ahead lanes for both the eastbound and westbound movements on the B4100. A flared left-turn lane from the B4100 east to the new link road would be required, along with two right-turn lanes from the B4100 west. On the new link road approach, two left-turn lanes would be required along with a right-turn lane.



Figure 8: B4100/new link road -T-junction option

[4] Based on 2031 Reference Case traffic flows, Technical Note 6 – M40 Junction 10 Options Report Traffic Flow Derivation, report reference ADC1794-RP-N-V2, 11 June 2021

3.16 The T-junction would operate in three stages as shown on **Figure 9**. The B4100 eastbound and westbound movements would run in stage 1. The right-turn from the B4100 to the new link road would run in stage 2, which would also have the left-turn from the new link road to the B4100 running under a filter arrow to improve efficiency.

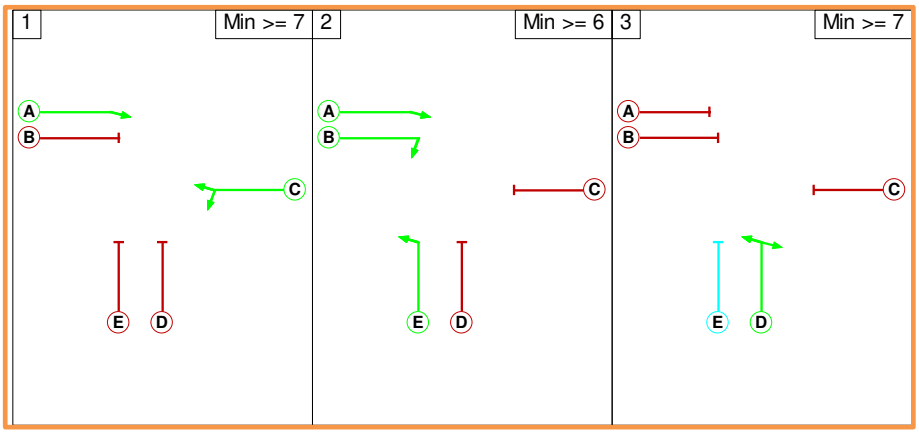


Figure 9: B4100/new link road -T-junction option phase/stage arrangement

3.17 The LinSig modelling showed that the B4100/new link road T-junction option would operate acceptably in the 2031 morning and evening peak hour scenarios with the OxSRFI development in place. The LinSig model network results are provided in **Appendix A** and the results for the B4100/new link road T-junction are summarised in the table below, which shows that the practical reserve capacity (PRC) would be positive in both peak hours, indicating that all links at the T-junction would operate less than 90% saturated, which is acceptable.

Scenario	PRC (%)	Total delay (pcuhr)	Longest east-bound queue (m)	Longest west-bound queue (m)
2031 AM peak hour	5.6%	20.1	72	30
2031 PM peak hour	7.8%	15.4	30	50

3.18 The T-junction has been designed such that the central reservoir between the T-junction and Baynard's Green roundabout could accommodate 100m of queueing vehicles on the B4100 eastbound and 80m of queuing vehicles on the B4100 westbound. The results in the table above show that the internal queueing could be accommodated within the available space.

3.19 Therefore, the T-junction option for the B4100/new link road junction would acceptably accommodate the forecast traffic demand.

B4100/new link road - roundabout option

3.20 Notwithstanding the above, a roundabout option for the B4100/new link road junction was considered to determine if it would be a better option than the T-junction.

3.21 Option testing using the LinSig network model was undertaken for a traffic signal controlled roundabout option. The option testing identified that a large junction would be required, as shown on **Figure 10**. The roundabout would require two ahead lanes for both the eastbound and westbound movements on the B4100. A flared left-turn lane from the B4100 east to the new link road would be required, along with two right-turn lanes from the B4100 west. On the new link road approach, two left-turn lanes would be required along with a right-turn lane.

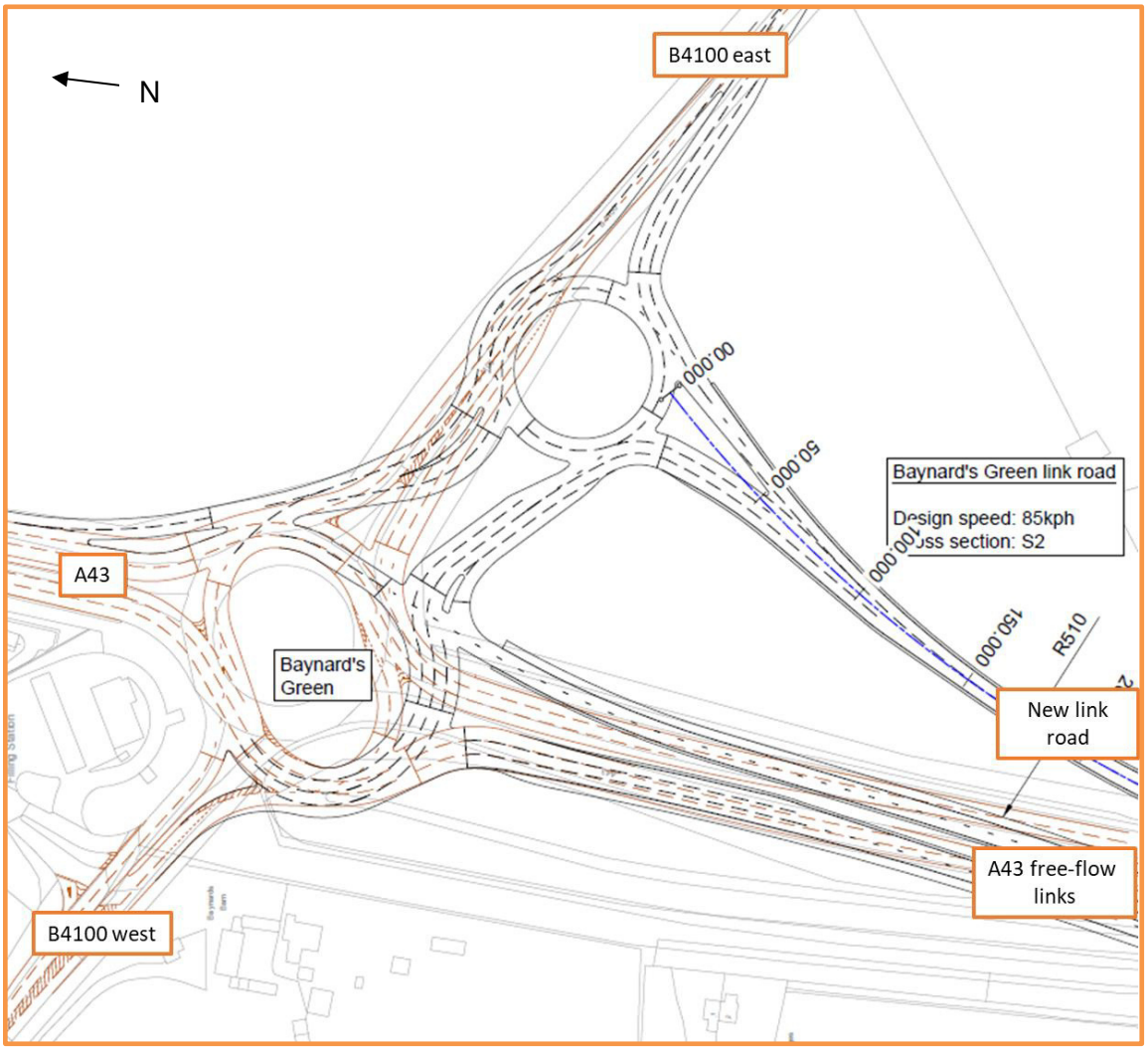


Figure 10: Option 25 Baynard's Green and new B4100/link road roundabout option

3.22 The LinSig modelling showed that the B4100/new link road roundabout option would operate acceptably in the 2031 morning and evening peak hour scenarios with the OxSRFI development in place. The results for the junction are summarised in the table below, which shows that the practical reserve capacity (PRC) would be positive in both peak hours, indicating that all links at the roundabout would operate less than 90% saturated, which is acceptable.

Scenario	PRC (%)	Total delay (pcuhr)	Longest east-bound queue (m)	Longest west-bound queue (m)
2031 AM peak hour	15.9%	16.0	42	30
2031 PM peak hour	15.5%	19.4	42	42

3.23 The roundabout has been designed such that the central reservoir between the roundabout and Baynard's Green roundabout could accommodate the queueing vehicles on the B4100 eastbound and westbound. The results in the table above show that the internal queueing could be accommodated within the available space.

3.24 Therefore, the roundabout option for the B4100/new link road junction would acceptably accommodate the forecast traffic demand. Further, the results show that the roundabout would operate with more reserve capacity than the T-junction option in both the morning and evening peak hours. The roundabout option also allows the distance between the B4100/new link road junction and the Baynard's Green roundabout to be reduced to 70m, reducing the required land-take.

3.25 Therefore, as the roundabout provides the greater capacity and since it is easier to coordinate two traffic signal controlled roundabouts than it is to coordinate a traffic signal controlled roundabout with a T-junction (two stages at the roundabout, three stages at the T-junction), it is the preferred option. The roundabout option could also more easily facilitate a fourth arm to the north if required in the future.

3.26 The proposed preliminary layout of the Baynard's Green roundabout and the B4100/new link road roundabout is shown on BWB Consulting drawing **OxSRFI-BWB-GEN-XX-SK-CH-SK042**.

Padbury roundabout

3.27 Provision of the northbound and southbound M40-A43 free-flow links would remove circa. 2,750 two-way pcus from Padbury roundabout in the morning peak hour, and circa. 2,650 two-way pcus in the evening peak hour. This significant reduction in traffic flow means that no further junction improvements would be required to accommodate the OxSRFI traffic flows beyond those provided by the committed OCC Housing Growth Deal scheme. The committed Growth Deal improvement scheme at the Padbury Roundabout is shown at **Figure 11**.

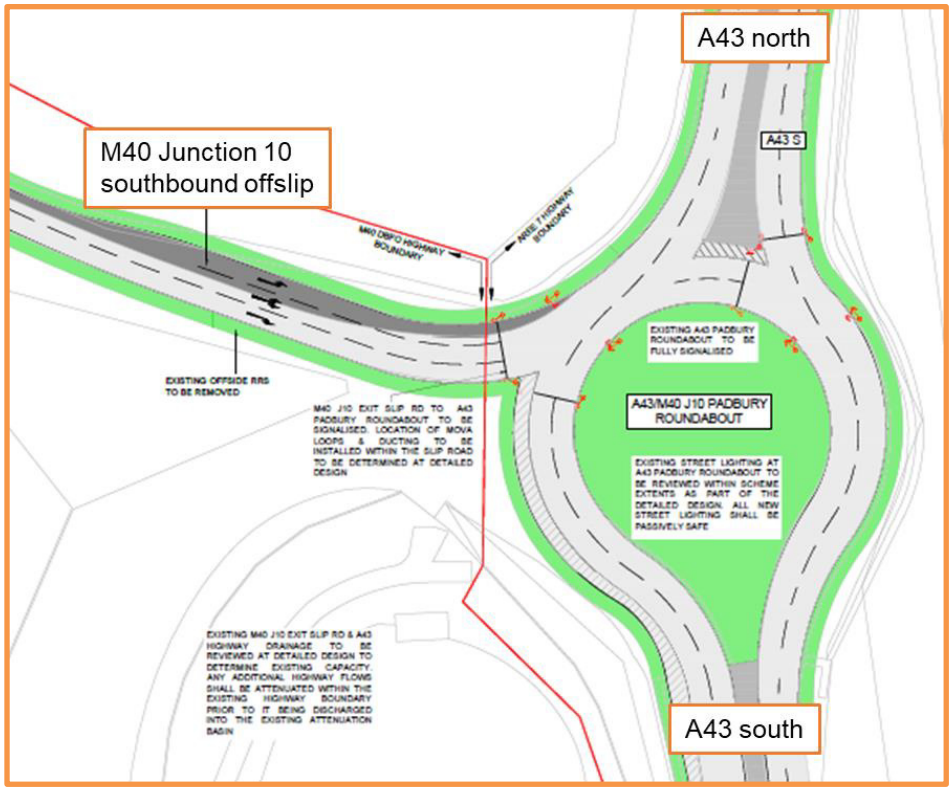


Figure 11: Padbury roundabout OCC Housing Growth Deal committed improvement scheme

3.28 The committed Growth Deal improvements would upgrade the junction to full traffic signal control. Under the committed improvements, the M40 Junction 10 southbound off-slip approach would be widened to provide an additional flared lane.

3.29 Under Option 25, the A43 (north) arm would be realigned to the east to allow for the free-flow links. Due to the significant reduction in traffic flows on this section of the network, the link between Padbury roundabout and the new junction with the B4100 could be provided as single carriageway, with the two-lane northbound exit merging down to a single lane 50m to the north of the roundabout. The southbound approach would be provided one full lane and one flared lane 85m long.

3.30 The proposed preliminary layout of the Padbury roundabout is shown on BWB Consulting drawing **OxSRFI-BWB-GEN-XX-SK-CH-SK042** and an extract is shown on **Figure 12** below.

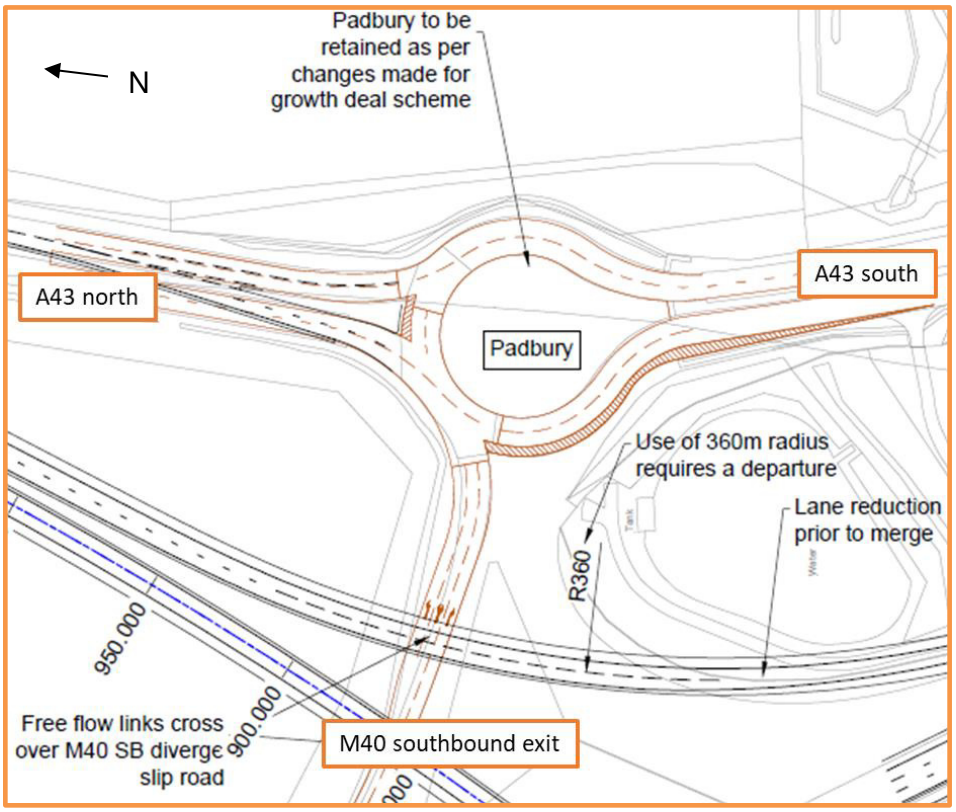


Figure 12: Option 25 Padbury roundabout arrangement

3.31 The LinSig model network results are provided in **Appendix A** and the results for the Padbury roundabout are summarised in the table below, which shows that the practical reserve capacity (PRC) would be positive in both peak hours, indicating that all links at the junction would operate less than 90% saturated, which is acceptable.

Scenario	PRC (%)	Total delay (pcuhr)
2031 AM peak hour	10.8%	10.6
2031 PM peak hour	59.5%	8.6

Cherwell roundabout

3.32 As discussed above, provision of the northbound and southbound M40-A43 free-flow links would remove circa. 2,750 two-way pcus in the morning peak hour and circa. 2,650 two-way pcus in the evening peak hour from Cherwell roundabout. Therefore, in contrast to Options 18 and 19, the new south facing M40 slip roads would not be required and modest improvement work at Cherwell roundabout would allow the junction to accommodate the additional traffic demand associated with the proposed OxSRFI development.

3.33 Under Option 25, the A43 northbound approach would be amended such that both lanes are subject to priority control. The nearside lane would be an 'ahead' lane towards the B4100 and the offside lane would be a right-turn lane towards the Cherwell Valley Motorway Service Area (MSA) and the M40 southbound on-slip. The circulating carriageway would be widened at the A43 southbound approach to facilitate two lanes. Further, the circulating carriageway at the Cherwell Valley MSA approach would also be amended to facilitate two lanes exiting onto the

M40 southbound on-slip and two lanes exiting on the bridge over the M40 towards the Ardley roundabout.

3.34 Under Option 25 the existing M40 southbound merge from the Cherwell roundabout is retained and extended so that it is a separate slip road, with a merge downstream of the free-flow merge.

3.35 The proposed preliminary layout of the Cherwell roundabout is shown on BWB Consulting drawing **OxSRFI-BWB-GEN-XX-SK-CH-SK042** and an extract is shown on **Figure 13**.

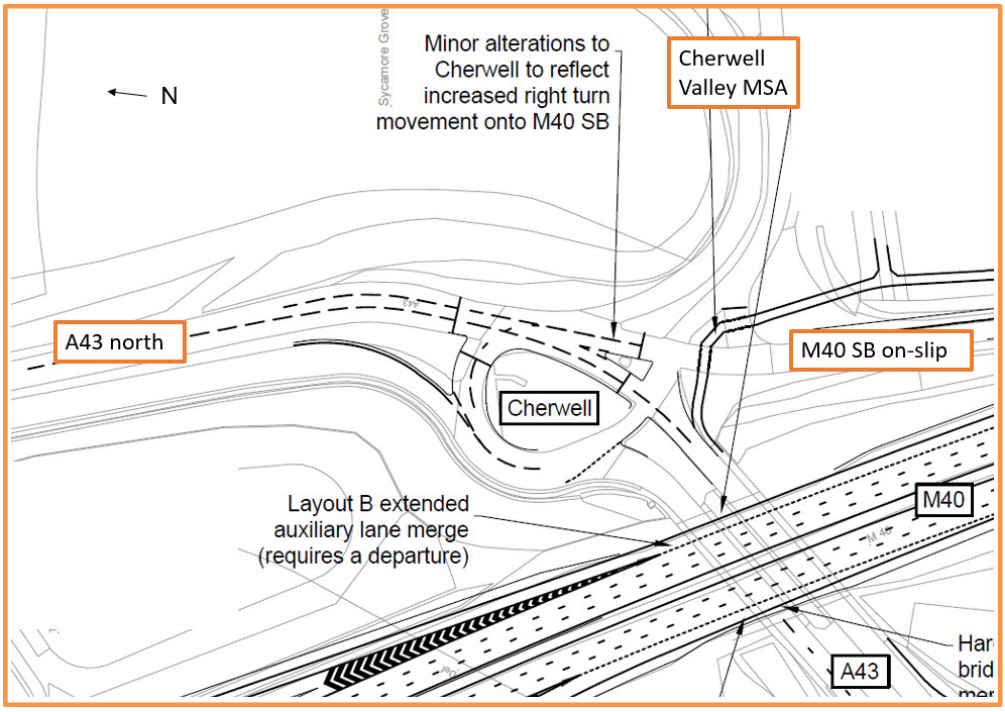


Figure 13: Option 25 Cherwell roundabout arrangement

3.36 The LinSig model network results are provided in **Appendix A** and the results for the Padbury roundabout are summarised in the table below, which shows that the practical reserve capacity (PRC) would be positive in both peak hours, indicating that all links at the junction would operate less than 90% saturated, which is acceptable.

Scenario	PRC (%)	Total delay (pcuhr)
2031 AM peak hour	15.0%	17.1
2031 PM peak hour	24.6%	21.0

Ardley roundabout

3.37 Provision of the northbound M40-A43 free-flow links would remove circa. 900 pcus in the morning peak hour and circa. 1,400 pcus in the evening peak hour from Ardley roundabout. Therefore, the scale of the required works at Ardley roundabout are reduced when compared to Options 18 and 19.

3.38 Under Option 25, the Ardley roundabout would be enlarged to the south. The existing M40 northbound merge slip road would be removed and a new M40 northbound merge would be constructed to the north of the roundabout. This relocation of the M40 northbound merge enables the M40 to A43 northbound free-flow link to be provided.

3.39 The M40 northbound diverge would be realigned to improve the approach road curvature, connecting to Ardley roundabout at a priority controlled node. Given the reduced traffic demand assessment was initially undertaken to determine whether the roundabout would operate acceptably with all arms retained under priority control. However, it was found that a priority controlled arrangement for the proposed Ardley Bypass and A43 southbound arms resulted in congestion. Therefore, the proposed Ardley Bypass arm would operate under traffic signal control. It would connect to the southern side of the Ardley roundabout, where there would be three entry lanes and three circulating lanes, and the A43 southbound would also connect via a traffic signal controlled node. The existing B430 approach would be provided as a priority controlled node, with two entry lanes as existing.

3.40 The proposed preliminary layout of the Ardley roundabout is shown on BWB Consulting drawing **OxSRFI-BWB-GEN-XX-SK-CH-SK042** and an extract is shown on **Figure 14** below.

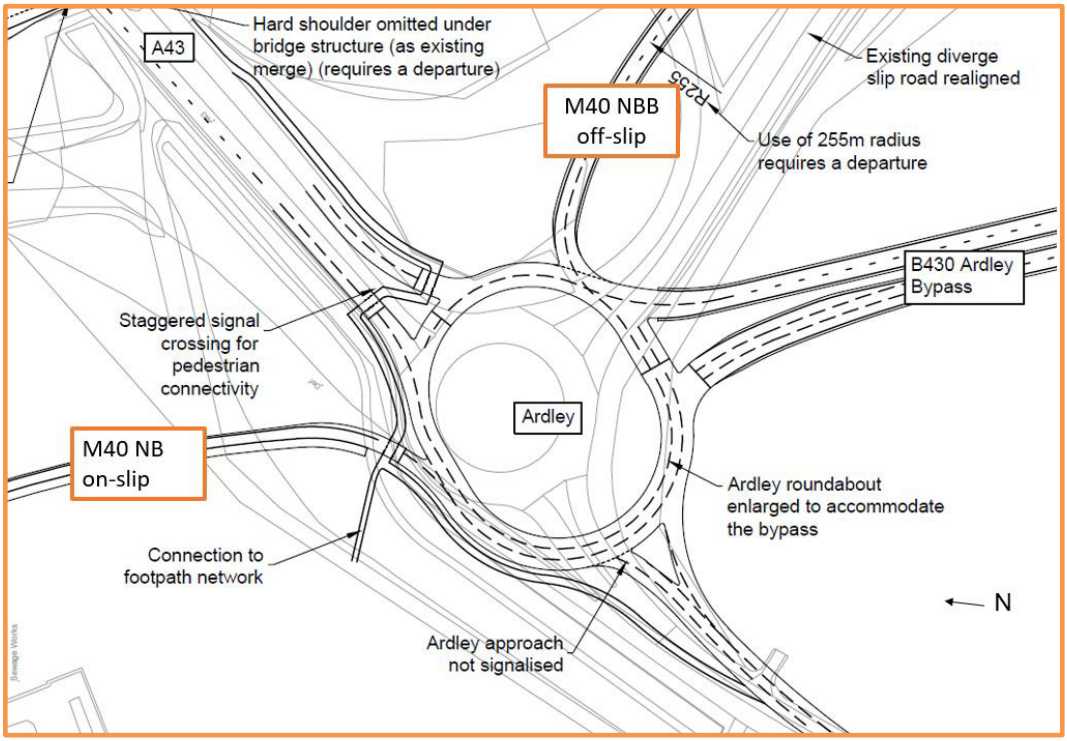


Figure 14: Option 25 Ardley roundabout arrangement

3.41 The LinSig model network results are provided in **Appendix A** and the results for the Ardley roundabout are summarised in the table below, which shows that the practical reserve capacity (PRC) would be positive in both peak hours, indicating that all links at the junction would operate less than 90% saturated, which is acceptable.

Scenario	PRC (%)	Total delay (pcuhr)
2031 AM peak hour	21.4%	15.9
2031 PM peak hour	20.7%	19.7

4.0 ANALYSIS OF M40 JUNCTION 10 PERFORMANCE

Journey time

4.1 As part of the option testing process which led to Options 18 and 19 being identified as the preferred options to be taken forwards, an analysis of journey times across the M40 Junction 10 complex were undertaken using network LinSig models. Journey times on key routes across the SRN and Oxfordshire highway networks for the 2031 Reference Case scenario (with the OCC Housing Growth Deal improvements, without the OxSRFI development) were compared against the proposed mitigation options. Tables were provided to show the comparative differences in terms of average journey time per pcu in seconds, and also for total journey in pcuHr. This second metric is the aggregate time taken by traffic travelling on each route.

4.2 The same methodology was adopted for assessing the impact on journey times due to Option 25 and comparison tables were generated to compare the 2031 morning peak, 2031 evening peak, 2031 off-peak and 2031 inter-peak periods for the following:

- Reference Case (without OxSRFI) against Option 25 (with OxSRFI)
- Option 18 against Option 25 (both with OxSRFI)
- Option 19 against Option 25 (both with OxSRFI).

4.3 It is noted that the traffic flow scenarios used for Options 18, 19 and 25 all include the additional traffic from the OxSFRI development, whereas the Reference Case scenario does not include the additional traffic demand from the OxSRFI. Therefore, the total journey metric for the routes to and from the OxSRFI site (i.e. to and from the Ardley Bypass to each of the other locations) includes the additional OxSRFI traffic which increases the overall pcuHr, even if there is a reduction in the actual journey time for that route. Hence, a direct comparison of the total journey time metric between the Reference Case and the Options 18, 19 and 25 for these routes is not provided.

4.4 The full journey time comparison tables are provided at **Appendix B**. By way of a summary of those detailed tables, the tables below provide a summary of the total average journey time on all assessed routes, and compares this sum of the average journey times across the assessed routes for the Reference Case, Option 18 and Option 19 against Option 25.

	Average journey time all routes (s)			
Period	Option 25	Reference Case	Option 18	Option 19
Off-peak	1911	2101	1900	1969
AM Peak	2116	3506	2304	2233
Interpeak	2088	2421	2226	2151
PM Peak	2178	2612	2386	2389

	Difference in journey time to Option 25 (s)		
Period	Reference Case	Option 18	Option 19
Off-peak	190	-11	58
AM Peak	1390	188	117
Interpeak	333	138	63
PM Peak	434	208	211

4.5 The results at **Appendix B** and summarised above show that Option 25 would significantly reduce journey times across the assessed network when compared to the Reference Case, particularly in the morning peak hour. The comparison tables also show that Option 25 would

perform materially better than Options 18 and 19 in the morning and evening peak hours, largely due to the provision of the M40 to A43 northbound free-flow link. Option 25 also performs better than Options 18 and 19 during the inter-peak periods, with negligible difference to Option 18 in the off-peak.

4.6 Therefore, Option 25 would significantly improve journey times across the M40 Junction 10 complex when compared to the Reference Case (i.e. without the OxSRFI development), offering both strategic and local network improvements. Further, the improved journey time reliability provides a cost benefit when applied to trips through this part of the network and would help to reduce driver stress in terms of reduced delays and improved experience.

Headroom

4.7 The table below provides a comparison between the forecast capacity at the future baseline (Reference Case) M40 Junction 10 (with committed Housing Growth Deal improvements, no OxSRFI development), with the forecast capacity at the junctions under Options 18, 19 and 25 with the OxSRFI development in place in the 2031 assessment year. Reference to Technical Note 5 should be made for details of Options 18 and 19.

Comparison of M40 Junction 10 mitigation options (% PRC) in 2031 assessment year								
Junction	Future baseline layout		Option 18		Option 19		Option 25	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Baynard's Green	-6.6%	-9.9%	5.4%	3.7%	5.3%	2.2%	8.0%	6.2%
Padbury	-5.6%	-3.0%	7.7%	4.7%	5.9%	3.6%	10.8%	59.5%
Cherwell	-25.7%	-4.4%	12.2%	4.5%	12.3%	2.6%	15.0%	24.6%
Ardley	86% (RFC)	99% (RFC)	16.9%	5.1%	11.4%	32.6%	21.4%	20.7%

4.8 As shown in the table above, notwithstanding the Housing Growth Deal improvement that are committed at M40 Junction 10, the future baseline arrangements at Baynard's Green, Padbury, Cherwell and Ardley junctions would be over capacity in 2031. These junctions would therefore require significant improvement to facilitate background growth to 2031 and to accommodate the proposed OxSRFI development.

4.9 The table demonstrates that Options 18 and 19 offer headroom to accommodate background traffic growth up to 2031 and the OxSRFI development traffic. Additionally, under these options, there would be headroom at all four junctions to accommodate some future growth.

4.10 Further, the summary results presented above show that Option 25 can also accommodate background traffic growth up to 2031 and the OxSRFI development traffic. However, Option 25 would provide increased headroom at all four junctions, but particularly at Padbury roundabout and Cherwell roundabout.

Conflict assessments

4.11 An assessment of the number of conflict points associated with Option 25 has also been undertaken. The three methods adopted by National Highways in their review of Options 3C, 18 and 19 have been used:

1. Journeys through the junction complex, including for the number of traffic lanes that would be in conflict at each node point on a specific route.
2. Per junction, number of lanes in conflict:
    - e.g. three entry lanes and two circulatory lanes: 3 + 2 = 5

3. Per junction, multiplying conflicting lanes:
   - e.g. three entry lanes and two circulatory lanes: 3 x 2 = 6

4.12 The results are presented below at **Figures 15 to 17** for each of the three methods. Please refer to the conflict assessment spreadsheet[5] for the detailed calculations.

4.13 The results show that Option 25 would have a similar number of conflicts to Options 18 and 19. Based on the number of conflict points at junctions (method 2), Option 25 has one more conflict point than Option 18, and three more conflict points then Option 19. Based on methods 1 and 2, Option 25 has 14 fewer, and three fewer, conflicts respectively than Option 18, and three more conflicts than Option 19.

		Number of conflict points		
From	To	Option 18	Option 19	Option 25
A43 north of Baynards Green	M40 south	5	5	6
M40 south	A43 north of Baynards green	18	17	6
A43 north of Baynards Green	M40 north	19	12	18
M40 north	A43 north of Baynards green	7	7	11
A43 north of Baynards Green	B430 (or Ardley Bypass)	18	18	14
B430 (or Ardley Bypass)	A43 north of Baynards green	16	15	18
M40 north	B430 (or Ardley Bypass)	16	14	11
B430 (or Ardley Bypass)	M40 south	6	6	11
M40 south	B430 (or Ardley Bypass)	1	1	2
B430 (or Ardley Bypass)	M40 north	7	9	5
M40 north	MSA	6	6	5
M40 south	MSA	13	12	11
MSA	M40 south	6	6	2
MSA	M40 north	10	3	10
B4100 east	B4100 west	7	7	10
B4100 west	B4100 east	7	7	8
		Option 18	Option 19	Option 25
	Totals	162	145	148

Figure 15: method 1, conflict assessment based on journeys through the M40 J10 junction complex

[5] OxSRFI – M40 J10 Conflict Assessment – Option 25

Junction	Node	Number of Lanes in conflict		
		Opt 18	Opt 19	Opt 25
Padbury Rbt	M40 SB Offslip	8	8	7
	A43 SB			
Cherwell Rbt	A43 SB	4	4	5
	Services	5	5	6
	A43 NB	4	4	3
Ardley Rbt	A43 SB	4	4	4
	M40 NB offslip	-	-	4
	Ardley Bypass	6	5	6
	B430	7	6	5
New Bypass Rbt	Ardley Bypass N	5	5	-
	M40 NB Offslip	5	5	-
	Ardley Bypass S	6	6	-
New A43/B4100 junction	A43 NB	-	-	5
	B4100 WB	-	-	5
	B4100 EB	-	-	5
Total		**54**	**52**	**55**

Example:
Three entry lanes and 2 circulating lanes
= 3 + 2 = 5

Figure 16: method 2, conflict assessment per junction basis (summation)

Junction	Node	Product of conflicting lanes		
		Opt 18	Opt 19	Opt 25
Padbury Rbt	M40 SB Offslip	15	15	12
	A43 SB			
Cherwell Rbt	A43 SB	3	3	6
	Services	6	6	8
	A43 NB	3	3	2
Ardley Rbt	A43 SB	4	4	4
	M40 NB offslip	-	-	4
	Ardley Bypass	8	4	9
	B430	10	8	6
New Bypass Rbt	Ardley Bypass N	6	6	-
	M40 NB Offslip	6	6	-
	Ardley Bypass S	9	9	-
New A43/B4100 junction	A43 NB	-	-	6
	B4100 WB	-	-	6
	B4100 EB	-	-	4
Total		**70**	**64**	**67**

Example:
Three entry lanes and 2 circulating lanes
= 3 x 2 = 6

Figure 17: method 3, conflict assessment per junction basis (multiplying)

4.14 The table below summarises the conflicts by method and calculates an average.

	Number of conflicts		
Method	**Option 18**	**Option 19**	**Option 25**
Journey based	162	145	148
Junction summing	54	52	55
Junction multiplying	70	64	67
Average	**95**	**87**	**90**

4.15 Based on the average of the assessment methods, Option 19 has the least number of conflicts, followed by Options 25 and then Option 18.

Future adaptability

4.16 Provision of the northbound and southbound free-flow links between the A43 and M40 and vice versa by the OxSRFI development would deliver the long-term strategic requirement for improving the operation of the SRN.

4.17 This key strategic infrastructure reduces traffic volumes the M40 Junction 10 complex to provide capacity for the OxSRFI traffic along with significant headroom to accommodate future growth, with only minor improvements to the Padbury and Cherwell roundabouts.

4.18 National Highways could consider the future grade-separation of the Baynards Green roundabout to further improve capacity and journey time reliability on the M40-A43 corridor.

5.0 GEOMETRY ASSESSMENT

Link road geometry

5.1 The geometry of the new connector roads has been assessed against DMRB standards CD 109, CD 122 and CD 127, which are the principal geometric design standards to be used in the design. The following table sets out for each connector road the design speed, cross-section and provides comments on key geometric features. The cross-sections are determined based on the link type and forecast traffic flows.

Link	Ref to drawing	Link type	Design speed (and how it is derived)	Cross-section	Commentary on compliance with standards
A43-M40 SB free flow link	**OxSRFI-BWB-GEN-XX-SK-CH-SK021**	Interchange link	85kph (CD 122 Table 5.4)	IL2A	Use of 360m radius is 1-step below desirable minimum but that is a departure from CD 122 para 1.3 Cross-section has a lane reduction taper prior to the merge (see merge assessment below) Hard-shoulder is not provided under the existing bridges in J10, departure from CD 127
M40 J10 SB merge slip road	**OxSRFI-BWB-GEN-XX-SK-CH-SK036**	Slip Road	70kph (CD 122 Table 5.4)	MG1A	Compliant geometry . Link is <0.75km and hence is designed as a slip road.
M40 J10 NB diverge slip road	**OxSRFI-BWB-GEN-XX-SK-CH-SK039**	Slip Road	70kph (CD 122 Table 5.4)	DG2A	Use of 255m radius is 1-step below desirable minimum but that is a departure from CD 122 para 1.3 Cross-section at the start of the slip road: existing lane widths are below standard width (existing departure from CD 127)
M40-A43 NB free flow	**OxSRFI-BWB-GEN-XX-SK-CH-SK035**	Interchange link	85kph (CD 122 Table 5.4)	IL2A	SSD of 295m achieved from back of nose into the loop (compliant), but the SSD into the diverge from the mainline reduces to approx. 260m due to the existing bridges (departure from CD 122 para 3.34) Hard-shoulder is not provided under the existing bridge, departure from CD 127 (this is an existing issue with the existing merge) Low-radius loop is compliant with standard but potential departure from CD 122 para 5.14 to retain some existing woodland within the loop
M40 J10 NB merge slip road	**OxSRFI-BWB-GEN-XX-SK-CH-SK037**	Slip Road	85kph (CD 122 Table 5.4)	IL1A	Compliant geometry . Link is >0.75km and hence is designed as an interchange link, but is <1km so a single lane is acceptable. Low-radius loop is provided on the link which is approx. 180 degrees.
Baynard's Green link road	**OxSRFI-BWB-GEN-XX-SK-CH-SK036**	Link road	85kph (CD 109)	S2	Compliant geometry

5.2 It can be seen from the above that there are a small number of departures from standard proposed. There are two primary reasons for these departures as follows:

- Use of radii below desirable minimum are to enable the scheme to be of a scale that is compatible with an overarching sustainability and environmental driver to retain a compact overall junction layout that sits within the general footprint of the existing highway network; and

- Retention of the existing bridges within J10 to avoid the disruption and cost associated with replacing them, this results in the hard shoulder departures, northbound visibility departure into the diverge and the southbound merge layout.

5.3 It is considered that the departures can be justified accordingly and that any residual risks can be appropriately mitigated. Formal submissions for departures will be made in due course.

Merge and diverge assessment

5.4 A merge and diverge assessment has been undertaken for all of the merges and diverges at J10 including the new free-flow link connections to the M40. The traffic data used for the assessment has been extracted from the 2031 Do Something traffic flows presented in Technical Note 6[4]. A copy merge and diverge flows are provided at **Appendix C**. The following table sets out the findings of this assessment.

Merge/Diverge	CD 122 required layout	Proposed layout	Compliant with standards?	Commentary
SB diverge	A (taper)	A1 (taper)	Yes	Existing diverge retained
SB free flow merge	E (lane gain with ghost island)	B (extended auxiliary lane)	**No**	The slip road flow is only just above the threshold for two lanes, extended auxiliary lane is provided as mitigation A 2-into-1 lane merge is provided on the connector road prior to the merge.
SB Cherwell merge	A (taper)	A (taper)	Yes	Sufficiently spaced beyond free flow
NB Ardley diverge	A (taper)	A1 (taper)	Yes	Existing diverge retained
NB free flow diverge	D (lane drop with ghost island)	A1 (taper)	**No**	The slip road flow is only just above the single lane diverge threshold and there is no lane drop
NB merge	D (single lane gain)	B (auxiliary lane)	To be discussed with NH SES, for existing merges layout D can be substituted by layout B	Cannot provide lane gain on M40 but auxiliary lane will assist with merging and replicates existing merge layout

5.5 It is considered that the departures from standard needed for the southbound free flow merge and northbound free flow diverge will be justifiable based on the same overall justification as set out above for the link road departures.

5.6 There is potential for National Highways to promote, as part of a future road investment strategy (RIS) motorway widening or four lane all-lane running between Junctions 9 and 10. This would change the south facing merges and diverges at Junction 10.

5.7 With the Option 25 scheme in place, it is envisaged these merges and diverges would be amended as follows for such a future scheme:

- The free-flow southbound merge extended auxiliary lane can become the new fourth lane;
- The southbound merge from Cherwell would then form a taper merge onto a four lane motorway instead of a three lane motorway;
- The northbound diverge to Ardley can be retained as a taper diverge from a four lane motorway instead of a three lane motorway; and
- The free-flow northbound diverge would become a lane drop. Without reconstruction of the existing bridges this would need to be a Layout C diverge (single lane drop diverge without ghost island or auxiliary lane).

Ardley Bypass

5.8 The general arrangement and vertical alignment for the proposed Ardley Bypass is shown at drawing **OxSRFI-BWB-GEN-XX-SK-CH-SK038**. Detail of the proposed Ardley Road bridge ober the bypass is shown at **OxSRFI-BWB-GEN-XX-SK-CH-SK039**.

Detailed junction geometry

5.9 A detailed assessment has not been undertaken at this stage, and this will be done as the junction designs are developed. It has been noted that there may be some departures from standard needed in relation to entry path curvature for approaches to signalised roundabouts.

6.0 ENVIRONMENT AND BUILDABILITY

Environment

6.1 Option 25 has been considered by the Applicant's team of professional consultants across the areas of assessment that might be expected to arise in an Environmental Assessment (leading to an Environmental Statement) process. Each consultant was also asked to compare Option 25 against Options 18 and 19. The findings summarised in this section. It should be noted that the assessment is based upon the high-level detail available at the stage of writing.

Lighting

6.2 Option 25 will increase lighting levels within the boundary of the Highways Works with visibility also possible from some receptors in Ardley. However, it is unlikely that potential receptors with views of the J10 Improvement Works would be subjected to an increase in obtrusive light due to existing lighting, and the embedded mitigation measures and compliance with lighting standards which will minimise light spill.

Landscape and Visual

6.3 The Option 25 does not appear to impact upon any additional designated or particularly sensitive landscape areas or features. It would directly impact upon some additional trees and a small woodland area immediately to the north of the proposed loop but this is not thought to be of any particular landscape value and mounding with woodland planting would be included around part of the loop to mitigate effects.

6.4 In terms of the proposals south of the junction and to the east of Ardley, Option 25 appears to offer a number of landscape and visual benefits compared to Options 18/19, with the bypass route generally sited at and below existing ground levels and without the need for an elevated south bound slip passing over the motorway. These changes would be welcome in landscape and visual terms.

6.5 In visual terms, whilst the new loop arrangement may be visible from a limited number of additional locations and properties on the northern edge of Ardley, and from a series of nearby public footpaths, these potentially additional effects are likely to be more than offset by the visual improvements from the changed arrangements further south (and to the east of Ardley).

6.6 Overall, based upon this desk-based review it is considered that J10 Option 25 is likely to result in an improved landscape and visual solution (in comparison to Options 18 and 19).

Noise

6.7 Option 25 is likely to offer some beneficial reductions in road traffic noise levels to some of the nearest receptors. The removal of the previously proposed southern slip roads, and reduction in traffic travelling southbound along the bypass from Ardley roundabout to the now removed Ardley East roundabout, is likely to result in less road traffic noise than the previous options at the nearest receptors.

6.8 The removal of Ardley East roundabout and changes to Ardley Road removes a beneficial reduction in traffic noise compared with the previous options, however, the flows on the B430 would still be expected to be lower due to it being stopped up to the south and therefore the beneficial reductions in noise level along this road would be maintained.

6.9 Additional noise mitigation is potentially required to manage noise levels for proposed changes in this option for a small number of receptors north of Ardley Roundabout and Baynard's Green. Proposed changes to Ardley Roundabout to the south are not considered to be materially different from the previous options.

Flood Risk

6.10 The floodplain and watercourse is shown in **Figure 18** below. Option 25 would require a new road link across the floodplain west of the M40, at this point the floodplain is narrower and there is land available to provide compensation floodplain.

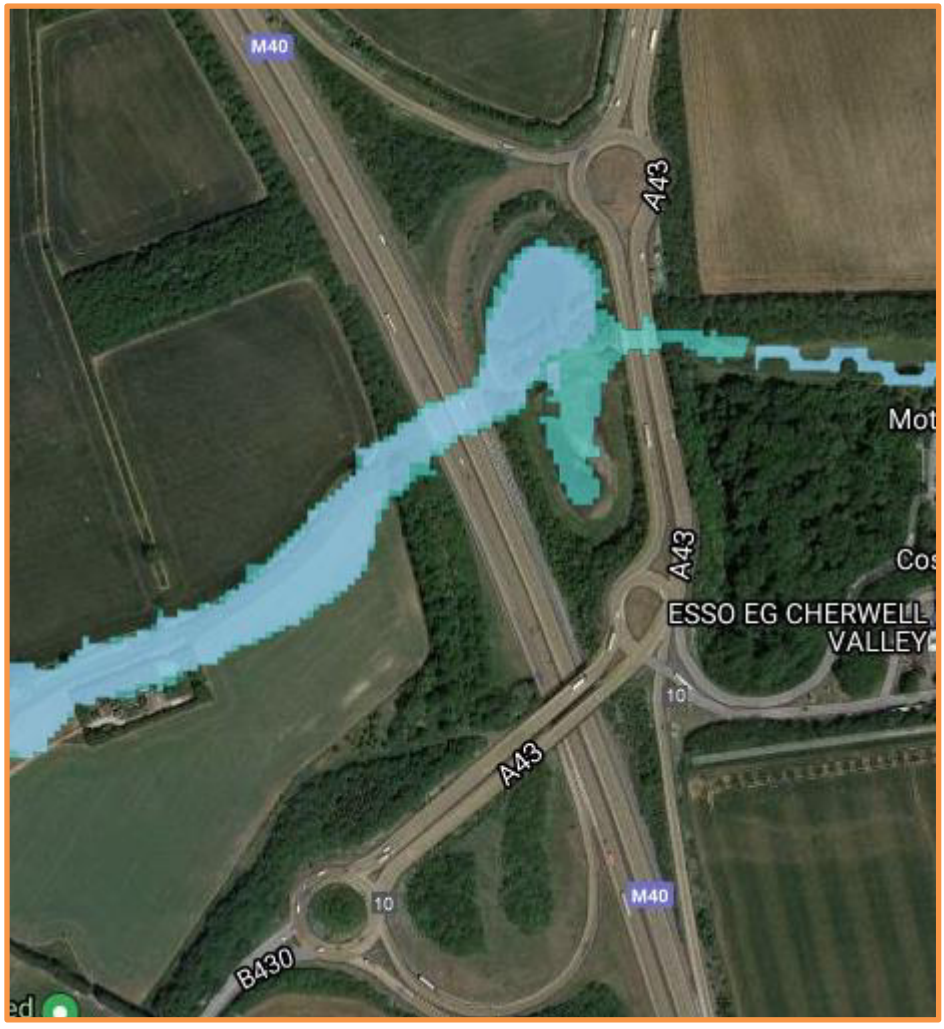


Figure 18: watercourse and floodplain at J10

6.11 The flood extents in Option 25 would likely be reduced compared with the previous options. The scheme would seek to retain existing culvert sizes and therefore the proposals appear acceptable from a flood risk perspective.

Ecology

6.12 Option 25 would result in slightly greater ecological losses, namely of woodland and tree habitat in comparison to the previously considered options. However, there would also be opportunities to mitigate this through additional structural planting throughout the J10 Improvement Works area.

6.13 Option 25 does not impact upon any additional designated sites of ecological value.

Buildability

6.14 Option 25 has considerable buildability advantages over the previous options as the majority of the highway works are off-line from the existing highway network. This will mean that new road links can be opened to traffic once completed, thus reducing traffic from the existing junctions which will make the works to those junctions easier to construct.

6.15 Option 25 would build on the committed OCC Housing Growth Deal highways works at Padbury roundabout and Baynard's Green roundabout, and it would minimise any abortive construction by that scheme. This would minimise traffic disruption.

6.16 The new bridge over the M40 is at a skew of less than 45 degrees which is easier to construct than in other options. Furthermore, all three bridge structures for the J10 works are in the same general area of the scheme which will simplify construction in terms of compounds and access to the bridge works.

7.0 LOCAL ACCESS, WALKING AND CYCLING

Local access and Cherwell MSA

7.1 As well as providing for strategic road traffic between the M40 and A43, M40 Junction 10 is the local junction on the M40 for access to Ardley, Heyford Park, and, via the Baynard's Green roundabout, the northern side of Bicester. M40 Junction 10 is also the junction for the Cherwell Valley MSA.

7.2 Option 25 would retain access to and from Ardley via Ardley roundabout. However, traffic levels would be significantly reduced due to the proposed Ardley Bypass becoming the new route for all B430 traffic. Option 25 would retain the existing connectivity for Ardley Road.

7.3 As is currently the case, Option 25 would require road users to use several individual junctions to use the MSA as shown in the table below.

Direction	Access to MSA	Exit from MSA
M40 Southbound	Via Padbury and Cherwell junctions (as existing)	Via Cherwell (as existing)
M40 Northbound	Via Ardley and Cherwell (as existing)	Via Cherwell and Ardley (as existing, but with the northbound on-slip relocated to the northern side of Ardley Roundabout)
A43 Southbound	Via Baynard's Green, the B4100/new link road junction, Padbury and Cherwell (one additional junction)	n/a
A43 Northbound	n/a	Via Cherwell, Padbury, the B4100/new link road junction and Baynard's Green (one additional junction)

Walking and cycling

7.4 With the removal of all SRN through traffic between the A43 and M40 south from the Ardley, Cherwell and Padbury roundabouts there is capacity headroom created in these junctions. This means that Option 25 could give an opportunity for providing crossing facilities for pedestrians and cyclists.

7.5 An initial route for improving connectivity through Junction 10 is shown on drawing **OxSRFI-BWB-GEN-XX-SK-CH-SK042**, this will be assessed in detail as part of the Walking, Cycling Horse-Riding Assessment and Review (WCHAR) process. The existing bridges do not, however, have wide enough hardened verges to accommodate a cycle route so these bridges are likely to present an ongoing constraint for cycle connectivity.

8.0 SUMMARY AND CONCLUSIONS

8.1 ADC Infrastructure Ltd and BWB Consulting Ltd are appointed by Oxfordshire Railfreight Ltd (the Applicant) to assess and design the transport and infrastructure requirements of a Nationally Significant Infrastructure Project (NSIP), that being a proposed Strategic Rail Freight Interchange in Oxfordshire, to be known as Oxfordshire Strategic Rail Freight Interchange (OxSRFI).

8.2 Throughout the period June 2021 to January 2022, in consultation with National Highways and OCC, ADC and BWB have undertaken option assessment work to consider and identify an improvement scheme at M40 Junction 10 that, along with the proposed bypass of Ardley village, would provide the required access to the SRN for the OxSRFI development, along with aiding the delivery of planned growth and development across the wider area.

8.3 In January 2022, National Highways and OCC confirmed that Options 18 and 19 that have been developed by ADC and BWB were the preferred options to be taken forward.

8.4 Both Option 18 and Option 19 include the proposal for a new free-flow link between the A43 south of the Baynard's Green roundabout and the M40 southbound. The key difference between Options 18 and 19 was the relocation of the M40 northbound on-slip at Ardley roundabout. Under Option 18, the M40 northbound on-slip at Ardley roundabout would be moved to the north of the junction.

8.5 As part of the further assessment work required for Options 18 and 19, National Highways requested that analysis was undertaken to see whether a M40 northbound to A43 northbound free-flow link road could be reasonably achieved in the future in terms of geometrical compliance with DMRB, formation of appropriate junctions, and environmental impact.

8.6 ADC and BWB have jointly investigated how the northbound free-flow link between the M40 northbound and the A43 northbound could be achieved. This technical note has therefore been prepared to present the options considered and how the OxSRFI proposals for M40 J10 could be changed.

8.7 The work undertaken and presented in this technical note has considered what further options could be developed, with the following objectives:

- maximise the benefits of the northbound and southbound M40-A43 free-flow links;
- minimise the environmental impact of the Ardley Bypass and M40 Junction 10 complex;
- minimise the construction of redundant infrastructure;
- minimise the overall land-take requirements; and minimise the impact on scale and construction cost when compared to Options 18/19.

8.8 It has been shown that Option 18 would be compatible with the future provision of a M40 northbound to A43 northbound free-flow link. However, providing Option 18 and then amending to provide the northbound free-flow link in the future would result in redundant infrastructure being implemented by OxSRFI.

8.9 It was also established that with the northbound M40 to A43 traffic removed from the M40 Junction 10 complex, along with the southbound A43 to M40 traffic, congestion issues at the Ardley, Cherwell and Padbury roundabouts would be significantly eased. The requirement to remove further traffic from the M40 Junction 10 complex, and in particular the Cherwell roundabout that was identified as being required under Options 18 and 19 to accommodate the OxSRFI development traffic would be eliminated. Under Option 18 and 19 this is achieved by providing a traffic signal controlled roundabout (known as Ardley East) on the proposed Ardley

Bypass to accommodate new M40 south-facing slip roads. However, with the northbound M40 to A43 traffic and southbound A43 to M40 traffic removed from the Ardley and Cherwell roundabouts, it would be possible to amend these junctions so that they would be able to accommodate the additional demand from the OxSRFI development, without the requirement for new south facing M40 slip roads.

8.10 Not providing the Ardley East roundabout and new south facing slips is considered to lessen or remove some of the potential environmental impacts associated with the proposed Ardley Bypass. The complex 3D interface created by the new bridge over M40 for the new southbound on-slip was likely to require the Ardley Bypass to be elevated and taken over Ardley Road which could have significant adverse noise and visual impacts on Ardley village.

8.11 As a result, Option 25 has been developed as shown on drawing **OxSRFI-BWB-GEN-ZZ-SK-CH-SK031**, which would achieve the following:

- The scheme eliminates the requirement for the Ardley East roundabout and the new south facing M40 slip roads.
- The Ardley Bypass would therefore be at or below the existing levels, passing under Ardley Road, eliminating the complex engineering works required to achieve the 3D layout and thereby minimising environmental impacts on Ardley village.
- The northbound and southbound M40-A43 free-flow links significantly reduce traffic flows through the M40 Junction 10 complex and materially improve journey times on the SRN.
- The required number of new structures over the M40 is the same as Options 18 and 19, therefore minimising the impact on scheme cost.
- The number of new junctions required remains the same as Options 18 and 19, therefore minimising the impact on scheme cost.
- The Cherwell roundabout can, with minor improvements, accommodate the OxSRFI traffic due to the removal of northbound and southbound traffic between the M40 and the A43.
- No changes to the Padbury roundabout are envisaged as the capacity is increased by the committed OCC Housing Growth deal improvement scheme.
- The overall scheme footprint is minimised, and Option 25 would mean that significant infrastructure is not built that could become redundant if the northbound free-flow link were built in the future.

8.12 An assessment of junction capacity was undertaken which demonstrates that Option 25 would accommodate background traffic growth up to 2031 and the OxSRFI development traffic, whilst providing increased headroom compared to Options 18 and 19. A conflict assessment shows that Option 25 would have a similar number of conflicts to Options 18 and 19, with Option 19 having the least number of conflicts, followed by Options 25 and then Option 18.

8.13 Journey time assessment shows that Option 25 would significantly reduce journey times across the assessed network when compared to the future baseline without the OxSRFI scheme, particularly in the morning peak hour. Option 25 would perform materially better than Options 18 and 19 in the morning and evening peak hours, largely due to the provision of the M40 to A43 northbound free-flow link. Option 25 also performs better than Options 18 and 19 during the inter-peak periods, with negligible difference to Option 18 in the off-peak.

8.14 Option 25 has buildability advantages over the previous options as the majority of the highway works are off-line from the existing highway network. This will mean that new road links can be opened to traffic once completed, thus reducing traffic from the existing junctions which will make the works to those junctions easier to construct.

8.15 Based on the assessment work included in this technical note is it concluded that:

- Providing a northbound M40 to A43 free-flow link is feasible within the scale of the OxSRFI improvements to M40 Junction 10.
- Providing a northbound M40 to A43 free-flow link enables the previously proposed Ardley East junction and proposed new south facing slip roads to be removed from the scheme, with reduced potential for environmental impacts.
- Option 25 overall performs better than previous options with regards to headroom and journey times.

8.16 Therefore, it is proposed that Option 25 it taken forward as the preferred option.

DRAWINGS

APPENDIX A

LINSIG RESULTS

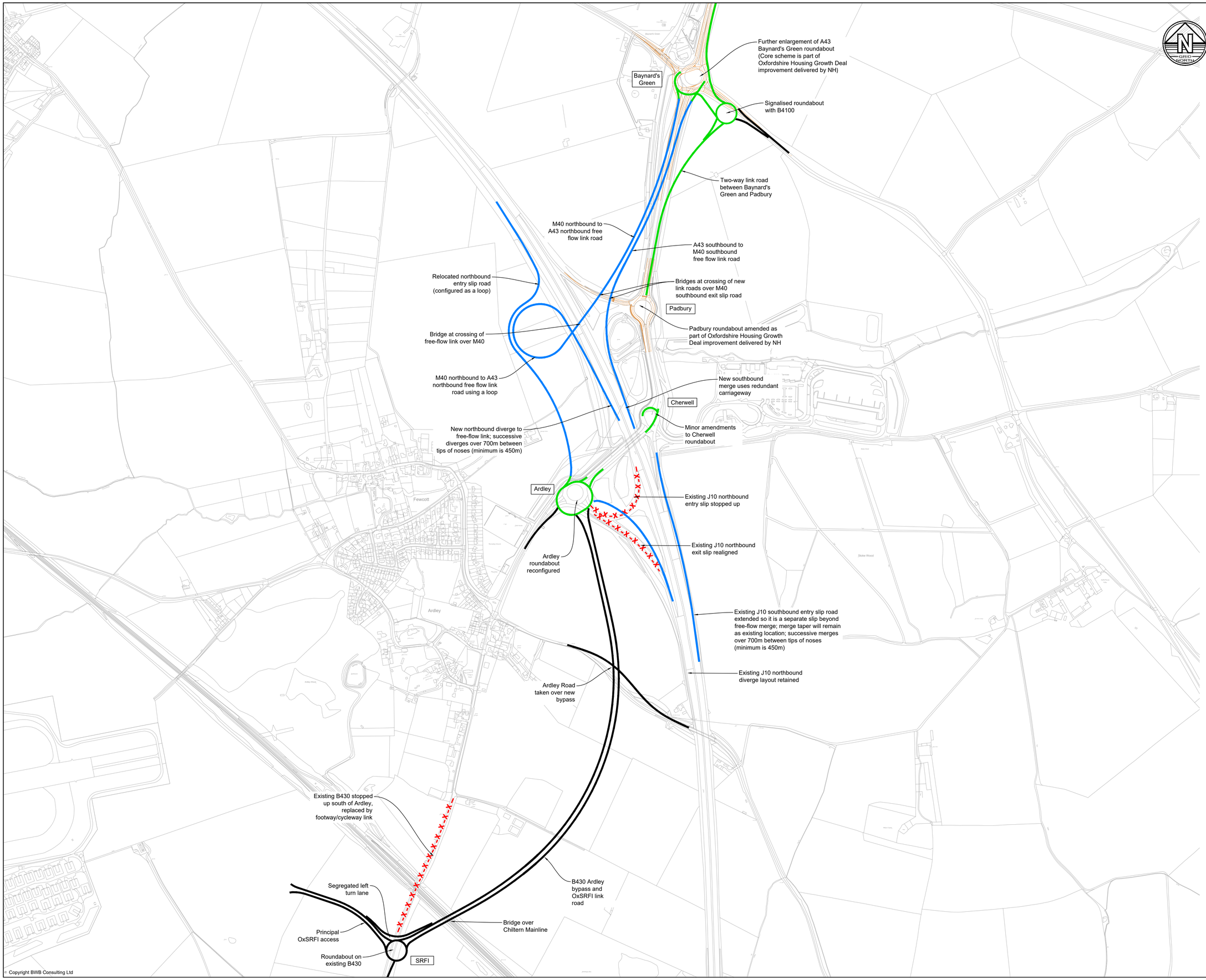
APPENDIX B

JOURNEY TIME ANALYSIS

APPENDIX C

M40 J10 MERGE AND DIVERGE 2031 TRAFFIC FLOWS

DRAWINGS



Legend

- Motorway (National Highways)
- All-purpose trunk road (National Highways)
- Other roads (OCC or private)
- Existing road stopped up

Rev	Date	Details of issue / revision	Drw	Rev
P04	29.03.22	Typo corrected	SRH	SRH
P03	07.03.22	Updated to suit developed geometry	SRH	SRH
P02	18.02.22	Baynard's Green amended	SRH	SRH
P01	17.12.21	Preliminary Issue	SRH	SRH

Issues & Revisions

BWB CONSULTANCY | ENVIRONMENT INFRASTRUCTURE | BUILDINGS
Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7407 3879
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client

OXFORDSHIRE RAILFREIGHT LTD.

Project Title

OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title

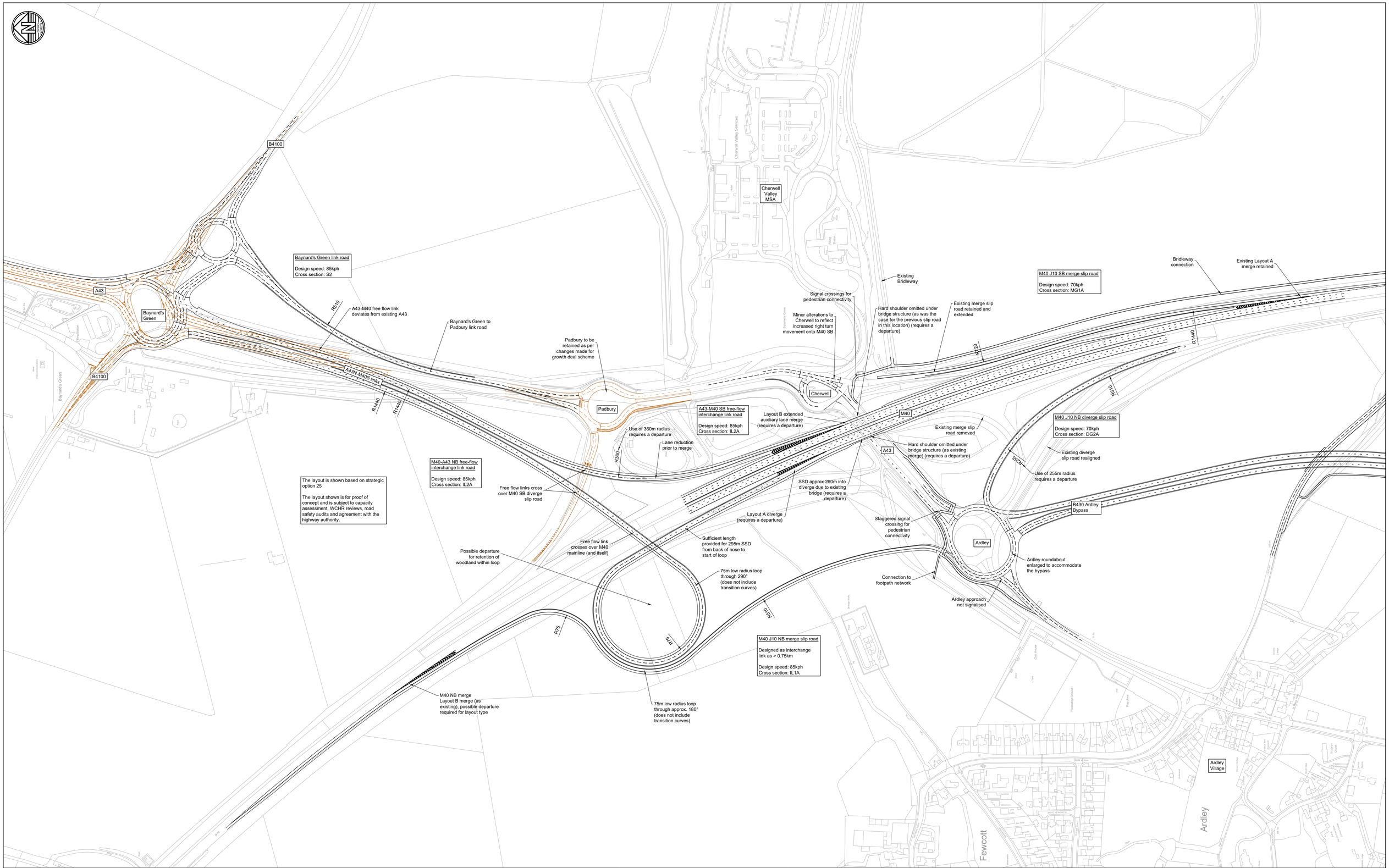
M40 JUNCTION 10 STRATEGIC OPTION 25

Drawn:	S. Hilditch		Reviewed:	S. Hilditch	
BWB Ref:	NTH2479	Date:	17.12.21	Scale@A1:	1:5,000

Drawing Status: **FOR COMMENT**

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-BWB-GEN-ZZ-SK-CH-SK031	S3	P04

© Copyright BWB Consulting Ltd



NOTES

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in metres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

© Copyright BWB Consulting Ltd

LEGEND

——— Growth Deal Scheme Layout

ISSUES & REVISIONS

Rev	Date	Details of issue / revision	Drw	Rev
P01	30.03.22	Preliminary Issue	SRH	SRH

BWB
A CAF GROUP COMPANY
Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client
OXFORDSHIRE RAILFREIGHT LTD.

Project Title
OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title
M40 JUNCTION 10 OVERALL GENERAL ARRANGEMENT

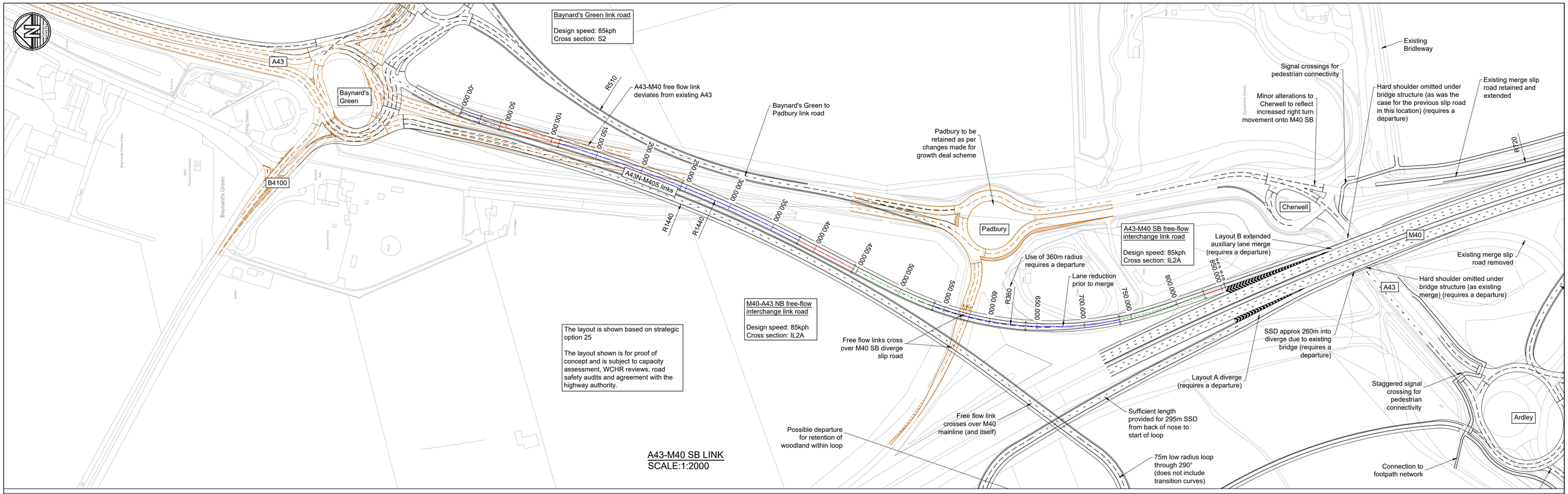
Drawn:	M. Valibhai		Reviewed:	S. Hilditch		
BWB Ref:	NTH2479	Date:	30.03.22	Scale@A1:	1:2500	

Drawing Status: **PRELIMINARY**

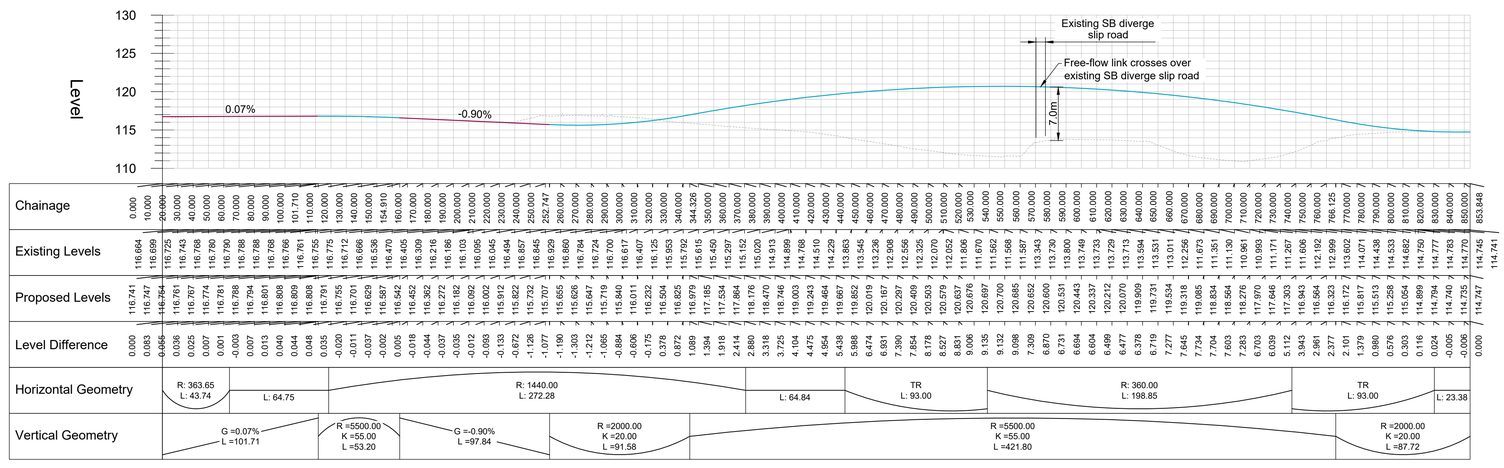
Project - Originator - Zone - Level - Type - Role - Number: **OxSRFI-BWB-GEN-XX-SK-CH-SK042**

Status: **S1** Rev: **P01**

Y:\NTH\NTH2479_Oxfordshire RFI\02. Project Delivery\01. WIP\Sketches\OxSRFI-BWB-GEN-XX-SK-CH-SK042_M40 J10 General Arrangement.dwg



Design Speed: 85kph



A43-M40 SB LINK LONGSECTION
SCALE: H 1:2000,V 1:400. DATUM: 110.000

NOTES

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in metres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

© Copyright BWB Consulting Ltd

LEGEND

- Growth Deal Scheme Layout
- Horizontal Geometry - Straight
- Horizontal Geometry - Transition
- Horizontal Geometry - Curvature
- Existing Ground
- Proposed Vertical Geometry - Straight Segment (Gradient)
- Proposed Vertical Geometry - Curvature

ISSUES & REVISIONS

Rev	Date	Details of issue / revision	Drw	Rev
P01	11.06.21	Preliminary Issue	MMV	SRH
P02	07.03.22	Preliminary Issue - Revised	MMV	SRH
P03	10.03.22	Baynard's Green minor amendment	SRH	SRH
P04	29.03.22	WCHR routes added	SRH	SRH

BWB A CAF GROUP COMPANY
Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client: OXFORDSHIRE RAILFREIGHT LTD.

Project Title: OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title: A43 TO M40 SB LINK

GENERAL ARRANGEMENT & VERTICAL ALIGNMENT

Drawn:	M. Valibhai	Reviewed:	S. Hilditch	
BWB Ref:	NTH2479	Date:	07.03.22	Scale@A1: 1:2000

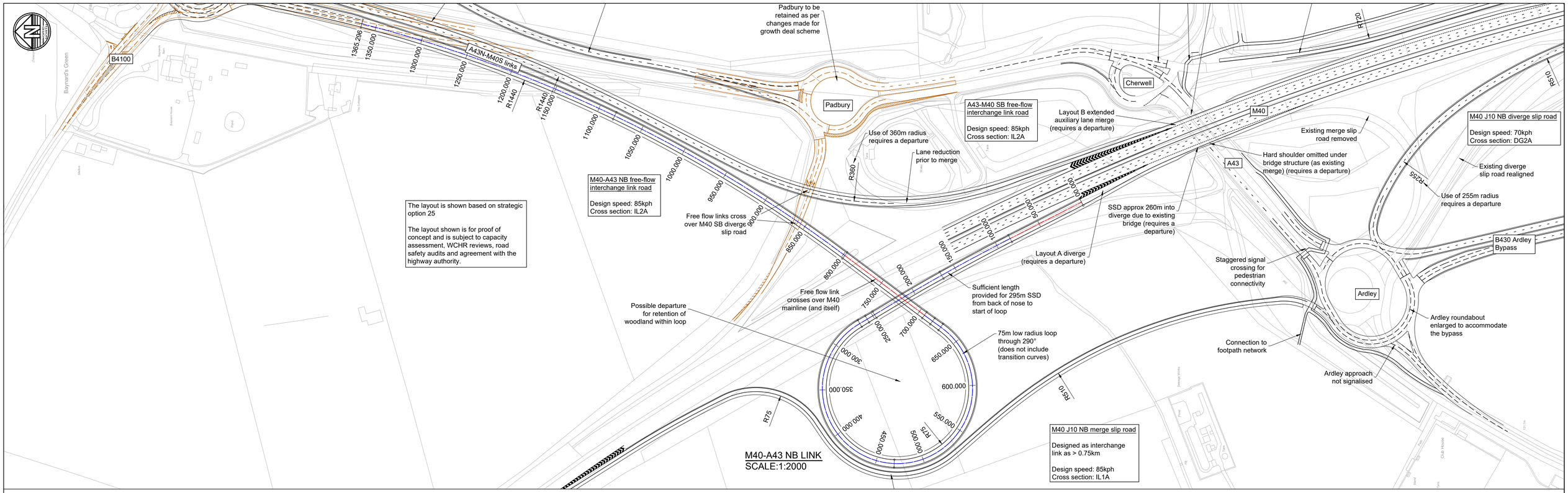
Drawing Status: PRELIMINARY

Project - Originator - Zone - Level - Type - Role - Number: OxSRFI-BWB-GEN-XX-SK-CH-SK021

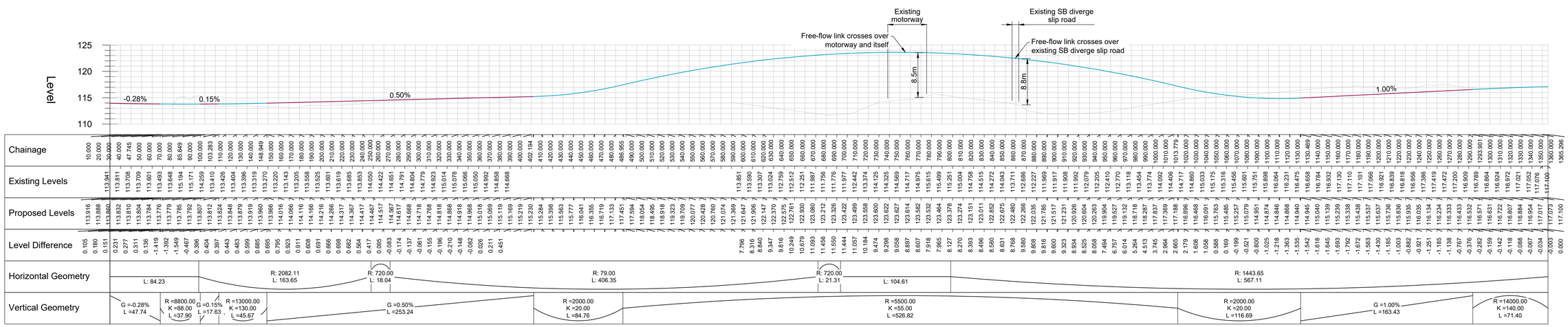
Status: S1

Rev: P04

Y:\NTH\NTH2479_Oxfordshire RFI\02. Project Delivery\01. WIP\Sketches\OxSRFI-BWB-GEN-XX-SK-CH-SK021 & SK035-SK039_ General Arrangement & Vertical Alignment.dwg



Design Speed: 85kph



M40-A43 NB LINK LONGSECTION
SCALE: H 1:2000,V 1:400. DATUM: 110.000

NOTES

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in metres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

© Copyright BWB Consulting Ltd

LEGEND

- Growth Deal Scheme Layout
- Horizontal Geometry - Straight
- Horizontal Geometry - Transition
- Horizontal Geometry - Curvature
- Existing Ground
- Proposed Vertical Geometry - Straight Segment (Gradient)
- Proposed Vertical Geometry - Curvature

ISSUES & REVISIONS

Rev	Date	Details of issue / revision	Drw	Rev
P01	07.03.22	Preliminary Issue	MMV	SRH
P02	29.03.22	WCHR routes added	SRH	SRH

BWB
A CAF GROUP COMPANY
Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client
OXFORDSHIRE RAILFREIGHT LTD.

Project Title
OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title
M40 TO A43 NB LINK

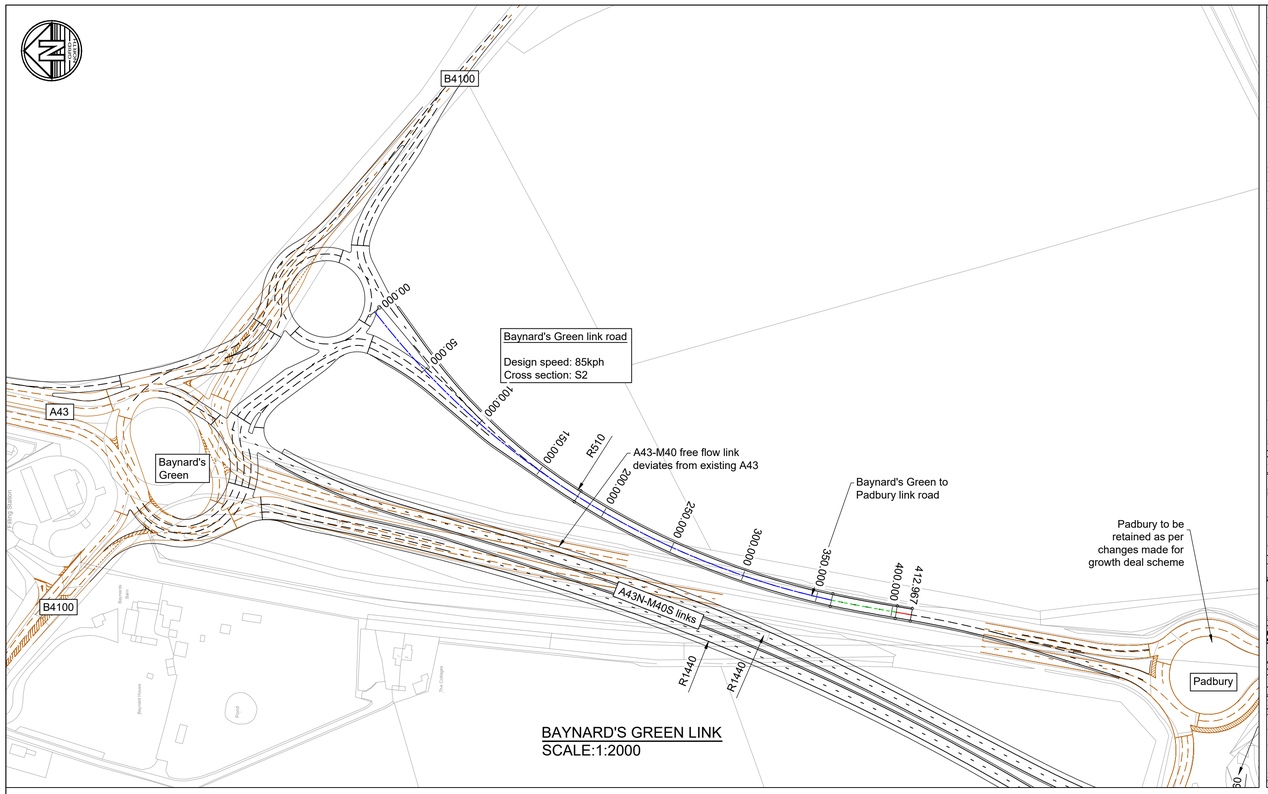
GENERAL ARRANGEMENT & VERTICAL ALIGNMENT

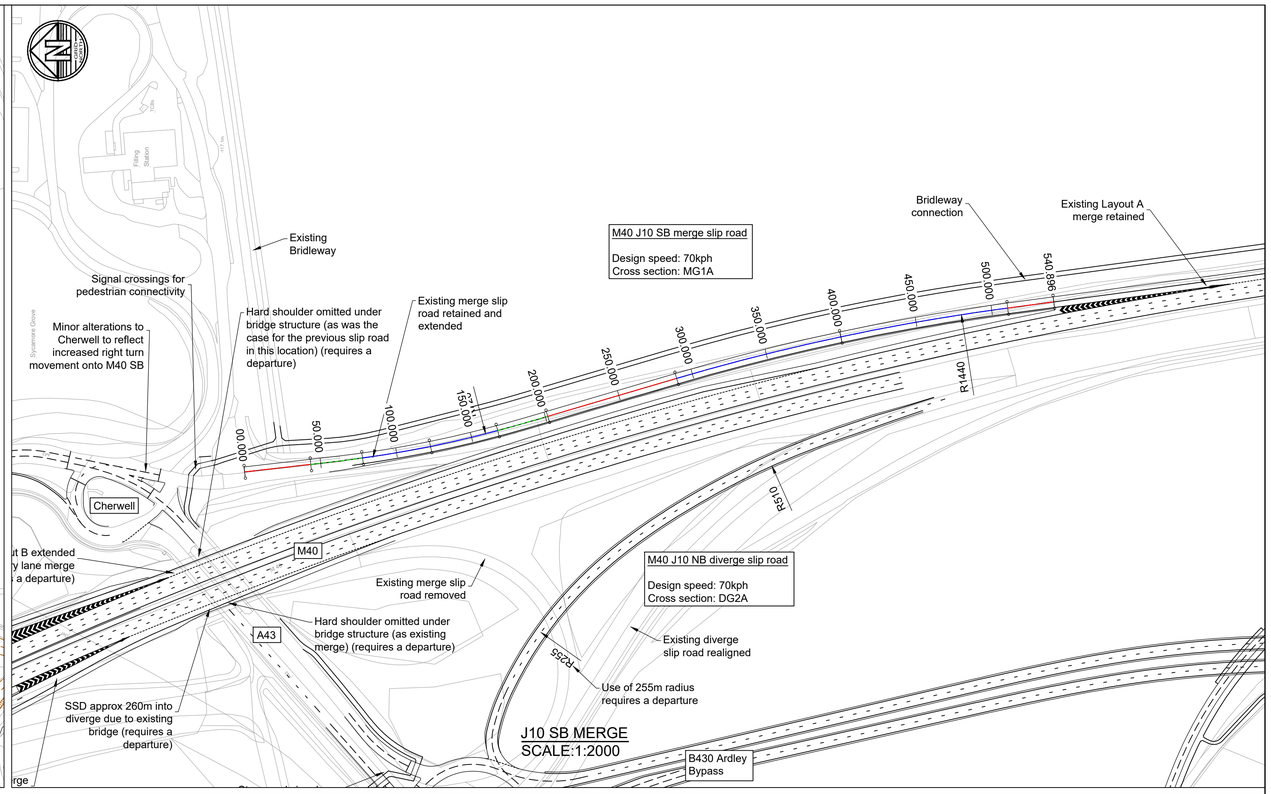
Drawn:	M. Valibhai	Reviewed:	S. Hilditch	
BWB Ref:	NTH2479	Date:	07.03.22	Scale@A1: 1:2000

Drawing Status
PRELIMINARY

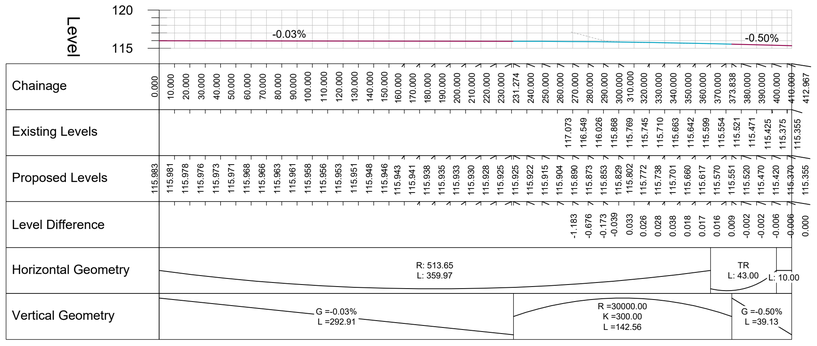
Project - Originator - Zone - Level - Type - Role - Number
OxSRFI-BWB-GEN-XX-SK-CH-SK035

Status **S1** | Rev **P02**



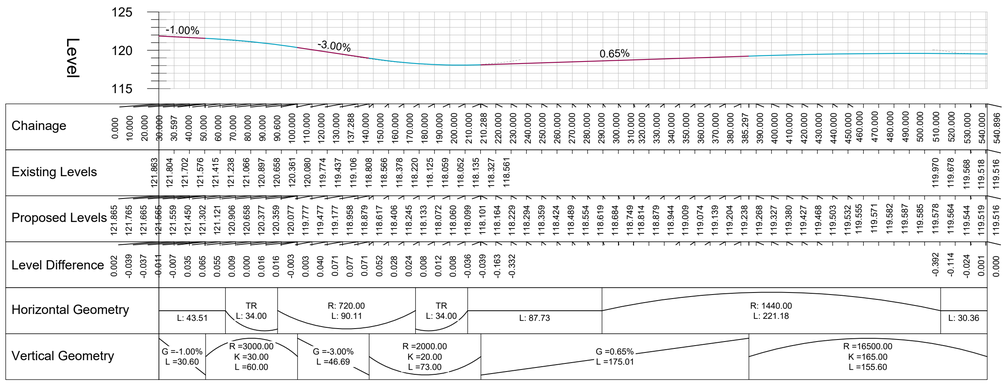


Design Speed: 85kph



BAYNARD'S GREEN LINK LONGSECTION
SCALE: H 1:2000,V 1:400. DATUM: 115.000

Design Speed: 70kph



J10 SB MERGE LONGSECTION
SCALE: H 1:2000,V 1:400. DATUM: 115.000

NOTES

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in metres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

© Copyright BWB Consulting Ltd

LEGEND

- Growth Deal Scheme Layout
- Horizontal Geometry - Straight
- Horizontal Geometry - Transition
- Horizontal Geometry - Curvature
- Existing Ground
- Proposed Vertical Geometry - Straight Segment (Gradient)
- Proposed Vertical Geometry - Curvature

ISSUES & REVISIONS

Rev	Date	Details of issue / revision	Drw	Rev
P01	07.03.22	Preliminary Issue	MMV	SRH
P02	10.03.22	Baynard's Green minor amendment	SRH	SRH
P03	29.03.22	WCHR routes added	SRH	SRH

BWB
A CAF GROUP COMPANY
Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client
OXFORDSHIRE RAILFREIGHT LTD.

Project Title
OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title
BAYNARD'S GREEN LINK & J10 SB MERGE GENERAL ARRANGEMENT & VERTICAL ALIGNMENT

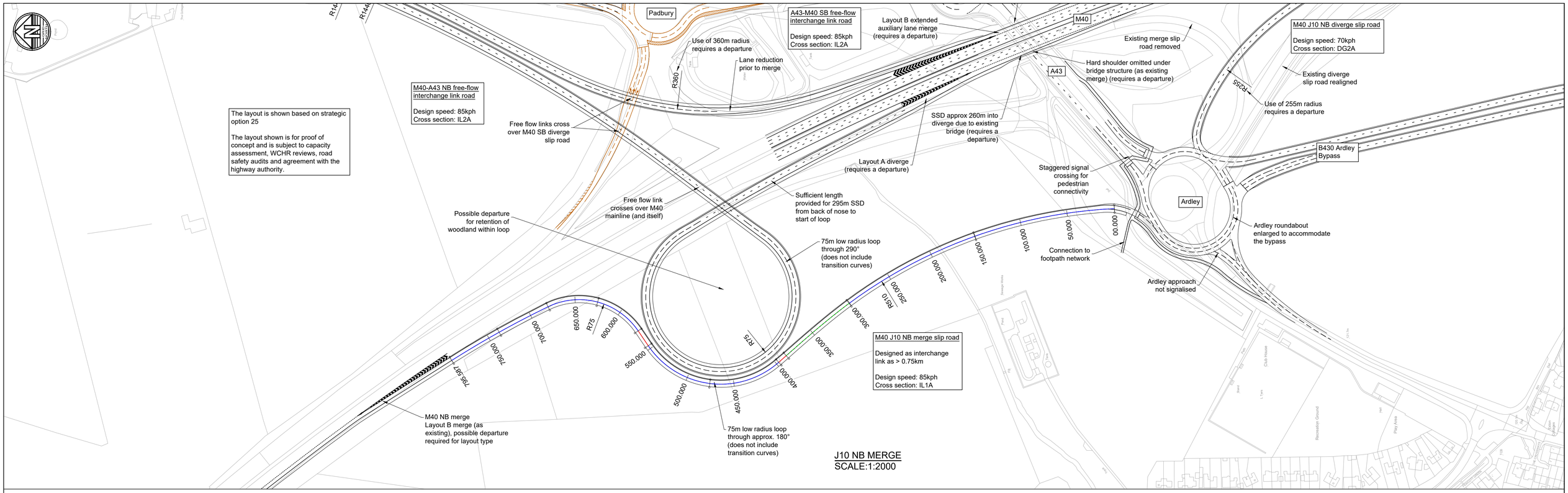
Drawn:	M. Valibhai	Reviewed:	S. Hilditch		
BWB Ref:	NTH2479	Date:	07.03.22	Scale@A1:	1:2000

Drawing Status
PRELIMINARY

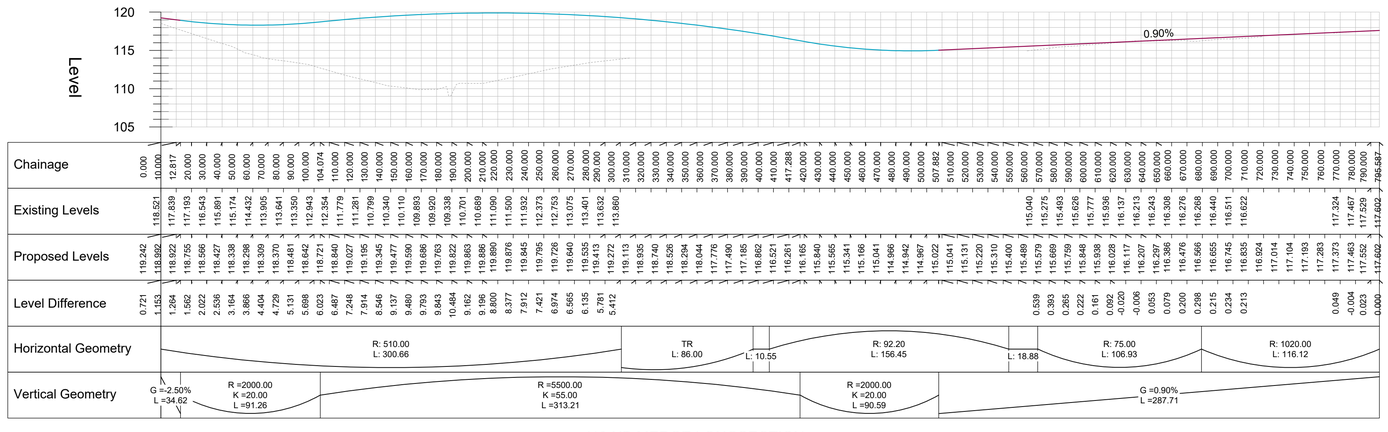
Project - Originator - Zone - Level - Type - Role - Number
OxSRFI-BWB-GEN-XX-SK-CH-SK036

Status: **S1**

Rev: **P03**



Design Speed: 85kph



J10 NB MERGE LONGSECTION
SCALE: H 1:2000,V 1:400. DATUM: 105.000

NOTES

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in metres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

© Copyright BWB Consulting Ltd

LEGEND

- Growth Deal Scheme Layout
- Horizontal Geometry - Straight
- Horizontal Geometry - Transition
- Horizontal Geometry - Curvature
- Existing Ground
- Proposed Vertical Geometry - Straight Segment (Gradient)
- Proposed Vertical Geometry - Curvature

ISSUES & REVISIONS

Rev	Date	Details of issue / revision	Drw	Rev
P01	07.03.22	Preliminary Issue	MMV	SRH
P02	29.03.22	WCHR routes added	SRH	SRH

BWB
A CAF GROUP COMPANY
Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client
OXFORDSHIRE RAILFREIGHT LTD.

Project Title
OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title
J10 NB MERGE

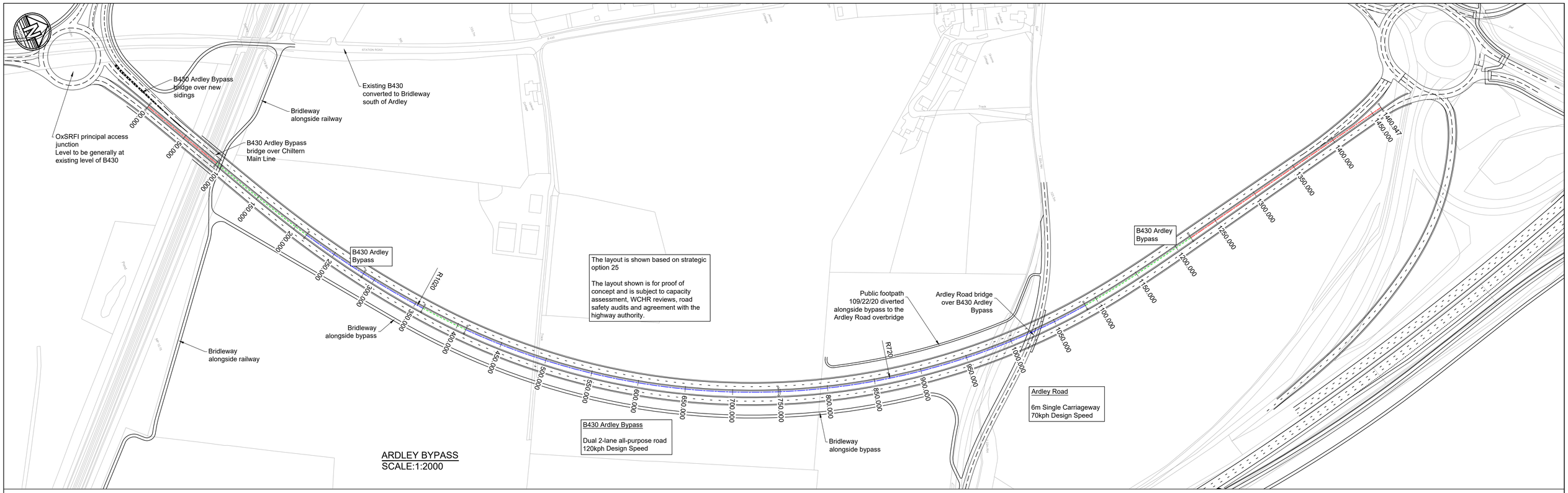
GENERAL ARRANGEMENT & VERTICAL ALIGNMENT

Drawn:	M. Valibhai	Reviewed:	S. Hilditch
BWB Ref:	NTH2479	Date:	07.03.22
Scale@A1:	1:2000		

Drawing Status
PRELIMINARY

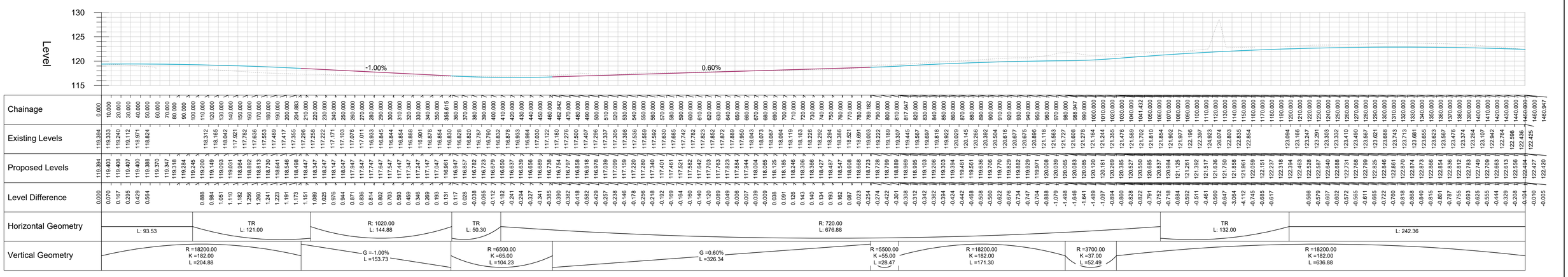
Project - Originator - Zone - Level - Type - Role - Number
OxSRFI-BWB-GEN-XX-SK-CH-SK037

Status **S1** Rev **P02**



ARDLEY BYPASS
SCALE:1:2000

Design Speed: 120kph



ARDLEY BYPASS LONGSECTION
SCALE: H 1:2000,V 1:400. DATUM: 115.000

NOTES

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in metres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

© Copyright BWB Consulting Ltd

LEGEND

- Growth Deal Scheme Layout
- Horizontal Geometry - Straight
- Horizontal Geometry - Transition
- Horizontal Geometry - Curvature
- Existing Ground
- Proposed Vertical Geometry - Straight Segment (Gradient)
- Proposed Vertical Geometry - Curvature

ISSUES & REVISIONS

Rev	Date	Details of issue / revision	Drw	Rev
P01	07.03.22	Preliminary Issue	MMV	SRH
P02	29.03.22	WCHR routes added	SRH	SRH

BWB
A CAF GROUP COMPANY
Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client
OXFORDSHIRE RAILFREIGHT LTD.

Project Title
OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title
ARDLEY BYPASS

GENERAL ARRANGEMENT & VERTICAL ALIGNMENT

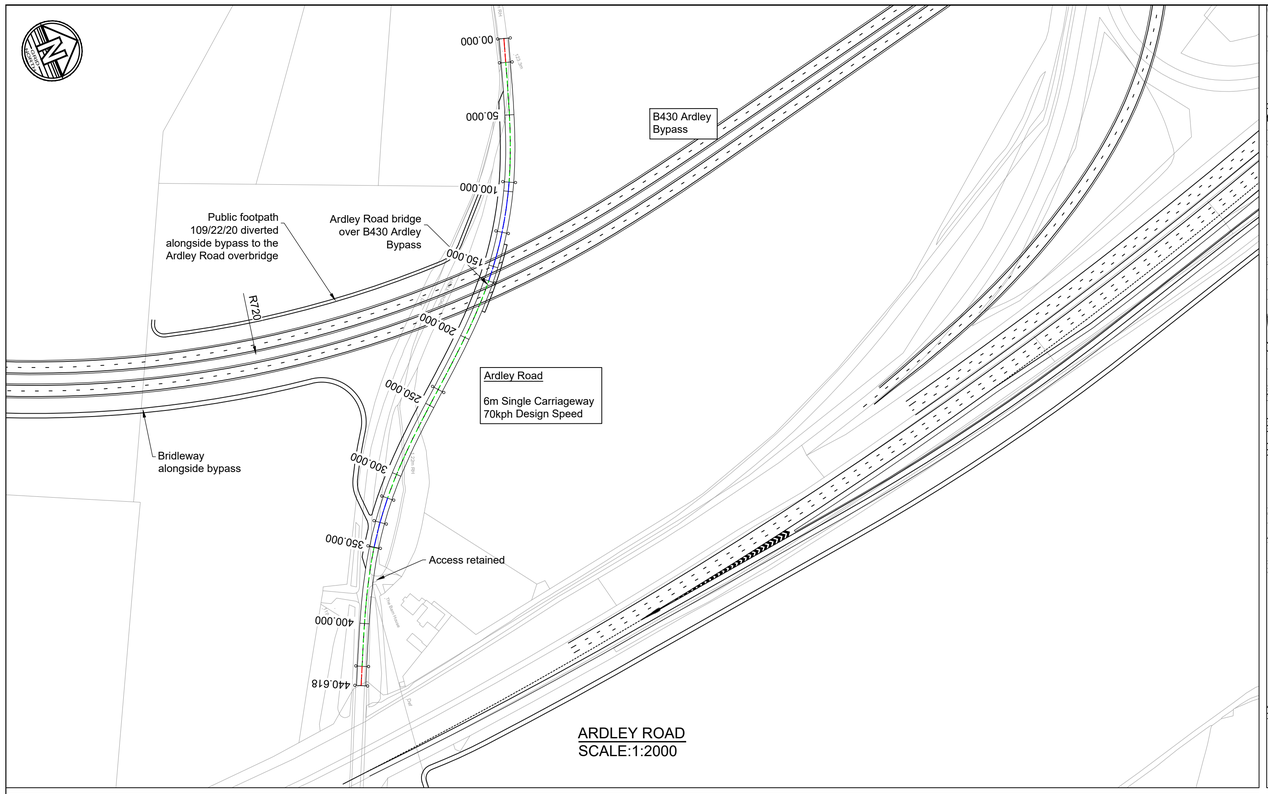
Drawn:	M. Valibhai	Reviewed:	S. Hilditch	
BWB Ref:	NTH2479	Date:	07.03.22	Scale@A1: 1:2000

Drawing Status
PRELIMINARY

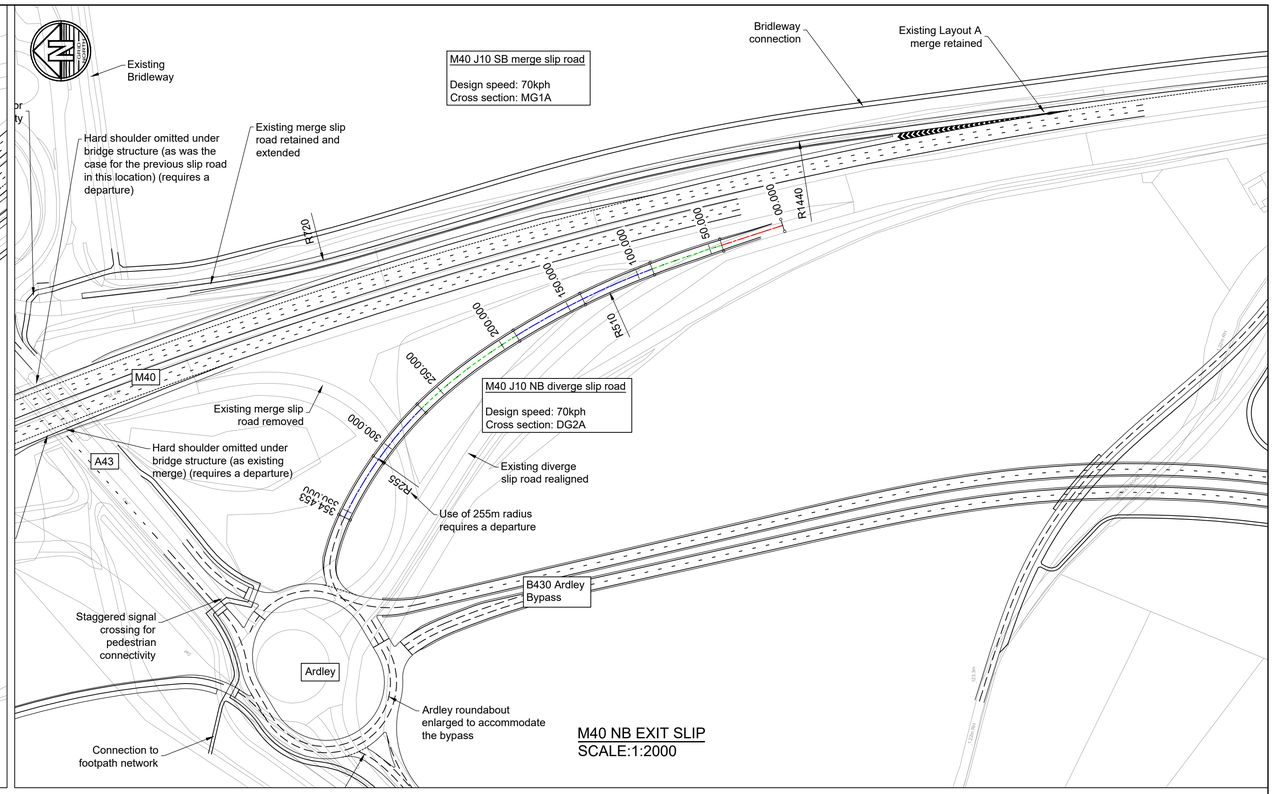
Project - Originator - Zone - Level - Type - Role - Number
OxSRFI-BWB-GEN-XX-SK-CH-SK038

Status: **S1**

Rev: **P02**

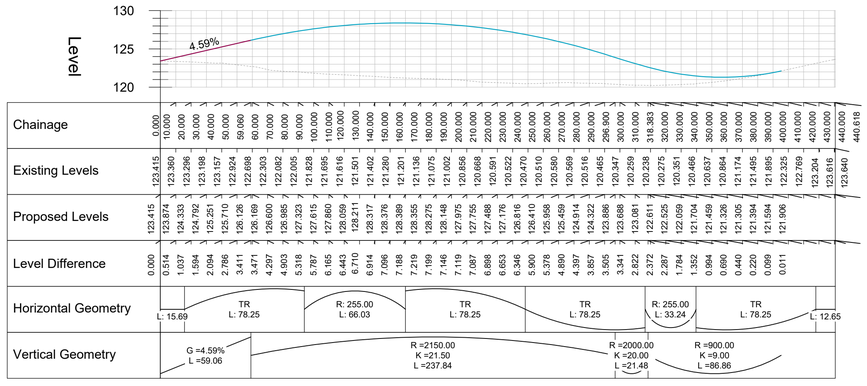


ARDLEY ROAD
SCALE:1:2000



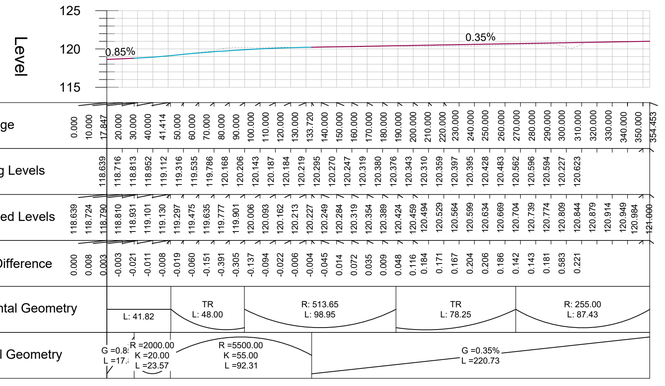
M40 NB EXIT SLIP
SCALE:1:2000

Design Speed: 70kph



ARDLEY ROAD LONGSECTION
SCALE: H 1:2000,V 1:400. DATUM: 120.000

Design Speed: 70kph



M40 NB EXIT SLIP LONGSECTION
SCALE: H 1:2000,V 1:400. DATUM: 115.000

NOTES

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in metres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

© Copyright BWB Consulting Ltd

LEGEND

- Growth Deal Scheme Layout
- Horizontal Geometry - Straight
- Horizontal Geometry - Transition
- Horizontal Geometry - Curvature
- Existing Ground
- Proposed Vertical Geometry - Straight Segment (Gradient)
- Proposed Vertical Geometry - Curvature

ISSUES & REVISIONS

Rev	Date	Details of issue / revision	Drw	Rev
P01	07.03.22	Preliminary Issue	MMV	SRH
P02	29.03.22	WCHR routes added	SRH	SRH

BWB A CAF GROUP COMPANY
Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client: OXFORDSHIRE RAILFREIGHT LTD.

Project Title: OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title: ARDLEY ROAD & M40 NB EXIT SLIP GENERAL ARRANGEMENT & VERTICAL ALIGNMENT

Drawn:	M. Valibhai	Reviewed:	S. Hilditch		
BWB Ref:	NTH2479	Date:	07.03.22	Scale@A1:	1:2000

Drawing Status: PRELIMINARY

Project - Originator - Zone - Level - Type - Role - Number: OxSRFI-BWB-GEN-XX-SK-CH-SK039

Status: S1

Rev: P02

APPENDIX A

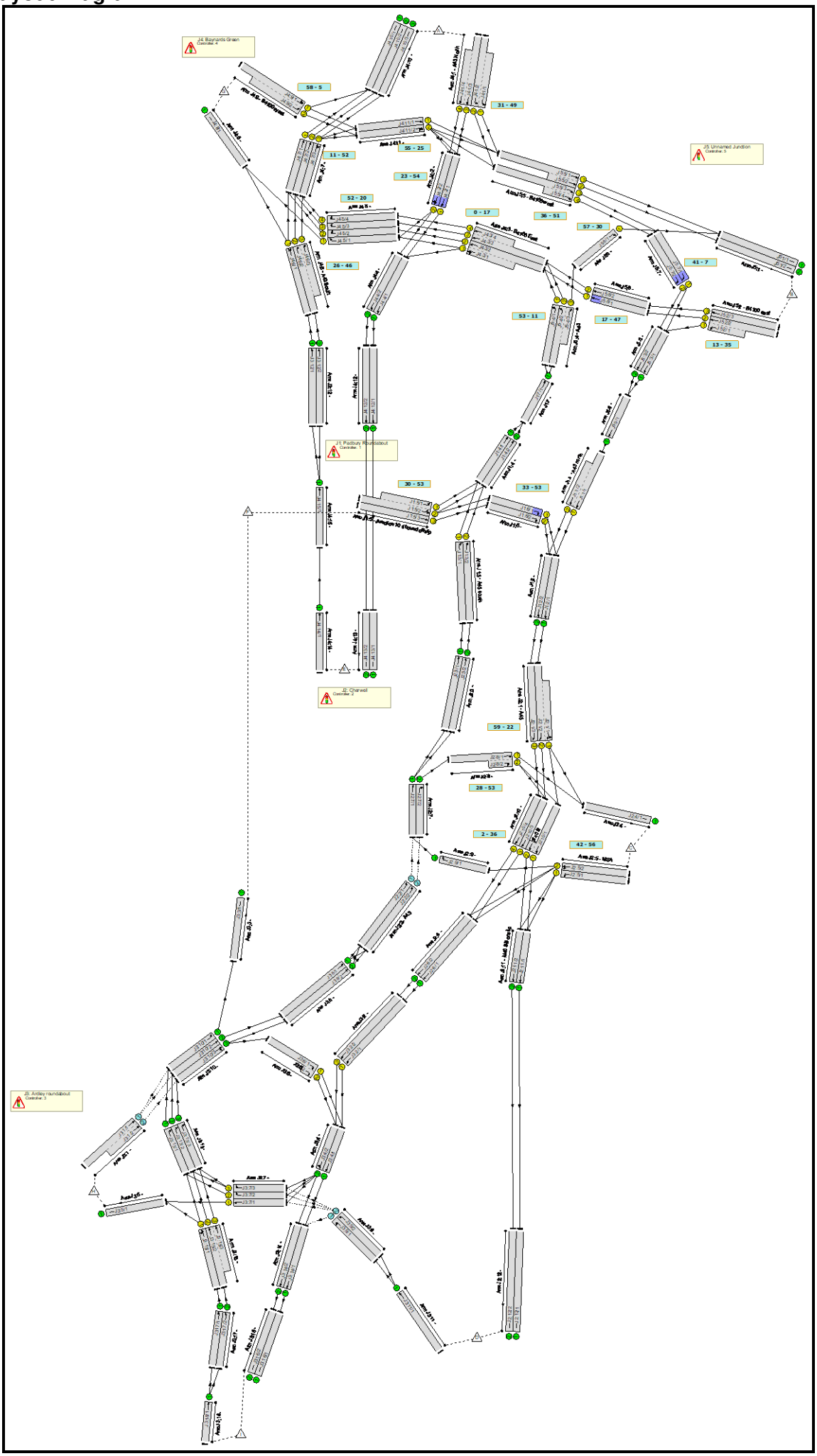
LINSIG RESULTS

Full Input Data And Results

User and Project Details

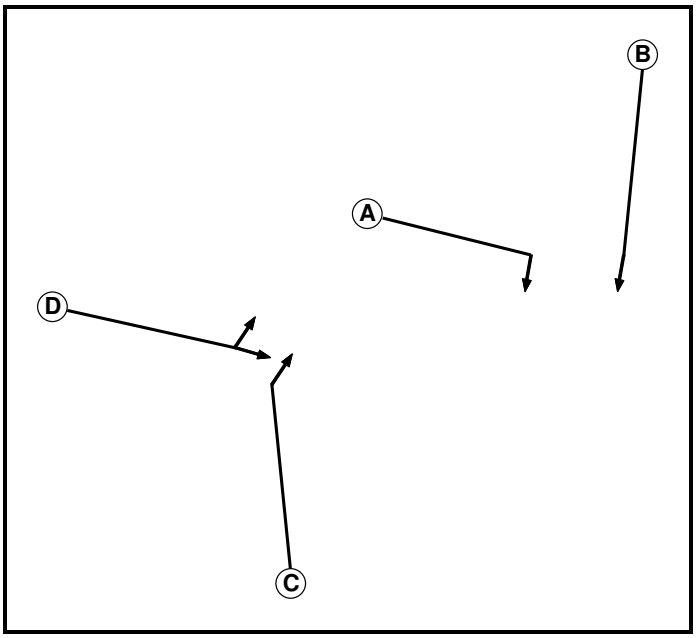
Project:	**Oxfordshire SRFI**
Title:	**Option25 Network Model**
Location:	
Additional detail:	Entry and exit links configured to be consistent with do something cases for comparison.
File name:	220307 Network - Option 25 BG roundabout.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



C1 - Padbury

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

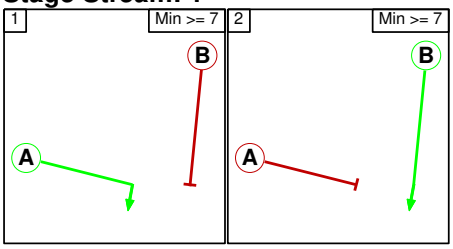
		Starting Phase			
		A	B	C	D
Terminating Phase	A		6	-	-
	B	6		-	-
	C	-	-		6
	D	-	-	6	

Phases in Stage

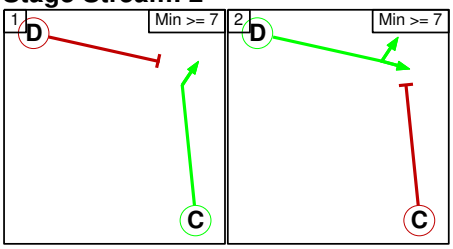
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Prohibited Stage Change

Stage Stream: 1

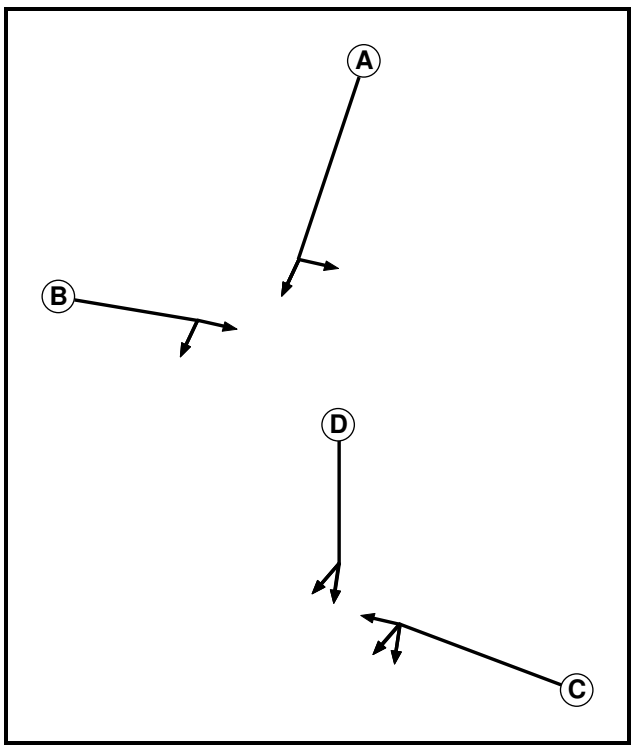
	To Stage		
From Stage		1	2
	1		6
	2	6	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		6
	2	6	

C2 - Cherwell

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

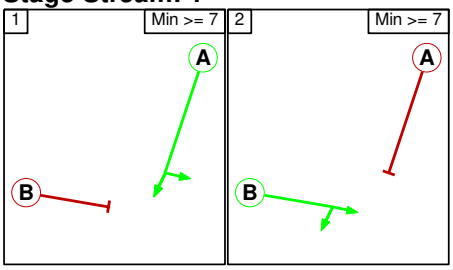
		Starting Phase			
		A	B	C	D
Terminating Phase	A		6	-	-
	B	6		-	-
	C	-	-		6
	D	-	-	6	

Phases in Stage

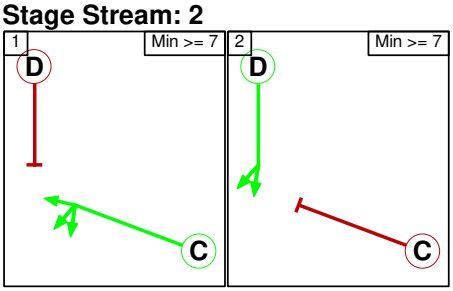
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Prohibited Stage Change

Stage Stream: 1

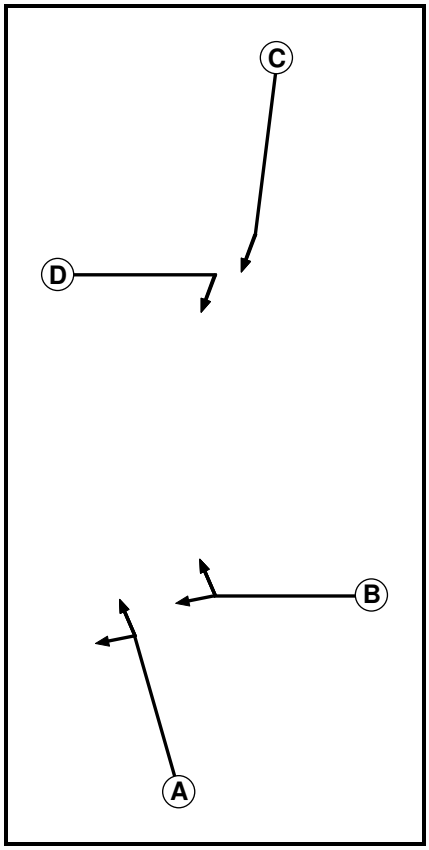
		To Stage		
			1	2
From Stage	1			6
	2	6		

Stage Stream: 2

		To Stage		
			1	2
From Stage	1			6
	2	6		

C3 - Ardley

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

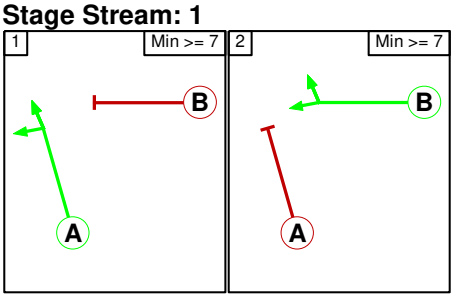
		Starting Phase			
		A	B	C	D
Terminating Phase	A		6	-	-
	B	6		-	-
	C	-	-		6
	D	-	-	6	

Phases in Stage

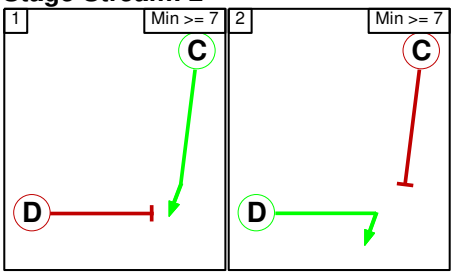
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Prohibited Stage Change

Stage Stream: 1

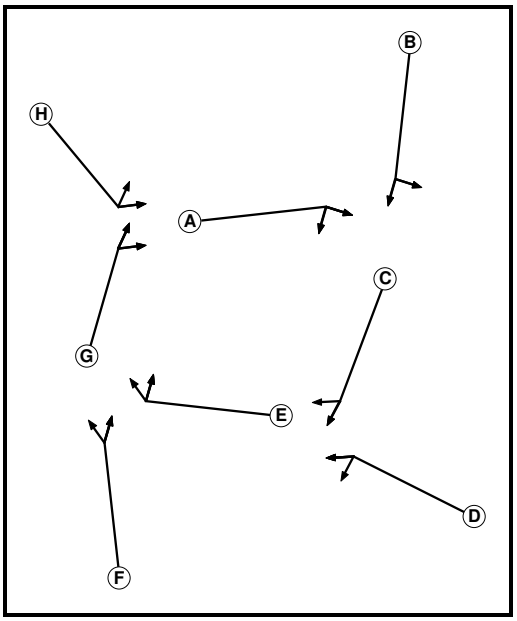
	To Stage		
From Stage		1	2
	1		6
	2	6	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		6
	2	6	

C4 - Baynards Green

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
E	Traffic	3		7	7
F	Traffic	3		7	7
G	Traffic	4		7	7
H	Traffic	4		7	7

Phase Intergreens Matrix

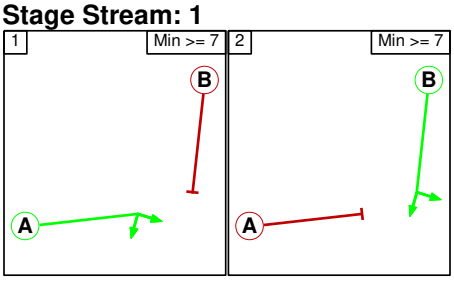
Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H
A		6	-	-	-	-	-	-
B	6		-	-	-	-	-	-
C	-	-		6	-	-	-	-
D	-	-	6		-	-	-	-
E	-	-	-	-		6	-	-
F	-	-	-	-	6		-	-
G	-	-	-	-	-	-		6
H	-	-	-	-	-	-	6	

Phases in Stage

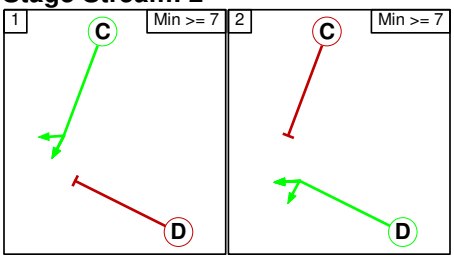
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F
4	1	G
4	2	H

Stage Diagram

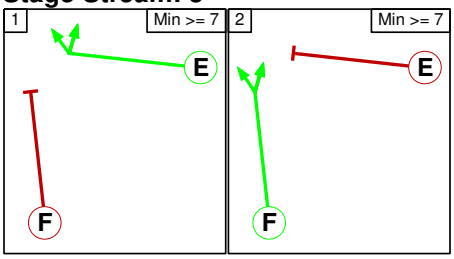
Stage Stream: 1



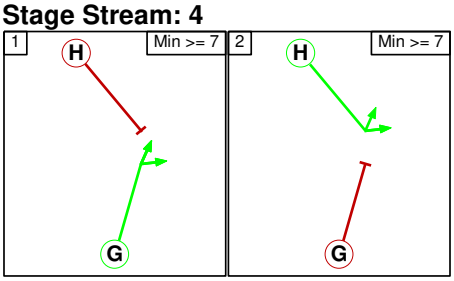
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Prohibited Stage Change

Stage Stream: 1

From Stage \ To Stage	1	2
1		6
2	6	

Stage Stream: 2

From Stage \ To Stage	1	2
1		6
2	6	

Stage Stream: 3

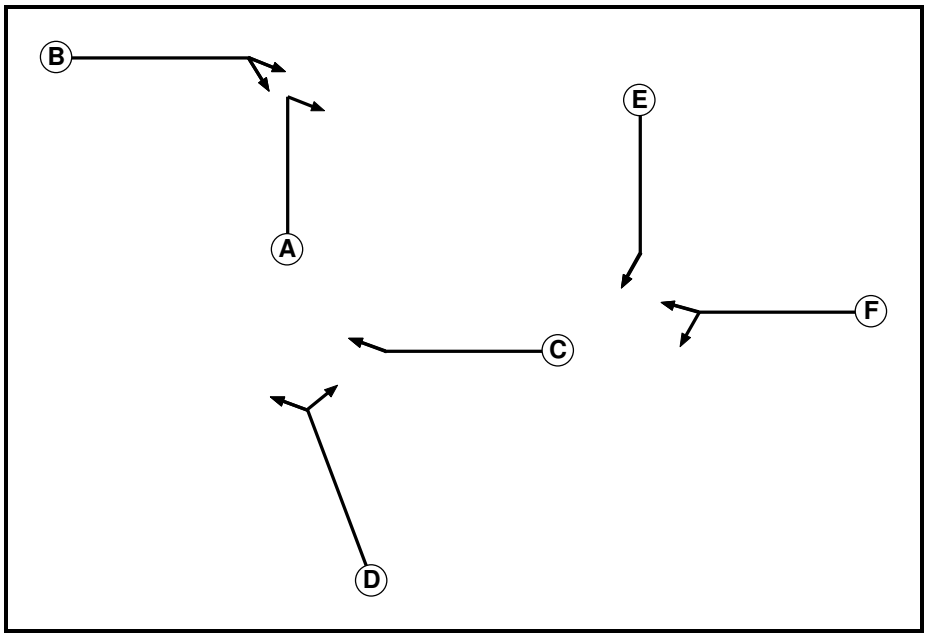
From Stage \ To Stage	1	2
1		6
2	6	

Stage Stream: 4

From Stage \ To Stage	1	2
1		6
2	6	

C5 - B4100 Roundabout

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
E	Traffic	3		7	7
F	Traffic	3		7	7

Phase Intergreens Matrix

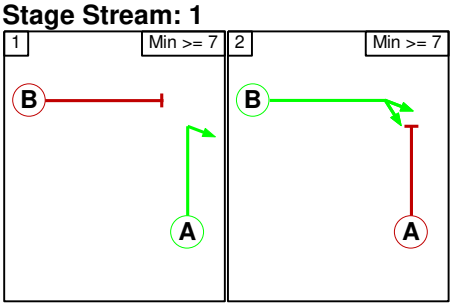
		Starting Phase					
		A	B	C	D	E	F
Terminating Phase	A		6	-	-	-	-
	B	6		-	-	-	-
	C	-	-		6	-	-
	D	-	-	6		-	-
	E	-	-	-	-		6
	F	-	-	-	-	6	

Phases in Stage

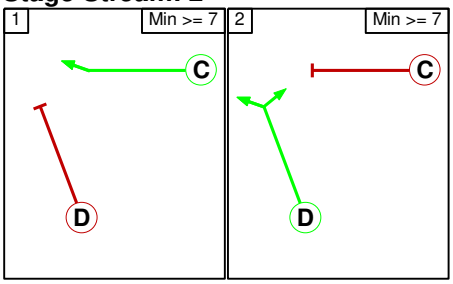
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F

Stage Diagram

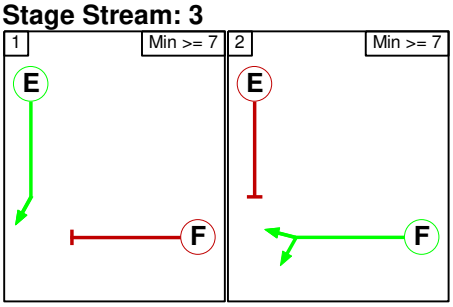
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Prohibited Stage Change

Stage Stream: 1

From Stage \ To Stage	1	2
1		6
2	6	

Stage Stream: 2

From Stage \ To Stage	1	2
1		6
2	6	

Stage Stream: 3

From Stage \ To Stage	1	2
1		6
2	6	

Junction: J2: Cherwell											
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)**
J2:2/1 (A43)	J2:7/1 (Ahead)	1200	0	J2:9/1	0.33	All	-	-	-	-	-
J2:2/2 (A43)	J2:7/2 (Ahead)	1200	0	J2:9/1	0.33	All	-	-	-	-	-

Junction: J3: Ardley roundabout											
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)**
J3:1/1	J3:10/1 (Ahead)	1000	0	J3:13/1	0.33	All	-	-	-	-	-
				J3:13/2	0.33	All					
	J3:10/2 (Ahead)	1000	0	J3:13/1	0.33	All					
				J3:13/2	0.33	All					
J3:1/2	J3:10/3 (Ahead)	1057	0	J3:13/1	0.28	All	-	-	-	-	-
				J3:12/2	0.28	All					
				J3:13/3	0.28	All					
J3:9/1	J3:14/1 (Left)	1000	0	J3:4/1	0.33	All	-	-	-	-	-
				J3:4/2	0.33	To J3:14/2 (Ahead)					
J3:9/2	J3:7/1 (Ahead)	1000	0	J3:4/1	0.33	All	-	-	-	-	-
				J3:4/2	0.33	All					
	J3:7/2 (Ahead)	1000	0	J3:4/1	0.33	All					
				J3:4/2	0.33	All					
	J3:7/3 (Ahead)	1000	0	J3:4/1	0.33	All					
				J3:4/2	0.33	All					

Lane Input Data

Junction: J1: Padbury Roundabout												
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)**
J1:1/1 (A43 north)	U	B	2	3	60.9	Geom	-	3.65	0.00	Y	Arm J1:2 Ahead	50.00
J1:1/2 (A43 north)	U	B	2	3	14.8	Geom	-	3.65	0.00	N	Arm J1:2 Ahead	50.00
J1:2/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J1:2/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J1:3/1 (A43 south)	U	C	2	3	52.2	Geom	-	3.65	0.00	Y	Arm J1:4 Ahead	30.00
J1:3/2 (A43 south)	U	C	2	3	52.2	Geom	-	3.65	0.00	N	Arm J1:4 Ahead	30.00
J1:4/1	U		2	3	8.7	Inf	-	-	-	-	-	-
J1:4/2	U		2	3	8.7	Inf	-	-	-	-	-	-
J1:5/1 (Junction 10 s'bound offslip)	U	D	2	3	10.8	Geom	-	3.65	0.00	Y	Arm J1:4 Left	40.00
J1:5/2 (Junction 10 s'bound offslip)	U	D	2	3	113.0	Geom	-	3.65	0.00	N	Arm J1:4 Left	50.00
											Arm J1:6 Ahead	50.00
J1:5/3 (Junction 10 s'bound offslip)	U	D	2	3	113.0	Geom	-	3.65	0.00	N	Arm J1:6 Ahead	50.00
J1:6/1	U	A	2	3	8.7	Geom	-	3.65	0.00	Y	Arm J1:2 Right	Inf
J1:6/2	U	A	2	3	8.7	Geom	-	3.65	0.00	N	Arm J1:2 Right	Inf
J1:7/1	U		2	3	36.5	Inf	-	-	-	-	-	-

Junction: J2: Cherwell												
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)**
J2:1/1 (A43)	U	A	2	3	17.4	Geom	-	3.65	0.00	Y	Arm J2:4 Left Arm J2:10 Ahead	Inf Inf
J2:1/2 (A43)	U	A	2	3	52.2	Geom	-	3.65	0.00	Y	Arm J2:10 Ahead	Inf
J2:1/3 (A43)	U	A	2	3	52.2	Geom	-	3.65	0.00	Y	Arm J2:10 Ahead	Inf
J2:2/1 (A43)	O		2	3	41.7	Inf	-	-	-	-	-	-
J2:2/2 (A43)	O		2	3	41.7	Inf	-	-	-	-	-	-
J2:3/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:3/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:5/1 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm J2:11 Left	30.00
J2:5/2 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm J2:6 Left Arm J2:9 Ahead	Inf Inf
J2:6/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:6/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:7/1	U		2	3	7.0	Inf	-	-	-	-	-	-
J2:7/2	U		2	3	7.0	Inf	-	-	-	-	-	-
J2:8/1	U	B	2	3	5.2	Geom	-	3.65	0.00	Y	Arm J2:4 Ahead	30.00
J2:8/2	U	B	2	3	5.0	Geom	-	3.65	0.00	N	Arm J2:10 Right	25.00
J2:9/1	U		2	3	7.8	Inf	-	-	-	-	-	-
J2:10/1	U	D	2	3	8.7	Geom	-	3.65	0.00	N	Arm J2:11 Ahead	Inf
J2:10/2	U	D	2	3	2.1	Geom	-	3.65	0.00	N	Arm J2:11 Ahead	Inf
J2:10/3	U	D	2	3	8.7	Geom	-	3.65	0.00	N	Arm J2:6 Ahead	Inf
J2:10/4	U	D	2	3	8.7	Geom	-	3.65	0.00	N	Arm J2:6 Ahead	Inf
J2:11/1 (M40 SB onslip)	U		2	3	130.4	Inf	-	-	-	-	-	-
J2:11/2 (M40 SB onslip)	U		2	3	130.4	Inf	-	-	-	-	-	-
J2:12/1	U		2	3	173.9	Inf	-	-	-	-	-	-
J2:12/2	U		2	3	173.9	Inf	-	-	-	-	-	-

Junction: J3: Ardley roundabout												
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)**
J3:1/1	O		2	3	60.0	Inf	-	-	-	-	-	-
J3:1/2	O		2	3	8.7	Inf	-	-	-	-	-	-
J3:2/1	U	C	2	3	41.7	Geom	-	3.65	0.00	Y	Arm J3:4 Ahead	Inf
J3:2/2	U	C	2	3	41.7	Geom	-	3.65	0.00	Y	Arm J3:4 Ahead	Inf
J3:3/1	U		2	3	173.9	Inf	-	-	-	-	-	-
J3:4/1	U		2	3	8.7	Inf	-	-	-	-	-	-
J3:4/2	U		2	3	8.7	Inf	-	-	-	-	-	-
J3:5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J3:6/1	U	D	2	3	9.6	Geom	-	3.65	0.00	Y	Arm J3:4 Right	Inf
J3:6/2	U	D	2	3	2.6	Geom	-	3.65	0.00	Y	Arm J3:4 Right	Inf
J3:7/1	U	B	2	3	7.8	Geom	-	3.65	0.00	Y	Arm J3:5 Ahead	Inf
J3:7/2	U	B	2	3	7.8	Geom	-	3.65	0.00	N	Arm J3:13 Right	Inf
J3:7/3	U	B	2	3	7.8	Geom	-	3.65	0.00	N	Arm J3:13 Right	Inf
J3:8/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J3:8/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J3:9/1	O		2	3	173.9	Inf	-	-	-	-	-	-
J3:9/2	O		2	3	173.9	Inf	-	-	-	-	-	-
J3:10/1	U		2	3	13.9	Inf	-	-	-	-	-	-
J3:10/2	U		2	3	13.9	Inf	-	-	-	-	-	-
J3:10/3	U		2	3	13.9	Inf	-	-	-	-	-	-
J3:11/1	U		2	3	104.3	Inf	-	-	-	-	-	-
J3:12/1	U		2	3	69.6	Inf	-	-	-	-	-	-
J3:12/2	U		2	3	69.6	Inf	-	-	-	-	-	-
J3:13/1	U		2	3	13.0	Inf	-	-	-	-	-	-
J3:13/2	U		2	3	13.0	Inf	-	-	-	-	-	-
J3:13/3	U		2	3	13.0	Inf	-	-	-	-	-	-
J3:14/1	U		2	3	87.0	Inf	-	-	-	-	-	-
J3:14/2	U		2	3	87.0	Inf	-	-	-	-	-	-
J3:15/1	U	A	2	3	104.3	Geom	-	3.65	0.00	Y	Arm J3:5 Left	Inf
											Arm J3:13 Ahead	Inf
J3:15/2	U	A	2	3	104.3	Geom	-	3.65	0.00	N	Arm J3:13 Ahead	Inf
J3:15/3	U	A	2	3	10.4	Geom	-	3.65	0.00	N	Arm J3:13 Ahead	Inf
J3:16/1	U		2	3	113.0	Inf	-	-	-	-	-	-

J3:16/2	U		2	3	113.0	Inf	-	-	-	-	-	-
J3:17/1	U		2	3	87.0	Inf	-	-	-	-	-	-
J3:17/2	U		2	3	87.0	Inf	-	-	-	-	-	-
J3:18/1	U		2	3	8.7	Inf	-	-	-	-	-	-

Junction: J4: Baynards Green												
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)**
J4:1/1 (A43 North)	U	B	2	3	24.3	Geom	-	3.65	0.00	Y	Arm J5:5 Left	Inf
J4:1/2 (A43 North)	U	B	2	3	60.0	Geom	-	3.65	0.00	N	Arm J5:5 Left	Inf
J4:1/3 (A43 North)	U	B	2	3	60.0	Geom	-	3.65	0.00	N	Arm J4:2 Ahead	Inf
J4:1/4 (A43 North)	U	B	2	3	24.3	Geom	-	3.65	0.00	Y	Arm J4:2 Ahead	50.00
J4:2/1	U	C	2	3	12.2	Geom	-	3.65	0.00	N	Arm J4:4 Ahead	Inf
J4:2/2	U	C	2	3	12.2	Geom	-	3.65	0.00	N	Arm J4:4 Ahead	Inf
											Arm J4:5 Right	Inf
J4:3/1 (B4100 East)	U	D	2	3	10.4	Geom	-	3.65	0.00	Y	Arm J4:4 Left	Inf
											Arm J4:5 Ahead	Inf
J4:3/2 (B4100 East)	U	D	2	3	17.4	Geom	-	3.65	0.00	N	Arm J4:5 Ahead	Inf
J4:3/3 (B4100 East)	U	D	2	3	17.4	Geom	-	3.65	0.00	N	Arm J4:5 Ahead	Inf
J4:3/4 (B4100 East)	U	D	2	3	8.7	Geom	-	3.65	0.00	N	Arm J4:5 Ahead	Inf
J4:4/1	U		2	3	17.4	Inf	-	-	-	-	-	-
J4:4/2	U		2	3	17.4	Inf	-	-	-	-	-	-
J4:5/1	U	E	2	3	7.5	Geom	-	3.65	0.00	Y	Arm J4:8 Right	Inf
J4:5/2	U	E	2	3	7.5	Geom	-	3.65	0.00	N	Arm J4:7 Right	Inf
J4:5/3	U	E	2	3	7.5	Geom	-	3.65	0.00	N	Arm J4:7 Right	Inf
J4:5/4	U	E	2	3	7.5	Geom	-	3.65	0.00	N	Arm J4:7 Right	Inf
J4:6/1 (A43 South)	U	F	2	3	139.1	Geom	-	3.65	0.00	Y	Arm J4:7 Ahead	50.00
											Arm J4:8 Ahead	Inf
J4:6/2 (A43 South)	U	F	2	3	139.1	Geom	-	3.65	0.00	Y	Arm J4:7 Ahead	50.00
J4:6/3 (A43 South)	U	F	2	3	20.9	Geom	-	3.65	0.00	Y	Arm J4:7 Ahead	50.00

J4:7/1	U	G	2	3	16.5	Geom	-	3.65	0.00	N	Arm J4:10 Ahead	Inf
J4:7/2	U	G	2	3	16.5	Geom	-	3.65	0.00	N	Arm J4:10 Ahead	Inf
J4:7/3	U	G	2	3	16.5	Geom	-	3.65	0.00	N	Arm J4:10 Ahead	Inf
											Arm J4:11 Right	Inf
J4:8/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J4:9/1 (B4100 West)	U	H	2	3	60.0	Geom	-	3.50	0.00	Y	Arm J4:10 Left	30.00
											Arm J4:11 Ahead	40.00
J4:9/2 (B4100 West)	U	H	2	3	22.6	Geom	-	3.50	0.00	Y	Arm J4:11 Ahead	40.00
J4:10/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J4:10/2	U		2	3	60.0	Inf	-	-	-	-	-	-
J4:10/3	U		2	3	60.0	Inf	-	-	-	-	-	-
J4:11/1	U	A	2	3	10.4	Geom	-	3.65	0.00	Y	Arm J5:5 Ahead	Inf
J4:11/2	U	A	2	3	10.4	Geom	-	3.65	0.00	N	Arm J4:2 Right	Inf
											Arm J5:5 Ahead	Inf
J4:12/1	U		2	3	173.9	Inf	-	-	-	-	-	-
J4:12/2	U		2	3	173.9	Inf	-	-	-	-	-	-
J4:13/1	U		2	3	173.9	Inf	-	-	-	-	-	-
J4:13/2	U		2	3	173.9	Inf	-	-	-	-	-	-
J4:14/1	U		2	3	17.4	Inf	-	-	-	-	-	-
J4:15/1	U		2	3	173.9	Inf	-	-	-	-	-	-

Junction: J5: Unnamed Junction												
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)**
J5:1/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J5:1/2	U		2	3	60.0	Inf	-	-	-	-	-	-
J5:2/1 (B4100 east)	U	F	2	3	7.8	Geom	-	3.65	0.00	Y	Arm J5:3 Left	40.00
J5:2/2 (B4100 east)	U	F	2	3	60.0	Geom	-	3.65	0.00	N	Arm J5:8 Ahead	Inf
J5:2/3 (B4100 east)	U	F	2	3	60.0	Geom	-	3.65	0.00	N	Arm J5:8 Ahead	40.00
J5:3/1	U		2	3	8.7	Inf	-	-	-	-	-	-
J5:3/2	U		2	3	8.7	Inf	-	-	-	-	-	-
J5:4/1 (A43)	U	D	2	3	60.9	Geom	-	3.65	0.00	N	Arm J4:3 Left	30.00
J5:4/2 (A43)	U	D	2	3	60.9	Geom	-	3.65	0.00	N	Arm J4:3 Left	40.00
J5:4/3 (A43)	U	D	2	3	7.8	Geom	-	3.65	0.00	Y	Arm J5:6 Ahead	40.00
J5:5/1 (B4100 west)	U	B	2	3	19.1	Geom	-	3.65	0.00	Y	Arm J5:1 Ahead	Inf
J5:5/2 (B4100 west)	U	B	2	3	6.3	Geom	-	3.65	0.00	N	Arm J5:1 Ahead	Inf
J5:5/3 (B4100 west)	U	B	2	3	19.1	Geom	-	3.65	0.00	N	Arm J5:7 Ahead	Inf
J5:5/4 (B4100 west)	U	B	2	3	6.3	Geom	-	3.65	0.00	N	Arm J5:7 Ahead	Inf
J5:6/1	U	A	2	3	8.7	Geom	-	4.00	0.00	Y	Arm J5:1 Right	40.00
J5:7/1	U	E	2	3	8.7	Geom	-	4.00	0.00	Y	Arm J5:3 Right	60.00
J5:7/2	U	E	2	3	8.7	Geom	-	4.00	0.00	N	Arm J5:3 Right	60.00
J5:8/1	U	C	2	3	8.7	Geom	-	4.00	0.00	Y	Arm J4:3 Ahead	60.00
J5:8/2	U	C	2	3	8.7	Geom	-	4.00	0.00	N	Arm J4:3 Ahead	60.00
J5:9/1	U		2	3	36.5	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2031 Opt 25 - AM'	08:00	09:00	01:00	
2: '2031 Opt 25 - PM'	17:00	18:00	01:00	
3: '2031 Opt 25 - off-peak'	00:00	01:00	01:00	((F1+F2)/2)*0.26
4: '2031 Opt 25 - inter-peak'	12:00	13:00	01:00	((F1+F2)/2)*0.89

Scenario 1: '2031 Option 25 - AM Peak' (FG1: '2031 Opt 25 - AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination									
		A	B	C	D	E	F	G	H	I	Tot.
Origin	A	0	446	112	0	1485	88	70	86	745	3032
	B	350	0	11	0	10	175	306	2	14	868
	C	78	4	0	295	0	145	3	9	48	582
	D	0	0	211	40	0	0	0	9	437	697
	E	1098	8	0	0	0	0	63	0	0	1169
	F	67	250	219	0	0	0	20	48	458	1062
	G	72	296	1	0	110	1	1	2	9	492
	H	42	6	6	10	0	64	5	0	26	159
	I	302	19	22	232	0	327	34	201	0	1137
	Tot.	2009	1029	582	577	1605	800	502	357	1737	9198

Traffic Lane Flows

Lane	Scenario 1: 2031 Option 25 - AM Peak
Junction: J1: Padbury Roundabout	
J1:1/1 (with short)	1246(In) 854(Out)
J1:1/2 (short)	392
J1:2/1	1228
J1:2/2	743
J1:3/1	236
J1:3/2	257
J1:4/1	558
J1:4/2	272
J1:5/1 (short)	322
J1:5/2 (with short)	711(In) 389(Out)
J1:5/3	351
J1:6/1	374
J1:6/2	351
J1:7/1	830
Junction: J2: Cherwell	
J2:1/1 (short)	343
J2:1/2 (with short)	1228(In) 885(Out)
J2:1/3	743
J2:2/1	408
J2:2/2	521
J2:3/1	236
J2:3/2	257
J2:4/1	582
J2:5/1	295
J2:5/2	287
J2:6/1	933
J2:6/2	897
J2:7/1	493
J2:7/2	521
J2:8/1 (with short)	521(In) 239(Out)
J2:8/2 (short)	282
J2:9/1	85
J2:10/1 (with short)	282(In) 144(Out)
J2:10/2 (short)	138
J2:10/3	885

J2:10/4	743
J2:11/1	292
J2:11/2	285
J2:12/1	292
J2:12/2	285
Junction: J3: Ardley roundabout	
J3:1/1 (with short)	159(In) 102(Out)
J3:1/2 (short)	57
J3:2/1	933
J3:2/2	897
J3:3/1	800
J3:4/1	959
J3:4/2	897
J3:5/1	357
J3:6/1 (with short)	26(In) 26(Out)
J3:6/2 (short)	0
J3:7/1	156
J3:7/2	409
J3:7/3	251
J3:8/1	447
J3:8/2	482
J3:9/1	437
J3:9/2	260
J3:10/1	800
J3:10/2	447
J3:10/3	508
J3:11/1	697
J3:12/1	323
J3:12/2	846
J3:13/1	736
J3:13/2	409
J3:13/3	451
J3:14/1	1396
J3:14/2	341
J3:15/1	528
J3:15/2 (with short)	609(In) 304(Out)
J3:15/3 (short)	305
J3:16/1	1396
J3:16/2	341
J3:17/1	528
J3:17/2	609
J3:18/1	1137

Junction: J4: Baynards Green	
J4:1/1 (short)	446
J4:1/2 (with short)	1477(In) 1031(Out)
J4:1/3 (with short)	1555(In) 787(Out)
J4:1/4 (short)	768
J4:2/1	839
J4:2/2	827
J4:3/1 (short)	378
J4:3/2 (with short)	683(In) 305(Out)
J4:3/3 (with short)	534(In) 279(Out)
J4:3/4 (short)	255
J4:4/1	849
J4:4/2	756
J4:5/1	439
J4:5/2	305
J4:5/3	279
J4:5/4	255
J4:6/1	323
J4:6/2 (with short)	846(In) 423(Out)
J4:6/3 (short)	423
J4:7/1	565
J4:7/2	702
J4:7/3	678
J4:8/1	502
J4:9/1 (with short)	492(In) 242(Out)
J4:9/2 (short)	250
J4:10/1	637
J4:10/2	702
J4:10/3	670
J4:11/1	174
J4:11/2	254
J4:12/1	849
J4:12/2	756
J4:13/1	849
J4:13/2	756
J4:14/1	1169
J4:15/1	1169
Junction: J5: Unnamed Junction	

J5:1/1	643
J5:1/2	386
J5:2/1 (short)	202
J5:2/2 (with short)	586(In) 384(Out)
J5:2/3	282
J5:3/1	704
J5:3/2	542
J5:4/1	299
J5:4/2 (with short)	531(In) 252(Out)
J5:4/3 (short)	279
J5:5/1 (with short)	750(In) 364(Out)
J5:5/2 (short)	386
J5:5/3 (with short)	1044(In) 502(Out)
J5:5/4 (short)	542
J5:6/1	279
J5:7/1	502
J5:7/2	542
J5:8/1	384
J5:8/2	282
J5:9/1	1246

Lane Saturation Flows

Junction: J1: Padbury Roundabout

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (A43 north)	3.65	0.00	Y	Arm J1:2 Ahead	50.00	100.0 %	1922	1922
J1:1/2 (A43 north)	3.65	0.00	N	Arm J1:2 Ahead	50.00	100.0 %	2058	2058
J1:2/1	Infinite Saturation Flow						Inf	Inf
J1:2/2	Infinite Saturation Flow						Inf	Inf
J1:3/1 (A43 south)	3.65	0.00	Y	Arm J1:4 Ahead	30.00	100.0 %	1886	1886
J1:3/2 (A43 south)	3.65	0.00	N	Arm J1:4 Ahead	30.00	100.0 %	2019	2019
J1:4/1	Infinite Saturation Flow						Inf	Inf
J1:4/2	Infinite Saturation Flow						Inf	Inf
J1:5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm J1:4 Left	40.00	100.0 %	1908	1908
J1:5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:4 Left	50.00	3.9 %	2058	2058
				Arm J1:6 Ahead	50.00	96.1 %		
J1:5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:6 Ahead	50.00	100.0 %	2058	2058
J1:6/1	3.65	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1980	1980
J1:6/2	3.65	0.00	N	Arm J1:2 Right	Inf	100.0 %	2120	2120
J1:7/1	Infinite Saturation Flow						Inf	Inf

Junction: J2: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (A43)	3.65	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1980	1980
				Arm J2:10 Ahead	Inf	0.0 %		
J2:1/2 (A43)	3.65	0.00	Y	Arm J2:10 Ahead	Inf	100.0 %	1980	1980
J2:1/3 (A43)	3.65	0.00	Y	Arm J2:10 Ahead	Inf	100.0 %	1980	1980
J2:2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:3/1	Infinite Saturation Flow						Inf	Inf
J2:3/2	Infinite Saturation Flow						Inf	Inf
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:5/1 (MSA)	3.50	0.00	Y	Arm J2:11 Left	30.00	100.0 %	1871	1871
J2:5/2 (MSA)	3.50	0.00	Y	Arm J2:6 Left	Inf	70.4 %	1965	1965
				Arm J2:9 Ahead	Inf	29.6 %		
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:6/2	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:7/2	Infinite Saturation Flow						Inf	Inf
J2:8/1	3.65	0.00	Y	Arm J2:4 Ahead	30.00	100.0 %	1886	1886
J2:8/2	3.65	0.00	N	Arm J2:10 Right	25.00	100.0 %	2000	2000
J2:9/1	Infinite Saturation Flow						Inf	Inf
J2:10/1	3.65	0.00	N	Arm J2:11 Ahead	Inf	100.0 %	2120	2120
J2:10/2	3.65	0.00	N	Arm J2:11 Ahead	Inf	100.0 %	2120	2120
J2:10/3	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:10/4	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:12/1	Infinite Saturation Flow						Inf	Inf
J2:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J3: Ardley roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1	Infinite Saturation Flow						Inf	Inf
J3:1/2	Infinite Saturation Flow						Inf	Inf
J3:2/1	3.65	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1980	1980
J3:2/2	3.65	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1980	1980
J3:3/1	Infinite Saturation Flow						Inf	Inf
J3:4/1	Infinite Saturation Flow						Inf	Inf
J3:4/2	Infinite Saturation Flow						Inf	Inf
J3:5/1	Infinite Saturation Flow						Inf	Inf
J3:6/1	3.65	0.00	Y	Arm J3:4 Right	Inf	100.0 %	1980	1980
J3:6/2	3.65	0.00	Y	Arm J3:4 Right	Inf	0.0 %	1980	1980
J3:7/1	3.65	0.00	Y	Arm J3:5 Ahead	Inf	100.0 %	1980	1980
J3:7/2	3.65	0.00	N	Arm J3:13 Right	Inf	100.0 %	2120	2120
J3:7/3	3.65	0.00	N	Arm J3:13 Right	Inf	100.0 %	2120	2120
J3:8/1	Infinite Saturation Flow						Inf	Inf
J3:8/2	Infinite Saturation Flow						Inf	Inf
J3:9/1	Infinite Saturation Flow						Inf	Inf
J3:9/2	Infinite Saturation Flow						Inf	Inf
J3:10/1	Infinite Saturation Flow						Inf	Inf
J3:10/2	Infinite Saturation Flow						Inf	Inf
J3:10/3	Infinite Saturation Flow						Inf	Inf
J3:11/1	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf
J3:12/2	Infinite Saturation Flow						Inf	Inf
J3:13/1	Infinite Saturation Flow						Inf	Inf
J3:13/2	Infinite Saturation Flow						Inf	Inf
J3:13/3	Infinite Saturation Flow						Inf	Inf
J3:14/1	Infinite Saturation Flow						Inf	Inf
J3:14/2	Infinite Saturation Flow						Inf	Inf
J3:15/1	3.65	0.00	Y	Arm J3:5 Left	Inf	38.1 %	1980	1980
				Arm J3:13 Ahead	Inf	61.9 %		
J3:15/2	3.65	0.00	N	Arm J3:13 Ahead	Inf	100.0 %	2120	2120
J3:15/3	3.65	0.00	N	Arm J3:13 Ahead	Inf	100.0 %	2120	2120
J3:16/1	Infinite Saturation Flow						Inf	Inf
J3:16/2	Infinite Saturation Flow						Inf	Inf
J3:17/1	Infinite Saturation Flow						Inf	Inf
J3:17/2	Infinite Saturation Flow						Inf	Inf
J3:18/1	Infinite Saturation Flow						Inf	Inf

Junction: J4: Baynards Green								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J4:1/1 (A43 North)	3.65	0.00	Y	Arm J5:5 Left	Inf	100.0 %	1980	1980
J4:1/2 (A43 North)	3.65	0.00	N	Arm J5:5 Left	Inf	100.0 %	2120	2120
J4:1/3 (A43 North)	3.65	0.00	N	Arm J4:2 Ahead	Inf	100.0 %	2120	2120
J4:1/4 (A43 North)	3.65	0.00	Y	Arm J4:2 Ahead	50.00	100.0 %	1922	1922
J4:2/1	3.65	0.00	N	Arm J4:4 Ahead	Inf	100.0 %	2120	2120
J4:2/2	3.65	0.00	N	Arm J4:4 Ahead	Inf	91.4 %	2120	2120
				Arm J4:5 Right	Inf	8.6 %		
J4:3/1 (B4100 East)	3.65	0.00	Y	Arm J4:4 Left	Inf	2.6 %	1980	1980
				Arm J4:5 Ahead	Inf	97.4 %		
J4:3/2 (B4100 East)	3.65	0.00	N	Arm J4:5 Ahead	Inf	100.0 %	2120	2120
J4:3/3 (B4100 East)	3.65	0.00	N	Arm J4:5 Ahead	Inf	100.0 %	2120	2120
J4:3/4 (B4100 East)	3.65	0.00	N	Arm J4:5 Ahead	Inf	100.0 %	2120	2120
J4:4/1	Infinite Saturation Flow						Inf	Inf
J4:4/2	Infinite Saturation Flow						Inf	Inf
J4:5/1	3.65	0.00	Y	Arm J4:8 Right	Inf	100.0 %	1980	1980
J4:5/2	3.65	0.00	N	Arm J4:7 Right	Inf	100.0 %	2120	2120
J4:5/3	3.65	0.00	N	Arm J4:7 Right	Inf	100.0 %	2120	2120
J4:5/4	3.65	0.00	N	Arm J4:7 Right	Inf	100.0 %	2120	2120
J4:6/1 (A43 South)	3.65	0.00	Y	Arm J4:7 Ahead	50.00	80.5 %	1933	1933
				Arm J4:8 Ahead	Inf	19.5 %		
J4:6/2 (A43 South)	3.65	0.00	Y	Arm J4:7 Ahead	50.00	100.0 %	1922	1922
J4:6/3 (A43 South)	3.65	0.00	Y	Arm J4:7 Ahead	50.00	100.0 %	1922	1922
J4:7/1	3.65	0.00	N	Arm J4:10 Ahead	Inf	100.0 %	2120	2120
J4:7/2	3.65	0.00	N	Arm J4:10 Ahead	Inf	100.0 %	2120	2120
J4:7/3	3.65	0.00	N	Arm J4:10 Ahead	Inf	98.8 %	2120	2120
				Arm J4:11 Right	Inf	1.2 %		
J4:8/1	Infinite Saturation Flow						Inf	Inf
J4:9/1 (B4100 West)	3.50	0.00	Y	Arm J4:10 Left	30.00	29.8 %	1887	1887
				Arm J4:11 Ahead	40.00	70.2 %		
J4:9/2 (B4100 West)	3.50	0.00	Y	Arm J4:11 Ahead	40.00	100.0 %	1894	1894
J4:10/1	Infinite Saturation Flow						Inf	Inf
J4:10/2	Infinite Saturation Flow						Inf	Inf
J4:10/3	Infinite Saturation Flow						Inf	Inf

J4:11/1	3.65	0.00	Y	Arm J5:5 Ahead	Inf	100.0 %	1980	1980
J4:11/2	3.65	0.00	N	Arm J4:2 Right Arm J5:5 Ahead	Inf Inf	43.7 % 56.3 %	2120	2120
J4:12/1	Infinite Saturation Flow						Inf	Inf
J4:12/2	Infinite Saturation Flow						Inf	Inf
J4:13/1	Infinite Saturation Flow						Inf	Inf
J4:13/2	Infinite Saturation Flow						Inf	Inf
J4:14/1	Infinite Saturation Flow						Inf	Inf
J4:15/1	Infinite Saturation Flow						Inf	Inf

Junction: J5: Unnamed Junction

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J5:1/1	Infinite Saturation Flow						Inf	Inf
J5:1/2	Infinite Saturation Flow						Inf	Inf
J5:2/1 (B4100 east)	3.65	0.00	Y	Arm J5:3 Left	40.00	100.0 %	1908	1908
J5:2/2 (B4100 east)	3.65	0.00	N	Arm J5:8 Ahead	Inf	100.0 %	2120	2120
J5:2/3 (B4100 east)	3.65	0.00	N	Arm J5:8 Ahead	40.00	100.0 %	2043	2043
J5:3/1	Infinite Saturation Flow						Inf	Inf
J5:3/2	Infinite Saturation Flow						Inf	Inf
J5:4/1 (A43)	3.65	0.00	N	Arm J4:3 Left	30.00	100.0 %	2019	2019
J5:4/2 (A43)	3.65	0.00	N	Arm J4:3 Left	40.00	100.0 %	2043	2043
J5:4/3 (A43)	3.65	0.00	Y	Arm J5:6 Ahead	40.00	100.0 %	1908	1908
J5:5/1 (B4100 west)	3.65	0.00	Y	Arm J5:1 Ahead	Inf	100.0 %	1980	1980
J5:5/2 (B4100 west)	3.65	0.00	N	Arm J5:1 Ahead	Inf	100.0 %	2120	2120
J5:5/3 (B4100 west)	3.65	0.00	N	Arm J5:7 Ahead	Inf	100.0 %	2120	2120
J5:5/4 (B4100 west)	3.65	0.00	N	Arm J5:7 Ahead	Inf	100.0 %	2120	2120
J5:6/1	4.00	0.00	Y	Arm J5:1 Right	40.00	100.0 %	1942	1942
J5:7/1	4.00	0.00	Y	Arm J5:3 Right	60.00	100.0 %	1966	1966
J5:7/2	4.00	0.00	N	Arm J5:3 Right	60.00	100.0 %	2102	2102
J5:8/1	4.00	0.00	Y	Arm J4:3 Ahead	60.00	100.0 %	1966	1966
J5:8/2	4.00	0.00	N	Arm J4:3 Ahead	60.00	100.0 %	2102	2102
J5:9/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2031 Option 25 - PM Peak' (FG2: '2031 Opt 25 - PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination									
		A	B	C	D	E	F	G	H	I	Tot.
Origin	A	0	467	81	0	894	85	45	30	345	1947
	B	637	0	25	0	10	186	372	2	17	1249
	C	119	4	0	258	0	196	6	2	15	600
	D	0	0	248	67	0	0	0	10	291	616
	E	1597	10	0	0	0	0	50	0	0	1657
	F	87	207	229	0	0	0	24	36	326	909
	G	37	244	1	0	35	0	3	1	10	331
	H	67	1	3	4	0	36	1	120	127	359
	I	603	8	17	401	0	391	9	249	0	1678
	Tot.	3147	941	604	730	939	894	510	450	1131	9346

Traffic Lane Flows

Lane	Scenario 2: 2031 Option 25 - PM Peak
Junction: J1: Padbury Roundabout	
J1:1/1 (with short)	783(In) 479(Out)
J1:1/2 (short)	304
J1:2/1	870
J1:2/2	504
J1:3/1	394
J1:3/2	424
J1:4/1	705
J1:4/2	431
J1:5/1 (short)	311
J1:5/2 (with short)	709(In) 398(Out)
J1:5/3	200
J1:6/1	391
J1:6/2	200
J1:7/1	1136
Junction: J2: Cherwell	
J2:1/1 (short)	336
J2:1/2 (with short)	870(In) 534(Out)
J2:1/3	504
J2:2/1	689
J2:2/2	740
J2:3/1	394
J2:3/2	424
J2:4/1	604
J2:5/1	258
J2:5/2	342
J2:6/1	549
J2:6/2	702
J2:7/1	818
J2:7/2	740
J2:8/1 (with short)	740(In) 268(Out)
J2:8/2 (short)	472
J2:9/1	129
J2:10/1 (with short)	472(In) 225(Out)
J2:10/2 (short)	247
J2:10/3	534

J2:10/4	504
J2:11/1	354
J2:11/2	376
J2:12/1	354
J2:12/2	376
Junction: J3: Ardley roundabout	
J3:1/1 (with short)	359(In) 107(Out)
J3:1/2 (short)	252
J3:2/1	549
J3:2/2	702
J3:3/1	894
J3:4/1	665
J3:4/2	833
J3:5/1	450
J3:6/1 (with short)	247(In) 116(Out)
J3:6/2 (short)	131
J3:7/1	201
J3:7/2	467
J3:7/3	315
J3:8/1	713
J3:8/2	716
J3:9/1	291
J3:9/2	325
J3:10/1	894
J3:10/2	713
J3:10/3	963
J3:11/1	616
J3:12/1	518
J3:12/2	1139
J3:13/1	858
J3:13/2	642
J3:13/3	711
J3:14/1	956
J3:14/2	175
J3:15/1	640
J3:15/2 (with short)	1038(In) 518(Out)
J3:15/3 (short)	520
J3:16/1	956
J3:16/2	175
J3:17/1	640
J3:17/2	1038
J3:18/1	1678

Junction: J4: Baynards Green	
J4:1/1 (short)	467
J4:1/2 (with short)	1008(In) 541(Out)
J4:1/3 (with short)	939(In) 492(Out)
J4:1/4 (short)	447
J4:2/1	512
J4:2/2	465
J4:3/1 (short)	422
J4:3/2 (with short)	952(In) 530(Out)
J4:3/3 (with short)	983(In) 492(Out)
J4:3/4 (short)	491
J4:4/1	522
J4:4/2	417
J4:5/1	460
J4:5/2	530
J4:5/3	492
J4:5/4	491
J4:6/1	518
J4:6/2 (with short)	1139(In) 569(Out)
J4:6/3 (short)	570
J4:7/1	998
J4:7/2	1061
J4:7/3	1061
J4:8/1	510
J4:9/1 (with short)	331(In) 166(Out)
J4:9/2 (short)	165
J4:10/1	1035
J4:10/2	1061
J4:10/3	1051
J4:11/1	133
J4:11/2	171
J4:12/1	522
J4:12/2	417
J4:13/1	522
J4:13/2	417
J4:14/1	1657
J4:15/1	1657
Junction: J5: Unnamed Junction	

J5:1/1	568
J5:1/2	373
J5:2/1 (short)	230
J5:2/2 (with short)	742(In) 512(Out)
J5:2/3	507
J5:3/1	500
J5:3/2	283
J5:4/1	440
J5:4/2 (with short)	696(In) 476(Out)
J5:4/3 (short)	220
J5:5/1 (with short)	721(In) 348(Out)
J5:5/2 (short)	373
J5:5/3 (with short)	553(In) 270(Out)
J5:5/4 (short)	283
J5:6/1	220
J5:7/1	270
J5:7/2	283
J5:8/1	512
J5:8/2	507
J5:9/1	783

Lane Saturation Flows

Junction: J1: Padbury Roundabout

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (A43 north)	3.65	0.00	Y	Arm J1:2 Ahead	50.00	100.0 %	1922	1922
J1:1/2 (A43 north)	3.65	0.00	N	Arm J1:2 Ahead	50.00	100.0 %	2058	2058
J1:2/1	Infinite Saturation Flow						Inf	Inf
J1:2/2	Infinite Saturation Flow						Inf	Inf
J1:3/1 (A43 south)	3.65	0.00	Y	Arm J1:4 Ahead	30.00	100.0 %	1886	1886
J1:3/2 (A43 south)	3.65	0.00	N	Arm J1:4 Ahead	30.00	100.0 %	2019	2019
J1:4/1	Infinite Saturation Flow						Inf	Inf
J1:4/2	Infinite Saturation Flow						Inf	Inf
J1:5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm J1:4 Left	40.00	100.0 %	1908	1908
J1:5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:4 Left	50.00	1.8 %	2058	2058
				Arm J1:6 Ahead	50.00	98.2 %		
J1:5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:6 Ahead	50.00	100.0 %	2058	2058
J1:6/1	3.65	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1980	1980
J1:6/2	3.65	0.00	N	Arm J1:2 Right	Inf	100.0 %	2120	2120
J1:7/1	Infinite Saturation Flow						Inf	Inf

Junction: J2: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (A43)	3.65	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1980	1980
				Arm J2:10 Ahead	Inf	0.0 %		
J2:1/2 (A43)	3.65	0.00	Y	Arm J2:10 Ahead	Inf	100.0 %	1980	1980
J2:1/3 (A43)	3.65	0.00	Y	Arm J2:10 Ahead	Inf	100.0 %	1980	1980
J2:2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:3/1	Infinite Saturation Flow						Inf	Inf
J2:3/2	Infinite Saturation Flow						Inf	Inf
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:5/1 (MSA)	3.50	0.00	Y	Arm J2:11 Left	30.00	100.0 %	1871	1871
J2:5/2 (MSA)	3.50	0.00	Y	Arm J2:6 Left	Inf	62.3 %	1965	1965
				Arm J2:9 Ahead	Inf	37.7 %		
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:6/2	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:7/2	Infinite Saturation Flow						Inf	Inf
J2:8/1	3.65	0.00	Y	Arm J2:4 Ahead	30.00	100.0 %	1886	1886
J2:8/2	3.65	0.00	N	Arm J2:10 Right	25.00	100.0 %	2000	2000
J2:9/1	Infinite Saturation Flow						Inf	Inf
J2:10/1	3.65	0.00	N	Arm J2:11 Ahead	Inf	100.0 %	2120	2120
J2:10/2	3.65	0.00	N	Arm J2:11 Ahead	Inf	100.0 %	2120	2120
J2:10/3	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:10/4	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:12/1	Infinite Saturation Flow						Inf	Inf
J2:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J3: Ardley roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1	Infinite Saturation Flow						Inf	Inf
J3:1/2	Infinite Saturation Flow						Inf	Inf
J3:2/1	3.65	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1980	1980
J3:2/2	3.65	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1980	1980
J3:3/1	Infinite Saturation Flow						Inf	Inf
J3:4/1	Infinite Saturation Flow						Inf	Inf
J3:4/2	Infinite Saturation Flow						Inf	Inf
J3:5/1	Infinite Saturation Flow						Inf	Inf
J3:6/1	3.65	0.00	Y	Arm J3:4 Right	Inf	100.0 %	1980	1980
J3:6/2	3.65	0.00	Y	Arm J3:4 Right	Inf	100.0 %	1980	1980
J3:7/1	3.65	0.00	Y	Arm J3:5 Ahead	Inf	100.0 %	1980	1980
J3:7/2	3.65	0.00	N	Arm J3:13 Right	Inf	100.0 %	2120	2120
J3:7/3	3.65	0.00	N	Arm J3:13 Right	Inf	100.0 %	2120	2120
J3:8/1	Infinite Saturation Flow						Inf	Inf
J3:8/2	Infinite Saturation Flow						Inf	Inf
J3:9/1	Infinite Saturation Flow						Inf	Inf
J3:9/2	Infinite Saturation Flow						Inf	Inf
J3:10/1	Infinite Saturation Flow						Inf	Inf
J3:10/2	Infinite Saturation Flow						Inf	Inf
J3:10/3	Infinite Saturation Flow						Inf	Inf
J3:11/1	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf
J3:12/2	Infinite Saturation Flow						Inf	Inf
J3:13/1	Infinite Saturation Flow						Inf	Inf
J3:13/2	Infinite Saturation Flow						Inf	Inf
J3:13/3	Infinite Saturation Flow						Inf	Inf
J3:14/1	Infinite Saturation Flow						Inf	Inf
J3:14/2	Infinite Saturation Flow						Inf	Inf
J3:15/1	3.65	0.00	Y	Arm J3:5 Left	Inf	38.9 %	1980	1980
				Arm J3:13 Ahead	Inf	61.1 %		
J3:15/2	3.65	0.00	N	Arm J3:13 Ahead	Inf	100.0 %	2120	2120
J3:15/3	3.65	0.00	N	Arm J3:13 Ahead	Inf	100.0 %	2120	2120
J3:16/1	Infinite Saturation Flow						Inf	Inf
J3:16/2	Infinite Saturation Flow						Inf	Inf
J3:17/1	Infinite Saturation Flow						Inf	Inf
J3:17/2	Infinite Saturation Flow						Inf	Inf
J3:18/1	Infinite Saturation Flow						Inf	Inf

Junction: J4: Baynards Green								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J4:1/1 (A43 North)	3.65	0.00	Y	Arm J5:5 Left	Inf	100.0 %	1980	1980
J4:1/2 (A43 North)	3.65	0.00	N	Arm J5:5 Left	Inf	100.0 %	2120	2120
J4:1/3 (A43 North)	3.65	0.00	N	Arm J4:2 Ahead	Inf	100.0 %	2120	2120
J4:1/4 (A43 North)	3.65	0.00	Y	Arm J4:2 Ahead	50.00	100.0 %	1922	1922
J4:2/1	3.65	0.00	N	Arm J4:4 Ahead	Inf	100.0 %	2120	2120
J4:2/2	3.65	0.00	N	Arm J4:4 Ahead	Inf	89.7 %	2120	2120
				Arm J4:5 Right	Inf	10.3 %		
J4:3/1 (B4100 East)	3.65	0.00	Y	Arm J4:4 Left	Inf	2.4 %	1980	1980
				Arm J4:5 Ahead	Inf	97.6 %		
J4:3/2 (B4100 East)	3.65	0.00	N	Arm J4:5 Ahead	Inf	100.0 %	2120	2120
J4:3/3 (B4100 East)	3.65	0.00	N	Arm J4:5 Ahead	Inf	100.0 %	2120	2120
J4:3/4 (B4100 East)	3.65	0.00	N	Arm J4:5 Ahead	Inf	100.0 %	2120	2120
J4:4/1	Infinite Saturation Flow						Inf	Inf
J4:4/2	Infinite Saturation Flow						Inf	Inf
J4:5/1	3.65	0.00	Y	Arm J4:8 Right	Inf	100.0 %	1980	1980
J4:5/2	3.65	0.00	N	Arm J4:7 Right	Inf	100.0 %	2120	2120
J4:5/3	3.65	0.00	N	Arm J4:7 Right	Inf	100.0 %	2120	2120
J4:5/4	3.65	0.00	N	Arm J4:7 Right	Inf	100.0 %	2120	2120
J4:6/1 (A43 South)	3.65	0.00	Y	Arm J4:7 Ahead	50.00	90.3 %	1928	1928
				Arm J4:8 Ahead	Inf	9.7 %		
J4:6/2 (A43 South)	3.65	0.00	Y	Arm J4:7 Ahead	50.00	100.0 %	1922	1922
J4:6/3 (A43 South)	3.65	0.00	Y	Arm J4:7 Ahead	50.00	100.0 %	1922	1922
J4:7/1	3.65	0.00	N	Arm J4:10 Ahead	Inf	100.0 %	2120	2120
J4:7/2	3.65	0.00	N	Arm J4:10 Ahead	Inf	100.0 %	2120	2120
J4:7/3	3.65	0.00	N	Arm J4:10 Ahead	Inf	99.1 %	2120	2120
				Arm J4:11 Right	Inf	0.9 %		
J4:8/1	Infinite Saturation Flow						Inf	Inf
J4:9/1 (B4100 West)	3.50	0.00	Y	Arm J4:10 Left	30.00	22.3 %	1889	1889
				Arm J4:11 Ahead	40.00	77.7 %		
J4:9/2 (B4100 West)	3.50	0.00	Y	Arm J4:11 Ahead	40.00	100.0 %	1894	1894
J4:10/1	Infinite Saturation Flow						Inf	Inf
J4:10/2	Infinite Saturation Flow						Inf	Inf
J4:10/3	Infinite Saturation Flow						Inf	Inf

J4:11/1	3.65	0.00	Y	Arm J5:5 Ahead	Inf	100.0 %	1980	1980
J4:11/2	3.65	0.00	N	Arm J4:2 Right Arm J5:5 Ahead	Inf Inf	22.2 % 77.8 %	2120	2120
J4:12/1	Infinite Saturation Flow						Inf	Inf
J4:12/2	Infinite Saturation Flow						Inf	Inf
J4:13/1	Infinite Saturation Flow						Inf	Inf
J4:13/2	Infinite Saturation Flow						Inf	Inf
J4:14/1	Infinite Saturation Flow						Inf	Inf
J4:15/1	Infinite Saturation Flow						Inf	Inf

Junction: J5: Unnamed Junction

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J5:1/1	Infinite Saturation Flow						Inf	Inf
J5:1/2	Infinite Saturation Flow						Inf	Inf
J5:2/1 (B4100 east)	3.65	0.00	Y	Arm J5:3 Left	40.00	100.0 %	1908	1908
J5:2/2 (B4100 east)	3.65	0.00	N	Arm J5:8 Ahead	Inf	100.0 %	2120	2120
J5:2/3 (B4100 east)	3.65	0.00	N	Arm J5:8 Ahead	40.00	100.0 %	2043	2043
J5:3/1	Infinite Saturation Flow						Inf	Inf
J5:3/2	Infinite Saturation Flow						Inf	Inf
J5:4/1 (A43)	3.65	0.00	N	Arm J4:3 Left	30.00	100.0 %	2019	2019
J5:4/2 (A43)	3.65	0.00	N	Arm J4:3 Left	40.00	100.0 %	2043	2043
J5:4/3 (A43)	3.65	0.00	Y	Arm J5:6 Ahead	40.00	100.0 %	1908	1908
J5:5/1 (B4100 west)	3.65	0.00	Y	Arm J5:1 Ahead	Inf	100.0 %	1980	1980
J5:5/2 (B4100 west)	3.65	0.00	N	Arm J5:1 Ahead	Inf	100.0 %	2120	2120
J5:5/3 (B4100 west)	3.65	0.00	N	Arm J5:7 Ahead	Inf	100.0 %	2120	2120
J5:5/4 (B4100 west)	3.65	0.00	N	Arm J5:7 Ahead	Inf	100.0 %	2120	2120
J5:6/1	4.00	0.00	Y	Arm J5:1 Right	40.00	100.0 %	1942	1942
J5:7/1	4.00	0.00	Y	Arm J5:3 Right	60.00	100.0 %	1966	1966
J5:7/2	4.00	0.00	N	Arm J5:3 Right	60.00	100.0 %	2102	2102
J5:8/1	4.00	0.00	Y	Arm J4:3 Ahead	60.00	100.0 %	1966	1966
J5:8/2	4.00	0.00	N	Arm J4:3 Ahead	60.00	100.0 %	2102	2102
J5:9/1	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2031 Option 25 - Off Peak' (FG3: '2031 Opt 25 - off-peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination									
		A	B	C	D	E	F	G	H	I	Tot.
Origin	A	0	119	25	0	309	22	15	15	142	647
	B	128	0	5	0	3	47	88	1	4	276
	C	26	1	0	72	0	44	1	1	8	153
	D	0	0	60	14	0	0	0	2	95	171
	E	350	2	0	0	0	0	15	0	0	367
	F	20	59	58	0	0	0	6	11	102	256
	G	14	70	0	0	19	0	1	0	2	106
	H	14	1	1	2	0	13	1	16	20	68
	I	118	4	5	82	0	93	6	59	0	367
	Tot.	670	256	154	170	331	219	133	105	373	2411

Traffic Lane Flows

Lane	Scenario 3: 2031 Option 25 - Off Peak
Junction: J1: Padbury Roundabout	
J1:1/1 (with short)	263(In) 90(Out)
J1:1/2 (short)	173
J1:2/1	247
J1:2/2	187
J1:3/1	60
J1:3/2	112
J1:4/1	118
J1:4/2	139
J1:5/1 (short)	58
J1:5/2 (with short)	242(In) 184(Out)
J1:5/3	14
J1:6/1	157
J1:6/2	14
J1:7/1	257
Junction: J2: Cherwell	
J2:1/1 (short)	88
J2:1/2 (with short)	247(In) 159(Out)
J2:1/3	187
J2:2/1	144
J2:2/2	164
J2:3/1	60
J2:3/2	112
J2:4/1	154
J2:5/1	72
J2:5/2	81
J2:6/1	167
J2:6/2	232
J2:7/1	172
J2:7/2	164
J2:8/1 (with short)	164(In) 66(Out)
J2:8/2 (short)	98
J2:9/1	28
J2:10/1 (with short)	98(In) 54(Out)
J2:10/2 (short)	44
J2:10/3	159

J2:10/4	187
J2:11/1	90
J2:11/2	80
J2:12/1	90
J2:12/2	80
Junction: J3: Ardley roundabout	
J3:1/1 (with short)	68(In) 13(Out)
J3:1/2 (short)	55
J3:2/1	167
J3:2/2	232
J3:3/1	219
J3:4/1	187
J3:4/2	248
J3:5/1	105
J3:6/1 (with short)	36(In) 20(Out)
J3:6/2 (short)	16
J3:7/1	46
J3:7/2	113
J3:7/3	74
J3:8/1	138
J3:8/2	170
J3:9/1	95
J3:9/2	76
J3:10/1	219
J3:10/2	138
J3:10/3	206
J3:11/1	171
J3:12/1	44
J3:12/2	323
J3:13/1	206
J3:13/2	138
J3:13/3	151
J3:14/1	282
J3:14/2	91
J3:15/1	152
J3:15/2 (with short)	215(In) 108(Out)
J3:15/3 (short)	107
J3:16/1	282
J3:16/2	91
J3:17/1	152
J3:17/2	215
J3:18/1	367

Junction: J4: Baynards Green	
J4:1/1 (short)	119
J4:1/2 (with short)	323(In) 204(Out)
J4:1/3 (with short)	324(In) 167(Out)
J4:1/4 (short)	157
J4:2/1	179
J4:2/2	165
J4:3/1 (short)	105
J4:3/2 (with short)	210(In) 105(Out)
J4:3/3 (with short)	201(In) 142(Out)
J4:3/4 (short)	59
J4:4/1	182
J4:4/2	149
J4:5/1	118
J4:5/2	105
J4:5/3	142
J4:5/4	59
J4:6/1	44
J4:6/2 (with short)	323(In) 163(Out)
J4:6/3 (short)	160
J4:7/1	134
J4:7/2	305
J4:7/3	219
J4:8/1	133
J4:9/1 (with short)	106(In) 54(Out)
J4:9/2 (short)	52
J4:10/1	148
J4:10/2	305
J4:10/3	217
J4:11/1	40
J4:11/2	54
J4:12/1	182
J4:12/2	149
J4:13/1	182
J4:13/2	149
J4:14/1	367
J4:15/1	367
Junction: J5: Unnamed Junction	

J5:1/1	160
J5:1/2	96
J5:2/1 (short)	57
J5:2/2 (with short)	220(In) 163(Out)
J5:2/3	56
J5:3/1	92
J5:3/2	171
J5:4/1	47
J5:4/2 (with short)	210(In) 145(Out)
J5:4/3 (short)	65
J5:5/1 (with short)	191(In) 95(Out)
J5:5/2 (short)	96
J5:5/3 (with short)	206(In) 35(Out)
J5:5/4 (short)	171
J5:6/1	65
J5:7/1	35
J5:7/2	171
J5:8/1	163
J5:8/2	56
J5:9/1	263

Lane Saturation Flows

Junction: J1: Padbury Roundabout

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (A43 north)	3.65	0.00	Y	Arm J1:2 Ahead	50.00	100.0 %	1922	1922
J1:1/2 (A43 north)	3.65	0.00	N	Arm J1:2 Ahead	50.00	100.0 %	2058	2058
J1:2/1	Infinite Saturation Flow						Inf	Inf
J1:2/2	Infinite Saturation Flow						Inf	Inf
J1:3/1 (A43 south)	3.65	0.00	Y	Arm J1:4 Ahead	30.00	100.0 %	1886	1886
J1:3/2 (A43 south)	3.65	0.00	N	Arm J1:4 Ahead	30.00	100.0 %	2019	2019
J1:4/1	Infinite Saturation Flow						Inf	Inf
J1:4/2	Infinite Saturation Flow						Inf	Inf
J1:5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm J1:4 Left	40.00	100.0 %	1908	1908
J1:5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:4 Left	50.00	14.7 %	2058	2058
				Arm J1:6 Ahead	50.00	85.3 %		
J1:5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:6 Ahead	50.00	100.0 %	2058	2058
J1:6/1	3.65	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1980	1980
J1:6/2	3.65	0.00	N	Arm J1:2 Right	Inf	100.0 %	2120	2120
J1:7/1	Infinite Saturation Flow						Inf	Inf

Junction: J2: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (A43)	3.65	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1980	1980
				Arm J2:10 Ahead	Inf	0.0 %		
J2:1/2 (A43)	3.65	0.00	Y	Arm J2:10 Ahead	Inf	100.0 %	1980	1980
J2:1/3 (A43)	3.65	0.00	Y	Arm J2:10 Ahead	Inf	100.0 %	1980	1980
J2:2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:3/1	Infinite Saturation Flow						Inf	Inf
J2:3/2	Infinite Saturation Flow						Inf	Inf
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:5/1 (MSA)	3.50	0.00	Y	Arm J2:11 Left	30.00	100.0 %	1871	1871
J2:5/2 (MSA)	3.50	0.00	Y	Arm J2:6 Left	Inf	65.4 %	1965	1965
				Arm J2:9 Ahead	Inf	34.6 %		
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:6/2	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:7/2	Infinite Saturation Flow						Inf	Inf
J2:8/1	3.65	0.00	Y	Arm J2:4 Ahead	30.00	100.0 %	1886	1886
J2:8/2	3.65	0.00	N	Arm J2:10 Right	25.00	100.0 %	2000	2000
J2:9/1	Infinite Saturation Flow						Inf	Inf
J2:10/1	3.65	0.00	N	Arm J2:11 Ahead	Inf	100.0 %	2120	2120
J2:10/2	3.65	0.00	N	Arm J2:11 Ahead	Inf	100.0 %	2120	2120
J2:10/3	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:10/4	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:12/1	Infinite Saturation Flow						Inf	Inf
J2:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J3: Ardley roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1	Infinite Saturation Flow						Inf	Inf
J3:1/2	Infinite Saturation Flow						Inf	Inf
J3:2/1	3.65	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1980	1980
J3:2/2	3.65	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1980	1980
J3:3/1	Infinite Saturation Flow						Inf	Inf
J3:4/1	Infinite Saturation Flow						Inf	Inf
J3:4/2	Infinite Saturation Flow						Inf	Inf
J3:5/1	Infinite Saturation Flow						Inf	Inf
J3:6/1	3.65	0.00	Y	Arm J3:4 Right	Inf	100.0 %	1980	1980
J3:6/2	3.65	0.00	Y	Arm J3:4 Right	Inf	100.0 %	1980	1980
J3:7/1	3.65	0.00	Y	Arm J3:5 Ahead	Inf	100.0 %	1980	1980
J3:7/2	3.65	0.00	N	Arm J3:13 Right	Inf	100.0 %	2120	2120
J3:7/3	3.65	0.00	N	Arm J3:13 Right	Inf	100.0 %	2120	2120
J3:8/1	Infinite Saturation Flow						Inf	Inf
J3:8/2	Infinite Saturation Flow						Inf	Inf
J3:9/1	Infinite Saturation Flow						Inf	Inf
J3:9/2	Infinite Saturation Flow						Inf	Inf
J3:10/1	Infinite Saturation Flow						Inf	Inf
J3:10/2	Infinite Saturation Flow						Inf	Inf
J3:10/3	Infinite Saturation Flow						Inf	Inf
J3:11/1	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf
J3:12/2	Infinite Saturation Flow						Inf	Inf
J3:13/1	Infinite Saturation Flow						Inf	Inf
J3:13/2	Infinite Saturation Flow						Inf	Inf
J3:13/3	Infinite Saturation Flow						Inf	Inf
J3:14/1	Infinite Saturation Flow						Inf	Inf
J3:14/2	Infinite Saturation Flow						Inf	Inf
J3:15/1	3.65	0.00	Y	Arm J3:5 Left	Inf	38.8 %	1980	1980
				Arm J3:13 Ahead	Inf	61.2 %		
J3:15/2	3.65	0.00	N	Arm J3:13 Ahead	Inf	100.0 %	2120	2120
J3:15/3	3.65	0.00	N	Arm J3:13 Ahead	Inf	100.0 %	2120	2120
J3:16/1	Infinite Saturation Flow						Inf	Inf
J3:16/2	Infinite Saturation Flow						Inf	Inf
J3:17/1	Infinite Saturation Flow						Inf	Inf
J3:17/2	Infinite Saturation Flow						Inf	Inf
J3:18/1	Infinite Saturation Flow						Inf	Inf

Junction: J4: Baynards Green								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J4:1/1 (A43 North)	3.65	0.00	Y	Arm J5:5 Left	Inf	100.0 %	1980	1980
J4:1/2 (A43 North)	3.65	0.00	N	Arm J5:5 Left	Inf	100.0 %	2120	2120
J4:1/3 (A43 North)	3.65	0.00	N	Arm J4:2 Ahead	Inf	100.0 %	2120	2120
J4:1/4 (A43 North)	3.65	0.00	Y	Arm J4:2 Ahead	50.00	100.0 %	1922	1922
J4:2/1	3.65	0.00	N	Arm J4:4 Ahead	Inf	100.0 %	2120	2120
J4:2/2	3.65	0.00	N	Arm J4:4 Ahead	Inf	90.3 %	2120	2120
				Arm J4:5 Right	Inf	9.7 %		
J4:3/1 (B4100 East)	3.65	0.00	Y	Arm J4:4 Left	Inf	2.9 %	1980	1980
				Arm J4:5 Ahead	Inf	97.1 %		
J4:3/2 (B4100 East)	3.65	0.00	N	Arm J4:5 Ahead	Inf	100.0 %	2120	2120
J4:3/3 (B4100 East)	3.65	0.00	N	Arm J4:5 Ahead	Inf	100.0 %	2120	2120
J4:3/4 (B4100 East)	3.65	0.00	N	Arm J4:5 Ahead	Inf	100.0 %	2120	2120
J4:4/1	Infinite Saturation Flow						Inf	Inf
J4:4/2	Infinite Saturation Flow						Inf	Inf
J4:5/1	3.65	0.00	Y	Arm J4:8 Right	Inf	100.0 %	1980	1980
J4:5/2	3.65	0.00	N	Arm J4:7 Right	Inf	100.0 %	2120	2120
J4:5/3	3.65	0.00	N	Arm J4:7 Right	Inf	100.0 %	2120	2120
J4:5/4	3.65	0.00	N	Arm J4:7 Right	Inf	100.0 %	2120	2120
J4:6/1 (A43 South)	3.65	0.00	Y	Arm J4:7 Ahead	50.00	65.9 %	1942	1942
				Arm J4:8 Ahead	Inf	34.1 %		
J4:6/2 (A43 South)	3.65	0.00	Y	Arm J4:7 Ahead	50.00	100.0 %	1922	1922
J4:6/3 (A43 South)	3.65	0.00	Y	Arm J4:7 Ahead	50.00	100.0 %	1922	1922
J4:7/1	3.65	0.00	N	Arm J4:10 Ahead	Inf	100.0 %	2120	2120
J4:7/2	3.65	0.00	N	Arm J4:10 Ahead	Inf	100.0 %	2120	2120
J4:7/3	3.65	0.00	N	Arm J4:10 Ahead	Inf	99.1 %	2120	2120
				Arm J4:11 Right	Inf	0.9 %		
J4:8/1	Infinite Saturation Flow						Inf	Inf
J4:9/1 (B4100 West)	3.50	0.00	Y	Arm J4:10 Left	30.00	25.9 %	1888	1888
				Arm J4:11 Ahead	40.00	74.1 %		
J4:9/2 (B4100 West)	3.50	0.00	Y	Arm J4:11 Ahead	40.00	100.0 %	1894	1894
J4:10/1	Infinite Saturation Flow						Inf	Inf
J4:10/2	Infinite Saturation Flow						Inf	Inf
J4:10/3	Infinite Saturation Flow						Inf	Inf

J4:11/1	3.65	0.00	Y	Arm J5:5 Ahead	Inf	100.0 %	1980	1980
J4:11/2	3.65	0.00	N	Arm J4:2 Right Arm J5:5 Ahead	Inf Inf	37.0 % 63.0 %	2120	2120
J4:12/1	Infinite Saturation Flow						Inf	Inf
J4:12/2	Infinite Saturation Flow						Inf	Inf
J4:13/1	Infinite Saturation Flow						Inf	Inf
J4:13/2	Infinite Saturation Flow						Inf	Inf
J4:14/1	Infinite Saturation Flow						Inf	Inf
J4:15/1	Infinite Saturation Flow						Inf	Inf

Junction: J5: Unnamed Junction

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J5:1/1	Infinite Saturation Flow						Inf	Inf
J5:1/2	Infinite Saturation Flow						Inf	Inf
J5:2/1 (B4100 east)	3.65	0.00	Y	Arm J5:3 Left	40.00	100.0 %	1908	1908
J5:2/2 (B4100 east)	3.65	0.00	N	Arm J5:8 Ahead	Inf	100.0 %	2120	2120
J5:2/3 (B4100 east)	3.65	0.00	N	Arm J5:8 Ahead	40.00	100.0 %	2043	2043
J5:3/1	Infinite Saturation Flow						Inf	Inf
J5:3/2	Infinite Saturation Flow						Inf	Inf
J5:4/1 (A43)	3.65	0.00	N	Arm J4:3 Left	30.00	100.0 %	2019	2019
J5:4/2 (A43)	3.65	0.00	N	Arm J4:3 Left	40.00	100.0 %	2043	2043
J5:4/3 (A43)	3.65	0.00	Y	Arm J5:6 Ahead	40.00	100.0 %	1908	1908
J5:5/1 (B4100 west)	3.65	0.00	Y	Arm J5:1 Ahead	Inf	100.0 %	1980	1980
J5:5/2 (B4100 west)	3.65	0.00	N	Arm J5:1 Ahead	Inf	100.0 %	2120	2120
J5:5/3 (B4100 west)	3.65	0.00	N	Arm J5:7 Ahead	Inf	100.0 %	2120	2120
J5:5/4 (B4100 west)	3.65	0.00	N	Arm J5:7 Ahead	Inf	100.0 %	2120	2120
J5:6/1	4.00	0.00	Y	Arm J5:1 Right	40.00	100.0 %	1942	1942
J5:7/1	4.00	0.00	Y	Arm J5:3 Right	60.00	100.0 %	1966	1966
J5:7/2	4.00	0.00	N	Arm J5:3 Right	60.00	100.0 %	2102	2102
J5:8/1	4.00	0.00	Y	Arm J4:3 Ahead	60.00	100.0 %	1966	1966
J5:8/2	4.00	0.00	N	Arm J4:3 Ahead	60.00	100.0 %	2102	2102
J5:9/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2031 Option 25 - Inter Peak' (FG4: '2031 Opt 25 - inter-peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination									
		A	B	C	D	E	F	G	H	I	Tot.
Origin	A	0	406	86	0	1059	77	51	52	485	2216
	B	439	0	16	0	9	161	302	2	14	943
	C	88	4	0	246	0	152	4	5	28	527
	D	0	0	204	48	0	0	0	8	324	584
	E	1199	8	0	0	0	0	50	0	0	1257
	F	69	203	199	0	0	0	20	37	349	877
	G	49	240	1	0	65	0	2	1	8	366
	H	49	3	4	6	0	45	3	53	68	231
	I	403	12	17	282	0	320	19	200	0	1253
	Tot.	2296	876	527	582	1133	755	451	358	1276	8254

Traffic Lane Flows

Lane	Scenario 4: 2031 Option 25 - Inter Peak
Junction: J1: Padbury Roundabout	
J1:1/1 (with short)	903(In) 609(Out)
J1:1/2 (short)	294
J1:2/1	969
J1:2/2	519
J1:3/1	265
J1:3/2	320
J1:4/1	530
J1:4/2	347
J1:5/1 (short)	265
J1:5/2 (with short)	652(In) 387(Out)
J1:5/3	225
J1:6/1	360
J1:6/2	225
J1:7/1	877
Junction: J2: Cherwell	
J2:1/1 (short)	302
J2:1/2 (with short)	969(In) 667(Out)
J2:1/3	519
J2:2/1	489
J2:2/2	561
J2:3/1	265
J2:3/2	320
J2:4/1	527
J2:5/1	246
J2:5/2	281
J2:6/1	695
J2:6/2	676
J2:7/1	585
J2:7/2	561
J2:8/1 (with short)	561(In) 225(Out)
J2:8/2 (short)	336
J2:9/1	96
J2:10/1 (with short)	336(In) 170(Out)
J2:10/2 (short)	166
J2:10/3	667

J2:10/4	519
J2:11/1	293
J2:11/2	289
J2:12/1	293
J2:12/2	289
Junction: J3: Ardley roundabout	
J3:1/1 (with short)	231(In) 90(Out)
J3:1/2 (short)	141
J3:2/1	695
J3:2/2	676
J3:3/1	755
J3:4/1	759
J3:4/2	733
J3:5/1	358
J3:6/1 (with short)	121(In) 64(Out)
J3:6/2 (short)	57
J3:7/1	158
J3:7/2	390
J3:7/3	252
J3:8/1	513
J3:8/2	537
J3:9/1	324
J3:9/2	260
J3:10/1	755
J3:10/2	513
J3:10/3	658
J3:11/1	584
J3:12/1	358
J3:12/2	899
J3:13/1	710
J3:13/2	468
J3:13/3	517
J3:14/1	1083
J3:14/2	193
J3:15/1	520
J3:15/2 (with short)	733(In) 366(Out)
J3:15/3 (short)	367
J3:16/1	1083
J3:16/2	193
J3:17/1	520
J3:17/2	733
J3:18/1	1253

Junction: J4: Baynards Green	
J4:1/1 (short)	406
J4:1/2 (with short)	1106(In) 700(Out)
J4:1/3 (with short)	1110(In) 563(Out)
J4:1/4 (short)	547
J4:2/1	594
J4:2/2	583
J4:3/1 (short)	357
J4:3/2 (with short)	707(In) 350(Out)
J4:3/3 (with short)	698(In) 356(Out)
J4:3/4 (short)	342
J4:4/1	603
J4:4/2	530
J4:5/1	401
J4:5/2	350
J4:5/3	356
J4:5/4	342
J4:6/1	358
J4:6/2 (with short)	899(In) 450(Out)
J4:6/3 (short)	449
J4:7/1	658
J4:7/2	806
J4:7/3	791
J4:8/1	451
J4:9/1 (with short)	366(In) 182(Out)
J4:9/2 (short)	184
J4:10/1	707
J4:10/2	806
J4:10/3	783
J4:11/1	137
J4:11/2	188
J4:12/1	603
J4:12/2	530
J4:13/1	603
J4:13/2	530
J4:14/1	1257
J4:15/1	1257
Junction: J5: Unnamed Junction	

J5:1/1	537
J5:1/2	339
J5:2/1 (short)	193
J5:2/2 (with short)	611(In) 418(Out)
J5:2/3	332
J5:3/1	536
J5:3/2	367
J5:4/1	289
J5:4/2 (with short)	588(In) 366(Out)
J5:4/3 (short)	222
J5:5/1 (with short)	654(In) 315(Out)
J5:5/2 (short)	339
J5:5/3 (with short)	710(In) 343(Out)
J5:5/4 (short)	367
J5:6/1	222
J5:7/1	343
J5:7/2	367
J5:8/1	418
J5:8/2	332
J5:9/1	903

Lane Saturation Flows

Junction: J1: Padbury Roundabout

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (A43 north)	3.65	0.00	Y	Arm J1:2 Ahead	50.00	100.0 %	1922	1922
J1:1/2 (A43 north)	3.65	0.00	N	Arm J1:2 Ahead	50.00	100.0 %	2058	2058
J1:2/1	Infinite Saturation Flow						Inf	Inf
J1:2/2	Infinite Saturation Flow						Inf	Inf
J1:3/1 (A43 south)	3.65	0.00	Y	Arm J1:4 Ahead	30.00	100.0 %	1886	1886
J1:3/2 (A43 south)	3.65	0.00	N	Arm J1:4 Ahead	30.00	100.0 %	2019	2019
J1:4/1	Infinite Saturation Flow						Inf	Inf
J1:4/2	Infinite Saturation Flow						Inf	Inf
J1:5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm J1:4 Left	40.00	100.0 %	1908	1908
J1:5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:4 Left	50.00	7.0 %	2058	2058
				Arm J1:6 Ahead	50.00	93.0 %		
J1:5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:6 Ahead	50.00	100.0 %	2058	2058
J1:6/1	3.65	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1980	1980
J1:6/2	3.65	0.00	N	Arm J1:2 Right	Inf	100.0 %	2120	2120
J1:7/1	Infinite Saturation Flow						Inf	Inf

Junction: J2: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (A43)	3.65	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1980	1980
				Arm J2:10 Ahead	Inf	0.0 %		
J2:1/2 (A43)	3.65	0.00	Y	Arm J2:10 Ahead	Inf	100.0 %	1980	1980
J2:1/3 (A43)	3.65	0.00	Y	Arm J2:10 Ahead	Inf	100.0 %	1980	1980
J2:2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:3/1	Infinite Saturation Flow						Inf	Inf
J2:3/2	Infinite Saturation Flow						Inf	Inf
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:5/1 (MSA)	3.50	0.00	Y	Arm J2:11 Left	30.00	100.0 %	1871	1871
J2:5/2 (MSA)	3.50	0.00	Y	Arm J2:6 Left	Inf	65.8 %	1965	1965
				Arm J2:9 Ahead	Inf	34.2 %		
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:6/2	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:7/2	Infinite Saturation Flow						Inf	Inf
J2:8/1	3.65	0.00	Y	Arm J2:4 Ahead	30.00	100.0 %	1886	1886
J2:8/2	3.65	0.00	N	Arm J2:10 Right	25.00	100.0 %	2000	2000
J2:9/1	Infinite Saturation Flow						Inf	Inf
J2:10/1	3.65	0.00	N	Arm J2:11 Ahead	Inf	100.0 %	2120	2120
J2:10/2	3.65	0.00	N	Arm J2:11 Ahead	Inf	100.0 %	2120	2120
J2:10/3	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:10/4	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:12/1	Infinite Saturation Flow						Inf	Inf
J2:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J3: Ardley roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1	Infinite Saturation Flow						Inf	Inf
J3:1/2	Infinite Saturation Flow						Inf	Inf
J3:2/1	3.65	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1980	1980
J3:2/2	3.65	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1980	1980
J3:3/1	Infinite Saturation Flow						Inf	Inf
J3:4/1	Infinite Saturation Flow						Inf	Inf
J3:4/2	Infinite Saturation Flow						Inf	Inf
J3:5/1	Infinite Saturation Flow						Inf	Inf
J3:6/1	3.65	0.00	Y	Arm J3:4 Right	Inf	100.0 %	1980	1980
J3:6/2	3.65	0.00	Y	Arm J3:4 Right	Inf	100.0 %	1980	1980
J3:7/1	3.65	0.00	Y	Arm J3:5 Ahead	Inf	100.0 %	1980	1980
J3:7/2	3.65	0.00	N	Arm J3:13 Right	Inf	100.0 %	2120	2120
J3:7/3	3.65	0.00	N	Arm J3:13 Right	Inf	100.0 %	2120	2120
J3:8/1	Infinite Saturation Flow						Inf	Inf
J3:8/2	Infinite Saturation Flow						Inf	Inf
J3:9/1	Infinite Saturation Flow						Inf	Inf
J3:9/2	Infinite Saturation Flow						Inf	Inf
J3:10/1	Infinite Saturation Flow						Inf	Inf
J3:10/2	Infinite Saturation Flow						Inf	Inf
J3:10/3	Infinite Saturation Flow						Inf	Inf
J3:11/1	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf
J3:12/2	Infinite Saturation Flow						Inf	Inf
J3:13/1	Infinite Saturation Flow						Inf	Inf
J3:13/2	Infinite Saturation Flow						Inf	Inf
J3:13/3	Infinite Saturation Flow						Inf	Inf
J3:14/1	Infinite Saturation Flow						Inf	Inf
J3:14/2	Infinite Saturation Flow						Inf	Inf
J3:15/1	3.65	0.00	Y	Arm J3:5 Left	Inf	38.5 %	1980	1980
				Arm J3:13 Ahead	Inf	61.5 %		
J3:15/2	3.65	0.00	N	Arm J3:13 Ahead	Inf	100.0 %	2120	2120
J3:15/3	3.65	0.00	N	Arm J3:13 Ahead	Inf	100.0 %	2120	2120
J3:16/1	Infinite Saturation Flow						Inf	Inf
J3:16/2	Infinite Saturation Flow						Inf	Inf
J3:17/1	Infinite Saturation Flow						Inf	Inf
J3:17/2	Infinite Saturation Flow						Inf	Inf
J3:18/1	Infinite Saturation Flow						Inf	Inf

Junction: J4: Baynards Green								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J4:1/1 (A43 North)	3.65	0.00	Y	Arm J5:5 Left	Inf	100.0 %	1980	1980
J4:1/2 (A43 North)	3.65	0.00	N	Arm J5:5 Left	Inf	100.0 %	2120	2120
J4:1/3 (A43 North)	3.65	0.00	N	Arm J4:2 Ahead	Inf	100.0 %	2120	2120
J4:1/4 (A43 North)	3.65	0.00	Y	Arm J4:2 Ahead	50.00	100.0 %	1922	1922
J4:2/1	3.65	0.00	N	Arm J4:4 Ahead	Inf	100.0 %	2120	2120
J4:2/2	3.65	0.00	N	Arm J4:4 Ahead	Inf	90.9 %	2120	2120
				Arm J4:5 Right	Inf	9.1 %		
J4:3/1 (B4100 East)	3.65	0.00	Y	Arm J4:4 Left	Inf	2.5 %	1980	1980
				Arm J4:5 Ahead	Inf	97.5 %		
J4:3/2 (B4100 East)	3.65	0.00	N	Arm J4:5 Ahead	Inf	100.0 %	2120	2120
J4:3/3 (B4100 East)	3.65	0.00	N	Arm J4:5 Ahead	Inf	100.0 %	2120	2120
J4:3/4 (B4100 East)	3.65	0.00	N	Arm J4:5 Ahead	Inf	100.0 %	2120	2120
J4:4/1	Infinite Saturation Flow						Inf	Inf
J4:4/2	Infinite Saturation Flow						Inf	Inf
J4:5/1	3.65	0.00	Y	Arm J4:8 Right	Inf	100.0 %	1980	1980
J4:5/2	3.65	0.00	N	Arm J4:7 Right	Inf	100.0 %	2120	2120
J4:5/3	3.65	0.00	N	Arm J4:7 Right	Inf	100.0 %	2120	2120
J4:5/4	3.65	0.00	N	Arm J4:7 Right	Inf	100.0 %	2120	2120
J4:6/1 (A43 South)	3.65	0.00	Y	Arm J4:7 Ahead	50.00	86.0 %	1930	1930
				Arm J4:8 Ahead	Inf	14.0 %		
J4:6/2 (A43 South)	3.65	0.00	Y	Arm J4:7 Ahead	50.00	100.0 %	1922	1922
J4:6/3 (A43 South)	3.65	0.00	Y	Arm J4:7 Ahead	50.00	100.0 %	1922	1922
J4:7/1	3.65	0.00	N	Arm J4:10 Ahead	Inf	100.0 %	2120	2120
J4:7/2	3.65	0.00	N	Arm J4:10 Ahead	Inf	100.0 %	2120	2120
J4:7/3	3.65	0.00	N	Arm J4:10 Ahead	Inf	99.0 %	2120	2120
				Arm J4:11 Right	Inf	1.0 %		
J4:8/1	Infinite Saturation Flow						Inf	Inf
J4:9/1 (B4100 West)	3.50	0.00	Y	Arm J4:10 Left	30.00	26.9 %	1888	1888
				Arm J4:11 Ahead	40.00	73.1 %		
J4:9/2 (B4100 West)	3.50	0.00	Y	Arm J4:11 Ahead	40.00	100.0 %	1894	1894
J4:10/1	Infinite Saturation Flow						Inf	Inf
J4:10/2	Infinite Saturation Flow						Inf	Inf
J4:10/3	Infinite Saturation Flow						Inf	Inf

J4:11/1	3.65	0.00	Y	Arm J5:5 Ahead	Inf	100.0 %	1980	1980
J4:11/2	3.65	0.00	N	Arm J4:2 Right Arm J5:5 Ahead	Inf Inf	35.6 % 64.4 %	2120	2120
J4:12/1	Infinite Saturation Flow						Inf	Inf
J4:12/2	Infinite Saturation Flow						Inf	Inf
J4:13/1	Infinite Saturation Flow						Inf	Inf
J4:13/2	Infinite Saturation Flow						Inf	Inf
J4:14/1	Infinite Saturation Flow						Inf	Inf
J4:15/1	Infinite Saturation Flow						Inf	Inf

Junction: J5: Unnamed Junction

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J5:1/1	Infinite Saturation Flow						Inf	Inf
J5:1/2	Infinite Saturation Flow						Inf	Inf
J5:2/1 (B4100 east)	3.65	0.00	Y	Arm J5:3 Left	40.00	100.0 %	1908	1908
J5:2/2 (B4100 east)	3.65	0.00	N	Arm J5:8 Ahead	Inf	100.0 %	2120	2120
J5:2/3 (B4100 east)	3.65	0.00	N	Arm J5:8 Ahead	40.00	100.0 %	2043	2043
J5:3/1	Infinite Saturation Flow						Inf	Inf
J5:3/2	Infinite Saturation Flow						Inf	Inf
J5:4/1 (A43)	3.65	0.00	N	Arm J4:3 Left	30.00	100.0 %	2019	2019
J5:4/2 (A43)	3.65	0.00	N	Arm J4:3 Left	40.00	100.0 %	2043	2043
J5:4/3 (A43)	3.65	0.00	Y	Arm J5:6 Ahead	40.00	100.0 %	1908	1908
J5:5/1 (B4100 west)	3.65	0.00	Y	Arm J5:1 Ahead	Inf	100.0 %	1980	1980
J5:5/2 (B4100 west)	3.65	0.00	N	Arm J5:1 Ahead	Inf	100.0 %	2120	2120
J5:5/3 (B4100 west)	3.65	0.00	N	Arm J5:7 Ahead	Inf	100.0 %	2120	2120
J5:5/4 (B4100 west)	3.65	0.00	N	Arm J5:7 Ahead	Inf	100.0 %	2120	2120
J5:6/1	4.00	0.00	Y	Arm J5:1 Right	40.00	100.0 %	1942	1942
J5:7/1	4.00	0.00	Y	Arm J5:3 Right	60.00	100.0 %	1966	1966
J5:7/2	4.00	0.00	N	Arm J5:3 Right	60.00	100.0 %	2102	2102
J5:8/1	4.00	0.00	Y	Arm J4:3 Ahead	60.00	100.0 %	1966	1966
J5:8/2	4.00	0.00	N	Arm J4:3 Ahead	60.00	100.0 %	2102	2102
J5:9/1	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2031 Option 25 - AM Peak' (FG1: '2031 Opt 25 - AM', Plan 1: 'Network Control Plan 1')
C1 - Padbury

Stage Timings

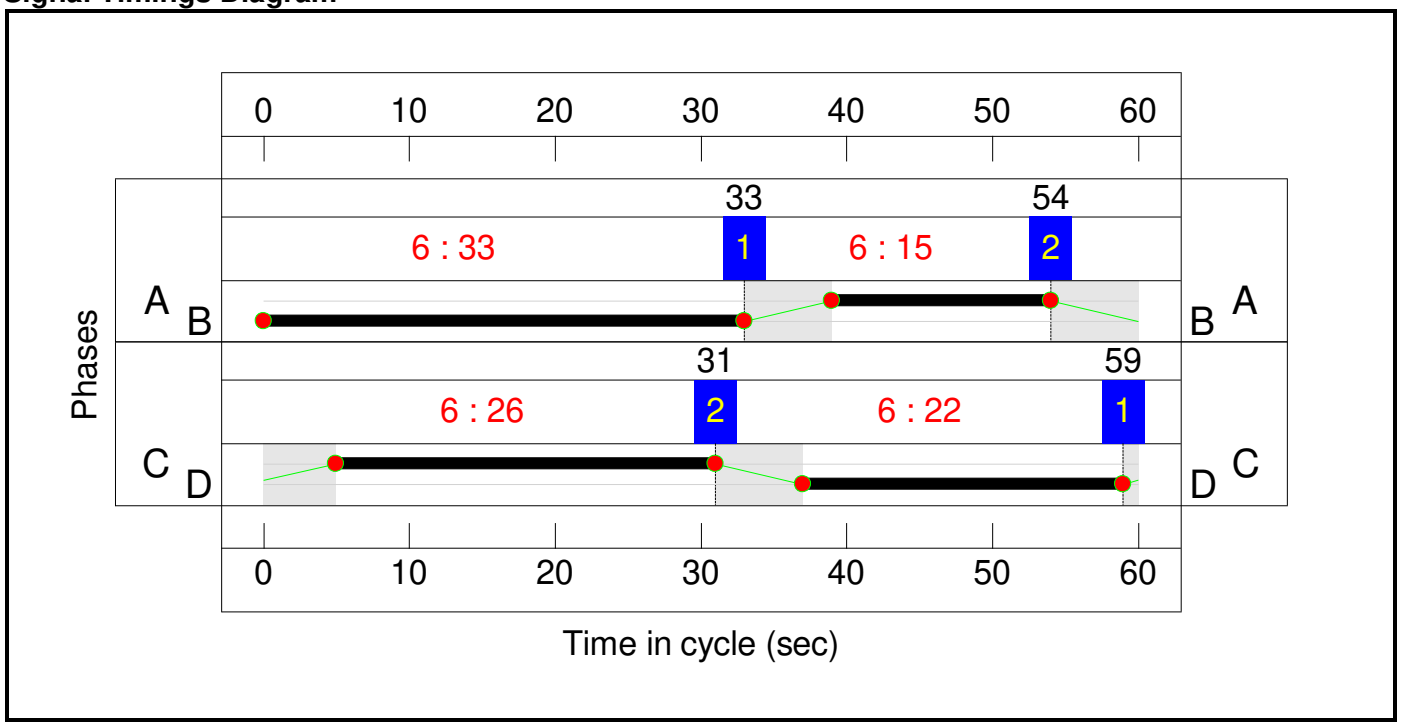
Stage Stream: 1

Stage	1	2
Duration	15	33
Change Point	33	54

Stage Stream: 2

Stage	1	2
Duration	26	22
Change Point	59	31

Signal Timings Diagram



C2 - Cherwell

Stage Timings

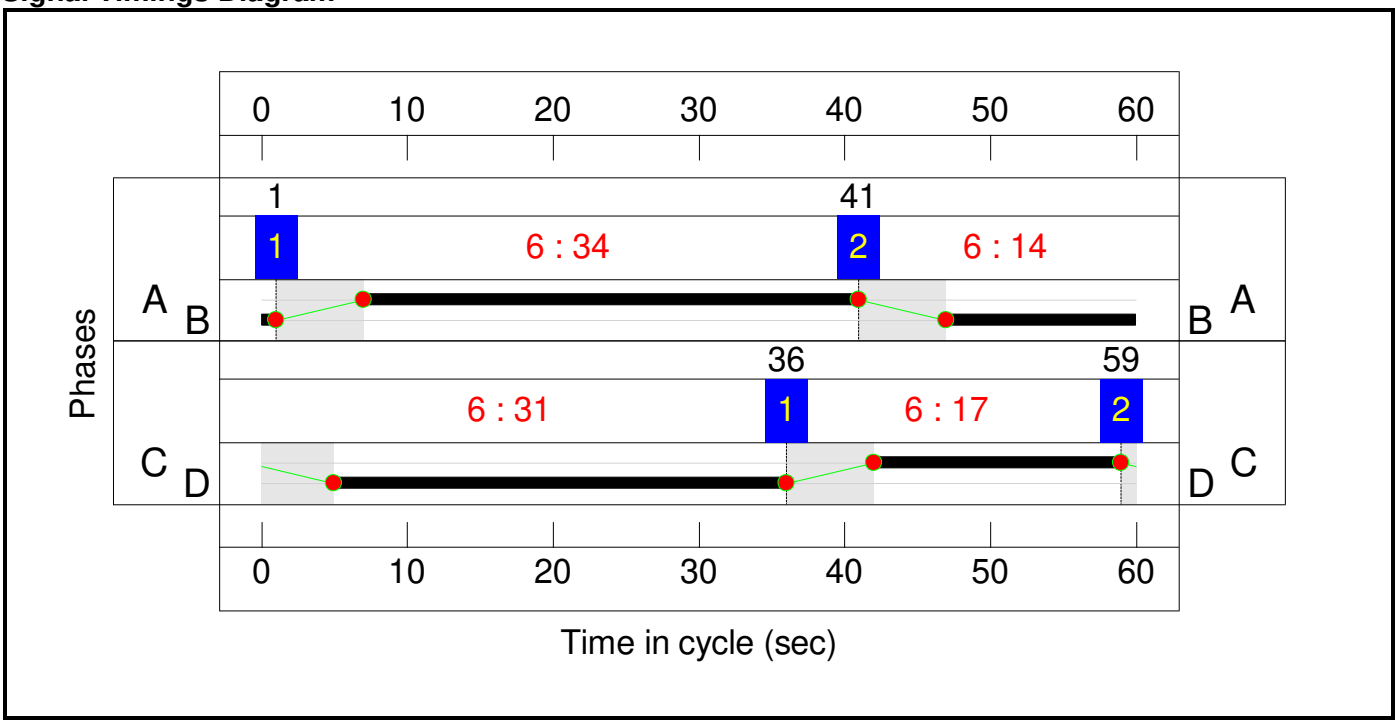
Stage Stream: 1

Stage	1	2
Duration	34	14
Change Point	1	41

Stage Stream: 2

Stage	1	2
Duration	17	31
Change Point	36	59

Signal Timings Diagram



C3 - Ardley

Stage Timings

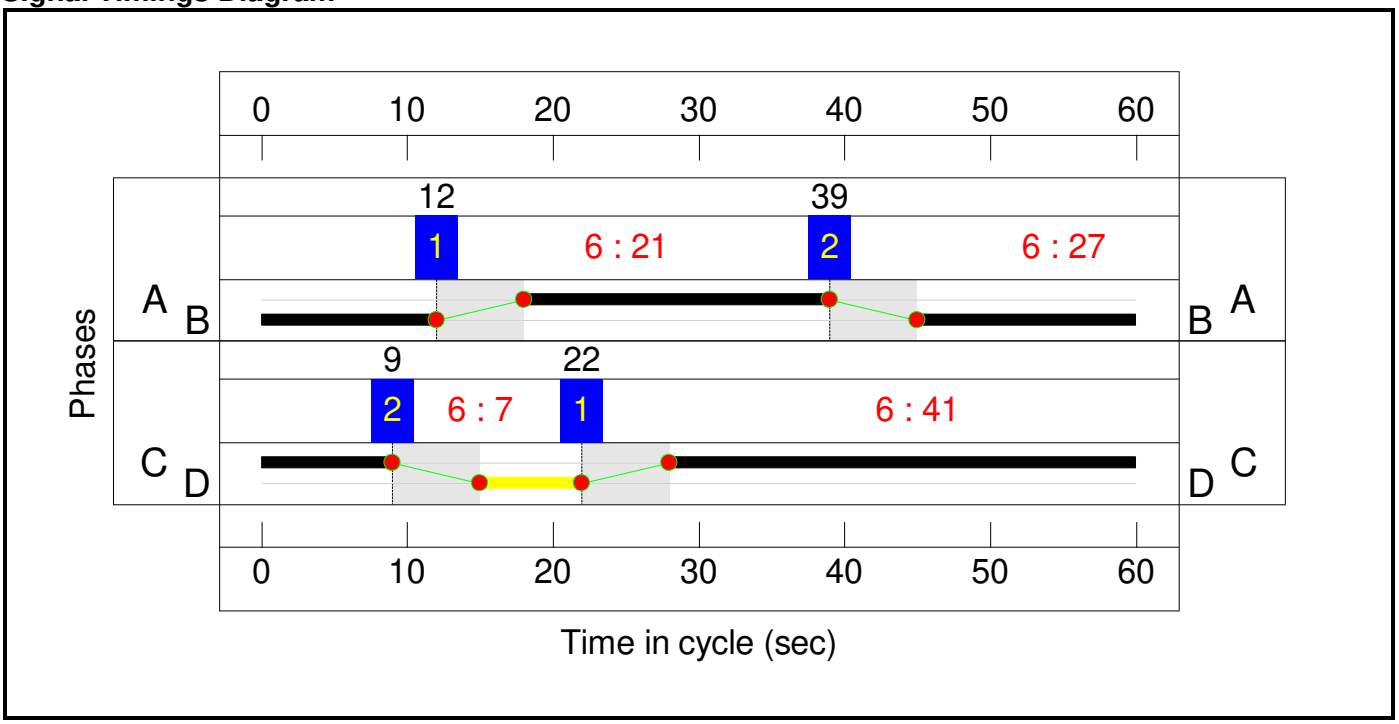
Stage Stream: 1

Stage	1	2
Duration	21	27
Change Point	12	39

Stage Stream: 2

Stage	1	2
Duration	41	7
Change Point	22	9

Signal Timings Diagram



C4 - Baynards Green

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	14	34
Change Point	59	19

Stage Stream: 2

Stage	1	2
Duration	34	14
Change Point	24	4

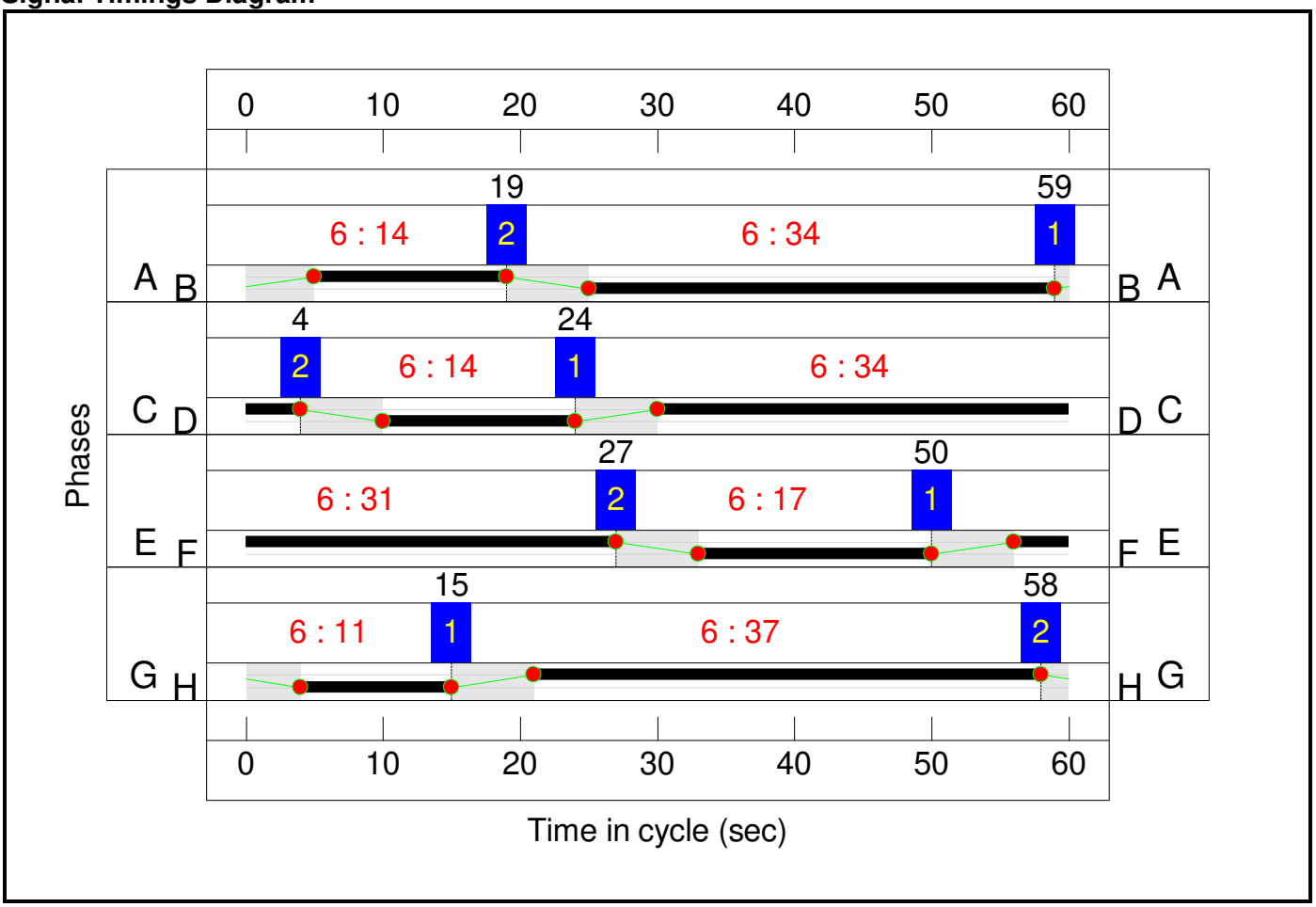
Stage Stream: 3

Stage	1	2
Duration	31	17
Change Point	50	27

Stage Stream: 4

Stage	1	2
Duration	37	11
Change Point	15	58

Signal Timings Diagram



C5 - B4100 Roundabout

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	21	27
Change Point	59	26

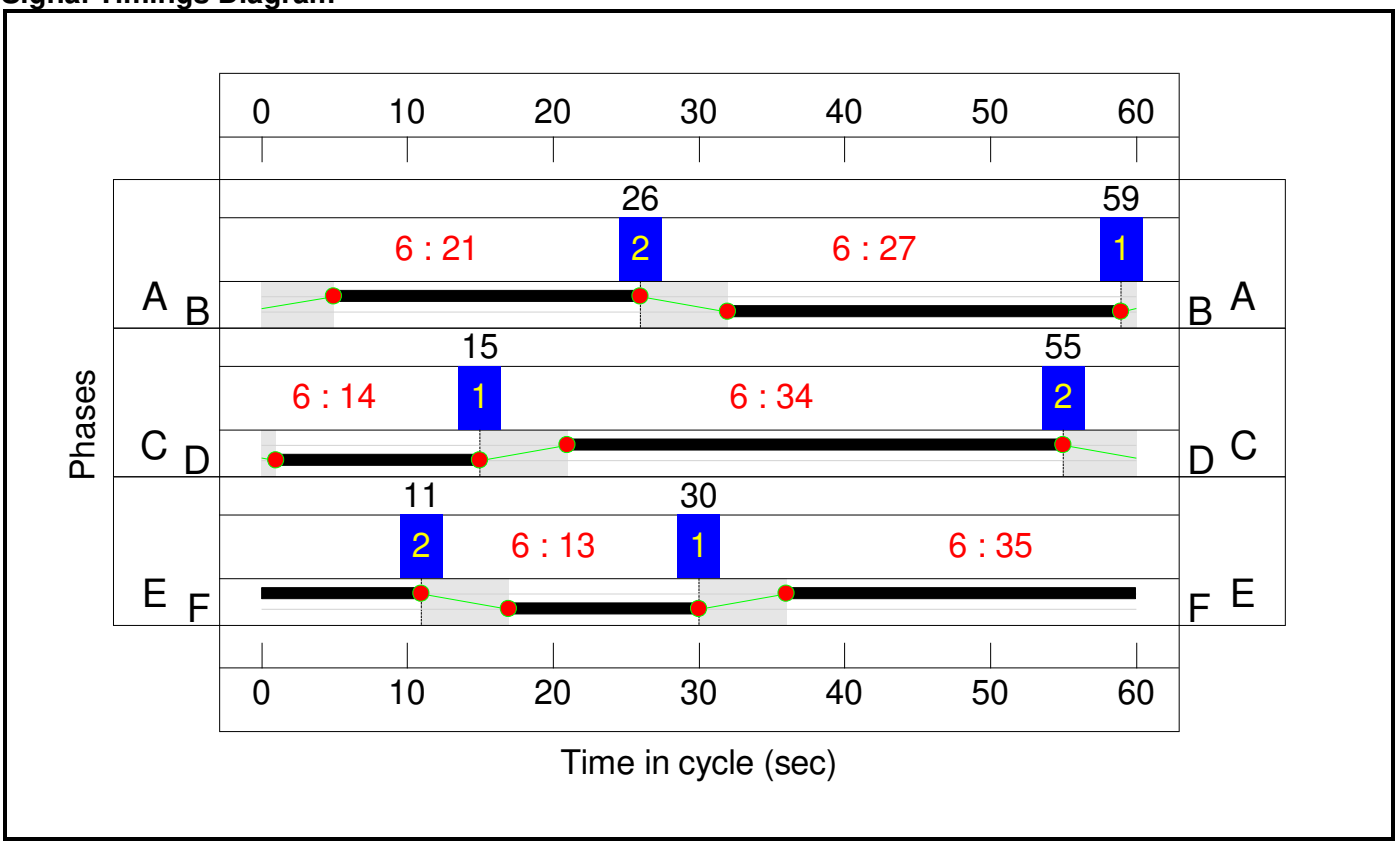
Stage Stream: 2

Stage	1	2
Duration	34	14
Change Point	15	55

Stage Stream: 3

Stage	1	2
Duration	35	13
Change Point	30	11

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: Option25 Network Model	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**83.4%**
J1: Padbury Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**81.2%**
1/1+1/2	A43 north Ahead	U	1:1	N/A	C1:B		1	33	-	1246	1922:2058	1051+483	81.2 : 81.2%
2/1	Ahead	U	N/A	N/A	-		-	-	-	1228	Inf	Inf	0.0%
2/2	Ahead	U	N/A	N/A	-		-	-	-	743	Inf	Inf	0.0%
3/1	A43 south Ahead	U	1:2	N/A	C1:C		1	26	-	236	1886	849	27.8%
3/2	A43 south Ahead	U	1:2	N/A	C1:C		1	26	-	257	2019	909	28.3%
4/1	Ahead	U	N/A	N/A	-		-	-	-	558	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	272	Inf	Inf	0.0%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	1:2	N/A	C1:D		1	22	-	711	2058:1908	744+616	52.3 : 52.3%
5/3	Junction 10 s'bound offslip Ahead	U	1:2	N/A	C1:D		1	22	-	351	2058	789	44.5%
6/1	Right	U	1:1	N/A	C1:A		1	15	-	374	1980	528	70.8%
6/2	Right	U	1:1	N/A	C1:A		1	15	-	351	2120	565	62.1%
7/1	Ahead	U	N/A	N/A	-		-	-	-	830	Inf	Inf	0.0%
J2: Cherwell	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**78.3%**
1/2+1/1	A43 Left Ahead	U	2:1	N/A	C2:A		1	34	-	1228	1980:1980	1131+439	78.2 : 78.2%
1/3	A43 Ahead	U	2:1	N/A	C2:A		1	34	-	743	1980	1155	64.3%
2/1	A43 Ahead	O	N/A	N/A	-		-	-	-	408	Inf	1172	34.8%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	521	Inf	1172	44.5%
3/1	Ahead	U	N/A	N/A	-		-	-	-	236	Inf	Inf	0.0%
3/2	Ahead	U	N/A	N/A	-		-	-	-	257	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	582	Inf	Inf	0.0%

5/1	MSA Left	U	2:2	N/A	C2:C		1	17	-	295	1871	561	52.6%
5/2	MSA Left Ahead	U	2:2	N/A	C2:C		1	17	-	287	1965	590	48.7%
6/1	Ahead	U	N/A	N/A	-		-	-	-	933	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	897	Inf	Inf	0.0%
7/1	Ahead	U	N/A	N/A	-		-	-	-	493	Inf	Inf	0.0%
7/2	Right	U	N/A	N/A	-		-	-	-	521	Inf	Inf	0.0%
8/1+8/2	Ahead Right	U	2:1	N/A	C2:B		1	14	-	521	1886:2000	344+405	69.6 : 69.6%
9/1	Right	U	N/A	N/A	-		-	-	-	85	Inf	Inf	0.0%
10/1+10/2	Ahead	U	2:2	N/A	C2:D		1	31	-	282	2120:2120	648+621	22.2 : 22.2%
10/3	Ahead	U	2:2	N/A	C2:D		1	31	-	885	2120	1131	78.3%
10/4	Ahead	U	2:2	N/A	C2:D		1	31	-	743	2120	1131	65.7%
11/1	M40 SB onslip Ahead	U	N/A	N/A	-		-	-	-	292	Inf	Inf	0.0%
11/2	M40 SB onslip Ahead	U	N/A	N/A	-		-	-	-	285	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	292	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	285	Inf	Inf	0.0%
J3: Ardley roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**74.2%**
1/1+1/2	Ahead	O	N/A	N/A	-		-	-	-	159	Inf : Inf	632+353	16.1 : 16.1%
2/1	Ahead	U	3:2	N/A	C3:C		1	41	-	933	1980	1386	67.3%
2/2	Ahead	U	3:2	N/A	C3:C		1	41	-	897	1980	1386	64.7%
3/1		U	N/A	N/A	-		-	-	-	800	Inf	Inf	0.0%
4/1	Ahead	U	N/A	N/A	-		-	-	-	959	Inf	Inf	0.0%
4/2	Right Ahead	U	N/A	N/A	-		-	-	-	897	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	357	Inf	Inf	0.0%
6/1+6/2	Right	U	3:2	N/A	C3:D		1	7	-	26	1980:1980	264+0	9.8 : 0.0%
7/1	Ahead	U	3:1	N/A	C3:B		1	27	-	156	1980	924	16.9%
7/2	Right	U	3:1	N/A	C3:B		1	27	-	409	2120	989	41.3%
7/3	Right	U	3:1	N/A	C3:B		1	27	-	251	2120	989	25.4%

8/1	Ahead	U	N/A	N/A	-		-	-	-	447	Inf	Inf	0.0%
8/2	Ahead	U	N/A	N/A	-		-	-	-	482	Inf	Inf	0.0%
9/1	Left	O	N/A	N/A	-		-	-	-	437	Inf	589	74.2%
9/2	Ahead	O	N/A	N/A	-		-	-	-	260	Inf	492	52.9%
10/1	Left	U	N/A	N/A	-		-	-	-	800	Inf	Inf	0.0%
10/2	Ahead	U	N/A	N/A	-		-	-	-	447	Inf	Inf	0.0%
10/3	Right Ahead	U	N/A	N/A	-		-	-	-	508	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	697	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	323	Inf	Inf	0.0%
12/2	Ahead	U	N/A	N/A	-		-	-	-	846	Inf	Inf	0.0%
13/1	Right	U	N/A	N/A	-		-	-	-	736	Inf	Inf	0.0%
13/2	Right	U	N/A	N/A	-		-	-	-	409	Inf	Inf	0.0%
13/3	Right	U	N/A	N/A	-		-	-	-	451	Inf	Inf	0.0%
14/1	Ahead	U	N/A	N/A	-		-	-	-	1396	Inf	Inf	0.0%
14/2	Ahead	U	N/A	N/A	-		-	-	-	341	Inf	Inf	0.0%
15/1	Left Ahead	U	3:1	N/A	C3:A		1	21	-	528	1980	726	72.7%
15/2+15/3	Ahead	U	3:1	N/A	C3:A		1	21	-	609	2120:2120	704+706	43.2 : 43.2%
16/1		U	N/A	N/A	-		-	-	-	1396	Inf	Inf	0.0%
16/2		U	N/A	N/A	-		-	-	-	341	Inf	Inf	0.0%
17/1	Ahead	U	N/A	N/A	-		-	-	-	528	Inf	Inf	0.0%
17/2	Ahead	U	N/A	N/A	-		-	-	-	609	Inf	Inf	0.0%
18/1	Ahead	U	N/A	N/A	-		-	-	-	1137	Inf	Inf	0.0%
J4: Baynards Green	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**83.4%**
1/2+1/1	A43 North Left	U	4:1	N/A	C4:B		1	34	-	1477	2120:1980	1237+566	83.4 : 78.8%
1/3+1/4	A43 North Ahead	U	4:1	N/A	C4:B		1	34	-	1555	2120:1922	1021+996	77.1 : 77.1%
2/1	Ahead	U	4:2	N/A	C4:C		1	34	-	839	2120	1237	67.8%
2/2	Ahead Right	U	4:2	N/A	C4:C		1	34	-	827	2120	1237	66.9%
3/2+3/1	B4100 East Left Ahead	U	4:2	N/A	C4:D		1	14	-	683	2120:1980	399+495	76.4 : 76.4%

3/3+3/4	B4100 East Ahead	U	4:2	N/A	C4:D		1	14	-	534	2120:2120	530+484	52.6 : 52.6%
4/1	Ahead	U	N/A	N/A	-		-	-	-	849	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	756	Inf	Inf	0.0%
5/1	Right	U	4:3	N/A	C4:E		1	31	-	439	1980	1056	41.6%
5/2	Right	U	4:3	N/A	C4:E		1	31	-	305	2120	1131	27.0%
5/3	Right	U	4:3	N/A	C4:E		1	31	-	279	2120	1131	24.7%
5/4	Right	U	4:3	N/A	C4:E		1	31	-	255	2120	1131	22.6%
6/1	A43 South Ahead Ahead2	U	4:3	N/A	C4:F		1	17	-	323	1933	580	55.7%
6/2+6/3	A43 South Ahead	U	4:3	N/A	C4:F		1	17	-	846	1922:1922	577+577	73.4 : 73.4%
7/1	Ahead	U	4:4	N/A	C4:G		1	37	-	565	2120	1343	42.1%
7/2	Ahead	U	4:4	N/A	C4:G		1	37	-	702	2120	1343	52.3%
7/3	Ahead Right	U	4:4	N/A	C4:G		1	37	-	678	2120	1343	50.5%
8/1		U	N/A	N/A	-		-	-	-	502	Inf	Inf	0.0%
9/1+9/2	B4100 West Left Ahead	U	4:4	N/A	C4:H		1	11	-	492	1887:1894	377+379	64.1 : 66.0%
10/1		U	N/A	N/A	-		-	-	-	637	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	702	Inf	Inf	0.0%
10/3		U	N/A	N/A	-		-	-	-	670	Inf	Inf	0.0%
11/1	Ahead	U	4:1	N/A	C4:A		1	14	-	174	1980	495	35.2%
11/2	Right Ahead	U	4:1	N/A	C4:A		1	14	-	254	2120	530	47.9%
12/1	Ahead	U	N/A	N/A	-		-	-	-	849	Inf	Inf	0.0%
12/2	Ahead	U	N/A	N/A	-		-	-	-	756	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	849	Inf	Inf	0.0%
13/2		U	N/A	N/A	-		-	-	-	756	Inf	Inf	0.0%
14/1	Ahead	U	N/A	N/A	-		-	-	-	1169	Inf	Inf	0.0%
15/1	Ahead	U	N/A	N/A	-		-	-	-	1169	Inf	Inf	0.0%
J5: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**77.6%**
1/1		U	N/A	N/A	-		-	-	-	643	Inf	Inf	0.0%
1/2		U	N/A	N/A	-		-	-	-	386	Inf	Inf	0.0%

2/2+2/1	B4100 east Left Ahead	U	5:3	N/A	C5:F		1	13	-	586	2120:1908	495+260	77.6 : 77.6%
2/3	B4100 east Ahead	U	5:3	N/A	C5:F		1	13	-	282	2043	477	59.2%
3/1	Ahead	U	N/A	N/A	-		-	-	-	704	Inf	Inf	0.0%
3/2	Ahead	U	N/A	N/A	-		-	-	-	542	Inf	Inf	0.0%
4/1	A43 Left	U	5:2	N/A	C5:D		1	14	-	299	2019	505	59.2%
4/2+4/3	A43 Left Ahead	U	5:2	N/A	C5:D		1	14	-	531	2043:1908	431+477	58.5 : 58.5%
5/1+5/2	B4100 west Ahead	U	5:1	N/A	C5:B		1	27	-	750	1980:2120	652+691	55.9 : 55.9%
5/3+5/4	B4100 west Ahead	U	5:1	N/A	C5:B		1	27	-	1044	2120:2120	653+705	76.9 : 76.9%
6/1	Right	U	5:1	N/A	C5:A		1	21	-	279	1942	712	39.2%
7/1	Right	U	5:3	N/A	C5:E		1	35	-	502	1966	1180	42.6%
7/2	Right	U	5:3	N/A	C5:E		1	35	-	542	2102	1261	43.0%
8/1	Ahead	U	5:2	N/A	C5:C		1	34	-	384	1966	1147	33.5%
8/2	Ahead	U	5:2	N/A	C5:C		1	34	-	282	2102	1226	23.0%
9/1	Ahead	U	N/A	N/A	-		-	-	-	1246	Inf	Inf	0.0%

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: Option25 Network Model	**-**	**-**	**1944**	**0**	**0**	**65.5**	**26.0**	**0.0**	**91.5**	**-**	**-**	**-**	**-**
J1: Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**7.2**	**3.5**	**0.0**	**10.6**	**-**	**-**	**-**	**-**
1/1+1/2	1246	1246	-	-	-	1.5	2.1	-	3.7	10.6	25.4	2.1	27.6
2/1	1228	1228	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	743	743	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	236	236	-	-	-	0.1	0.2	-	0.3	4.9	0.7	0.2	0.9
3/2	257	257	-	-	-	0.2	0.2	-	0.4	5.2	0.9	0.2	1.1
4/1	558	558	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	272	272	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	711	711	-	-	-	2.7	0.5	-	3.3	16.7	4.9	0.5	5.4
5/3	351	351	-	-	-	1.3	0.4	-	1.7	17.9	4.3	0.4	4.7
6/1	374	374	-	-	-	0.6	0.0	-	0.6	6.1	1.2	0.0	1.2
6/2	351	351	-	-	-	0.6	0.0	-	0.6	6.1	0.9	0.0	0.9
7/1	830	830	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Cherwell	**-**	**-**	**929**	**0**	**0**	**11.6**	**5.5**	**0.0**	**17.1**	**-**	**-**	**-**	**-**
1/2+1/1	1228	1228	-	-	-	2.1	1.8	-	3.9	11.5	4.9	1.8	6.7
1/3	743	743	-	-	-	1.6	0.9	-	2.5	12.0	10.0	0.9	10.9
2/1	408	408	408	0	0	0.1	0.3	-	0.4	3.4	4.3	0.3	4.6
2/2	521	521	521	0	0	0.0	0.4	-	0.4	2.9	2.3	0.4	2.7
3/1	236	236	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	257	257	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	582	582	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	295	295	-	-	-	1.4	0.6	-	2.0	24.2	4.0	0.6	4.6
5/2	287	287	-	-	-	1.4	0.5	-	1.8	23.2	3.9	0.5	4.4
6/1	933	933	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	897	897	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

7/1	493	493	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	521	521	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1+8/2	521	521	-	-	-	2.5	1.1	-	3.6	25.1	3.7	1.1	4.8
9/1	85	85	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1+10/2	282	282	-	-	-	0.8	0.0	-	0.8	9.9	2.8	0.0	2.8
10/3	885	885	-	-	-	1.3	0.0	-	1.3	5.3	3.0	0.0	3.0
10/4	743	743	-	-	-	0.4	0.0	-	0.4	2.0	1.0	0.0	1.0
11/1	292	292	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	285	285	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	292	292	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	285	285	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J3: Ardley roundabout	**-**	**-**	**1015**	**0**	**0**	**9.5**	**6.4**	**0.0**	**15.9**	**-**	**-**	**-**	**-**
1/1+1/2	159	159	318	0	0	0.0	0.1	-	0.1	2.8	0.2	0.1	0.3
2/1	933	933	-	-	-	0.9	1.0	-	1.9	7.3	13.3	1.0	14.3
2/2	897	897	-	-	-	0.6	0.9	-	1.5	5.9	11.1	0.9	12.0
3/1	800	800	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	959	959	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	897	897	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	357	357	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1+6/2	26	26	-	-	-	0.2	0.1	-	0.2	29.9	0.4	0.1	0.4
7/1	156	156	-	-	-	0.2	0.1	-	0.3	6.2	1.3	0.1	1.5
7/2	409	409	-	-	-	0.6	0.4	-	1.0	8.5	2.7	0.4	3.1
7/3	251	251	-	-	-	0.9	0.2	-	1.1	15.7	2.3	0.2	2.5
8/1	447	447	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	482	482	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	437	437	437	0	0	0.8	1.4	-	2.2	18.5	5.1	1.4	6.5
9/2	260	260	260	0	0	0.6	0.6	-	1.1	15.9	2.9	0.6	3.4
10/1	800	800	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	447	447	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/3	508	508	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

11/1	697	697	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	323	323	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	846	846	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	736	736	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	409	409	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/3	451	451	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	1396	1396	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/2	341	341	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	528	528	-	-	-	2.4	1.3	-	3.7	25.4	7.5	1.3	8.8
15/2+15/3	609	609	-	-	-	2.4	0.4	-	2.8	16.3	3.7	0.4	4.1
16/1	1396	1396	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/2	341	341	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/1	528	528	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/2	609	609	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
18/1	1137	1137	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J4: Baynards Green	**-**	**-**	**0**	**0**	**0**	**25.1**	**6.8**	**0.0**	**31.9**	**-**	**-**	**-**	**-**
1/2+1/1	1477	1477	-	-	-	3.7	2.2	-	6.0	14.6	13.7	2.2	16.0
1/3+1/4	1555	1555	-	-	-	3.7	1.7	-	5.3	12.3	8.7	1.7	10.4
2/1	839	839	-	-	-	0.4	0.0	-	0.4	1.7	0.9	0.0	0.9
2/2	827	827	-	-	-	0.3	0.0	-	0.3	1.5	1.0	0.0	1.0
3/2+3/1	683	683	-	-	-	4.4	0.0	-	4.4	23.3	10.4	0.0	10.4
3/3+3/4	534	534	-	-	-	3.2	0.0	-	3.2	21.7	4.4	0.0	4.4
4/1	849	849	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	756	756	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	439	439	-	-	-	0.2	0.0	-	0.2	1.8	1.0	0.0	1.0
5/2	305	305	-	-	-	0.0	0.0	-	0.0	0.0	0.6	0.0	0.6
5/3	279	279	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/4	255	255	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	323	323	-	-	-	1.6	0.6	-	2.2	24.6	4.5	0.6	5.1
6/2+6/3	846	846	-	-	-	4.4	1.4	-	5.8	24.7	6.2	1.4	7.6

7/1	565	565	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	702	702	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/3	678	678	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	502	502	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1+9/2	492	492	-	-	-	3.0	0.9	-	3.9	28.8	3.8	0.9	4.7
10/1	637	637	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	702	702	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/3	670	670	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	174	174	-	-	-	0.0	0.0	-	0.0	0.3	0.1	0.0	0.1
11/2	254	254	-	-	-	0.0	0.0	-	0.0	0.2	0.1	0.0	0.1
12/1	849	849	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	756	756	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	849	849	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	756	756	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	1169	1169	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	1169	1169	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J5: Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**12.1**	**3.8**	**0.0**	**16.0**	**-**	**-**	**-**	**-**
1/1	643	643	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
1/2	386	386	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2+2/1	586	586	-	-	-	3.4	1.7	-	5.1	31.4	6.0	1.7	7.7
2/3	282	282	-	-	-	1.6	0.7	-	2.3	29.6	4.2	0.7	4.9
3/1	704	704	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	542	542	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	299	299	-	-	-	1.7	0.7	-	2.4	29.2	4.8	0.7	5.5
4/2+4/3	531	531	-	-	-	2.3	0.7	-	3.0	20.2	3.7	0.7	4.4
5/1+5/2	750	750	-	-	-	2.0	0.0	-	2.0	9.6	6.7	0.0	6.7
5/3+5/4	1044	1044	-	-	-	1.1	0.0	-	1.1	3.7	2.4	0.0	2.4
6/1	279	279	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	502	502	-	-	-	0.0	0.0	-	0.0	0.0	0.1	0.0	0.1
7/2	542	542	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

8/1	384	384	-	-	-	0.0	0.0	-	0.0	0.4	0.4	0.0	0.4
8/2	282	282	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	1246	1246	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 - Padbury	Stream: 1 PRC for Signalled Lanes (%):	10.8	Total Delay for Signalled Lanes (pcuHr):	4.91	Cycle Time (s):	60
C1 - Padbury	Stream: 2 PRC for Signalled Lanes (%):	72.2	Total Delay for Signalled Lanes (pcuHr):	5.73	Cycle Time (s):	60
C2 - Cherwell	Stream: 1 PRC for Signalled Lanes (%):	15.1	Total Delay for Signalled Lanes (pcuHr):	10.01	Cycle Time (s):	60
C2 - Cherwell	Stream: 2 PRC for Signalled Lanes (%):	15.0	Total Delay for Signalled Lanes (pcuHr):	6.32	Cycle Time (s):	60
C3 - Ardley	Stream: 1 PRC for Signalled Lanes (%):	23.8	Total Delay for Signalled Lanes (pcuHr):	8.80	Cycle Time (s):	60
C3 - Ardley	Stream: 2 PRC for Signalled Lanes (%):	33.7	Total Delay for Signalled Lanes (pcuHr):	3.60	Cycle Time (s):	60
C4 - Baynards Green	Stream: 1 PRC for Signalled Lanes (%):	8.0	Total Delay for Signalled Lanes (pcuHr):	11.34	Cycle Time (s):	60
C4 - Baynards Green	Stream: 2 PRC for Signalled Lanes (%):	17.9	Total Delay for Signalled Lanes (pcuHr):	8.39	Cycle Time (s):	60
C4 - Baynards Green	Stream: 3 PRC for Signalled Lanes (%):	22.7	Total Delay for Signalled Lanes (pcuHr):	8.22	Cycle Time (s):	60
C4 - Baynards Green	Stream: 4 PRC for Signalled Lanes (%):	36.4	Total Delay for Signalled Lanes (pcuHr):	3.94	Cycle Time (s):	60
C5 - B4100 Roundabout	Stream: 1 PRC for Signalled Lanes (%):	17.0	Total Delay for Signalled Lanes (pcuHr):	3.07	Cycle Time (s):	60
C5 - B4100 Roundabout	Stream: 2 PRC for Signalled Lanes (%):	51.9	Total Delay for Signalled Lanes (pcuHr):	5.45	Cycle Time (s):	60
C5 - B4100 Roundabout	Stream: 3 PRC for Signalled Lanes (%):	15.9	Total Delay for Signalled Lanes (pcuHr):	7.43	Cycle Time (s):	60
	PRC Over All Lanes (%):	8.0	Total Delay Over All Lanes(pcuHr):	91.54		

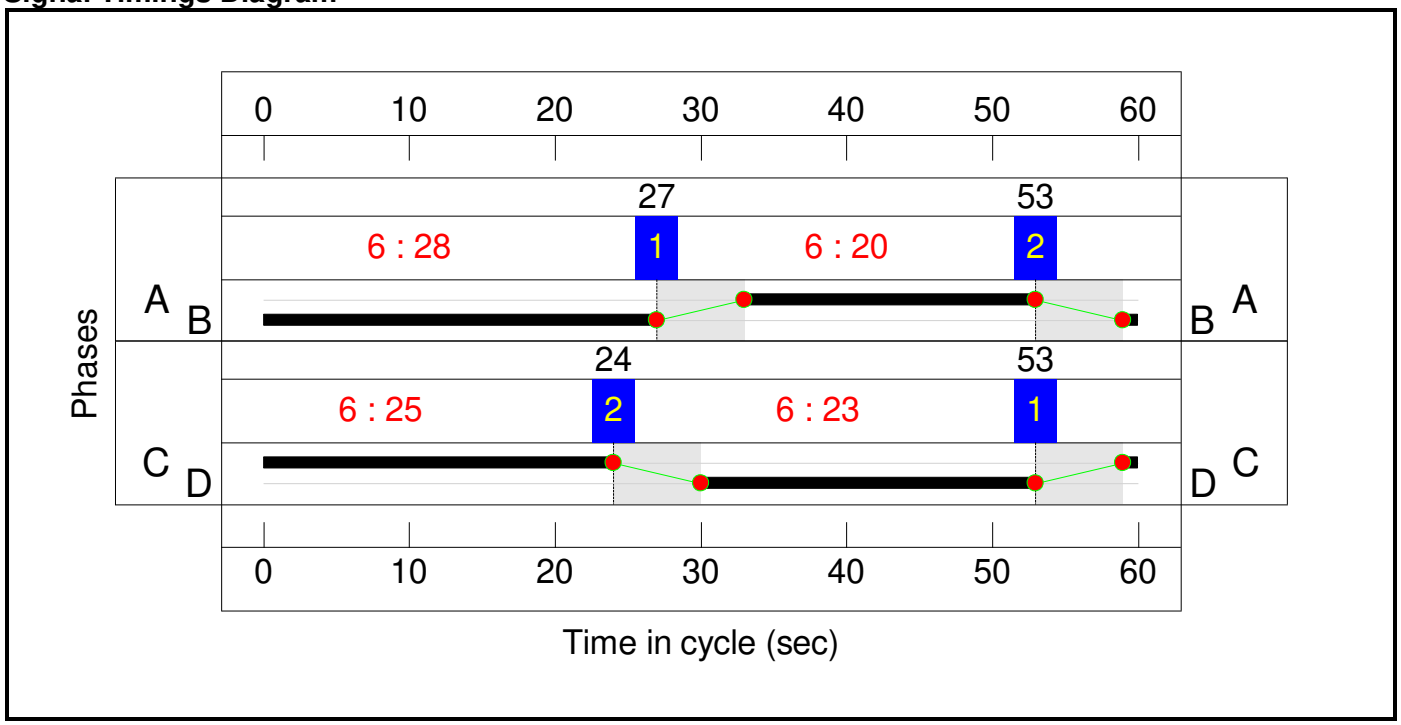
Scenario 2: '2031 Option 25 - PM Peak' (FG2: '2031 Opt 25 - PM', Plan 1: 'Network Control Plan 1')
C1 - Padbury
Stage Timings
Stage Stream: 1

Stage	1	2
Duration	20	28
Change Point	27	53

Stage Stream: 2

Stage	1	2
Duration	25	23
Change Point	53	24

Signal Timings Diagram



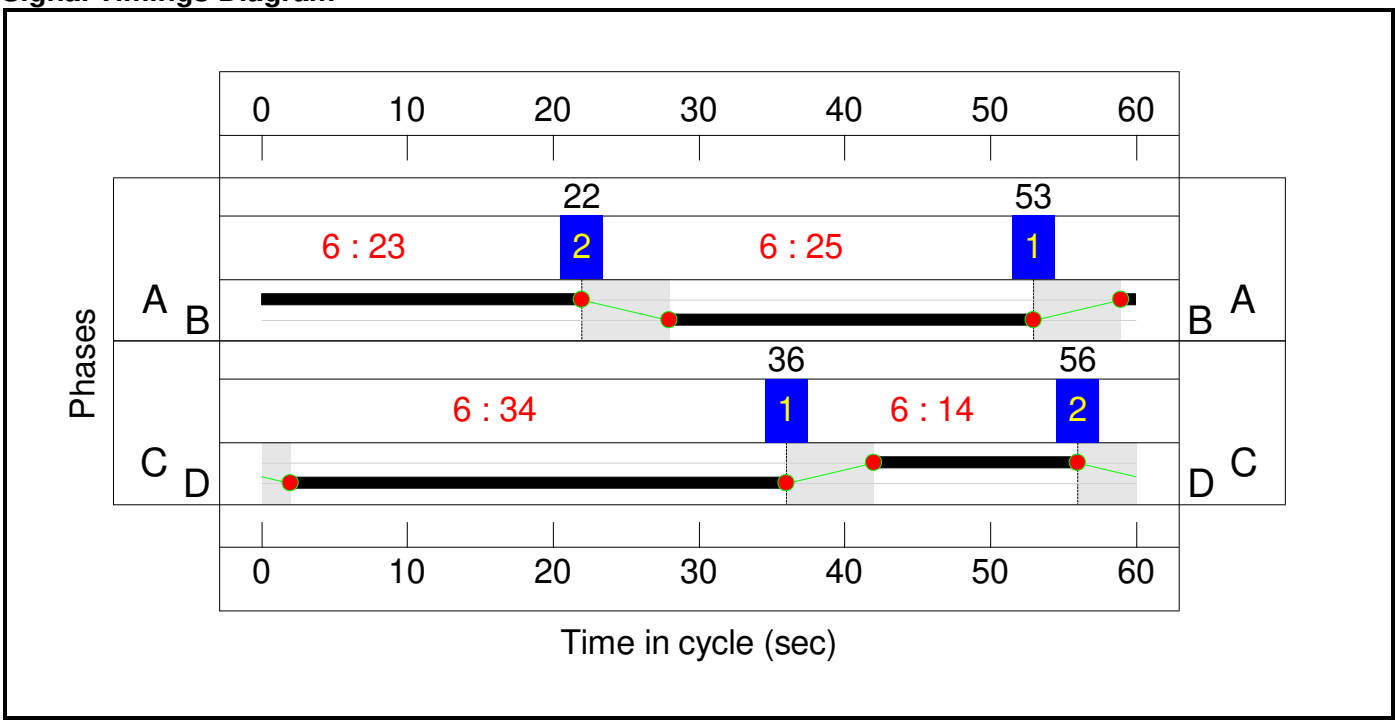
C2 - Cherwell
Stage Timings
Stage Stream: 1

Stage	1	2
Duration	23	25
Change Point	53	22

Stage Stream: 2

Stage	1	2
Duration	14	34
Change Point	36	56

Signal Timings Diagram



C3 - Ardley

Stage Timings

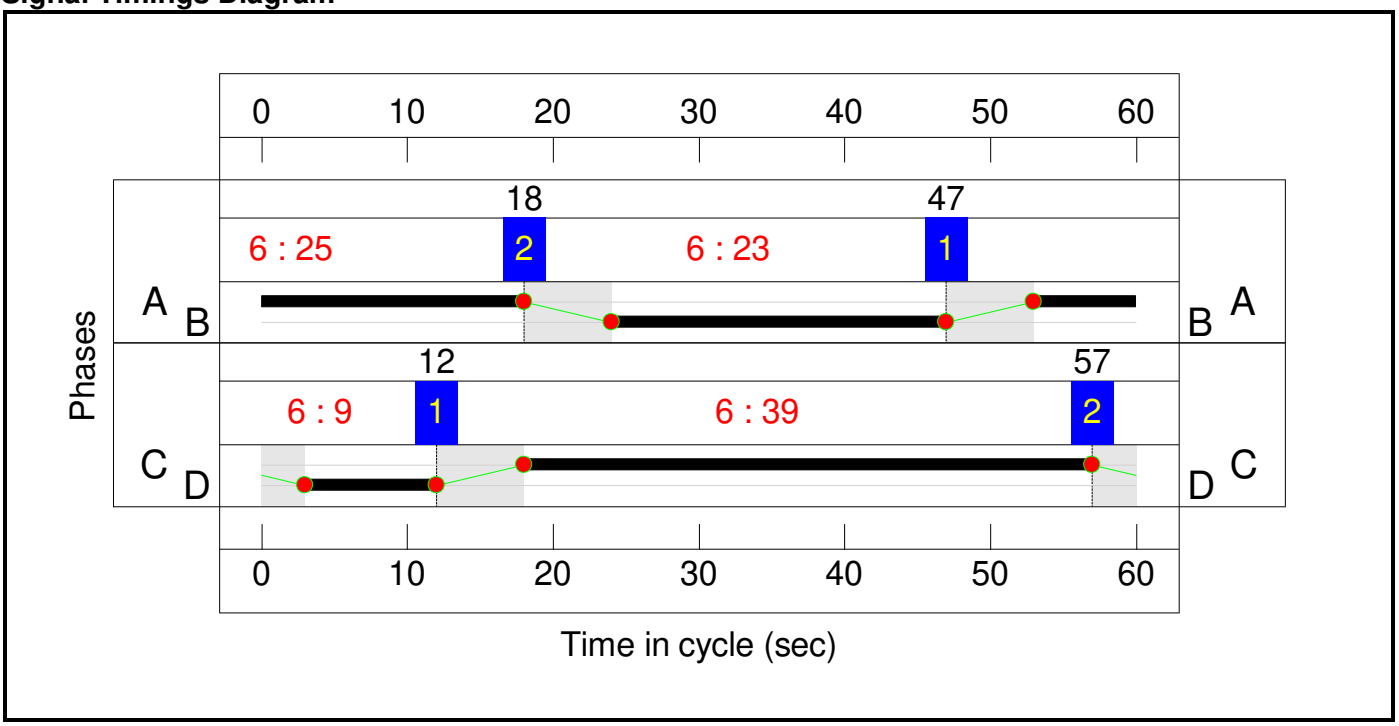
Stage Stream: 1

Stage	1	2
Duration	25	23
Change Point	47	18

Stage Stream: 2

Stage	1	2
Duration	39	9
Change Point	12	57

Signal Timings Diagram



C4 - Baynards Green

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	30	18
Change Point	49	25

Stage Stream: 2

Stage	1	2
Duration	31	17
Change Point	17	54

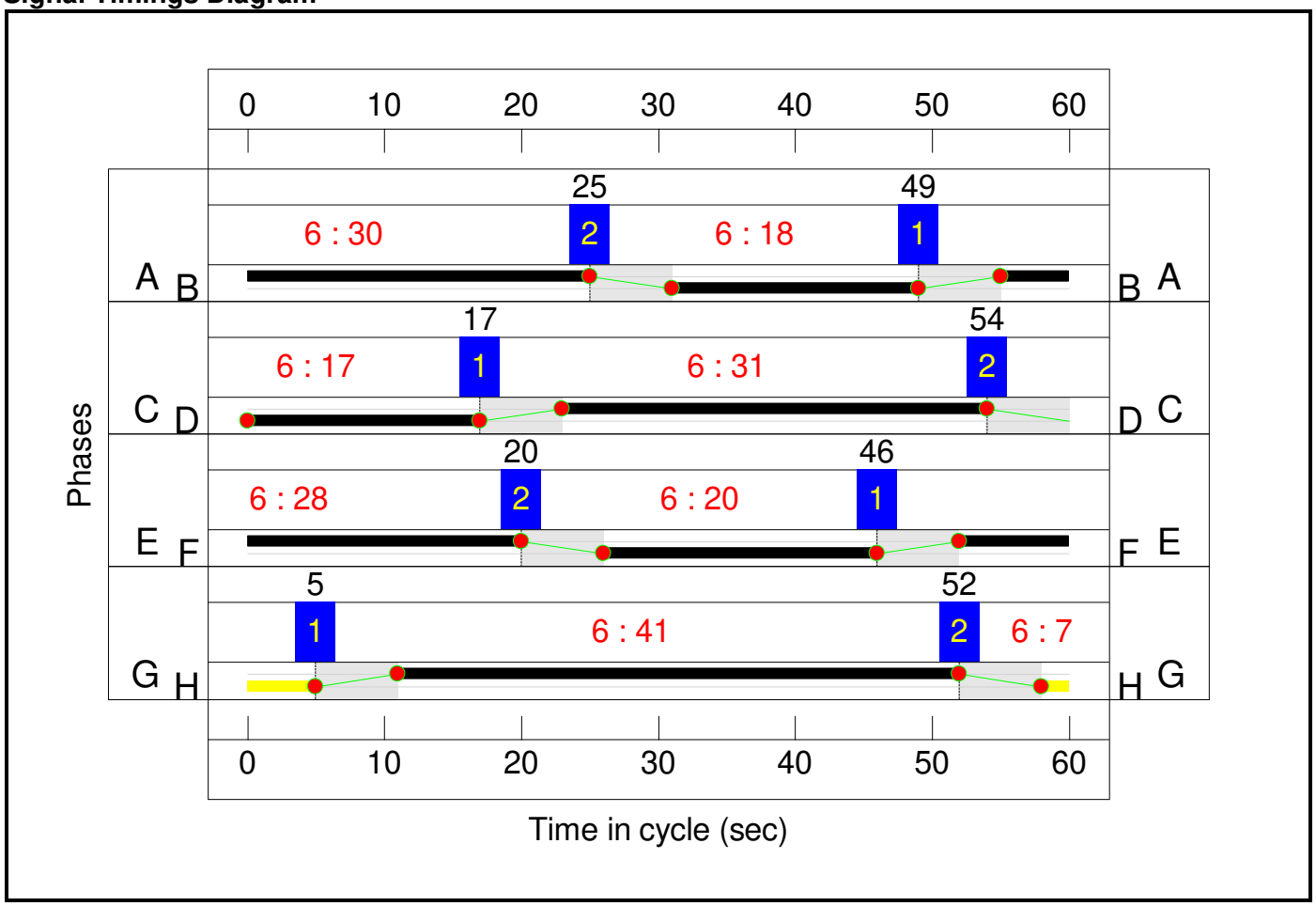
Stage Stream: 3

Stage	1	2
Duration	28	20
Change Point	46	20

Stage Stream: 4

Stage	1	2
Duration	41	7
Change Point	5	52

Signal Timings Diagram



C5 - B4100 Roundabout

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	33	15
Change Point	51	30

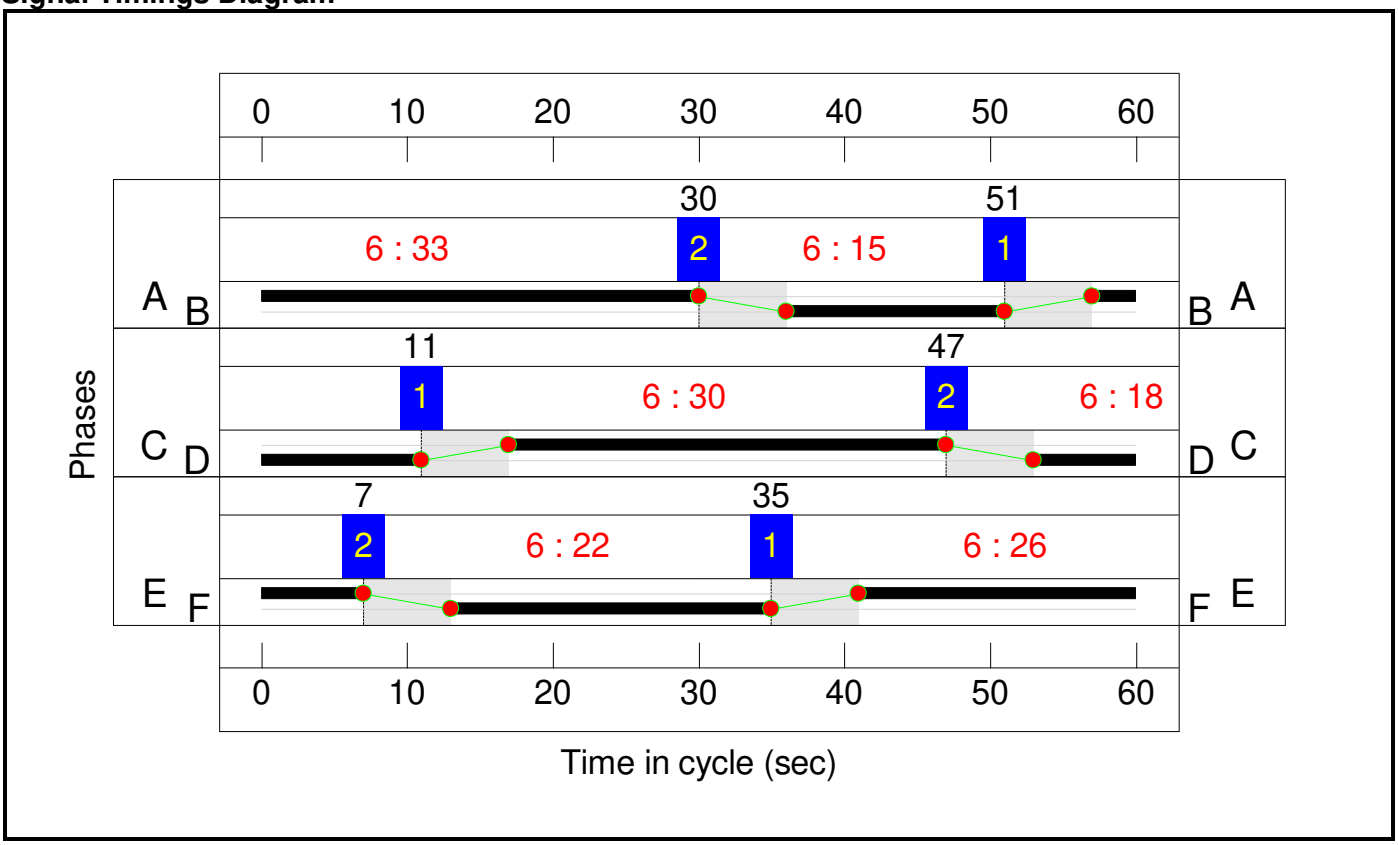
Stage Stream: 2

Stage	1	2
Duration	30	18
Change Point	11	47

Stage Stream: 3

Stage	1	2
Duration	26	22
Change Point	35	7

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: Option25 Network Model	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.7%**
J1: Padbury Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**56.4%**
1/1+1/2	A43 north Ahead	U	1:1	N/A	C1:B		1	28	-	783	1922:2058	929+590	51.6 : 51.6%
2/1	Ahead	U	N/A	N/A	-		-	-	-	870	Inf	Inf	0.0%
2/2	Ahead	U	N/A	N/A	-		-	-	-	504	Inf	Inf	0.0%
3/1	A43 south Ahead	U	1:2	N/A	C1:C		1	25	-	394	1886	817	48.2%
3/2	A43 south Ahead	U	1:2	N/A	C1:C		1	25	-	424	2019	875	48.5%
4/1	Ahead	U	N/A	N/A	-		-	-	-	705	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	431	Inf	Inf	0.0%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	1:2	N/A	C1:D		1	23	-	709	2058:1908	766+598	52.0 : 52.0%
5/3	Junction 10 s'bound offslip Ahead	U	1:2	N/A	C1:D		1	23	-	200	2058	823	24.3%
6/1	Right	U	1:1	N/A	C1:A		1	20	-	391	1980	693	56.4%
6/2	Right	U	1:1	N/A	C1:A		1	20	-	200	2120	742	27.0%
7/1	Ahead	U	N/A	N/A	-		-	-	-	1136	Inf	Inf	0.0%
J2: Cherwell	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**72.2%**
1/2+1/1	A43 Left Ahead	U	2:1	N/A	C2:A		1	23	-	870	1980:1980	792+498	67.4 : 67.4%
1/3	A43 Ahead	U	2:1	N/A	C2:A		1	23	-	504	1980	792	63.6%
2/1	A43 Ahead	O	N/A	N/A	-		-	-	-	689	Inf	1157	59.5%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	740	Inf	1157	63.9%
3/1	Ahead	U	N/A	N/A	-		-	-	-	394	Inf	Inf	0.0%
3/2	Ahead	U	N/A	N/A	-		-	-	-	424	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	604	Inf	Inf	0.0%

5/1	MSA Left	U	2:2	N/A	C2:C		1	14	-	258	1871	468	55.2%
5/2	MSA Left Ahead	U	2:2	N/A	C2:C		1	14	-	342	1965	491	69.6%
6/1	Ahead	U	N/A	N/A	-		-	-	-	549	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	702	Inf	Inf	0.0%
7/1	Ahead	U	N/A	N/A	-		-	-	-	818	Inf	Inf	0.0%
7/2	Right	U	N/A	N/A	-		-	-	-	740	Inf	Inf	0.0%
8/1+8/2	Ahead Right	U	2:1	N/A	C2:B		1	25	-	740	1886:2000	371+654	72.2 : 72.2%
9/1	Right	U	N/A	N/A	-		-	-	-	129	Inf	Inf	0.0%
10/1+10/2	Ahead	U	2:2	N/A	C2:D		1	34	-	472	2120:2120	653+717	34.5 : 34.5%
10/3	Ahead	U	2:2	N/A	C2:D		1	34	-	534	2120	1237	43.2%
10/4	Ahead	U	2:2	N/A	C2:D		1	34	-	504	2120	1237	40.8%
11/1	M40 SB onslip Ahead	U	N/A	N/A	-		-	-	-	354	Inf	Inf	0.0%
11/2	M40 SB onslip Ahead	U	N/A	N/A	-		-	-	-	376	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	354	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	376	Inf	Inf	0.0%
J3: Ardley roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**74.6%**
1/1+1/2	Ahead	O	N/A	N/A	-		-	-	-	359	Inf : Inf	152+358	70.4 : 70.4%
2/1	Ahead	U	3:2	N/A	C3:C		1	39	-	549	1980	1320	41.6%
2/2	Ahead	U	3:2	N/A	C3:C		1	39	-	702	1980	1320	53.2%
3/1		U	N/A	N/A	-		-	-	-	894	Inf	Inf	0.0%
4/1	Ahead	U	N/A	N/A	-		-	-	-	665	Inf	Inf	0.0%
4/2	Right Ahead	U	N/A	N/A	-		-	-	-	833	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	450	Inf	Inf	0.0%
6/1+6/2	Right	U	3:2	N/A	C3:D		1	9	-	247	1980:1980	224+253	51.7 : 51.7%
7/1	Ahead	U	3:1	N/A	C3:B		1	23	-	201	1980	792	25.4%
7/2	Right	U	3:1	N/A	C3:B		1	23	-	467	2120	848	55.1%
7/3	Right	U	3:1	N/A	C3:B		1	23	-	315	2120	848	37.1%

8/1	Ahead	U	N/A	N/A	-		-	-	-	713	Inf	Inf	0.0%
8/2	Ahead	U	N/A	N/A	-		-	-	-	716	Inf	Inf	0.0%
9/1	Left	O	N/A	N/A	-		-	-	-	291	Inf	724	40.2%
9/2	Ahead	O	N/A	N/A	-		-	-	-	325	Inf	565	57.6%
10/1	Left	U	N/A	N/A	-		-	-	-	894	Inf	Inf	0.0%
10/2	Ahead	U	N/A	N/A	-		-	-	-	713	Inf	Inf	0.0%
10/3	Right Ahead	U	N/A	N/A	-		-	-	-	963	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	616	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	518	Inf	Inf	0.0%
12/2	Ahead	U	N/A	N/A	-		-	-	-	1139	Inf	Inf	0.0%
13/1	Right	U	N/A	N/A	-		-	-	-	858	Inf	Inf	0.0%
13/2	Right	U	N/A	N/A	-		-	-	-	642	Inf	Inf	0.0%
13/3	Right	U	N/A	N/A	-		-	-	-	711	Inf	Inf	0.0%
14/1	Ahead	U	N/A	N/A	-		-	-	-	956	Inf	Inf	0.0%
14/2	Ahead	U	N/A	N/A	-		-	-	-	175	Inf	Inf	0.0%
15/1	Left Ahead	U	3:1	N/A	C3:A		1	25	-	640	1980	858	74.6%
15/2+15/3	Ahead	U	3:1	N/A	C3:A		1	25	-	1038	2120:2120	774+777	66.9 : 66.9%
16/1		U	N/A	N/A	-		-	-	-	956	Inf	Inf	0.0%
16/2		U	N/A	N/A	-		-	-	-	175	Inf	Inf	0.0%
17/1	Ahead	U	N/A	N/A	-		-	-	-	640	Inf	Inf	0.0%
17/2	Ahead	U	N/A	N/A	-		-	-	-	1038	Inf	Inf	0.0%
18/1	Ahead	U	N/A	N/A	-		-	-	-	1678	Inf	Inf	0.0%
J4: Baynards Green	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.7%**
1/2+1/1	A43 North Left	U	4:1	N/A	C4:B		1	18	-	1008	2120:1980	671+627	80.6 : 74.5%
1/3+1/4	A43 North Ahead	U	4:1	N/A	C4:B		1	18	-	939	2120:1922	671+609	73.3 : 73.4%
2/1	Ahead	U	4:2	N/A	C4:C		1	31	-	512	2120	1131	45.3%
2/2	Ahead Right	U	4:2	N/A	C4:C		1	31	-	465	2120	1131	41.1%
3/2+3/1	B4100 East Left Ahead	U	4:2	N/A	C4:D		1	17	-	952	2120:1980	636+506	83.3 : 83.3%

3/3+3/4	B4100 East Ahead	U	4:2	N/A	C4:D		1	17	-	983	2120:2120	581+580	84.7 : 84.7%
4/1	Ahead	U	N/A	N/A	-		-	-	-	522	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	417	Inf	Inf	0.0%
5/1	Right	U	4:3	N/A	C4:E		1	28	-	460	1980	957	48.1%
5/2	Right	U	4:3	N/A	C4:E		1	28	-	530	2120	1025	51.7%
5/3	Right	U	4:3	N/A	C4:E		1	28	-	492	2120	1025	48.0%
5/4	Right	U	4:3	N/A	C4:E		1	28	-	491	2120	1025	47.9%
6/1	A43 South Ahead Ahead2	U	4:3	N/A	C4:F		1	20	-	518	1928	675	76.8%
6/2+6/3	A43 South Ahead	U	4:3	N/A	C4:F		1	20	-	1139	1922:1922	673+673	84.6 : 84.7%
7/1	Ahead	U	4:4	N/A	C4:G		1	41	-	998	2120	1484	67.3%
7/2	Ahead	U	4:4	N/A	C4:G		1	41	-	1061	2120	1484	71.5%
7/3	Ahead Right	U	4:4	N/A	C4:G		1	41	-	1061	2120	1484	71.5%
8/1		U	N/A	N/A	-		-	-	-	510	Inf	Inf	0.0%
9/1+9/2	B4100 West Left Ahead	U	4:4	N/A	C4:H		1	7	-	331	1889:1894	252+253	65.9 : 65.3%
10/1		U	N/A	N/A	-		-	-	-	1035	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	1061	Inf	Inf	0.0%
10/3		U	N/A	N/A	-		-	-	-	1051	Inf	Inf	0.0%
11/1	Ahead	U	4:1	N/A	C4:A		1	30	-	133	1980	1023	13.0%
11/2	Right Ahead	U	4:1	N/A	C4:A		1	30	-	171	2120	1095	15.6%
12/1	Ahead	U	N/A	N/A	-		-	-	-	522	Inf	Inf	0.0%
12/2	Ahead	U	N/A	N/A	-		-	-	-	417	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	522	Inf	Inf	0.0%
13/2		U	N/A	N/A	-		-	-	-	417	Inf	Inf	0.0%
14/1	Ahead	U	N/A	N/A	-		-	-	-	1657	Inf	Inf	0.0%
15/1	Ahead	U	N/A	N/A	-		-	-	-	1657	Inf	Inf	0.0%
J5: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**77.9%**
1/1		U	N/A	N/A	-		-	-	-	568	Inf	Inf	0.0%
1/2		U	N/A	N/A	-		-	-	-	373	Inf	Inf	0.0%

2/2+2/1	B4100 east Left Ahead	U	5:3	N/A	C5:F		1	22	-	742	2120:1908	710+319	72.1 : 72.1%
2/3	B4100 east Ahead	U	5:3	N/A	C5:F		1	22	-	507	2043	783	64.7%
3/1	Ahead	U	N/A	N/A	-		-	-	-	500	Inf	Inf	0.0%
3/2	Ahead	U	N/A	N/A	-		-	-	-	283	Inf	Inf	0.0%
4/1	A43 Left	U	5:2	N/A	C5:D		1	18	-	440	2019	639	68.8%
4/2+4/3	A43 Left Ahead	U	5:2	N/A	C5:D		1	18	-	696	2043:1908	611+282	77.9 : 77.9%
5/1+5/2	B4100 west Ahead	U	5:1	N/A	C5:B		1	15	-	721	1980:2120	449+481	77.6 : 77.6%
5/3+5/4	B4100 west Ahead	U	5:1	N/A	C5:B		1	15	-	553	2120:2120	461+483	58.6 : 58.6%
6/1	Right	U	5:1	N/A	C5:A		1	33	-	220	1942	1100	20.0%
7/1	Right	U	5:3	N/A	C5:E		1	26	-	270	1966	885	30.5%
7/2	Right	U	5:3	N/A	C5:E		1	26	-	283	2102	946	29.9%
8/1	Ahead	U	5:2	N/A	C5:C		1	30	-	512	1966	1016	50.4%
8/2	Ahead	U	5:2	N/A	C5:C		1	30	-	507	2102	1086	46.7%
9/1	Ahead	U	N/A	N/A	-		-	-	-	783	Inf	Inf	0.0%

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: Option25 Network Model	**-**	**-**	**2763**	**0**	**0**	**77.9**	**29.2**	**0.0**	**107.1**	**-**	**-**	**-**	**-**
J1: Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**6.4**	**2.2**	**0.0**	**8.6**	**-**	**-**	**-**	**-**
1/1+1/2	783	783	-	-	-	1.1	0.5	-	1.6	7.4	19.7	0.5	20.3
2/1	870	870	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	504	504	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	394	394	-	-	-	0.7	0.5	-	1.2	11.0	4.4	0.5	4.8
3/2	424	424	-	-	-	0.9	0.5	-	1.4	11.9	5.7	0.5	6.1
4/1	705	705	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	431	431	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	709	709	-	-	-	2.6	0.5	-	3.1	15.9	4.9	0.5	5.4
5/3	200	200	-	-	-	0.7	0.2	-	0.8	14.9	2.2	0.2	2.3
6/1	391	391	-	-	-	0.3	0.0	-	0.3	2.5	0.4	0.0	0.4
6/2	200	200	-	-	-	0.1	0.0	-	0.1	2.5	0.2	0.0	0.2
7/1	1136	1136	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Cherwell	**-**	**-**	**1429**	**0**	**0**	**14.4**	**6.5**	**0.0**	**21.0**	**-**	**-**	**-**	**-**
1/2+1/1	870	870	-	-	-	4.7	1.0	-	5.8	23.8	8.2	1.0	9.2
1/3	504	504	-	-	-	1.7	0.9	-	2.6	18.5	5.4	0.9	6.3
2/1	689	689	689	0	0	0.7	0.7	-	1.4	7.5	10.1	0.7	10.8
2/2	740	740	740	0	0	0.1	0.9	-	1.0	5.0	4.1	0.9	5.0
3/1	394	394	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	424	424	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	604	604	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	258	258	-	-	-	1.4	0.6	-	2.0	28.1	3.7	0.6	4.3
5/2	342	342	-	-	-	1.9	1.1	-	3.1	32.3	5.1	1.1	6.3
6/1	549	549	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	702	702	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

7/1	818	818	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	740	740	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1+8/2	740	740	-	-	-	2.2	1.3	-	3.5	16.9	4.2	1.3	5.5
9/1	129	129	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1+10/2	472	472	-	-	-	1.6	0.0	-	1.6	12.4	3.7	0.0	3.7
10/3	534	534	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/4	504	504	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	354	354	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	376	376	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	354	354	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	376	376	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J3: Ardley roundabout	**-**	**-**	**1334**	**0**	**0**	**12.5**	**7.2**	**0.0**	**19.7**	**-**	**-**	**-**	**-**
1/1+1/2	359	359	718	0	0	0.3	1.2	-	1.5	15.2	1.9	1.2	3.1
2/1	549	549	-	-	-	0.1	0.4	-	0.4	2.7	0.4	0.4	0.7
2/2	702	702	-	-	-	1.0	0.6	-	1.6	8.2	8.3	0.6	8.9
3/1	894	894	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	665	665	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	833	833	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	450	450	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1+6/2	247	247	-	-	-	1.4	0.5	-	1.9	27.5	2.0	0.5	2.5
7/1	201	201	-	-	-	0.5	0.2	-	0.7	12.5	2.2	0.2	2.4
7/2	467	467	-	-	-	0.6	0.6	-	1.2	9.5	1.2	0.6	1.8
7/3	315	315	-	-	-	1.9	0.3	-	2.1	24.5	4.8	0.3	5.1
8/1	713	713	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	716	716	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	291	291	291	0	0	0.0	0.3	-	0.4	4.7	1.0	0.3	1.3
9/2	325	325	325	0	0	0.5	0.7	-	1.1	12.6	2.9	0.7	3.6
10/1	894	894	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	713	713	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/3	963	963	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

11/1	616	616	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	518	518	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	1139	1139	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	858	858	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	642	642	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/3	711	711	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	956	956	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/2	175	175	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	640	640	-	-	-	2.5	1.4	-	4.0	22.4	8.9	1.4	10.3
15/2+15/3	1038	1038	-	-	-	3.7	1.0	-	4.7	16.3	6.5	1.0	7.5
16/1	956	956	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/2	175	175	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/1	640	640	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/2	1038	1038	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
18/1	1678	1678	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J4: Baynards Green	**-**	**-**	**0**	**0**	**0**	**30.1**	**8.3**	**0.0**	**38.5**	**-**	**-**	**-**	**-**
1/2+1/1	1008	1008	-	-	-	5.2	1.7	-	6.9	24.7	8.3	1.7	10.0
1/3+1/4	939	939	-	-	-	4.8	1.4	-	6.1	23.5	7.2	1.4	8.6
2/1	512	512	-	-	-	0.1	0.0	-	0.1	0.5	0.3	0.0	0.3
2/2	465	465	-	-	-	0.1	0.0	-	0.1	0.5	0.3	0.0	0.3
3/2+3/1	952	952	-	-	-	4.8	0.0	-	4.8	18.0	11.6	0.0	11.6
3/3+3/4	983	983	-	-	-	4.7	0.0	-	4.7	17.1	7.4	0.0	7.4
4/1	522	522	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	417	417	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	460	460	-	-	-	0.1	0.0	-	0.1	0.8	0.7	0.0	0.7
5/2	530	530	-	-	-	0.0	0.0	-	0.0	0.0	0.6	0.0	0.6
5/3	492	492	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/4	491	491	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	518	518	-	-	-	2.5	1.6	-	4.1	28.6	7.6	1.6	9.2
6/2+6/3	1139	1139	-	-	-	5.7	2.7	-	8.4	26.5	8.7	2.7	11.4

7/1	998	998	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	1061	1061	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/3	1061	1061	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	510	510	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1+9/2	331	331	-	-	-	2.3	0.9	-	3.2	35.0	2.6	0.9	3.6
10/1	1035	1035	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	1061	1061	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/3	1051	1051	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	133	133	-	-	-	0.0	0.0	-	0.0	0.3	0.1	0.0	0.1
11/2	171	171	-	-	-	0.0	0.0	-	0.0	0.3	0.1	0.0	0.1
12/1	522	522	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	417	417	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	522	522	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	417	417	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	1657	1657	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	1657	1657	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J5: Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**14.3**	**5.0**	**0.0**	**19.4**	**-**	**-**	**-**	**-**
1/1	568	568	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
1/2	373	373	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2+2/1	742	742	-	-	-	3.0	1.3	-	4.2	20.6	6.8	1.3	8.1
2/3	507	507	-	-	-	2.1	0.9	-	3.0	21.7	6.9	0.9	7.8
3/1	500	500	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	283	283	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	440	440	-	-	-	2.7	1.1	-	3.8	30.8	7.1	1.1	8.2
4/2+4/3	696	696	-	-	-	3.5	1.7	-	5.2	26.9	7.8	1.7	9.5
5/1+5/2	721	721	-	-	-	2.4	0.0	-	2.4	12.0	7.1	0.0	7.1
5/3+5/4	553	553	-	-	-	0.6	0.0	-	0.6	4.1	0.5	0.0	0.5
6/1	220	220	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	270	270	-	-	-	0.0	0.0	-	0.0	0.1	0.4	0.0	0.4
7/2	283	283	-	-	-	0.0	0.0	-	0.0	0.1	0.5	0.0	0.5

8/1	512	512	-	-	-	0.1	0.0	-	0.1	0.4	0.5	0.0	0.5
8/2	507	507	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	783	783	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 - Padbury	Stream: 1 PRC for Signalled Lanes (%):	59.5	Total Delay for Signalled Lanes (pcuHr):	2.02	Cycle Time (s):	60
C1 - Padbury	Stream: 2 PRC for Signalled Lanes (%):	73.1	Total Delay for Signalled Lanes (pcuHr):	6.57	Cycle Time (s):	60
C2 - Cherwell	Stream: 1 PRC for Signalled Lanes (%):	24.6	Total Delay for Signalled Lanes (pcuHr):	11.81	Cycle Time (s):	60
C2 - Cherwell	Stream: 2 PRC for Signalled Lanes (%):	29.3	Total Delay for Signalled Lanes (pcuHr):	6.72	Cycle Time (s):	60
C3 - Ardley	Stream: 1 PRC for Signalled Lanes (%):	20.7	Total Delay for Signalled Lanes (pcuHr):	12.74	Cycle Time (s):	60
C3 - Ardley	Stream: 2 PRC for Signalled Lanes (%):	69.2	Total Delay for Signalled Lanes (pcuHr):	3.90	Cycle Time (s):	60
C4 - Baynards Green	Stream: 1 PRC for Signalled Lanes (%):	11.7	Total Delay for Signalled Lanes (pcuHr):	13.07	Cycle Time (s):	60
C4 - Baynards Green	Stream: 2 PRC for Signalled Lanes (%):	6.2	Total Delay for Signalled Lanes (pcuHr):	9.58	Cycle Time (s):	60
C4 - Baynards Green	Stream: 3 PRC for Signalled Lanes (%):	6.2	Total Delay for Signalled Lanes (pcuHr):	12.61	Cycle Time (s):	60
C4 - Baynards Green	Stream: 4 PRC for Signalled Lanes (%):	25.9	Total Delay for Signalled Lanes (pcuHr):	3.21	Cycle Time (s):	60
C5 - B4100 Roundabout	Stream: 1 PRC for Signalled Lanes (%):	16.0	Total Delay for Signalled Lanes (pcuHr):	3.03	Cycle Time (s):	60
C5 - B4100 Roundabout	Stream: 2 PRC for Signalled Lanes (%):	15.5	Total Delay for Signalled Lanes (pcuHr):	9.01	Cycle Time (s):	60
C5 - B4100 Roundabout	Stream: 3 PRC for Signalled Lanes (%):	24.8	Total Delay for Signalled Lanes (pcuHr):	7.32	Cycle Time (s):	60
	PRC Over All Lanes (%):	6.2	Total Delay Over All Lanes(pcuHr):	107.09		

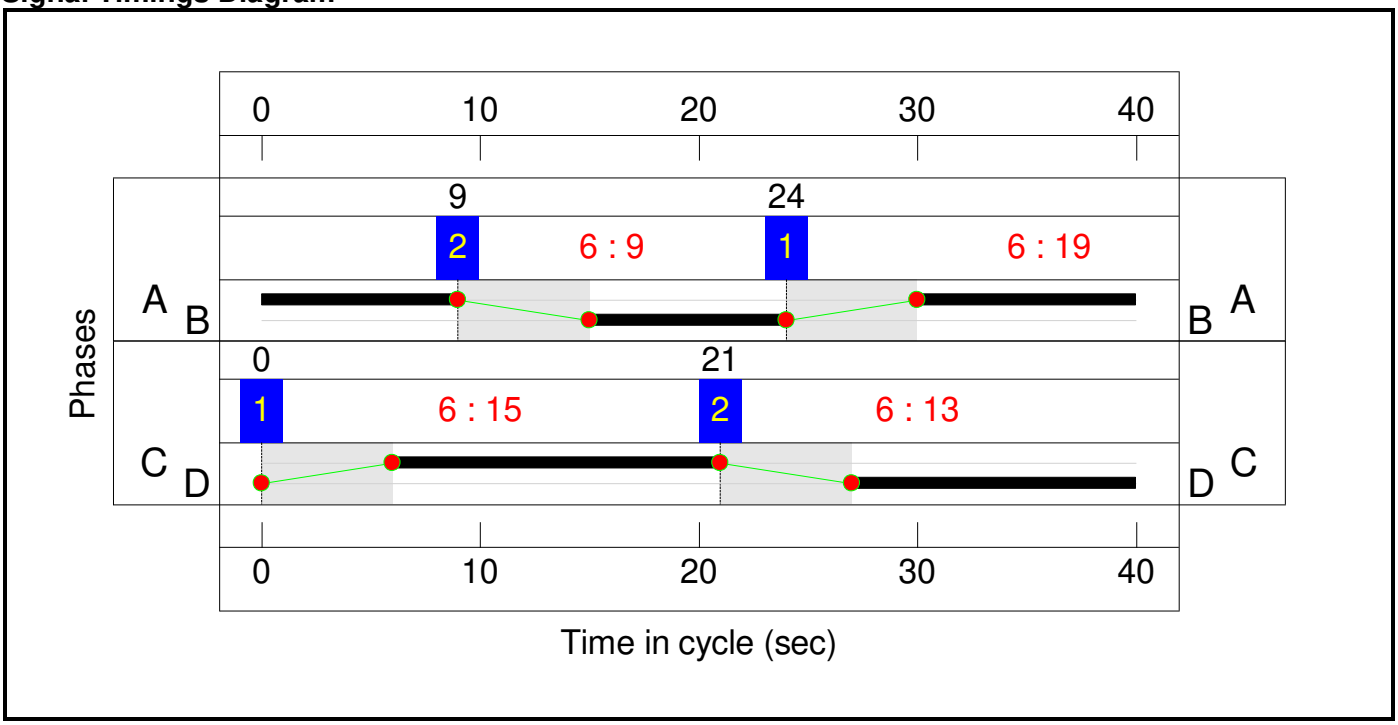
Scenario 3: '2031 Option 25 - Off Peak' (FG3: '2031 Opt 25 - off-peak', Plan 1: 'Network Control Plan 1')
C1 - Padbury
Stage Timings
Stage Stream: 1

Stage	1	2
Duration	19	9
Change Point	24	9

Stage Stream: 2

Stage	1	2
Duration	15	13
Change Point	0	21

Signal Timings Diagram



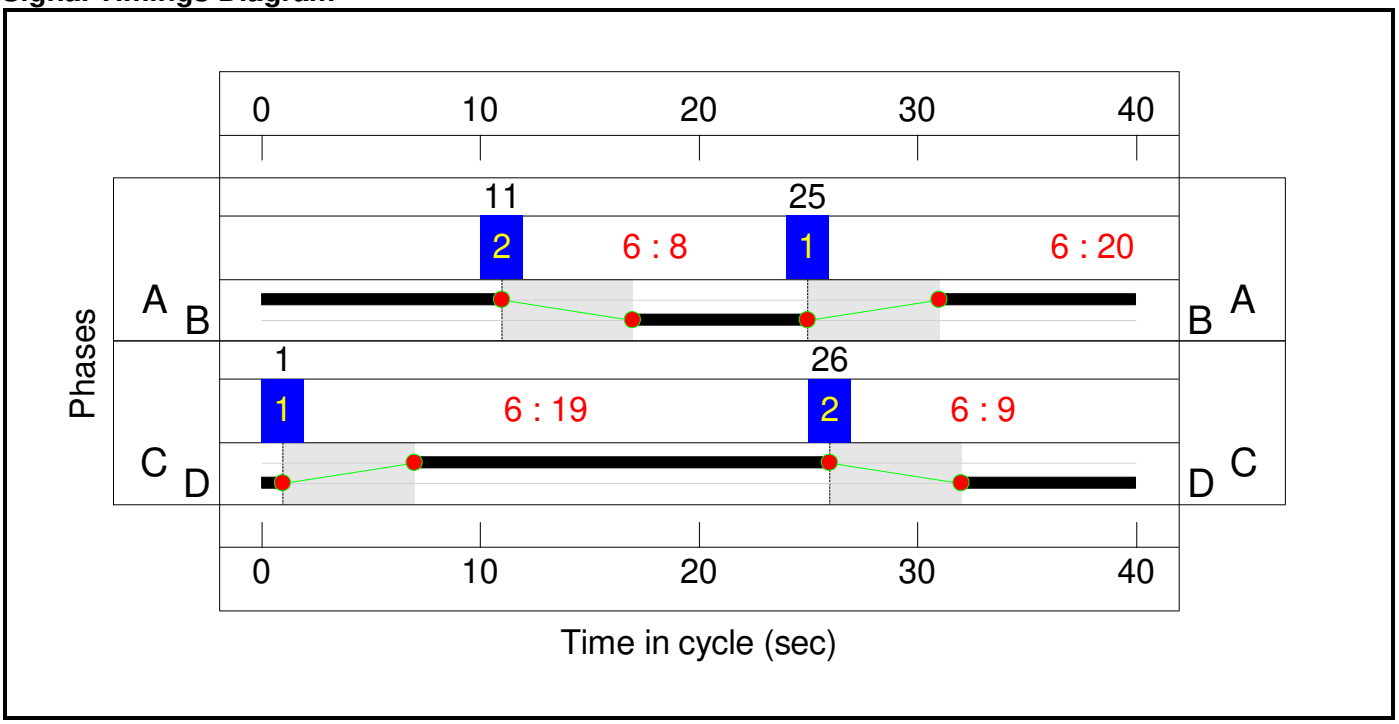
C2 - Cherwell
Stage Timings
Stage Stream: 1

Stage	1	2
Duration	20	8
Change Point	25	11

Stage Stream: 2

Stage	1	2
Duration	19	9
Change Point	1	26

Signal Timings Diagram



C3 - Ardley

Stage Timings

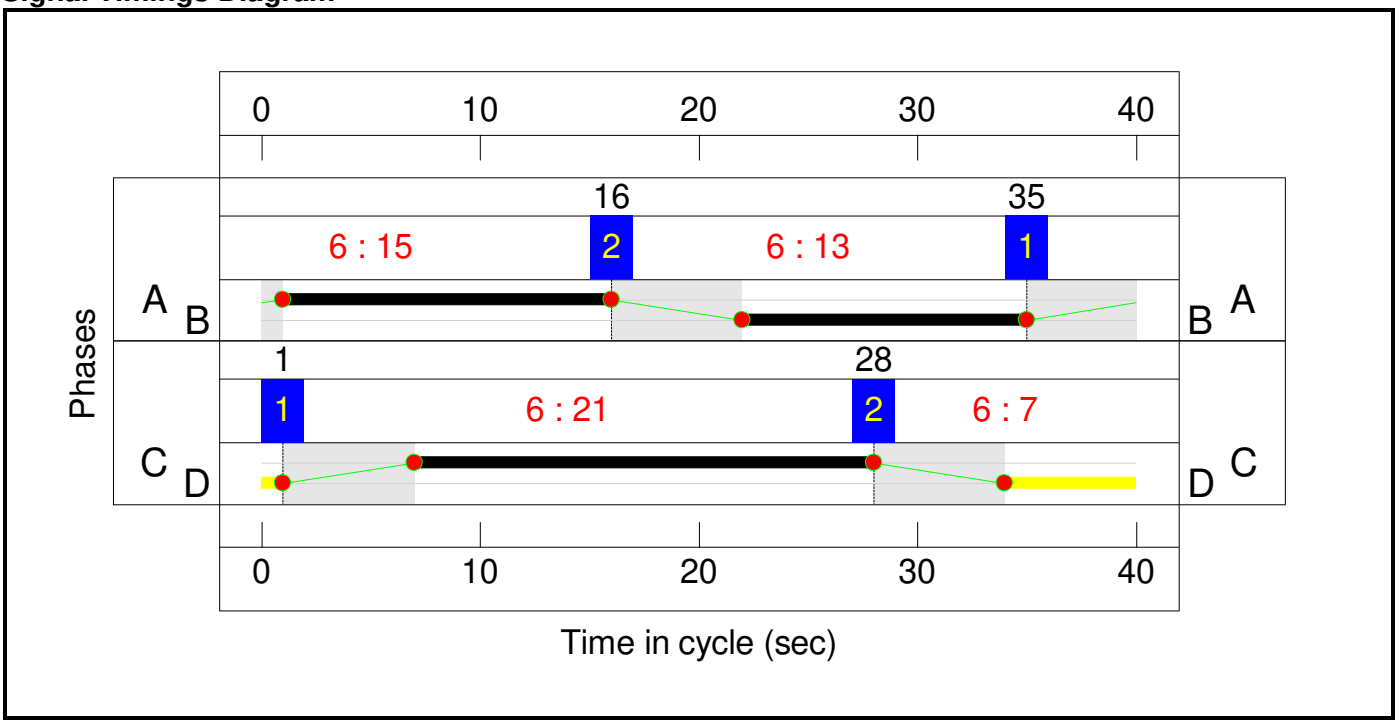
Stage Stream: 1

Stage	1	2
Duration	15	13
Change Point	35	16

Stage Stream: 2

Stage	1	2
Duration	21	7
Change Point	1	28

Signal Timings Diagram



C4 - Baynards Green

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	16	12
Change Point	39	21

Stage Stream: 2

Stage	1	2
Duration	19	9
Change Point	19	4

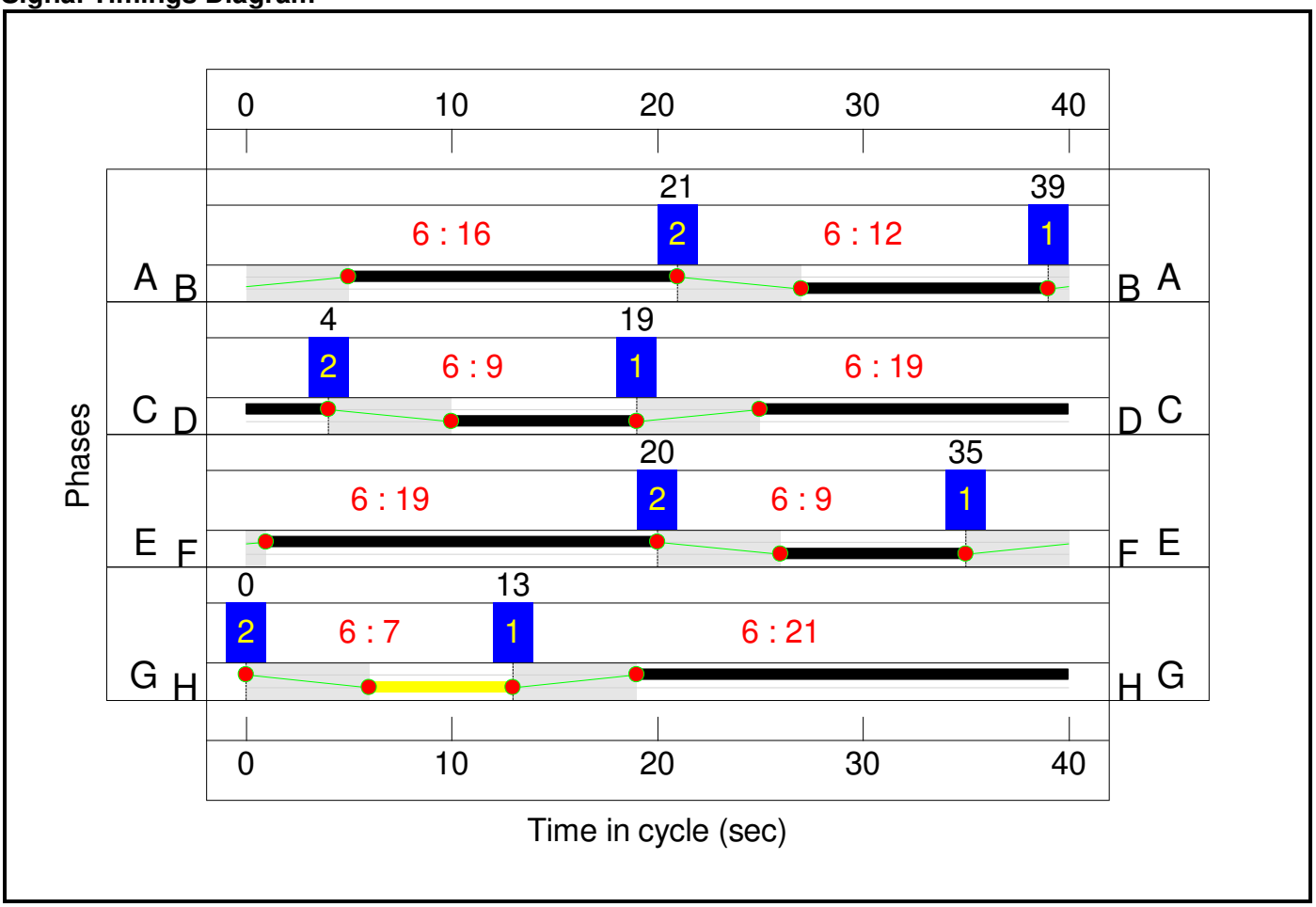
Stage Stream: 3

Stage	1	2
Duration	19	9
Change Point	35	20

Stage Stream: 4

Stage	1	2
Duration	21	7
Change Point	13	0

Signal Timings Diagram



C5 - B4100 Roundabout

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	11	17
Change Point	6	23

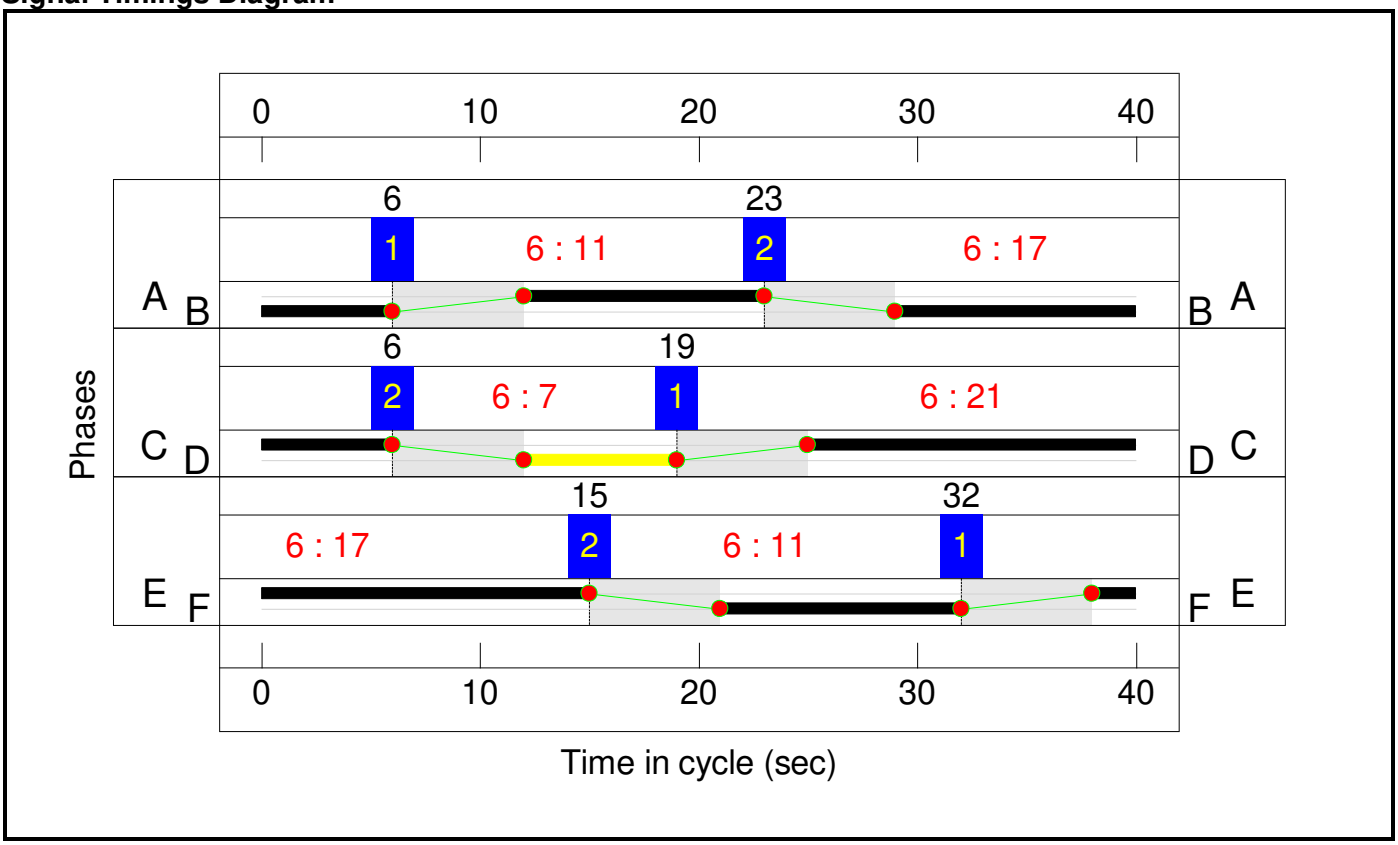
Stage Stream: 2

Stage	1	2
Duration	21	7
Change Point	19	6

Stage Stream: 3

Stage	1	2
Duration	17	11
Change Point	32	15

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: Option25 Network Model	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**35.5%**
J1: Padbury Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**33.6%**
1/1+1/2	A43 north Ahead	U	1:1	N/A	C1:B		1	9	-	263	1922:2058	480+515	18.7 : 33.6%
2/1	Ahead	U	N/A	N/A	-		-	-	-	247	Inf	Inf	0.0%
2/2	Ahead	U	N/A	N/A	-		-	-	-	187	Inf	Inf	0.0%
3/1	A43 south Ahead	U	1:2	N/A	C1:C		1	15	-	60	1886	754	8.0%
3/2	A43 south Ahead	U	1:2	N/A	C1:C		1	15	-	112	2019	808	13.9%
4/1	Ahead	U	N/A	N/A	-		-	-	-	118	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	139	Inf	Inf	0.0%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	1:2	N/A	C1:D		1	13	-	242	2058:1908	720+227	25.5 : 25.5%
5/3	Junction 10 s'bound offslip Ahead	U	1:2	N/A	C1:D		1	13	-	14	2058	720	1.9%
6/1	Right	U	1:1	N/A	C1:A		1	19	-	157	1980	990	15.9%
6/2	Right	U	1:1	N/A	C1:A		1	19	-	14	2120	1060	1.3%
7/1	Ahead	U	N/A	N/A	-		-	-	-	257	Inf	Inf	0.0%
J2: Cherwell	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**35.3%**
1/2+1/1	A43 Left Ahead	U	2:1	N/A	C2:A		1	20	-	247	1980:1980	1040+667	15.3 : 13.2%
1/3	A43 Ahead	U	2:1	N/A	C2:A		1	20	-	187	1980	1040	18.0%
2/1	A43 Ahead	O	N/A	N/A	-		-	-	-	144	Inf	1191	12.1%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	164	Inf	1191	13.8%
3/1	Ahead	U	N/A	N/A	-		-	-	-	60	Inf	Inf	0.0%
3/2	Ahead	U	N/A	N/A	-		-	-	-	112	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	154	Inf	Inf	0.0%

5/1	MSA Left	U	2:2	N/A	C2:C		1	19	-	72	1871	935	7.7%
5/2	MSA Left Ahead	U	2:2	N/A	C2:C		1	19	-	81	1965	982	8.2%
6/1	Ahead	U	N/A	N/A	-		-	-	-	167	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	232	Inf	Inf	0.0%
7/1	Ahead	U	N/A	N/A	-		-	-	-	172	Inf	Inf	0.0%
7/2	Right	U	N/A	N/A	-		-	-	-	164	Inf	Inf	0.0%
8/1+8/2	Ahead Right	U	2:1	N/A	C2:B		1	8	-	164	1886:2000	303+450	21.8 : 21.8%
9/1	Right	U	N/A	N/A	-		-	-	-	28	Inf	Inf	0.0%
10/1+10/2	Ahead	U	2:2	N/A	C2:D		1	9	-	98	2120:2120	392+319	13.8 : 13.8%
10/3	Ahead	U	2:2	N/A	C2:D		1	9	-	159	2120	530	30.0%
10/4	Ahead	U	2:2	N/A	C2:D		1	9	-	187	2120	530	35.3%
11/1	M40 SB onslip Ahead	U	N/A	N/A	-		-	-	-	90	Inf	Inf	0.0%
11/2	M40 SB onslip Ahead	U	N/A	N/A	-		-	-	-	80	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	90	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	80	Inf	Inf	0.0%
J3: Ardley roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**21.3%**
1/1+1/2	Ahead	O	N/A	N/A	-		-	-	-	68	Inf : Inf	205+867	6.3 : 6.3%
2/1	Ahead	U	3:2	N/A	C3:C		1	21	-	167	1980	1089	15.3%
2/2	Ahead	U	3:2	N/A	C3:C		1	21	-	232	1980	1089	21.3%
3/1		U	N/A	N/A	-		-	-	-	219	Inf	Inf	0.0%
4/1	Ahead	U	N/A	N/A	-		-	-	-	187	Inf	Inf	0.0%
4/2	Right Ahead	U	N/A	N/A	-		-	-	-	248	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	105	Inf	Inf	0.0%
6/1+6/2	Right	U	3:2	N/A	C3:D		1	7	-	36	1980:1980	331+265	6.0 : 6.0%
7/1	Ahead	U	3:1	N/A	C3:B		1	13	-	46	1980	693	6.6%
7/2	Right	U	3:1	N/A	C3:B		1	13	-	113	2120	742	15.2%
7/3	Right	U	3:1	N/A	C3:B		1	13	-	74	2120	742	10.0%
8/1	Ahead	U	N/A	N/A	-		-	-	-	138	Inf	Inf	0.0%

8/2	Ahead	U	N/A	N/A	-		-	-	-	170	Inf	Inf	0.0%
9/1	Left	O	N/A	N/A	-		-	-	-	95	Inf	908	10.5%
9/2	Ahead	O	N/A	N/A	-		-	-	-	76	Inf	856	8.9%
10/1	Left	U	N/A	N/A	-		-	-	-	219	Inf	Inf	0.0%
10/2	Ahead	U	N/A	N/A	-		-	-	-	138	Inf	Inf	0.0%
10/3	Right Ahead	U	N/A	N/A	-		-	-	-	206	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	171	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	44	Inf	Inf	0.0%
12/2	Ahead	U	N/A	N/A	-		-	-	-	323	Inf	Inf	0.0%
13/1	Right	U	N/A	N/A	-		-	-	-	206	Inf	Inf	0.0%
13/2	Right	U	N/A	N/A	-		-	-	-	138	Inf	Inf	0.0%
13/3	Right	U	N/A	N/A	-		-	-	-	151	Inf	Inf	0.0%
14/1	Ahead	U	N/A	N/A	-		-	-	-	282	Inf	Inf	0.0%
14/2	Ahead	U	N/A	N/A	-		-	-	-	91	Inf	Inf	0.0%
15/1	Left Ahead	U	3:1	N/A	C3:A		1	15	-	152	1980	792	19.2%
15/2+15/3	Ahead	U	3:1	N/A	C3:A		1	15	-	215	2120:2120	848+848	12.7 : 12.6%
16/1		U	N/A	N/A	-		-	-	-	282	Inf	Inf	0.0%
16/2		U	N/A	N/A	-		-	-	-	91	Inf	Inf	0.0%
17/1	Ahead	U	N/A	N/A	-		-	-	-	152	Inf	Inf	0.0%
17/2	Ahead	U	N/A	N/A	-		-	-	-	215	Inf	Inf	0.0%
18/1	Ahead	U	N/A	N/A	-		-	-	-	367	Inf	Inf	0.0%
J4: Baynards Green	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**33.9%**
1/2+1/1	A43 North Left	U	4:1	N/A	C4:B		1	12	-	323	2120:1980	689+644	29.6 : 18.5%
1/3+1/4	A43 North Ahead	U	4:1	N/A	C4:B		1	12	-	324	2120:1922	689+625	24.2 : 25.1%
2/1	Ahead	U	4:2	N/A	C4:C		1	19	-	179	2120	1060	16.9%
2/2	Ahead Right	U	4:2	N/A	C4:C		1	19	-	165	2120	1060	15.6%
3/2+3/1	B4100 East Left Ahead	U	4:2	N/A	C4:D		1	9	-	210	2120:1980	530+495	19.8 : 21.2%

3/3+3/4	B4100 East Ahead	U	4:2	N/A	C4:D		1	9	-	201	2120:2120	530+220	26.8 : 26.8%
4/1	Ahead	U	N/A	N/A	-		-	-	-	182	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	149	Inf	Inf	0.0%
5/1	Right	U	4:3	N/A	C4:E		1	19	-	118	1980	990	11.9%
5/2	Right	U	4:3	N/A	C4:E		1	19	-	105	2120	1060	9.9%
5/3	Right	U	4:3	N/A	C4:E		1	19	-	142	2120	1060	13.4%
5/4	Right	U	4:3	N/A	C4:E		1	19	-	59	2120	1060	5.6%
6/1	A43 South Ahead Ahead2	U	4:3	N/A	C4:F		1	9	-	44	1942	485	9.1%
6/2+6/3	A43 South Ahead	U	4:3	N/A	C4:F		1	9	-	323	1922:1922	480+480	33.9 : 33.3%
7/1	Ahead	U	4:4	N/A	C4:G		1	21	-	134	2120	1166	11.5%
7/2	Ahead	U	4:4	N/A	C4:G		1	21	-	305	2120	1166	26.2%
7/3	Ahead Right	U	4:4	N/A	C4:G		1	21	-	219	2120	1166	18.8%
8/1		U	N/A	N/A	-		-	-	-	133	Inf	Inf	0.0%
9/1+9/2	B4100 West Left Ahead	U	4:4	N/A	C4:H		1	7	-	106	1888:1894	378+379	14.3 : 13.7%
10/1		U	N/A	N/A	-		-	-	-	148	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	305	Inf	Inf	0.0%
10/3		U	N/A	N/A	-		-	-	-	217	Inf	Inf	0.0%
11/1	Ahead	U	4:1	N/A	C4:A		1	16	-	40	1980	842	4.8%
11/2	Right Ahead	U	4:1	N/A	C4:A		1	16	-	54	2120	901	6.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	182	Inf	Inf	0.0%
12/2	Ahead	U	N/A	N/A	-		-	-	-	149	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	182	Inf	Inf	0.0%
13/2		U	N/A	N/A	-		-	-	-	149	Inf	Inf	0.0%
14/1	Ahead	U	N/A	N/A	-		-	-	-	367	Inf	Inf	0.0%
15/1	Ahead	U	N/A	N/A	-		-	-	-	367	Inf	Inf	0.0%
J5: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**35.5%**
1/1		U	N/A	N/A	-		-	-	-	160	Inf	Inf	0.0%
1/2		U	N/A	N/A	-		-	-	-	96	Inf	Inf	0.0%

2/2+2/1	B4100 east Left Ahead	U	5:3	N/A	C5:F		1	11	-	220	2120:1908	636+222	25.6 : 25.6%
2/3	B4100 east Ahead	U	5:3	N/A	C5:F		1	11	-	56	2043	613	9.1%
3/1	Ahead	U	N/A	N/A	-		-	-	-	92	Inf	Inf	0.0%
3/2	Ahead	U	N/A	N/A	-		-	-	-	171	Inf	Inf	0.0%
4/1	A43 Left	U	5:2	N/A	C5:D		1	7	-	47	2019	404	11.6%
4/2+4/3	A43 Left Ahead	U	5:2	N/A	C5:D		1	7	-	210	2043:1908	409+183	35.5 : 35.5%
5/1+5/2	B4100 west Ahead	U	5:1	N/A	C5:B		1	17	-	191	1980:2120	741+748	12.8 : 12.8%
5/3+5/4	B4100 west Ahead	U	5:1	N/A	C5:B		1	17	-	206	2120:2120	186+907	18.8 : 18.8%
6/1	Right	U	5:1	N/A	C5:A		1	11	-	65	1942	583	11.2%
7/1	Right	U	5:3	N/A	C5:E		1	17	-	35	1966	885	4.0%
7/2	Right	U	5:3	N/A	C5:E		1	17	-	171	2102	946	18.1%
8/1	Ahead	U	5:2	N/A	C5:C		1	21	-	163	1966	1081	15.1%
8/2	Ahead	U	5:2	N/A	C5:C		1	21	-	56	2102	1156	4.8%
9/1	Ahead	U	N/A	N/A	-		-	-	-	263	Inf	Inf	0.0%

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: Option25 Network Model	**-**	**-**	**615**	**0**	**0**	**13.6**	**3.1**	**0.0**	**16.7**	**-**	**-**	**-**	**-**
J1: Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**2.0**	**0.5**	**0.0**	**2.5**	**-**	**-**	**-**	**-**
1/1+1/2	263	263	-	-	-	1.1	0.2	-	1.3	17.1	1.4	0.2	1.6
2/1	247	247	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	187	187	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	60	60	-	-	-	0.1	0.0	-	0.1	7.9	0.3	0.0	0.3
3/2	112	112	-	-	-	0.2	0.1	-	0.3	8.1	0.5	0.1	0.6
4/1	118	118	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	139	139	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	242	242	-	-	-	0.6	0.2	-	0.8	11.7	1.4	0.2	1.6
5/3	14	14	-	-	-	0.0	0.0	-	0.0	11.3	0.1	0.0	0.1
6/1	157	157	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	14	14	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	257	257	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Cherwell	**-**	**-**	**308**	**0**	**0**	**2.2**	**0.6**	**0.0**	**2.7**	**-**	**-**	**-**	**-**
1/2+1/1	247	247	-	-	-	0.2	0.1	-	0.3	4.1	0.3	0.1	0.4
1/3	187	187	-	-	-	0.1	0.1	-	0.2	3.1	0.7	0.1	0.8
2/1	144	144	144	0	0	0.0	0.1	-	0.1	1.7	0.0	0.1	0.1
2/2	164	164	164	0	0	0.0	0.1	-	0.1	1.8	0.0	0.1	0.1
3/1	60	60	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	112	112	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	154	154	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	72	72	-	-	-	0.1	0.0	-	0.1	7.3	0.4	0.0	0.4
5/2	81	81	-	-	-	0.1	0.0	-	0.2	7.2	0.5	0.0	0.5
6/1	167	167	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	232	232	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

7/1	172	172	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	164	164	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1+8/2	164	164	-	-	-	0.5	0.1	-	0.7	15.0	1.0	0.1	1.1
9/1	28	28	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1+10/2	98	98	-	-	-	0.3	0.0	-	0.3	10.2	0.6	0.0	0.6
10/3	159	159	-	-	-	0.6	0.0	-	0.6	12.5	1.0	0.0	1.0
10/4	187	187	-	-	-	0.3	0.0	-	0.3	6.5	0.5	0.0	0.5
11/1	90	90	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	80	80	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	90	90	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	80	80	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J3: Ardley roundabout	**-**	**-**	**307**	**0**	**0**	**1.4**	**0.8**	**0.0**	**2.2**	**-**	**-**	**-**	**-**
1/1+1/2	68	68	136	0	0	0.0	0.0	-	0.0	1.8	0.0	0.0	0.0
2/1	167	167	-	-	-	0.0	0.1	-	0.1	2.5	0.1	0.1	0.2
2/2	232	232	-	-	-	0.1	0.1	-	0.2	3.5	0.3	0.1	0.4
3/1	219	219	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	187	187	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	248	248	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	105	105	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1+6/2	36	36	-	-	-	0.1	0.0	-	0.2	16.4	0.2	0.0	0.2
7/1	46	46	-	-	-	0.1	0.0	-	0.1	11.5	0.4	0.0	0.4
7/2	113	113	-	-	-	0.1	0.1	-	0.2	6.0	0.7	0.1	0.8
7/3	74	74	-	-	-	0.2	0.1	-	0.2	11.5	0.5	0.1	0.6
8/1	138	138	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	170	170	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	95	95	95	0	0	0.0	0.1	-	0.1	2.2	0.0	0.1	0.1
9/2	76	76	76	0	0	0.0	0.0	-	0.0	2.3	0.0	0.0	0.0
10/1	219	219	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	138	138	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/3	206	206	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

11/1	171	171	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	44	44	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	323	323	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	206	206	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	138	138	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/3	151	151	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	282	282	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/2	91	91	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	152	152	-	-	-	0.3	0.1	-	0.4	10.6	1.1	0.1	1.2
15/2+15/3	215	215	-	-	-	0.5	0.1	-	0.5	8.8	0.8	0.1	0.8
16/1	282	282	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/2	91	91	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/1	152	152	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/2	215	215	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
18/1	367	367	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J4: Baynards Green	**-**	**-**	**0**	**0**	**0**	**6.1**	**0.7**	**0.0**	**6.8**	**-**	**-**	**-**	**-**
1/2+1/1	323	323	-	-	-	0.9	0.2	-	1.1	11.7	1.6	0.2	1.8
1/3+1/4	324	324	-	-	-	0.9	0.2	-	1.1	11.8	1.3	0.2	1.5
2/1	179	179	-	-	-	0.0	0.0	-	0.0	0.6	0.1	0.0	0.1
2/2	165	165	-	-	-	0.0	0.0	-	0.0	0.4	0.1	0.0	0.1
3/2+3/1	210	210	-	-	-	1.1	0.0	-	1.1	18.6	1.2	0.0	1.2
3/3+3/4	201	201	-	-	-	1.4	0.0	-	1.4	25.8	1.6	0.0	1.6
4/1	182	182	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	149	149	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	118	118	-	-	-	0.0	0.0	-	0.0	0.6	0.1	0.0	0.1
5/2	105	105	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/3	142	142	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/4	59	59	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	44	44	-	-	-	0.1	0.0	-	0.2	15.7	0.4	0.0	0.4
6/2+6/3	323	323	-	-	-	1.1	0.3	-	1.4	15.1	1.4	0.3	1.7

7/1	134	134	-	-	-	0.0	0.0	-	0.0	0.1	0.0	0.0	0.0
7/2	305	305	-	-	-	0.0	0.0	-	0.0	0.2	0.0	0.0	0.0
7/3	219	219	-	-	-	0.0	0.0	-	0.0	0.3	0.0	0.0	0.0
8/1	133	133	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1+9/2	106	106	-	-	-	0.4	0.1	-	0.5	16.0	0.5	0.1	0.6
10/1	148	148	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	305	305	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/3	217	217	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	40	40	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	54	54	-	-	-	0.0	0.0	-	0.0	0.3	0.0	0.0	0.0
12/1	182	182	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	149	149	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	182	182	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	149	149	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	367	367	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	367	367	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J5: Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**1.9**	**0.6**	**0.0**	**2.5**	**-**	**-**	**-**	**-**
1/1	160	160	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
1/2	96	96	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2+2/1	220	220	-	-	-	0.6	0.2	-	0.8	13.3	1.4	0.2	1.5
2/3	56	56	-	-	-	0.2	0.1	-	0.2	13.4	0.4	0.1	0.5
3/1	92	92	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	171	171	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	47	47	-	-	-	0.2	0.1	-	0.2	17.6	0.5	0.1	0.5
4/2+4/3	210	210	-	-	-	0.7	0.3	-	1.0	17.1	1.5	0.3	1.8
5/1+5/2	191	191	-	-	-	0.2	0.0	-	0.2	4.3	0.4	0.0	0.4
5/3+5/4	206	206	-	-	-	0.0	0.0	-	0.0	0.1	0.0	0.0	0.0
6/1	65	65	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	35	35	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	171	171	-	-	-	0.0	0.0	-	0.0	0.1	0.0	0.0	0.0

8/1	163	163	-	-	-	0.0	0.0	-	0.0	0.1	0.1	0.0	0.1
8/2	56	56	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	263	263	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 - Padbury	Stream: 1 PRC for Signalled Lanes (%):	167.7	Total Delay for Signalled Lanes (pcuHr):	1.25	Cycle Time (s):	40
C1 - Padbury	Stream: 2 PRC for Signalled Lanes (%):	252.3	Total Delay for Signalled Lanes (pcuHr):	1.21	Cycle Time (s):	40
C2 - Cherwell	Stream: 1 PRC for Signalled Lanes (%):	313.3	Total Delay for Signalled Lanes (pcuHr):	1.12	Cycle Time (s):	40
C2 - Cherwell	Stream: 2 PRC for Signalled Lanes (%):	155.1	Total Delay for Signalled Lanes (pcuHr):	1.48	Cycle Time (s):	40
C3 - Ardley	Stream: 1 PRC for Signalled Lanes (%):	368.9	Total Delay for Signalled Lanes (pcuHr):	1.55	Cycle Time (s):	40
C3 - Ardley	Stream: 2 PRC for Signalled Lanes (%):	322.5	Total Delay for Signalled Lanes (pcuHr):	0.50	Cycle Time (s):	40
C4 - Baynards Green	Stream: 1 PRC for Signalled Lanes (%):	204.0	Total Delay for Signalled Lanes (pcuHr):	2.12	Cycle Time (s):	40
C4 - Baynards Green	Stream: 2 PRC for Signalled Lanes (%):	235.9	Total Delay for Signalled Lanes (pcuHr):	2.57	Cycle Time (s):	40
C4 - Baynards Green	Stream: 3 PRC for Signalled Lanes (%):	165.3	Total Delay for Signalled Lanes (pcuHr):	1.57	Cycle Time (s):	40
C4 - Baynards Green	Stream: 4 PRC for Signalled Lanes (%):	244.1	Total Delay for Signalled Lanes (pcuHr):	0.51	Cycle Time (s):	40
C5 - B4100 Roundabout	Stream: 1 PRC for Signalled Lanes (%):	377.6	Total Delay for Signalled Lanes (pcuHr):	0.24	Cycle Time (s):	40
C5 - B4100 Roundabout	Stream: 2 PRC for Signalled Lanes (%):	153.6	Total Delay for Signalled Lanes (pcuHr):	1.23	Cycle Time (s):	40
C5 - B4100 Roundabout	Stream: 3 PRC for Signalled Lanes (%):	251.2	Total Delay for Signalled Lanes (pcuHr):	1.03	Cycle Time (s):	40
	PRC Over All Lanes (%):	153.6	Total Delay Over All Lanes(pcuHr):	16.67		

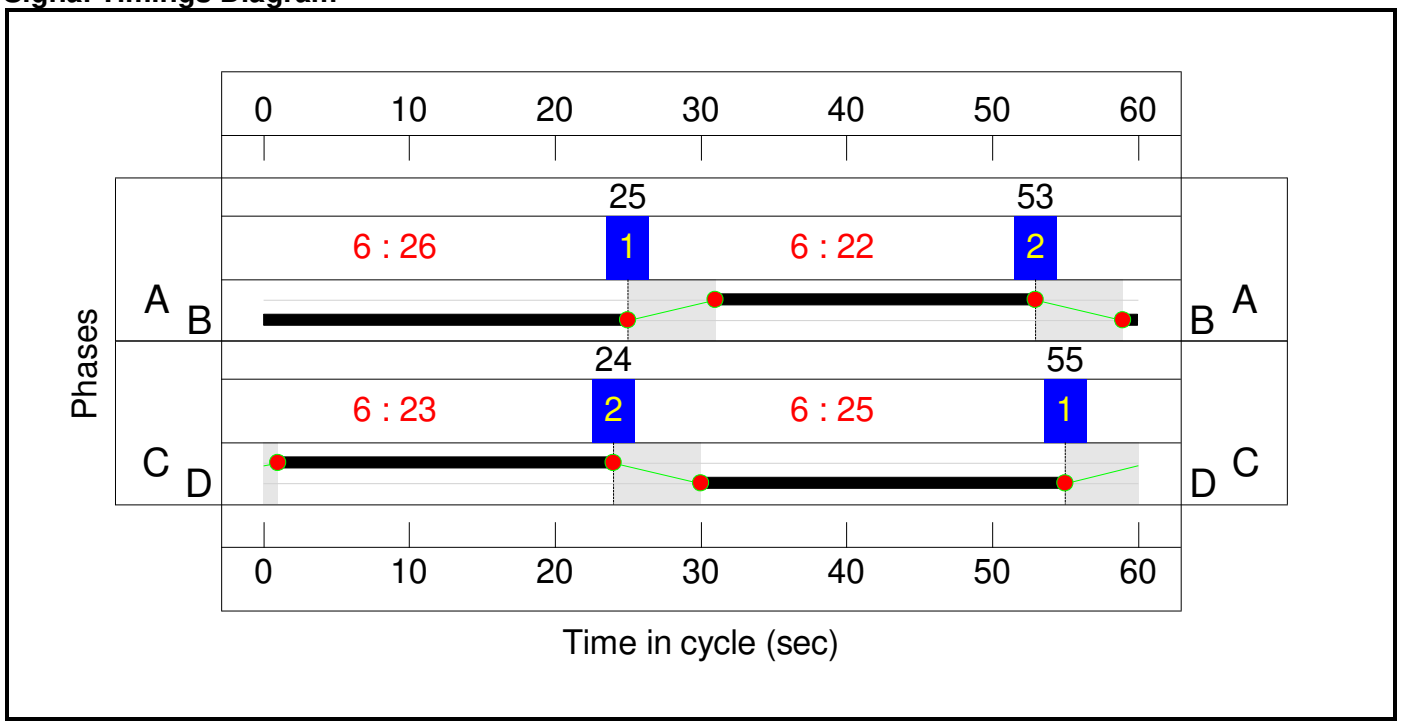
Scenario 4: '2031 Option 25 - Inter Peak' (FG4: '2031 Opt 25 - inter-peak', Plan 1: 'Network Control Plan 1')
C1 - Padbury
Stage Timings
Stage Stream: 1

Stage	1	2
Duration	22	26
Change Point	25	53

Stage Stream: 2

Stage	1	2
Duration	23	25
Change Point	55	24

Signal Timings Diagram



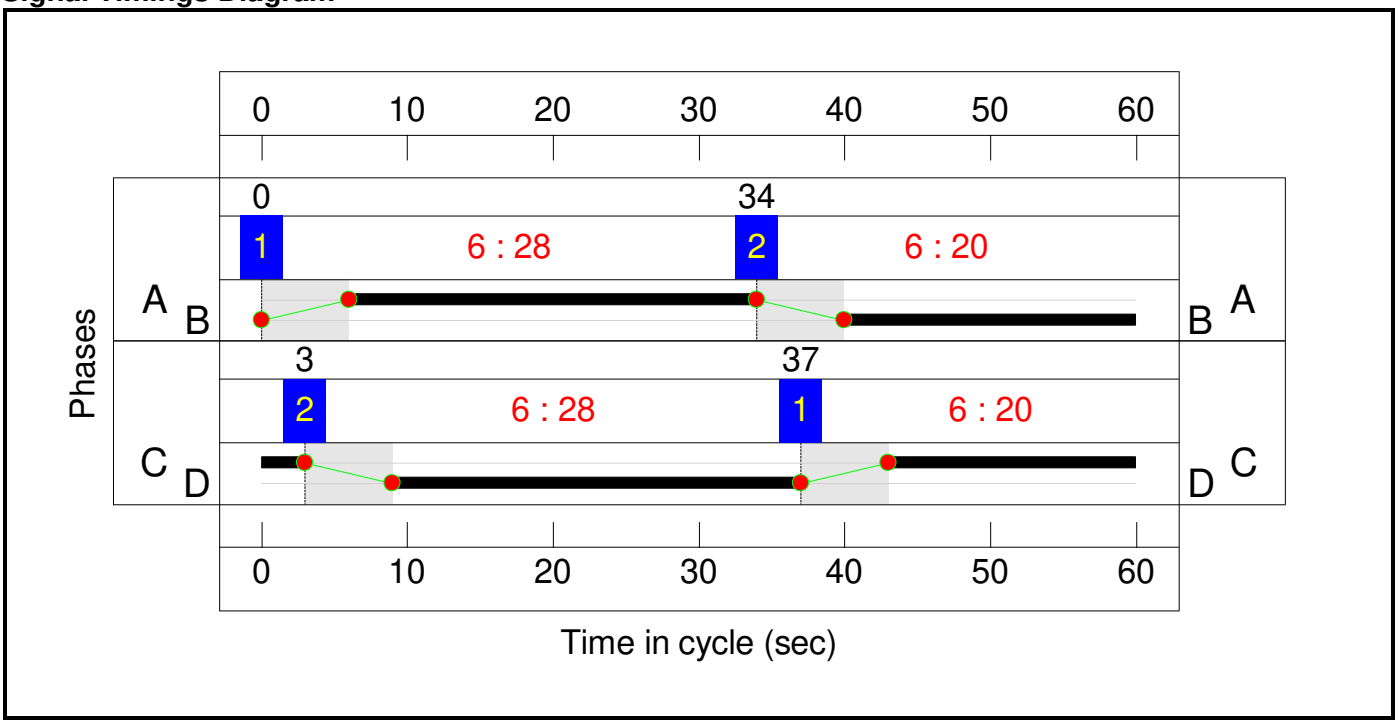
C2 - Cherwell
Stage Timings
Stage Stream: 1

Stage	1	2
Duration	28	20
Change Point	0	34

Stage Stream: 2

Stage	1	2
Duration	20	28
Change Point	37	3

Signal Timings Diagram



C3 - Ardley

Stage Timings

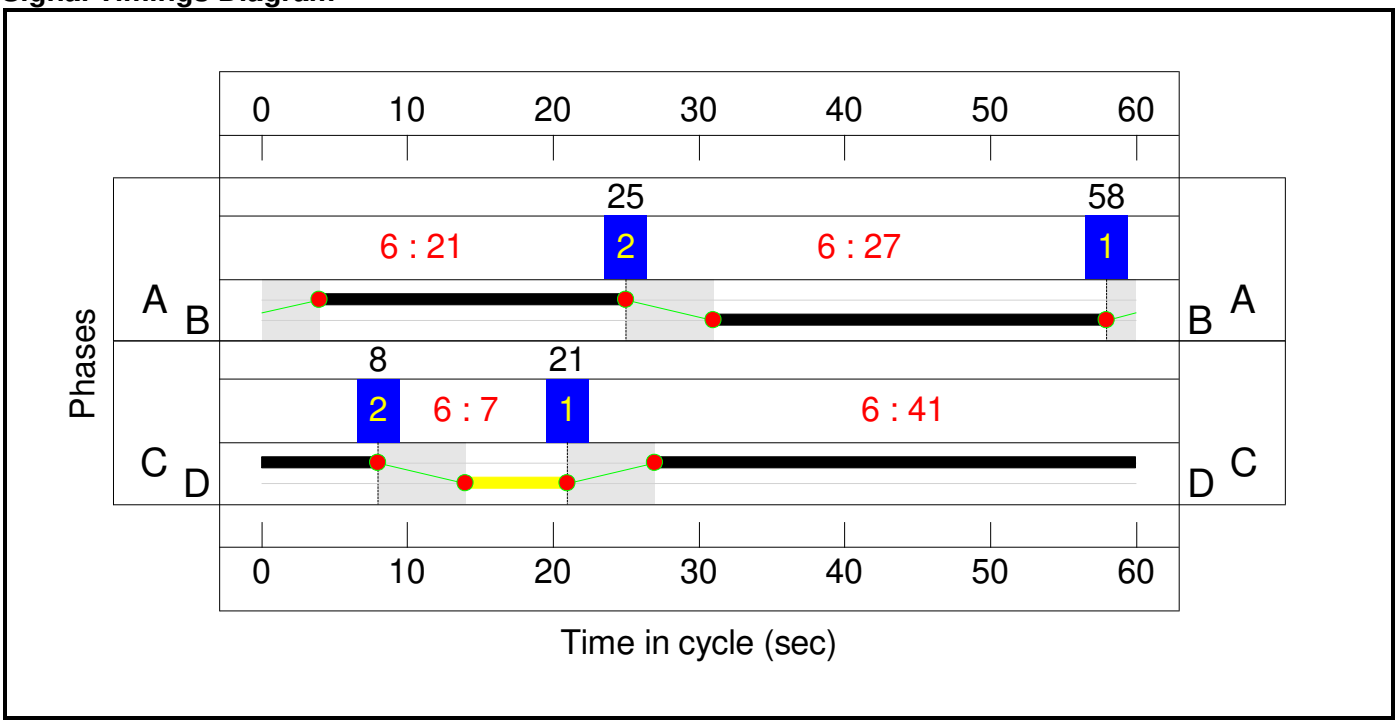
Stage Stream: 1

Stage	1	2
Duration	21	27
Change Point	58	25

Stage Stream: 2

Stage	1	2
Duration	41	7
Change Point	21	8

Signal Timings Diagram



C4 - Baynards Green

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	14	34
Change Point	59	19

Stage Stream: 2

Stage	1	2
Duration	34	14
Change Point	24	4

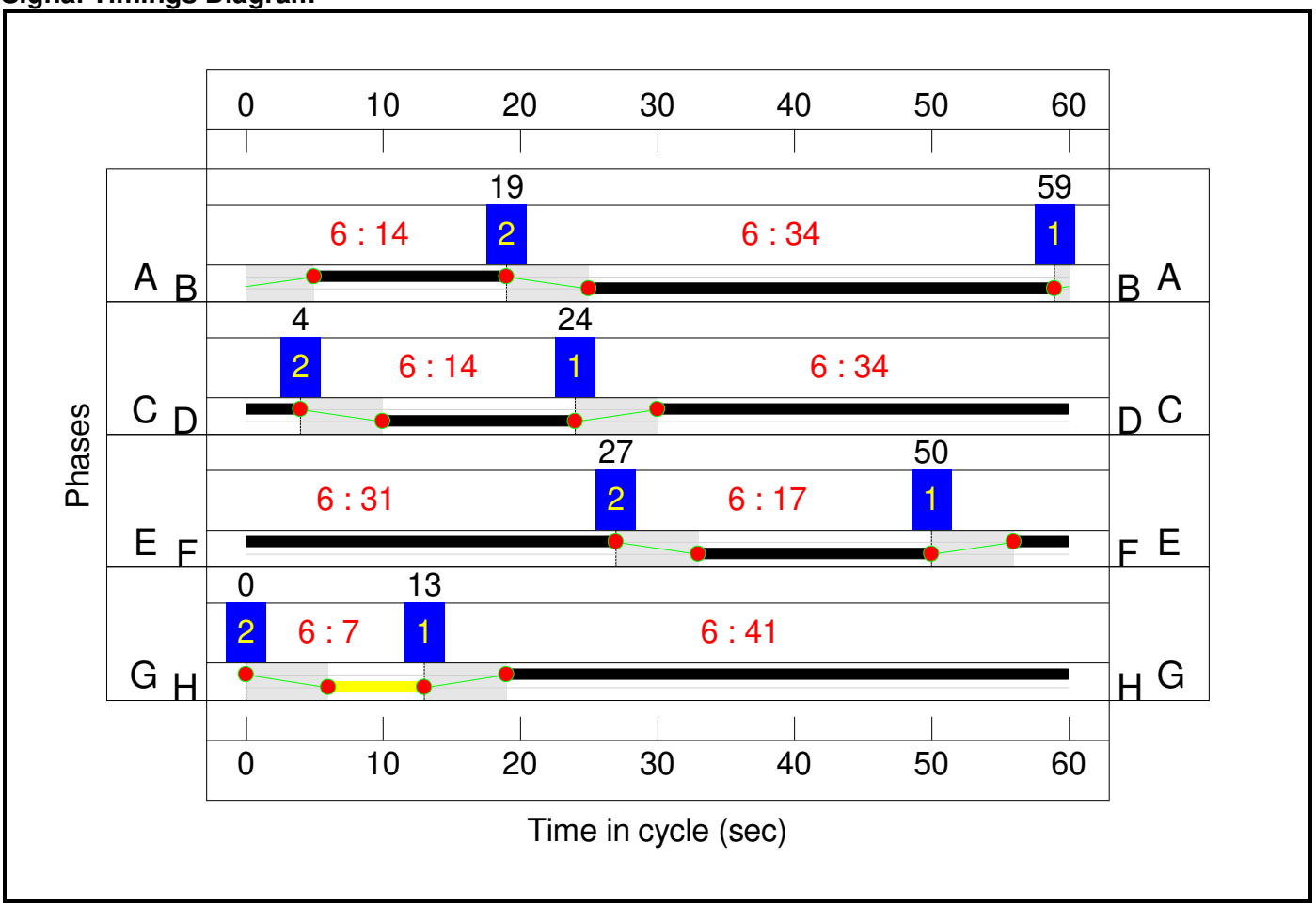
Stage Stream: 3

Stage	1	2
Duration	31	17
Change Point	50	27

Stage Stream: 4

Stage	1	2
Duration	41	7
Change Point	13	0

Signal Timings Diagram



C5 - B4100 Roundabout

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	33	15
Change Point	47	26

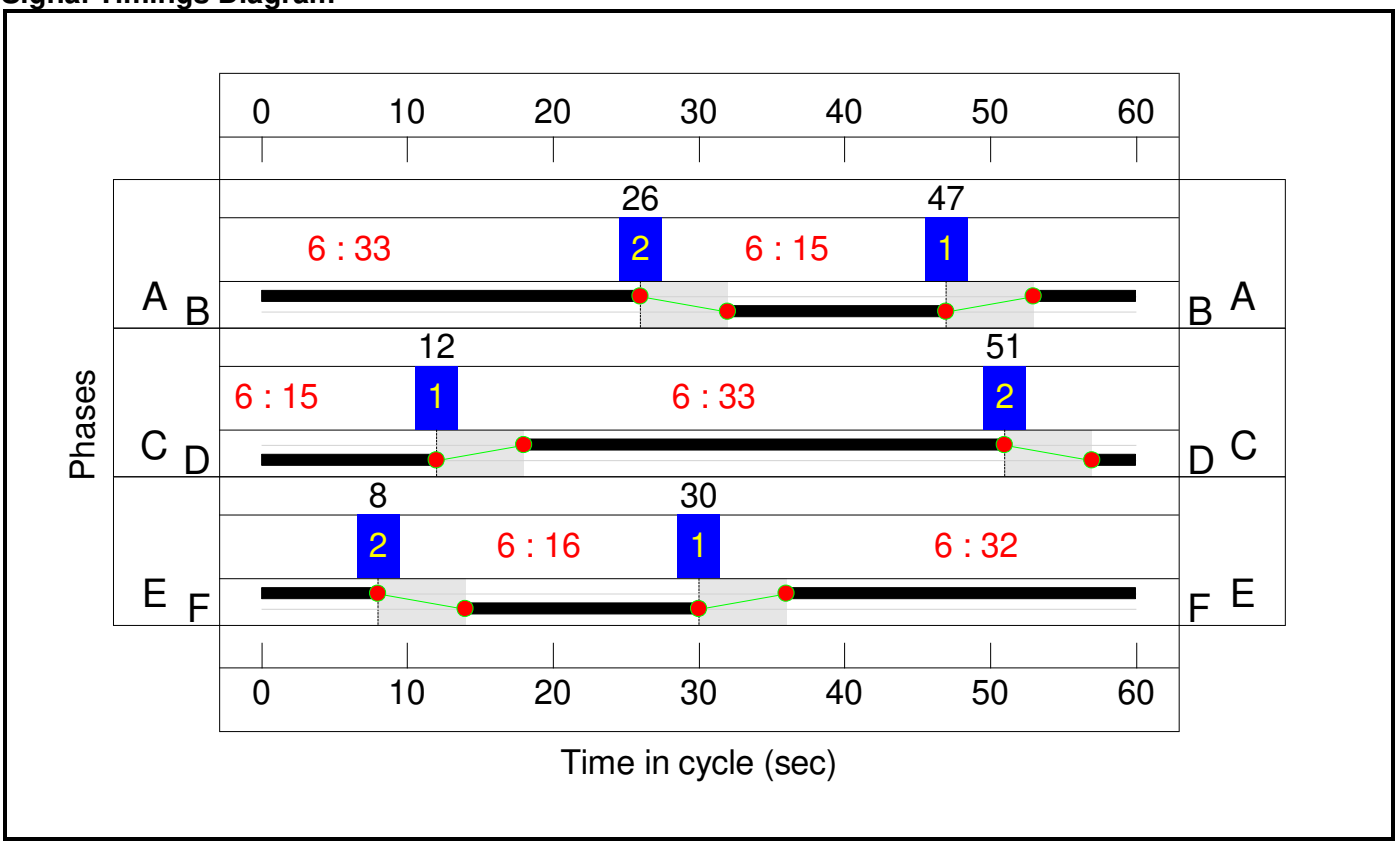
Stage Stream: 2

Stage	1	2
Duration	33	15
Change Point	12	51

Stage Stream: 3

Stage	1	2
Duration	32	16
Change Point	30	8

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: Option25 Network Model	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**78.0%**
J1: Padbury Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**70.4%**
1/1+1/2	A43 north Ahead	U	1:1	N/A	C1:B		1	26	-	903	1922:2058	865+418	70.4 : 70.4%
2/1	Ahead	U	N/A	N/A	-		-	-	-	969	Inf	Inf	0.0%
2/2	Ahead	U	N/A	N/A	-		-	-	-	519	Inf	Inf	0.0%
3/1	A43 south Ahead	U	1:2	N/A	C1:C		1	23	-	265	1886	754	35.1%
3/2	A43 south Ahead	U	1:2	N/A	C1:C		1	23	-	320	2019	808	39.6%
4/1	Ahead	U	N/A	N/A	-		-	-	-	530	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	347	Inf	Inf	0.0%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	1:2	N/A	C1:D		1	25	-	652	2058:1908	812+556	47.7 : 47.7%
5/3	Junction 10 s'bound offslip Ahead	U	1:2	N/A	C1:D		1	25	-	225	2058	892	25.2%
6/1	Right	U	1:1	N/A	C1:A		1	22	-	360	1980	759	47.4%
6/2	Right	U	1:1	N/A	C1:A		1	22	-	225	2120	813	27.7%
7/1	Ahead	U	N/A	N/A	-		-	-	-	877	Inf	Inf	0.0%
J2: Cherwell	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**69.7%**
1/2+1/1	A43 Left Ahead	U	2:1	N/A	C2:A		1	28	-	969	1980:1980	957+433	69.7 : 69.7%
1/3	A43 Ahead	U	2:1	N/A	C2:A		1	28	-	519	1980	957	54.2%
2/1	A43 Ahead	O	N/A	N/A	-		-	-	-	489	Inf	1168	41.9%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	561	Inf	1168	48.0%
3/1	Ahead	U	N/A	N/A	-		-	-	-	265	Inf	Inf	0.0%
3/2	Ahead	U	N/A	N/A	-		-	-	-	320	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	527	Inf	Inf	0.0%

5/1	MSA Left	U	2:2	N/A	C2:C		1	20	-	246	1871	655	37.6%
5/2	MSA Left Ahead	U	2:2	N/A	C2:C		1	20	-	281	1965	688	40.9%
6/1	Ahead	U	N/A	N/A	-		-	-	-	695	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	676	Inf	Inf	0.0%
7/1	Ahead	U	N/A	N/A	-		-	-	-	585	Inf	Inf	0.0%
7/2	Right	U	N/A	N/A	-		-	-	-	561	Inf	Inf	0.0%
8/1+8/2	Ahead Right	U	2:1	N/A	C2:B		1	20	-	561	1886:2000	358+534	62.9 : 62.9%
9/1	Right	U	N/A	N/A	-		-	-	-	96	Inf	Inf	0.0%
10/1+10/2	Ahead	U	2:2	N/A	C2:D		1	28	-	336	2120:2120	590+576	28.8 : 28.8%
10/3	Ahead	U	2:2	N/A	C2:D		1	28	-	667	2120	1025	65.1%
10/4	Ahead	U	2:2	N/A	C2:D		1	28	-	519	2120	1025	50.7%
11/1	M40 SB onslip Ahead	U	N/A	N/A	-		-	-	-	293	Inf	Inf	0.0%
11/2	M40 SB onslip Ahead	U	N/A	N/A	-		-	-	-	289	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	293	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	289	Inf	Inf	0.0%
J3: Ardley roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**71.6%**
1/1+1/2	Ahead	O	N/A	N/A	-		-	-	-	231	Inf : Inf	311+487	29.0 : 29.0%
2/1	Ahead	U	3:2	N/A	C3:C		1	41	-	695	1980	1386	50.1%
2/2	Ahead	U	3:2	N/A	C3:C		1	41	-	676	1980	1386	48.8%
3/1		U	N/A	N/A	-		-	-	-	755	Inf	Inf	0.0%
4/1	Ahead	U	N/A	N/A	-		-	-	-	759	Inf	Inf	0.0%
4/2	Right Ahead	U	N/A	N/A	-		-	-	-	733	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	358	Inf	Inf	0.0%
6/1+6/2	Right	U	3:2	N/A	C3:D		1	7	-	121	1980:1980	218+194	29.3 : 29.3%
7/1	Ahead	U	3:1	N/A	C3:B		1	27	-	158	1980	924	17.1%
7/2	Right	U	3:1	N/A	C3:B		1	27	-	390	2120	989	39.4%
7/3	Right	U	3:1	N/A	C3:B		1	27	-	252	2120	989	25.5%

8/1	Ahead	U	N/A	N/A	-		-	-	-	513	Inf	Inf	0.0%
8/2	Ahead	U	N/A	N/A	-		-	-	-	537	Inf	Inf	0.0%
9/1	Left	O	N/A	N/A	-		-	-	-	324	Inf	688	47.1%
9/2	Ahead	O	N/A	N/A	-		-	-	-	260	Inf	534	48.7%
10/1	Left	U	N/A	N/A	-		-	-	-	755	Inf	Inf	0.0%
10/2	Ahead	U	N/A	N/A	-		-	-	-	513	Inf	Inf	0.0%
10/3	Right Ahead	U	N/A	N/A	-		-	-	-	658	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	584	Inf	Inf	0.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	358	Inf	Inf	0.0%
12/2	Ahead	U	N/A	N/A	-		-	-	-	899	Inf	Inf	0.0%
13/1	Right	U	N/A	N/A	-		-	-	-	710	Inf	Inf	0.0%
13/2	Right	U	N/A	N/A	-		-	-	-	468	Inf	Inf	0.0%
13/3	Right	U	N/A	N/A	-		-	-	-	517	Inf	Inf	0.0%
14/1	Ahead	U	N/A	N/A	-		-	-	-	1083	Inf	Inf	0.0%
14/2	Ahead	U	N/A	N/A	-		-	-	-	193	Inf	Inf	0.0%
15/1	Left Ahead	U	3:1	N/A	C3:A		1	21	-	520	1980	726	71.6%
15/2+15/3	Ahead	U	3:1	N/A	C3:A		1	21	-	733	2120:2120	704+706	52.0 : 52.0%
16/1		U	N/A	N/A	-		-	-	-	1083	Inf	Inf	0.0%
16/2		U	N/A	N/A	-		-	-	-	193	Inf	Inf	0.0%
17/1	Ahead	U	N/A	N/A	-		-	-	-	520	Inf	Inf	0.0%
17/2	Ahead	U	N/A	N/A	-		-	-	-	733	Inf	Inf	0.0%
18/1	Ahead	U	N/A	N/A	-		-	-	-	1253	Inf	Inf	0.0%
J4: Baynards Green	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**78.0%**
1/2+1/1	A43 North Left	U	4:1	N/A	C4:B		1	34	-	1106	2120:1980	1237+759	56.6 : 53.5%
1/3+1/4	A43 North Ahead	U	4:1	N/A	C4:B		1	34	-	1110	2120:1922	1023+994	55.0 : 55.0%
2/1	Ahead	U	4:2	N/A	C4:C		1	34	-	594	2120	1237	48.0%
2/2	Ahead Right	U	4:2	N/A	C4:C		1	34	-	583	2120	1237	47.1%
3/2+3/1	B4100 East Left Ahead	U	4:2	N/A	C4:D		1	14	-	707	2120:1980	530+495	66.0 : 72.1%

3/3+3/4	B4100 East Ahead	U	4:2	N/A	C4:D		1	14	-	698	2120:2120	530+509	67.2 : 67.2%
4/1	Ahead	U	N/A	N/A	-		-	-	-	603	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	530	Inf	Inf	0.0%
5/1	Right	U	4:3	N/A	C4:E		1	31	-	401	1980	1056	38.0%
5/2	Right	U	4:3	N/A	C4:E		1	31	-	350	2120	1131	31.0%
5/3	Right	U	4:3	N/A	C4:E		1	31	-	356	2120	1131	31.5%
5/4	Right	U	4:3	N/A	C4:E		1	31	-	342	2120	1131	30.2%
6/1	A43 South Ahead Ahead2	U	4:3	N/A	C4:F		1	17	-	358	1930	579	61.8%
6/2+6/3	A43 South Ahead	U	4:3	N/A	C4:F		1	17	-	899	1922:1922	577+577	78.0 : 77.9%
7/1	Ahead	U	4:4	N/A	C4:G		1	41	-	658	2120	1484	44.3%
7/2	Ahead	U	4:4	N/A	C4:G		1	41	-	806	2120	1484	54.3%
7/3	Ahead Right	U	4:4	N/A	C4:G		1	41	-	791	2120	1484	53.3%
8/1		U	N/A	N/A	-		-	-	-	451	Inf	Inf	0.0%
9/1+9/2	B4100 West Left Ahead	U	4:4	N/A	C4:H		1	7	-	366	1888:1894	252+253	72.3 : 72.9%
10/1		U	N/A	N/A	-		-	-	-	707	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	806	Inf	Inf	0.0%
10/3		U	N/A	N/A	-		-	-	-	783	Inf	Inf	0.0%
11/1	Ahead	U	4:1	N/A	C4:A		1	14	-	137	1980	495	27.7%
11/2	Right Ahead	U	4:1	N/A	C4:A		1	14	-	188	2120	530	35.5%
12/1	Ahead	U	N/A	N/A	-		-	-	-	603	Inf	Inf	0.0%
12/2	Ahead	U	N/A	N/A	-		-	-	-	530	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	603	Inf	Inf	0.0%
13/2		U	N/A	N/A	-		-	-	-	530	Inf	Inf	0.0%
14/1	Ahead	U	N/A	N/A	-		-	-	-	1257	Inf	Inf	0.0%
15/1	Ahead	U	N/A	N/A	-		-	-	-	1257	Inf	Inf	0.0%
J5: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**75.8%**
1/1		U	N/A	N/A	-		-	-	-	537	Inf	Inf	0.0%
1/2		U	N/A	N/A	-		-	-	-	339	Inf	Inf	0.0%

2/2+2/1	B4100 east Left Ahead	U	5:3	N/A	C5:F		1	16	-	611	2120:1908	568+262	73.6 : 73.6%
2/3	B4100 east Ahead	U	5:3	N/A	C5:F		1	16	-	332	2043	579	57.4%
3/1	Ahead	U	N/A	N/A	-		-	-	-	536	Inf	Inf	0.0%
3/2	Ahead	U	N/A	N/A	-		-	-	-	367	Inf	Inf	0.0%
4/1	A43 Left	U	5:2	N/A	C5:D		1	15	-	289	2019	538	53.7%
4/2+4/3	A43 Left Ahead	U	5:2	N/A	C5:D		1	15	-	588	2043:1908	536+325	68.3 : 68.3%
5/1+5/2	B4100 west Ahead	U	5:1	N/A	C5:B		1	15	-	654	1980:2120	447+481	70.5 : 70.5%
5/3+5/4	B4100 west Ahead	U	5:1	N/A	C5:B		1	15	-	710	2120:2120	453+484	75.8 : 75.8%
6/1	Right	U	5:1	N/A	C5:A		1	33	-	222	1942	1100	20.2%
7/1	Right	U	5:3	N/A	C5:E		1	32	-	343	1966	1081	31.7%
7/2	Right	U	5:3	N/A	C5:E		1	32	-	367	2102	1156	31.7%
8/1	Ahead	U	5:2	N/A	C5:C		1	33	-	418	1966	1114	37.5%
8/2	Ahead	U	5:2	N/A	C5:C		1	33	-	332	2102	1191	27.9%
9/1	Ahead	U	N/A	N/A	-		-	-	-	903	Inf	Inf	0.0%

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: Option25 Network Model	**-**	**-**	**2096**	**0**	**0**	**62.8**	**19.9**	**0.0**	**82.7**	**-**	**-**	**-**	**-**
J1: Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**5.5**	**2.4**	**0.0**	**7.9**	**-**	**-**	**-**	**-**
1/1+1/2	903	903	-	-	-	1.4	1.2	-	2.6	10.4	20.6	1.2	21.8
2/1	969	969	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	519	519	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	265	265	-	-	-	0.3	0.3	-	0.6	8.0	2.4	0.3	2.7
3/2	320	320	-	-	-	0.4	0.3	-	0.7	8.2	3.0	0.3	3.3
4/1	530	530	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	347	347	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	652	652	-	-	-	2.1	0.5	-	2.6	14.1	4.4	0.5	4.9
5/3	225	225	-	-	-	0.7	0.2	-	0.8	13.5	2.4	0.2	2.5
6/1	360	360	-	-	-	0.3	0.0	-	0.3	3.5	0.6	0.0	0.6
6/2	225	225	-	-	-	0.2	0.0	-	0.2	3.5	0.4	0.0	0.4
7/1	877	877	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Cherwell	**-**	**-**	**1050**	**0**	**0**	**9.6**	**4.0**	**0.0**	**13.7**	**-**	**-**	**-**	**-**
1/2+1/1	969	969	-	-	-	2.1	1.1	-	3.2	12.0	3.9	1.1	5.0
1/3	519	519	-	-	-	1.1	0.6	-	1.7	11.9	4.2	0.6	4.8
2/1	489	489	489	0	0	0.2	0.4	-	0.5	4.0	6.2	0.4	6.5
2/2	561	561	561	0	0	0.0	0.5	-	0.5	3.0	1.7	0.5	2.2
3/1	265	265	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	320	320	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	527	527	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	246	246	-	-	-	1.0	0.3	-	1.3	19.0	3.0	0.3	3.3
5/2	281	281	-	-	-	1.2	0.3	-	1.5	19.2	3.5	0.3	3.9
6/1	695	695	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	676	676	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

7/1	585	585	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	561	561	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1+8/2	561	561	-	-	-	2.1	0.8	-	2.9	18.8	3.5	0.8	4.4
9/1	96	96	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1+10/2	336	336	-	-	-	1.9	0.0	-	1.9	20.8	3.8	0.0	3.8
10/3	667	667	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/4	519	519	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	293	293	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	289	289	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	293	293	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	289	289	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J3: Ardley roundabout	**-**	**-**	**1046**	**0**	**0**	**9.0**	**4.7**	**0.0**	**13.7**	**-**	**-**	**-**	**-**
1/1+1/2	231	231	462	0	0	0.1	0.2	-	0.3	4.2	0.5	0.2	0.7
2/1	695	695	-	-	-	0.1	0.5	-	0.6	3.0	2.2	0.5	2.7
2/2	676	676	-	-	-	0.3	0.5	-	0.8	4.1	4.6	0.5	5.0
3/1	755	755	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	759	759	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	733	733	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	358	358	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1+6/2	121	121	-	-	-	0.7	0.2	-	0.9	28.2	0.9	0.2	1.1
7/1	158	158	-	-	-	0.3	0.1	-	0.4	9.6	1.3	0.1	1.4
7/2	390	390	-	-	-	0.9	0.3	-	1.2	10.8	2.2	0.3	2.5
7/3	252	252	-	-	-	1.0	0.2	-	1.2	16.9	3.2	0.2	3.4
8/1	513	513	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	537	537	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	324	324	324	0	0	0.0	0.4	-	0.5	5.4	1.2	0.4	1.6
9/2	260	260	260	0	0	0.3	0.5	-	0.7	10.3	2.2	0.5	2.6
10/1	755	755	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	513	513	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/3	658	658	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

11/1	584	584	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	358	358	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	899	899	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	710	710	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	468	468	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/3	517	517	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	1083	1083	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/2	193	193	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	520	520	-	-	-	2.4	1.2	-	3.6	25.0	7.4	1.2	8.6
15/2+15/3	733	733	-	-	-	3.0	0.5	-	3.5	17.2	4.6	0.5	5.1
16/1	1083	1083	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/2	193	193	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/1	520	520	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/2	733	733	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
18/1	1253	1253	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J4: Baynards Green	**-**	**-**	**0**	**0**	**0**	**24.0**	**5.1**	**0.0**	**29.1**	**-**	**-**	**-**	**-**
1/2+1/1	1106	1106	-	-	-	2.3	0.6	-	2.9	9.4	7.2	0.6	7.8
1/3+1/4	1110	1110	-	-	-	2.2	0.6	-	2.8	9.2	5.3	0.6	5.9
2/1	594	594	-	-	-	0.2	0.0	-	0.2	1.1	0.5	0.0	0.5
2/2	583	583	-	-	-	0.2	0.0	-	0.2	1.0	0.6	0.0	0.6
3/2+3/1	707	707	-	-	-	5.4	0.0	-	5.4	27.6	10.4	0.0	10.4
3/3+3/4	698	698	-	-	-	4.5	0.0	-	4.5	23.1	5.9	0.0	5.9
4/1	603	603	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	530	530	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	401	401	-	-	-	0.2	0.0	-	0.2	1.7	0.7	0.0	0.7
5/2	350	350	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/3	356	356	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/4	342	342	-	-	-	0.0	0.0	-	0.0	0.0	0.6	0.0	0.6
6/1	358	358	-	-	-	1.8	0.8	-	2.6	26.1	5.1	0.8	5.9
6/2+6/3	899	899	-	-	-	4.8	1.7	-	6.5	26.2	6.7	1.7	8.5

7/1	658	658	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	806	806	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/3	791	791	-	-	-	0.0	0.0	-	0.0	0.0	0.6	0.0	0.6
8/1	451	451	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1+9/2	366	366	-	-	-	2.5	1.3	-	3.8	37.7	2.9	1.3	4.2
10/1	707	707	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	806	806	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/3	783	783	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	137	137	-	-	-	0.0	0.0	-	0.0	0.4	0.1	0.0	0.1
11/2	188	188	-	-	-	0.0	0.0	-	0.0	0.3	0.1	0.0	0.1
12/1	603	603	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	530	530	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	603	603	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	530	530	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	1257	1257	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	1257	1257	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J5: Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**14.7**	**3.7**	**0.0**	**18.4**	**-**	**-**	**-**	**-**
1/1	537	537	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
1/2	339	339	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2+2/1	611	611	-	-	-	3.1	1.4	-	4.5	26.7	6.2	1.4	7.5
2/3	332	332	-	-	-	1.7	0.7	-	2.4	25.7	4.7	0.7	5.4
3/1	536	536	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	367	367	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	289	289	-	-	-	1.8	0.6	-	2.4	30.1	4.7	0.6	5.3
4/2+4/3	588	588	-	-	-	3.0	1.1	-	4.0	24.6	5.9	1.1	7.0
5/1+5/2	654	654	-	-	-	2.6	0.0	-	2.6	14.3	6.8	0.0	6.8
5/3+5/4	710	710	-	-	-	2.4	0.0	-	2.4	12.0	4.1	0.0	4.1
6/1	222	222	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	343	343	-	-	-	0.0	0.0	-	0.0	0.2	0.3	0.0	0.3
7/2	367	367	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

8/1	418	418	-	-	-	0.0	0.0	-	0.0	0.4	0.4	0.0	0.4
8/2	332	332	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	903	903	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 - Padbury	Stream: 1 PRC for Signalled Lanes (%):	27.8	Total Delay for Signalled Lanes (pcuHr):	3.18	Cycle Time (s):	60
C1 - Padbury	Stream: 2 PRC for Signalled Lanes (%):	88.8	Total Delay for Signalled Lanes (pcuHr):	4.72	Cycle Time (s):	60
C2 - Cherwell	Stream: 1 PRC for Signalled Lanes (%):	29.1	Total Delay for Signalled Lanes (pcuHr):	7.89	Cycle Time (s):	60
C2 - Cherwell	Stream: 2 PRC for Signalled Lanes (%):	38.3	Total Delay for Signalled Lanes (pcuHr):	4.74	Cycle Time (s):	60
C3 - Ardley	Stream: 1 PRC for Signalled Lanes (%):	25.7	Total Delay for Signalled Lanes (pcuHr):	9.89	Cycle Time (s):	60
C3 - Ardley	Stream: 2 PRC for Signalled Lanes (%):	79.5	Total Delay for Signalled Lanes (pcuHr):	2.31	Cycle Time (s):	60
C4 - Baynards Green	Stream: 1 PRC for Signalled Lanes (%):	59.0	Total Delay for Signalled Lanes (pcuHr):	5.73	Cycle Time (s):	60
C4 - Baynards Green	Stream: 2 PRC for Signalled Lanes (%):	24.8	Total Delay for Signalled Lanes (pcuHr):	10.23	Cycle Time (s):	60
C4 - Baynards Green	Stream: 3 PRC for Signalled Lanes (%):	15.3	Total Delay for Signalled Lanes (pcuHr):	9.32	Cycle Time (s):	60
C4 - Baynards Green	Stream: 4 PRC for Signalled Lanes (%):	23.5	Total Delay for Signalled Lanes (pcuHr):	3.84	Cycle Time (s):	60
C5 - B4100 Roundabout	Stream: 1 PRC for Signalled Lanes (%):	18.8	Total Delay for Signalled Lanes (pcuHr):	4.97	Cycle Time (s):	60
C5 - B4100 Roundabout	Stream: 2 PRC for Signalled Lanes (%):	31.8	Total Delay for Signalled Lanes (pcuHr):	6.48	Cycle Time (s):	60
C5 - B4100 Roundabout	Stream: 3 PRC for Signalled Lanes (%):	22.3	Total Delay for Signalled Lanes (pcuHr):	6.91	Cycle Time (s):	60
	PRC Over All Lanes (%):	15.3	Total Delay Over All Lanes(pcuHr):	82.73		

APPENDIX B

JOURNEY TIME ANALYSIS

Key route journey time comparison for 2031 option 25 vs reference case- morning peak							
From	To	Option 25 average journey (s)	Reference average journey (s)	Difference (s)	Option 25 Total Journey (pcuHr)	Reference Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	88	376	-288	36.38	155.27	-119
M40 south	A43 north of Baynards green	130	189	-59	39.56	57.55	-18
A43 north of Baynards Green	M40 north	185	414	-230	4.51	10.12	-6
M40 north	A43 north of Baynards green	105	105	1	1.96	1.95	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	182	485	-302			
B430 (or Ardley Bypass)	A43 north of Baynards green	222	237	-14			
M40 south	B430 (or Ardley Bypass)	104	144	-41			
B430 (or Ardley Bypass)	M40 south	211	254	-44			
M40 north	B430 (or Ardley Bypass)	143	428	-285			
B430 (or Ardley Bypass)	M40 north	120	144	-24			
M40 north	MSA	85	247	-162	5.19	15.03	-10
M40 south	MSA	158	146	12	9.27	8.55	1
MSA	M40 south	91	105	-14	7.47	8.59	-1
MSA	M40 north	115	93	21	4.62	3.76	1
B4100 east	B4100 west	115	61	55	9.79	5.15	5
B4100 west	B4100 east	61	79	-18	5.01	6.50	-1
		Net change		-1390	Net change		-149

Key route journey time comparison for 2031 option 25 vs reference case - evening peak							
From	To	Option 25 average journey (s)	Reference average journey (s)	Difference (s)	Option 25 Total Journey (pcuHr)	Reference Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	99	227	-128	24.46	56.25	-32
M40 south	A43 north of Baynards green	132	227	-95	58.60	100.52	-42
A43 north of Baynards Green	M40 north	210	194	16	4.96	4.59	0
M40 north	A43 north of Baynards green	108	120	-12	2.61	2.90	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	199	257	-58			
B430 (or Ardley Bypass)	A43 north of Baynards green	240	242	-2			
M40 south	B430 (or Ardley Bypass)	90	175	-85			
B430 (or Ardley Bypass)	M40 south	200	238	-38			
M40 north	B430 (or Ardley Bypass)	137	222	-85			
B430 (or Ardley Bypass)	M40 north	117	143	-26			
M40 north	MSA	79	119	-39	5.04	7.54	-2
M40 south	MSA	171	156	15	11.77	10.75	1
MSA	M40 south	95	82	13	6.82	5.90	1
MSA	M40 north	125	76	49	6.81	4.16	3
B4100 east	B4100 west	96	68	29	9.93	6.98	3
B4100 west	B4100 east	80	67	13	5.41	4.54	1
		Net change		-434	Net change		-68

Key route journey time comparison for 2031 option 25 vs 2031 option 18 - morning peak							
From	To	Option 25 average journey (s)	Option 18 average journey (s)	Difference (s)	Option 25 Total Journey (pcuHr)	Option 18 Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	88	99	-10	36.38	40.67	-4
M40 south	A43 north of Baynards green	130	224	-95	39.56	68.44	-29
A43 north of Baynards Green	M40 north	185	210	-25	4.51	5.13	-1
M40 north	A43 north of Baynards green	105	107	-2	1.96	2.00	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	182	242	-60	37.75	50.08	-12
B430 (or Ardley Bypass)	A43 north of Baynards green	222	219	3	18.65	18.40	0
M40 south	B430 (or Ardley Bypass)	104	85	19	12.56	10.31	2
B430 (or Ardley Bypass)	M40 south	211	99	112	13.57	6.35	7
M40 north	B430 (or Ardley Bypass)	143	206	-62	18.24	26.14	-8
B430 (or Ardley Bypass)	M40 north	120	131	-10	10.94	11.87	-1
M40 north	MSA	85	98	-12	5.19	5.94	-1
M40 south	MSA	158	171	-13	9.27	10.00	-1
MSA	M40 south	91	141	-50	7.47	11.59	-4
MSA	M40 north	115	126	-11	4.62	5.06	0
B4100 east	B4100 west	115	73	42	9.79	6.21	4
B4100 west	B4100 east	61	75	-14	5.01	6.14	-1
		Net change		**-188**	**Net change**		**-49**

Key route journey time comparison for 2031 option 25 vs 2031 option 18 - evening peak							
From	To	Option 25 average journey (s)	Option 18 average journey (s)	Difference (s)	Option 25 Total Journey (pcuHr)	Option 18 Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	99	102	-4	24.46	25.33	-1
M40 south	A43 north of Baynards green	132	250	-118	58.60	110.99	-52
A43 north of Baynards Green	M40 north	210	202	8	4.96	4.76	0
M40 north	A43 north of Baynards green	108	121	-14	2.61	2.93	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	199	235	-36	19.09	22.54	-3
B430 (or Ardley Bypass)	A43 north of Baynards green	240	256	-16	40.20	42.86	-3
M40 south	B430 (or Ardley Bypass)	90	83	7	7.25	6.68	1
B430 (or Ardley Bypass)	M40 south	200	103	98	22.29	11.42	11
M40 north	B430 (or Ardley Bypass)	137	210	-74	12.39	19.05	-7
B430 (or Ardley Bypass)	M40 north	117	154	-36	12.75	16.68	-4
M40 north	MSA	79	110	-31	5.04	7.00	-2
M40 south	MSA	171	176	-5	11.77	12.14	0
MSA	M40 south	95	130	-35	6.82	9.32	-3
MSA	M40 north	125	109	16	6.81	5.92	1
B4100 east	B4100 west	96	79	17	9.93	8.17	2
B4100 west	B4100 east	80	66	14	5.41	4.47	1
		Net change		**-208**	**Net change**		**-60**

Key route journey time comparison for 2031 option 25 vs 2031 option 19 - morning peak							
From	To	Option 25 average journey (s)	Option 19 average journey (s)	Difference (s)	Option 25 Total Journey (pcuHr)	Option 19 Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	88	99	-10	36.38	40.63	-4
M40 south	A43 north of Baynards green	130	229	-100	39.56	69.94	-30
A43 north of Baynards Green	M40 north	185	163	22	4.51	3.98	1
M40 north	A43 north of Baynards green	105	97	8	1.96	1.81	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	182	221	-38	37.75	45.67	-8
B430 (or Ardley Bypass)	A43 north of Baynards green	222	238	-16	18.65	19.95	-1
M40 south	B430 (or Ardley Bypass)	104	89	14	12.56	10.83	2
B430 (or Ardley Bypass)	M40 south	211	99	112	13.57	6.37	7
M40 north	B430 (or Ardley Bypass)	143	191	-48	18.24	24.32	-6
B430 (or Ardley Bypass)	M40 north	120	157	-36	10.94	14.24	-3
M40 north	MSA	85	93	-7	5.19	5.63	0
M40 south	MSA	158	166	-8	9.27	9.72	0
MSA	M40 south	91	141	-50	7.47	11.54	-4
MSA	M40 north	115	104	11	4.62	4.19	0
B4100 east	B4100 west	115	73	42	9.79	6.21	4
B4100 west	B4100 east	61	75	-14	5.01	6.14	-1
		Net change		-117	Net change		-46

Key route journey time comparison for 2031 option 25 vs 2031 option 19 - evening peak							
From	To	Option 25 average journey (s)	Option 19 average journey (s)	Difference (s)	Option 25 Total Journey (pcuHr)	Option 19 Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	99	102	-4	24.46	25.38	-1
M40 south	A43 north of Baynards green	132	238	-106	58.60	105.58	-47
A43 north of Baynards Green	M40 north	210	187	23	4.96	4.41	1
M40 north	A43 north of Baynards green	108	122	-14	2.61	2.94	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	199	250	-50	19.09	23.92	-5
B430 (or Ardley Bypass)	A43 north of Baynards green	240	260	-20	40.20	43.57	-3
M40 south	B430 (or Ardley Bypass)	90	81	9	7.25	6.54	1
B430 (or Ardley Bypass)	M40 south	200	114	86	22.29	12.73	10
M40 north	B430 (or Ardley Bypass)	137	222	-85	12.39	20.06	-8
B430 (or Ardley Bypass)	M40 north	117	178	-61	12.75	19.35	-7
M40 north	MSA	79	111	-32	5.04	7.05	-2
M40 south	MSA	171	163	7	11.77	11.26	1
MSA	M40 south	95	132	-36	6.82	9.42	-3
MSA	M40 north	125	85	40	6.81	4.63	2
B4100 east	B4100 west	96	79	17	9.93	8.17	2
B4100 west	B4100 east	80	66	14	5.41	4.47	1
		Net change		-212	Net change		-59

Key route journey time comparison for 2031 option 25 vs reference case - off-peak							
From	To	Option 25 average journey (s)	Reference average journey (s)	Difference (s)	Option 25 Total Journey (pcuHr)	Reference Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	87	148	-62	7.45	12.74	-5
M40 south	A43 north of Baynards green	121	173	-52	11.73	16.78	-5
A43 north of Baynards Green	M40 north	176	141	35	1.07	0.86	0
M40 north	A43 north of Baynards green	125	90	35	0.70	0.50	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	173	203	-30			
B430 (or Ardley Bypass)	A43 north of Baynards green	233	228	5			
M40 south	B430 (or Ardley Bypass)	87	133	-46			
B430 (or Ardley Bypass)	M40 south	195	225	-30			
M40 north	B430 (or Ardley Bypass)	132	167	-35			
B430 (or Ardley Bypass)	M40 north	106	141	-36			
M40 north	MSA	66	71	-6	1.06	1.15	0
M40 south	MSA	127	116	11	2.12	1.93	0
MSA	M40 south	74	86	-12	1.49	1.73	0
MSA	M40 north	94	79	15	1.14	0.96	0
B4100 east	B4100 west	72	52	20	1.76	1.27	0
B4100 west	B4100 east	43	48	-5	0.84	0.93	0
		Net change		**-191**	**Net change**		**-9**

Key route journey time comparison for 2031 option 25 vs reference case - inter-peak							
From	To	Option 25 average journey (s)	Reference average journey (s)	Difference (s)	Option 25 Total Journey (pcuHr)	Reference Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	85	196	-112	24.89	57.74	-33
M40 south	A43 north of Baynards green	131	183	-52	43.70	60.95	-17
A43 north of Baynards Green	M40 north	177	170	7	3.79	3.64	0
M40 north	A43 north of Baynards green	108	121	-13	2.06	2.32	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	171	235	-64			
B430 (or Ardley Bypass)	A43 north of Baynards green	238	230	8			
M40 south	B430 (or Ardley Bypass)	90	143	-53			
B430 (or Ardley Bypass)	M40 south	205	241	-36			
M40 north	B430 (or Ardley Bypass)	136	213	-76			
B430 (or Ardley Bypass)	M40 north	120	142	-22			
M40 north	MSA	84	112	-29	4.62	6.21	-2
M40 south	MSA	161	130	32	9.15	7.34	2
MSA	M40 south	86	90	-4	5.88	6.12	0
MSA	M40 north	114	83	31	4.80	3.50	1
B4100 east	B4100 west	113	63	50	9.46	5.29	4
B4100 west	B4100 east	70	70	0	4.64	4.65	0
		Net change		**-333**	**Net change**		**-45**

Key route journey time comparison for 2031 option 25 vs 2031 option 18 - off-peak							
From	To	Option 25 average journey (s)	Option 18 average journey (s)	Difference (s)	Option 25 Total Journey (pcuHr)	Option 18 Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	87	89	-2	7.45	7.64	0
M40 south	A43 north of Baynards green	121	201	-80	11.73	19.53	-8
A43 north of Baynards Green	M40 north	176	155	21	1.07	0.95	0
M40 north	A43 north of Baynards green	125	96	30	0.70	0.53	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	173	187	-14	6.83	7.37	-1
B430 (or Ardley Bypass)	A43 north of Baynards green	233	216	18	7.65	7.06	1
M40 south	B430 (or Ardley Bypass)	87	68	19	2.30	1.80	0
B430 (or Ardley Bypass)	M40 south	195	90	106	4.45	2.04	2
M40 north	B430 (or Ardley Bypass)	132	150	-18	3.73	4.24	-1
B430 (or Ardley Bypass)	M40 north	106	120	-15	2.73	3.11	0
M40 north	MSA	66	61	5	1.06	0.98	0
M40 south	MSA	127	151	-24	2.12	2.52	0
MSA	M40 south	74	113	-39	1.49	2.26	-1
MSA	M40 north	94	99	-6	1.14	1.21	0
B4100 east	B4100 west	72	56	16	1.76	1.38	0
B4100 west	B4100 east	43	48	-5	0.84	0.93	0
		Net change		10	Net change		-7

Key route journey time comparison for 2031 option 25 vs 2031 option 18 - inter-peak							
From	To	Option 25 average journey (s)	Option 18 average journey (s)	Difference (s)	Option 25 Total Journey (pcuHr)	Option 18 Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	85	97	-13	24.89	28.62	-4
M40 south	A43 north of Baynards green	131	230	-99	43.70	76.70	-33
A43 north of Baynards Green	M40 north	177	195	-18	3.79	4.16	0
M40 north	A43 north of Baynards green	108	107	1	2.06	2.05	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	171	218	-47	23.02	29.36	-6
B430 (or Ardley Bypass)	A43 north of Baynards green	238	258	-20	26.60	28.83	-2
M40 south	B430 (or Ardley Bypass)	90	76	15	8.14	6.80	1
B430 (or Ardley Bypass)	M40 south	205	100	105	16.05	7.86	8
M40 north	B430 (or Ardley Bypass)	136	194	-58	13.22	18.83	-6
B430 (or Ardley Bypass)	M40 north	120	149	-29	10.67	13.22	-3
M40 north	MSA	84	80	3	4.62	4.44	0
M40 south	MSA	161	164	-3	9.15	9.31	0
MSA	M40 south	86	124	-38	5.88	8.48	-3
MSA	M40 north	114	104	10	4.80	4.38	0
B4100 east	B4100 west	113	66	47	9.46	5.52	4
B4100 west	B4100 east	70	64	6	4.64	4.27	0
		Net change		-138	Net change		-42

Key route journey time comparison for 2031 option 25 vs 2031 option 19 - off-peak							
From	To	Option 25 average journey (s)	Option 19 average journey (s)	Difference (s)	Option 25 Total Journey (pcuHr)	Option 19 Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	87	89	-2	7.45	7.63	0
M40 south	A43 north of Baynards green	121	201	-81	11.73	19.56	-8
A43 north of Baynards Green	M40 north	176	143	33	1.07	0.87	0
M40 north	A43 north of Baynards green	125	96	30	0.70	0.53	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	173	222	-49	6.83	8.77	-2
B430 (or Ardley Bypass)	A43 north of Baynards green	233	219	14	7.65	7.18	0
M40 south	B430 (or Ardley Bypass)	87	69	18	2.30	1.83	0
B430 (or Ardley Bypass)	M40 south	195	102	93	4.45	2.33	2
M40 north	B430 (or Ardley Bypass)	132	179	-47	3.73	5.07	-1
B430 (or Ardley Bypass)	M40 north	106	148	-42	2.73	3.82	-1
M40 north	MSA	66	60	6	1.06	0.96	0
M40 south	MSA	127	144	-17	2.12	2.40	0
MSA	M40 south	74	118	-44	1.49	2.37	-1
MSA	M40 north	94	74	20	1.14	0.90	0
B4100 east	B4100 west	72	56	16	1.76	1.38	0
B4100 west	B4100 east	43	48	-5	0.84	0.93	0
		Net change		-58	Net change		-9

Key route journey time comparison for 2031 option 25 vs 2031 option 19 - inter-peak							
From	To	Option 25 average journey (s)	Option 19 average journey (s)	Difference (s)	Option 25 Total Journey (pcuHr)	Option 19 Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	85	97	-13	24.89	28.62	-4
M40 south	A43 north of Baynards green	131	226	-95	43.70	75.37	-32
A43 north of Baynards Green	M40 north	177	155	22	3.79	3.32	0
M40 north	A43 north of Baynards green	108	112	-4	2.06	2.14	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	171	216	-45	23.02	29.07	-6
B430 (or Ardley Bypass)	A43 north of Baynards green	238	227	11	26.60	25.39	1
M40 south	B430 (or Ardley Bypass)	90	82	8	8.14	7.40	1
B430 (or Ardley Bypass)	M40 south	205	101	104	16.05	7.87	8
M40 north	B430 (or Ardley Bypass)	136	203	-67	13.22	19.69	-6
B430 (or Ardley Bypass)	M40 north	120	143	-23	10.67	12.75	-2
M40 north	MSA	84	91	-7	4.62	5.01	0
M40 south	MSA	161	165	-4	9.15	9.36	0
MSA	M40 south	86	119	-33	5.88	8.10	-2
MSA	M40 north	114	85	29	4.80	3.59	1
B4100 east	B4100 west	113	66	47	9.46	5.52	4
B4100 west	B4100 east	70	64	6	4.64	4.27	0
		Net change		-63	Net change		-37

APPENDIX C

M40 J10 MERGE AND DIVERGE 2031 TRAFFIC FLOWS

Diverges		AM1 (0645 to 0745)						AM2 (0745 to 0845)						PM (1630 to 1730)					
		downstream mainline			diverge flow			downstream mainline			diverge flow			downstream mainline			diverge flow		
	zones	vph	hgv	%HGV	vph	hgv	%HGV	vph	hgv	%HGV	vph	hgv	%HGV	vph	hgv	%HGV	vph	hgv	%HGV
M40 NB Ardley diverge	from 4 to 3,4,8,9,10,11,	3873	400	10.3%	587	126	21.5%	4134	307	7.4%	575	122	21.2%	6207	447	7.2%	488	128	26.2%
M40 NB A43 diverge	from 4 to 1,2,7	2976	274	9.2%	897	158	17.6%	3091	122	3.9%	1043	126	12.1%	4691	319	6.8%	1516	141	9.3%
M40 SB diverge	from 6 to all	3883	671	17.3%	898	98	10.9%	3318	474	14.3%	971	104	10.7%	3475	301	8.7%	850	77	9.1%

Merges		AM1 (0645 to 0745)						AM2 (0745 to 0845)						PM (1630 to 1730)					
		upstream mainline			merge flow			upstream mainline			merge flow			upstream mainline			merge flow		
		vph	hgv	%HGV	vph	hgv	%HGV	vph	hgv	%HGV	vph	hgv	%HGV	vph	hgv	%HGV	vph	hgv	%HGV
A43 to M40 SB merge	from 1,2,7 to 4	3883	671	17.3%	1397	231	16.5%	3318	474	14.3%	1393	212	15.2%	3475	301	8.7%	853	86	10.1%
Cherwell to M40 SB merge	from 3,4,8,9,10,11 to 4	5280	902	17.1%	421	144	34.2%	4711	686	14.6%	437	140	32.0%	4328	387	8.9%	612	118	19.3%
M40 NB merge	from all to 6	2976	400	13.4%	663	72	10.9%	3091	307	9.9%	744	69	9.3%	4691	447	9.5%	842	70	8.3%

APPENDIX 21

TN9 ADDENDUM: M40 JUNCTION 10 OPTION 25a

OXFORDSHIRE RAILFREIGHT INTERCHANGE LIMITED

TECHNICAL NOTE 9 ADDENDUM: M40 JUNCTION 10 OPTION 25a

ADC Infrastructure Limited
City Buildings
34-36 Carrington Street
Nottingham
NG1 7FG

tel. 0115 941 4817
www.ADCinfrastructure.com

project number: ADC1794				report reference: ADC1794-RP-T1
version	date	author	reviewer	comments
1	30/11/2022	[redacted]		internal draft
2	03/01/2023			first external issue

Introduction

1. ADC Infrastructure Ltd and BWB Consulting Ltd are appointed by Oxfordshire Railfreight Ltd (the Applicant) to assess and design the transport and infrastructure requirements of a Nationally Significant Infrastructure Project (NSIP), that being a proposed Strategic Rail Freight Interchange in Oxfordshire, to be known as Oxfordshire Strategic Rail Freight Interchange (OxSRFI).

2. Throughout the period June 2021 to January 2022, in consultation with National Highways and Oxfordshire County Council (OCC), ADC and BWB have undertaken option assessment work to consider and identify an improvement scheme at M40 Junction 10 that, along with the proposed bypass of Ardley village, would provide the required access to the Strategic Road Network (SRN) for the OxSRFI development, along with improving connectivity and aiding the delivery of planned growth across the wider area.

3. In January 2022, National Highways and OCC confirmed that Options 18 and 19 that have been developed by ADC and BWB were the preferred options to be taken forward.

M40 Junction 10 Option 25

4. Both Option 18 and Option 19 include the proposal for a new free-flow link between the A43 south of the Baynard's Green roundabout and the M40 southbound. The key difference between Options 18 and 19 was the relocation of the M40 northbound on-slip at Ardley roundabout. Under Option 18, the M40 northbound on-slip at Ardley roundabout would be moved to the north of the junction, facilitating the potential future provision of a M40 northbound to A43 northbound free-flow link road.

5. As part of the further assessment work required for Options 18 and 19, National Highways requested that analysis was undertaken to see whether the M40 northbound to A43 northbound free-flow link road could be reasonably achieved in the future in terms of geometrical compliance with DMRB, formation of appropriate junctions, and environmental impact.

6. ADC and BWB jointly investigated how the northbound free-flow link between the M40 northbound and the A43 northbound could be achieved. Technical Note 9 (TN9) was therefore prepared to present the options considered for providing a M40 northbound to A43 northbound free-flow link road and investigating how the OxSRFI proposals for M40 J10 could be changed.

7. TN9 demonstrated that Option 25 met the design criteria and proposed that it should become the preferred option. Option 25 is shown on drawing **OxSRFI-BWB-GEN-ZZ-SK-CH-SK031**. The overall scheme footprint is minimised compared to Options 18/19, and Option 25 would mean that significant infrastructure would not be built that could later become redundant if the northbound free-flow link were built in the future. TN9 concluded that Option 25 achieves the following:
   - The scheme eliminates the requirement for the Ardley East roundabout and the new south facing M40 slip roads.
   - The Ardley Bypass would therefore be at or below the existing levels, passing under Ardley Road, eliminating the complex engineering works required to achieve the 3D layout and thereby minimising environmental impacts on Ardley village.
   - The northbound and southbound M40-A43 free-flow links significantly reduce traffic flows through the M40 Junction 10 complex and materially improve journey times on the SRN.
   - The required number of new structures over the M40 is the same as Options 18 and 19, therefore minimising the impact on scheme cost.

- The number of new junctions required remains the same as Options 18 and 19, therefore minimising the impact on scheme cost.
- The Cherwell roundabout can, with minor improvements, accommodate the OxSRFI traffic due to the removal of northbound and southbound traffic between the M40 and the A43.
- No changes to the Padbury roundabout are envisaged as the capacity is increased by the committed OCC Housing Growth deal improvement scheme.

8. An assessment of junction capacity was undertaken which demonstrates that Option 25 would accommodate background traffic growth up to 2031 and the OxSRFI development traffic, whilst providing increased headroom and network resilience compared to Options 18 and 19. Further, Journey time assessment shows that Option 25 would significantly reduce journey times across the assessed network when compared to the future baseline without the OxSRFI scheme, particularly in the morning peak hour. Option 25 would perform materially better than Options 18 and 19 in the morning and evening peak hours, largely due to the provision of the M40 to A43 northbound free-flow link. Option 25 also performs better than Options 18 and 19 during the inter-peak periods, with negligible difference to Option 18 in the off-peak.

9. Hence, it was concluded that Option 25 delivered the high-quality access to the SRN that the development requires, whilst it also provided future resilience at M40 Junction 10 within a smaller footprint than the previously agreed Options 18 and 19.

M40 Junction 10 Option 25 - B4100 and Baynard's Green

10. As discussed in Section 2 of TN9, Option 25 would provide a full northbound free-flow link from the M40 to the A43, with the slip-road loop west of the M40 mainline facilitating a tighter alignment of the free-flow link as it crosses the motorway and merges with the A43. TN9 proposed that Options 25 would separate the M40/A43 traffic from the local traffic, creating a new link between the B4100 and Padbury roundabout, with a new junction created with the B4100 east of Baynard's Green.

11. Two options for the new B4100/new link road junction were considered; a traffic signal controlled T-junction and a traffic signal controlled roundabout. TN9 concluded that the roundabout option was the preferred option as it provided the greater capacity and it would be easier to coordinate two traffic signal controlled roundabouts than a traffic signal controlled roundabout with a T-junction (two stages at the roundabout, three stages at the T-junction).

12. The proposed layout of the Option 25 Baynard's Green roundabout and the B4100/new link road roundabout is shown on **Figure 1** below.

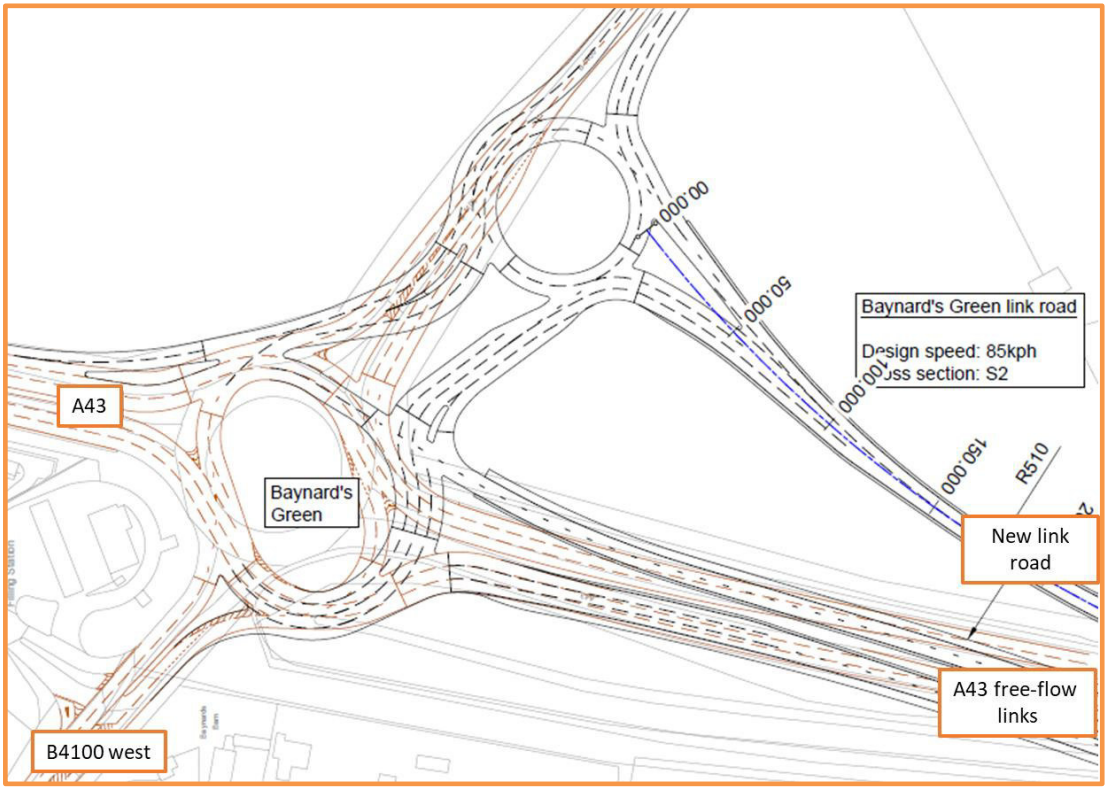


Figure 1: Option 25 Baynard's Green and new B4100/link road roundabout option

Highway Authority feedback on M40 Junction 10 Option 25

13. National Highways provided their initial feedback on Option 25 via email on 14 June 2022. With regards to the Baynard's Green and B4100 junctions, National Highways made the following comments:
    - *"The proposed arrangement around Baynard's Green looks complex and consider that this should be simplified. Option 25 includes too many lanes and signals at this junction and this can cause safety issues and confusion for the drivers.*
    - *Whilst geometry not detail checked, however, entry path curvature will need to stay within mandated limits."*

14. National Highways go on to comment that "…*our key concern with Option 25 is around the proposed changes at Baynard's Green. However, we consider that there is scope to refine the current design of the layout and signing to address a lot (or maybe even all) of the concerns about complexity*".

15. Further, in their comments of 15 June 2022, OCC agreed with NH concerns, stating *"…the Baynard's Green arrangement looks very complicated, with a real risk of local traffic from Bicester to Banbury accidentally heading south on the M40. Cycle facilities would be vital to help cyclists negotiate such an arrangement".*

Reference case modelling of Baynard's Green roundabout

16. Between 2018 and 2020, National Highways assessed the future performance of the M40 Junction 10 complex using a calibrated and validated VISSIM model. This work identified that the Baynard's Green and Padbury roundabouts currently operate over capacity, with the performance deteriorating significantly in future years and adversely impacting the operation of M40 Junction 10. Hence, improvement schemes were identified at these junctions, to be delivered through a combination of OCC Housing Growth Deal funding and contributions from

the Heyford Park development. It was expected that the improvement schemes would be delivered in 2023.

17. As such, the identified Baynard's Green and Padbury roundabout Growth Deal improvement schemes had been included as committed infrastructure within the reference case modelling presented in ADC Infrastructure Technical Note 9.

18. However, OCC confirmed via email on 24 October 2022 that the Housing Growth Deal funding would no longer be used to fund improvements at the Baynard's Green roundabout, though the funding would still deliver the identified improvement scheme at Padbury roundabout.

19. Therefore, the reference case LinSig model has been updated to reflect the existing junction arrangement of the Baynard's Green roundabout. The reference case LinSig network model results are contained in **Appendix A** and the performance of the existing Baynard's Green roundabout, expressed as a percentage of total capacity, is summarised in the table below.

Scenario	A43 SB	B4100 WB	A43 NB	B4100 EB
2031 Ref AM peak hour	134.7%	146.8%	88.0%	88.2%
2031 Ref PM peak hour	82.1%	159.6%	119.3%	94.7%

20. The results show that the existing Baynard's Green roundabout would operate significantly over capacity in the 2031 reference case morning and evening peak hour scenarios without the OxSRFI development in place. In the morning peak hour, there would be significant congestion on the A43 southbound and B4100 westbound approaches, with the A43 northbound and B4100 eastbound approaches operating at c.85% of their capacity. In the evening peak hour, the A43 northbound and B4100 westbound approaches would operate with significant congestion, with the B4100 eastbound approach operating close to 100% of its capacity.

Revised Baynard's Green layout (M40 Junction 10 Option 25a)

21. To overcome the issues raised by National Highways, further consideration was given to the proposed layout of the Baynard's Green and B4100/new link road roundabouts. To address the concern regarding complexity, the LinSig model was used to test options for reducing the number of lanes between the two roundabouts. However, the modelling showed that this was not possible, with reduced capacity leading to problematic queueing between the two roundabouts. Whilst a comprehensive signage strategy could assist drivers in navigating the junctions, the potential for vehicles changing lanes and weaving across a relatively short distance would remain.

22. Hence, to reduce complexity and achieve an arrangement that would provide a connection for the new link road and deliver the required capacity, a five-arm gyratory at Baynard's Green has been considered. The gyratory would cater for all-moves between the A43 north, A43 south, B4100 east, B4100 west and the new link road. A southbound cut-through would be provided for vehicles travelling from the A43 to the M40 southbound free-flow link. This cut-through would remove the large A43 southbound flow from the circulating carriageway, avoiding conflict with the B4100 westbound approach and the new link road approach. This also allows the number of lanes on the eastern side of the junction to be reduced, improving the driver experience. This layout is now developed into the wider M40 J10 proposals as Option 25a.

23. All approaches to the gyratory would operate under traffic signal control, with the exception of the new link road (to/from Padbury junction) which would be priority controlled. Toucan crossing facilities would be provided on the B4100 east and west arms of the gyratory, and across

the circulating carriageway at the B4100 entries. These facilities would allow cyclists to travel along the B4100 in both directions through the junction without using the carriageway.

24. The Option 25 LinSig network model has been amended to represent the revised Baynard's Green layout for Option 25a. This network model has then been used as the design tool to inform the required arrangement at the proposed five-arm Baynard's Green gyratory, including the method of control at each node and the number of approach/exit lanes. This has followed an iterative process with geometrical design input from BWB Consulting Ltd.

25. The proposed improvement scheme is shown on BWB Consulting **Drawing OxSRFI-BWB-GEN-XX-SK-CH-SK050 P03**, and an extract shown below.

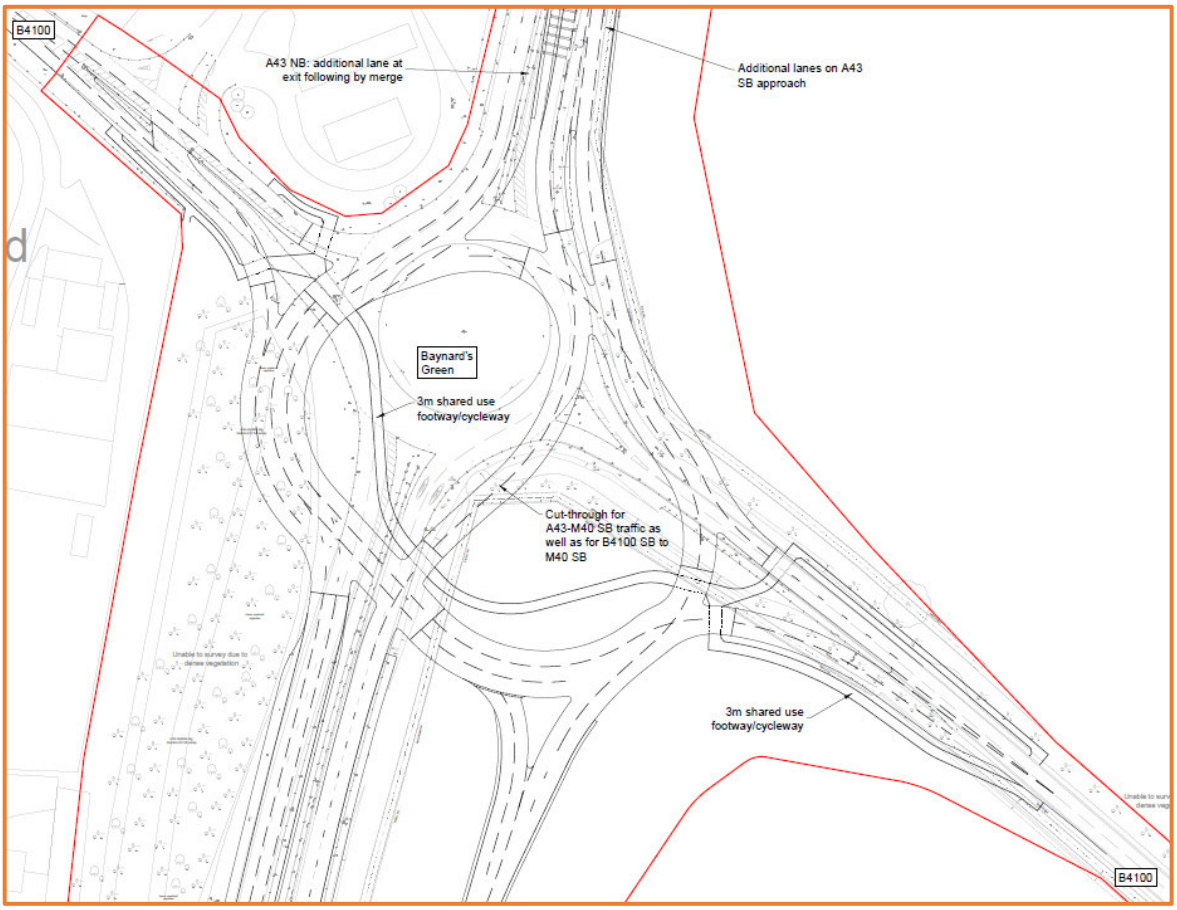


Figure 2: extract of Drawing OxSRFI-BWB-GEN-XX-SK-CH-SK050 P03

26. Whilst the five-arm Baynard's Green gyratory would be a relatively large junction, the overall footprint and land requirement would be reduced when compared to the previous proposals. Further, when compared to Options 18 and 19, under Option 25a there is no requirement for a new junction (Options 18 and 19 both required a new junction on the Ardley Bypass, referred to as the Ardley East roundabout). The five-arm gyratory would also allow the new link road to follow an alignment much closer to the existing alignment of the A43, helping to reduce the overall footprint of the M40 Junction 10 proposals.

27. Each approach arm has been carefully designed to minimise the number of lanes required and the length of flared lanes.

Baynard's Green five-arm gyratory capacity results

28. In addition to their comments on the proposed Option 25 arrangement, National Highways also provided detailed comments on the LinSig modelling via their term consultants Aecom. ADC have provided responses to the points raised in the Model Checking Report, with relevant changes made to the LinSig model for the Option 25a proposal. The Model Checking report is provided at **Appendix B**.

29. The LinSig network model results are contained in **Appendix C** and the key performance indicators for the Baynard's Green gyratory are summarised in the table below. The results show that the proposed five-arm Baynard's Green gyratory would operate within capacity in the 2031 morning and evening peak hour scenarios with the OxSRFI development in place. The practical reserve capacity (PRC) would be positive in both peak hours, indicating that all links at the roundabout would operate less than 90% saturated, which is acceptable.

Scenario	PRC (%)	Total delay (pcuhr)
2031 WD AM peak hour	3.6%	47.3
2031 WD PM peak hour	2.1%	52.4

Scenario	A43 SB (DoS)	B4100 WB (DoS)	New Link Rd (DoS)	A43 NB (DoS)	B4100 EB (DoS)
2031 WD AM peak hour	86.0%	86.9%	44.1%	46.3%	67.3%
2031 WD PM peak hour	88.2%	87.9%	64.3%	87.8%	62.5%

30. When compared to the summarised results for the existing Baynard's Green roundabout in the 2031 reference case model, as presented at paragraph 19, the proposed Baynard's Green improvement would deliver significant benefit with improved capacity performance and reduced queueing and delay, particularly on the B4100 westbound and A43 northbound and southbound approaches.

Option 25a journey time assessment

31. Following the same process established for the assessment of previous options, the average journey time per pcu in seconds (and also total journey time in pcuHr) on key routes across the SRN and Oxfordshire highway networks for the updated 2031 Reference Case scenario (with the OCC Housing Growth Deal improvement at Padbury roundabout only, without the OxSRFI development) were compared against the average journey times for Option 25a. Comparison tables were generated to compare the 2031 morning peak, 2031 evening peak, 2031 off-peak and 2031 inter-peak periods for the following:
    - Reference Case (without OxSRFI) against Option 25a (with OxSRFI)
    - Option 18 against Option 25a (both with OxSRFI)
    - Option 19 against Option 25a (both with OxSRFI).

32. It is noted that the traffic flow scenarios used for Options 18, 19 and 25a all include the additional traffic from the OxSRFI development, whereas the Reference Case scenario does not include the additional traffic demand from the OxSRFI. Therefore, the total journey metric for the routes to and from the OxSRFI site (i.e. to and from the Ardley Bypass to each of the other locations) includes the additional OxSRFI traffic which increases the overall pcuHr, even if there is a reduction in the actual journey time for that route. Hence, a direct comparison of the total journey time metric between the Reference Case and the Options 18, 19 and 25a for these routes is not provided.

33. The full journey time comparison tables are provided at **Appendix D**. By way of a summary of those detailed tables, the tables below provide a summary of the total average journey time on all assessed routes and compares this sum of the average journey times across the assessed routes for the updated Reference Case, Option 18 and Option 19 against the revised Option 25a.

	Average journey time all routes (s)			
Period	Option 25a	Reference Case	Option 18	Option 19
Off-peak	1816	2004	1900	1969
AM Peak	2035	4533	2304	2233
Interpeak	1982	2818	2226	2151
PM Peak	2092	4075	2386	2389

	Difference in journey time to Option 25a (s)		
Period	Reference Case	Option 18	Option 19
Off-peak	188	84	153
AM Peak	2498	269	198
Interpeak	836	244	169
PM Peak	1983	294	297

34. The results summarised above show that Option 25a would significantly reduce journey times across the assessed network when compared to the updated Reference Case, particularly in the morning peak hour. The comparison tables also show that Option 25a would perform materially better than Options 18 and 19 in the morning and evening peak hours, largely due to the provision of the M40 to A43 northbound free-flow link. Option 25a also performs better than Options 18 and 19 during the off-peak and inter-peak periods.

35. Therefore, Option 25a would significantly improve journey times across the M40 Junction 10 complex when compared to the Reference Case (i.e. without the OxSRFI development), offering both strategic and local network improvements. The improved journey time reliability provides a cost benefit when applied to trips through this part of the network and would help to reduce driver stress in terms of reduced delays and improved experience.

Junction performance

36. The table below provides a comparison between the forecast capacity at the future baseline (Reference Case) M40 Junction 10 (with committed Housing Growth Deal improvements at Padbury only, no OxSRFI development), with the forecast capacity at the junctions under Options 18, 19 and Option 25a with the OxSRFI development in place in the 2031 assessment year. Reference to Technical Note 5 should be made for details of Options 18 and 19.

Comparison of M40 Junction 10 mitigation options (% PRC) in 2031 assessment year								
Junction	Future baseline layout		Option 18		Option 19		Option 25a	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Baynard's Green	147% (RFC)	160% (RFC)	5.4%	3.7%	5.3%	2.2%	3.6%	2.1%
Padbury	10.2%	-7.2%	7.7%	4.7%	5.9%	3.6%	10.3%	15.8%
Cherwell	-8.1%	-4.4%	12.2%	4.5%	12.3%	2.6%	14.9%	25.0%
Ardley	85% (RFC)	98% (RFC)	16.9%	5.1%	11.4%	32.6%	7.8%	12.6%

37. As shown in the table above, notwithstanding the Housing Growth Deal improvement that is committed at Padbury roundabout, the future baseline arrangements at Baynard's Green, Padbury, Cherwell and Ardley junctions would be over capacity in 2031. These junctions would therefore require significant improvement to facilitate background growth to 2031 and to accommodate the proposed OxSRFI development.

38. The summary results presented above show that Option 25a can accommodate background traffic growth up to 2031 and the OxSRFI development traffic. However, Option 25a would provide increased headroom at all four junctions, but particularly at Padbury roundabout and Cherwell roundabout due to the removal of all A43 to M40 south traffic (and vice versa) from these junctions.

Summary and conclusions

39. ADC and BWB have undertaken extensive option assessment work to identify an improvement scheme at M40 Junction 10 that, along with the proposed bypass of Ardley village, would provide the required access to the SRN for the OxSRFI development, along with aiding the delivery of planned growth and development across the wider area.

40. In January 2022, National Highways and OCC confirmed that Options 18 and 19 that have been developed by ADC and BWB were the preferred options to be taken forward.

41. As part of the further assessment work required for Options 18 and 19, and as requested by National Highways, ADC and BWB jointly investigated how a northbound free-flow link between the M40 northbound and the A43 northbound could be accommodated by Option 18. Technical Note 9 was prepared to present the options considered for providing a M40 northbound to A43 northbound free-flow link road.

42. TN9 concluded that providing Option 18 and then amending to provide the northbound free-flow link in the future would result in redundant infrastructure being implemented by OxSRFI. Hence TN9 proposed that Option 25 should be the preferred option, which would achieve the following:
    - The scheme eliminates the requirement for the Ardley East roundabout and the new south facing M40 slip roads.
    - The Ardley Bypass would therefore be at or below the existing levels, passing under Ardley Road, eliminating the complex engineering works required to achieve the 3D layout and thereby minimising environmental impacts on Ardley village.
    - The northbound and southbound M40-A43 free-flow links significantly reduce traffic flows through the M40 Junction 10 complex and materially improve journey times on the SRN.
    - The required number of new structures over the M40 is the same as Options 18 and 19, therefore minimising the impact on scheme cost.
    - The number of new junctions required remains the same as Options 18 and 19, therefore minimising the impact on scheme cost.
    - The Cherwell roundabout can, with minor improvements, accommodate the OxSRFI traffic due to the removal of northbound and southbound traffic between the M40 and the A43.
    - No changes to the Padbury roundabout are envisaged as the capacity is increased by the committed OCC Housing Growth deal improvement scheme.
    - The overall scheme footprint is minimised, and Option 25 would mean that significant infrastructure is not built that could become redundant if the northbound free-flow link were built in the future.

43. TN9 demonstrated that Option 25 would perform materially better than Options 18 and 19 in the morning and evening peak hours, largely due to the provision of the M40 to A43 northbound free-

flow link. Option 25 also performs better than Options 18 and 19 during the inter-peak periods, with negligible difference to Option 18 in the off-peak.

44. Hence, it was concluded that Option 25 delivered the high-quality access to the SRN that the OxSRFI development requires, whilst it also provided future resilience at M40 Junction 10 within a smaller footprint than the previously agreed Options 18 and 19.

45. To allow the provision of the northbound free-flow link, Option 25 would separate the M40/A43 traffic from the local traffic, creating a new link between the B4100 and Padbury roundabout, with a new junction created with the B4100 east of Baynard's Green. TN9 concluded that the preferred option for the new junction should be a signalised roundabout as it provided the greater capacity.

46. In their feedback on TN9, National Highways considered that the Baynard's Green and B4100/new link road junction arrangement would be *"complex and consider that this should be simplified. Option 25 includes too many lanes and signals at this junction and this can cause safety issues and confusion for the drivers".*

47. To overcome the issues raised by National Highways, further consideration was given to the proposed layout of the Baynard's Green and B4100/new link road roundabouts. However, the modelling showed that this was not possible, with reduced capacity leading to problematic queueing between the two roundabouts.

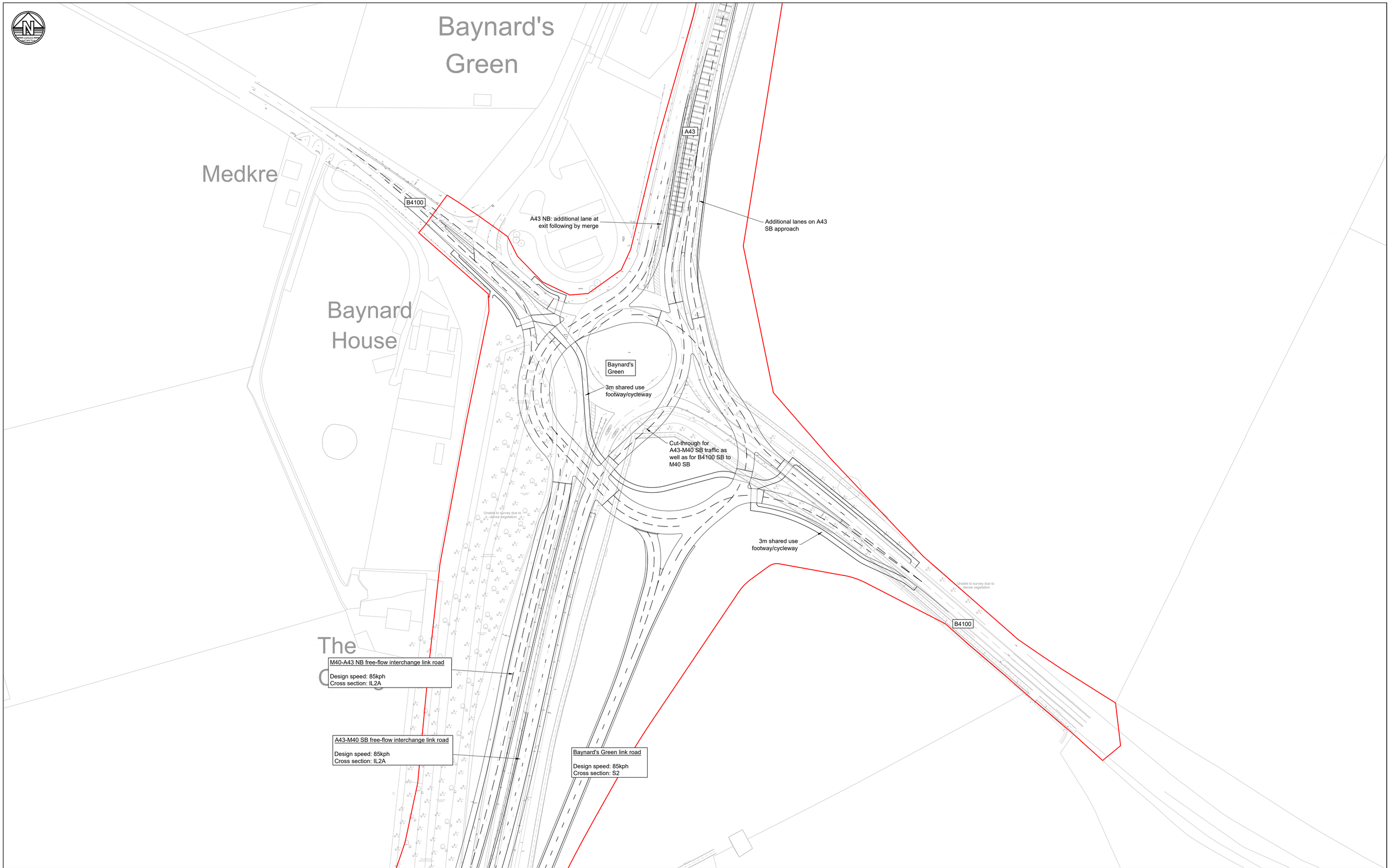
48. Therefore, to reduce complexity and achieve an arrangement that would provide a connection for the new link road and deliver the required capacity, a five-arm gyratory at Baynard's Green is proposed. The gyratory would provide a southbound cut-through for vehicles travelling from the A43 to the M40 southbound free-flow link, removing the large A43 southbound flow from the circulating carriageway, avoiding conflict with the B4100 westbound approach and the new link road approach. Toucan crossing facilities would be provided on the B4100 east and west arms of the gyratory, and across the circulating carriageway at the B4100 entries. These facilities would allow cyclists to travel along the B4100 in both directions through the junction without using the carriageway. The new layout is Option 25a.

49. The overall footprint and land requirement of would be reduced when compared to the previous proposals. Further, when compared to Options 18 and 19, under the revised proposals which are now known as Option 25a, there is no requirement for a new junction (Options 18 and 19 both required a new junction on the Ardley Bypass, referred to as the Ardley East roundabout). The five-arm gyratory would also allow the new link road to follow an alignment much closer to the existing alignment of the A43, helping to reduce the overall footprint of the M40 Junction 10 proposals.

50. The results of the updated network LinSig modelling show that the revised Baynard's Green improvement scheme would deliver significant benefit when compared to the existing junction, with improved capacity performance and reduced queueing and delay, particularly on the B4100 westbound and A43 northbound and southbound approaches. Further, the Option 25a would significantly reduce journey times across the assessed network when compared to the updated Reference Case, particularly in the morning peak hour. Option 25a would also perform materially better than Options 18 and 19 in the morning and evening peak hours.

51. Therefore, it is proposed that Option 25a which incorporates the revised Baynard's Green proposals should be taken forward as the preferred option.

DRAWINGS



Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in metres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

© Copyright BWB Consulting Ltd

Legend

Draft Order Limits

ISSUES & REVISIONS

Rev	Date	Details of issue / revision	Drw	Rev
P01	02.09.22	Preliminary Issue	SRH	SRH
P02	07.09.22	Presentation amended	SRH	SRH
P03	19.12.22	Updated to option 26 layout	SRH	SRH

BWB
A CAF GROUP COMPANY
Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client
OXFORDSHIRE RAILFREIGHT LTD.

Project Title
OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title
A43 / B4100 BAYNARDS GREEN GENERAL ARRANGEMENT

Drawn:	S. Hilditch		Reviewed:	S. Hilditch		
BWB Ref:	NTH2479	Date:	02.09.22	Scale@A1:	1:1,000	

Drawing Status
PRELIMINARY

Project - Originator - Zone - Level - Type - Role - Number
OxSRFI-BWB-GEN-XX-SK-CH-SK050

Status: **S1**

Rev: **P03**

Y:\NTH\NTH2479_Oxfordshire RFI\02. Project Delivery\01. WIP\Sketches\OxSRFI-BWB-GEN-XX-SK-CH-SK050_Baynards Green GA.dwg

APPENDIX A

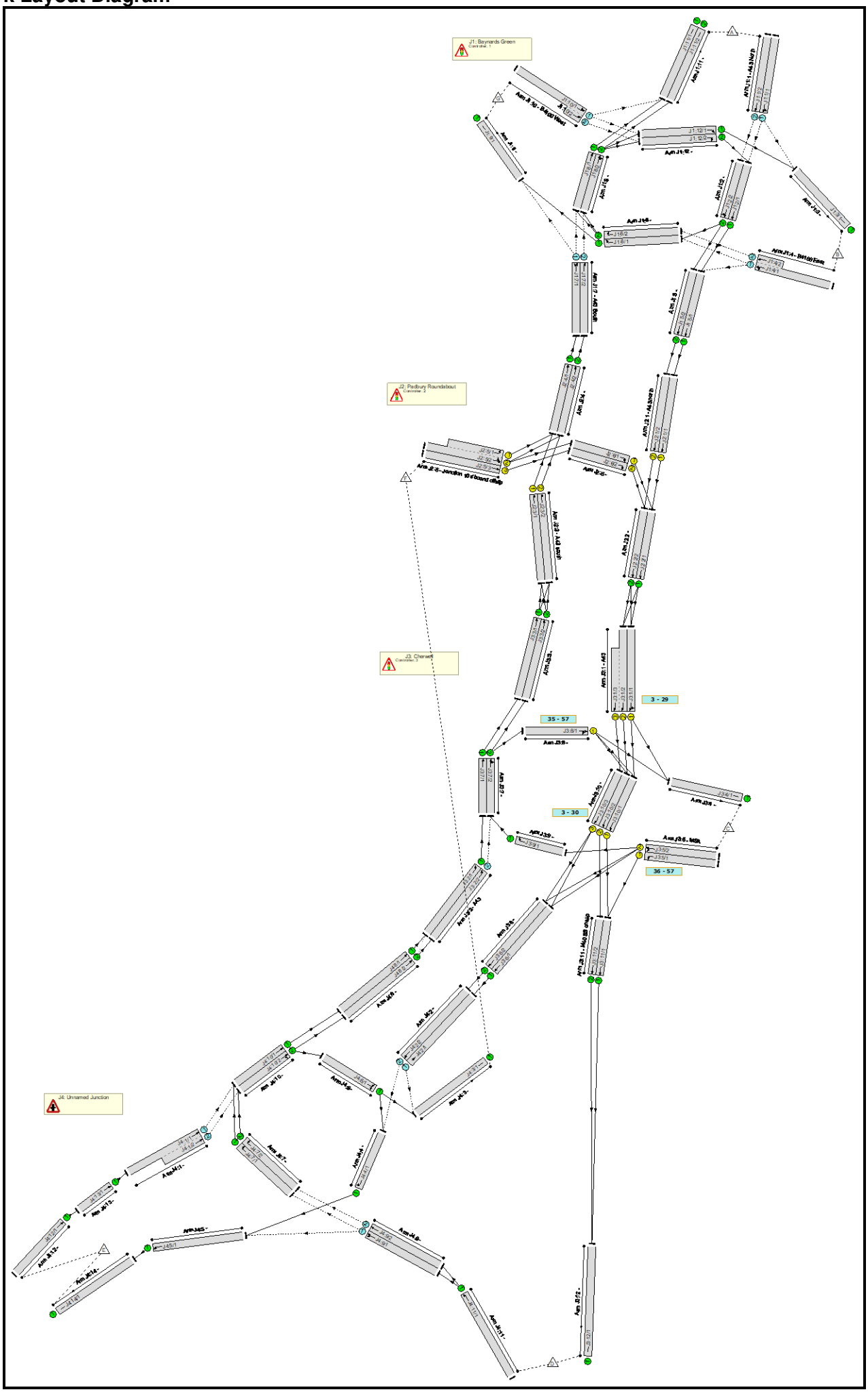
REVISED REFERENCE CASE LINSIG MODEL

Full Input Data And Results

User and Project Details

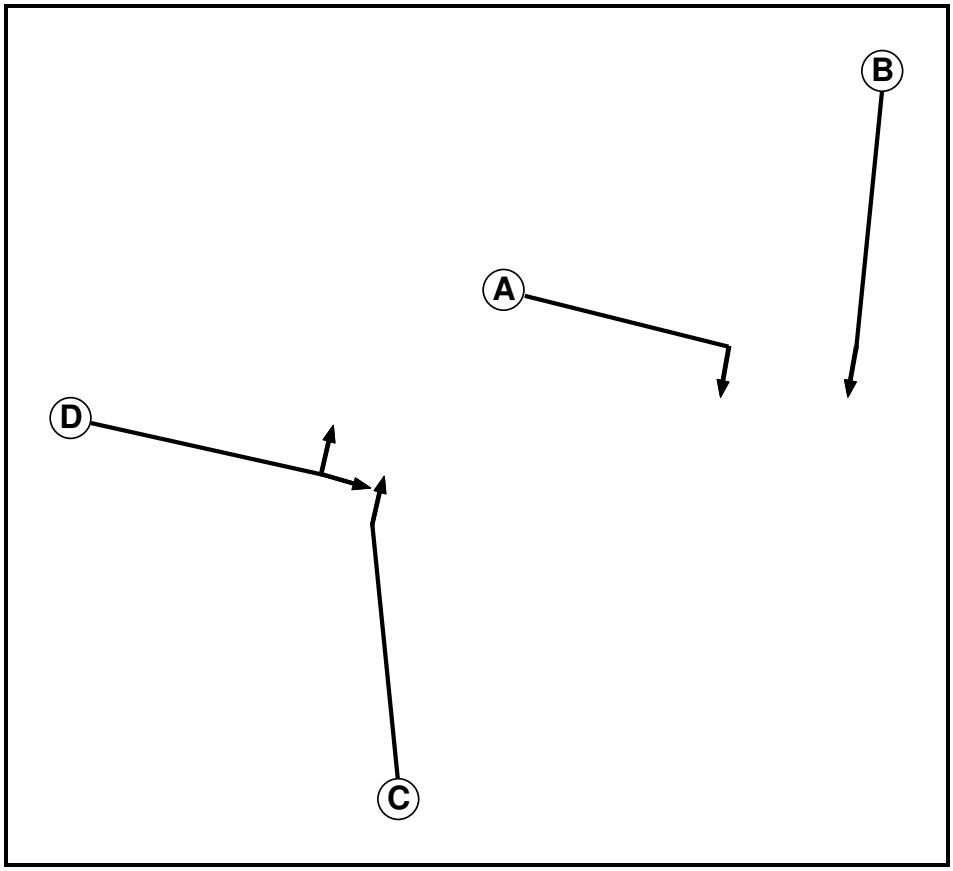
Project:	**Oxfordshire SRFI**
Title:	**Reference Case Network Model**
Location:	
Additional detail:	Entry and exit links configured to be consistent with do something cases for comparison. Baynards Green reverts to exitsing.
File name:	221109 Network - reference case.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



C2

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

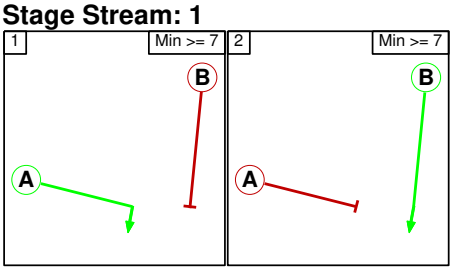
		Starting Phase			
		A	B	C	D
Terminating Phase	A		6	-	-
	B	6		-	-
	C	-	-		6
	D	-	-	6	

Phases in Stage

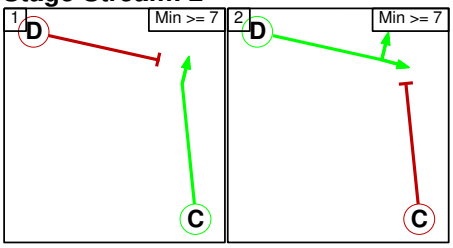
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Prohibited Stage Change

Stage Stream: 1

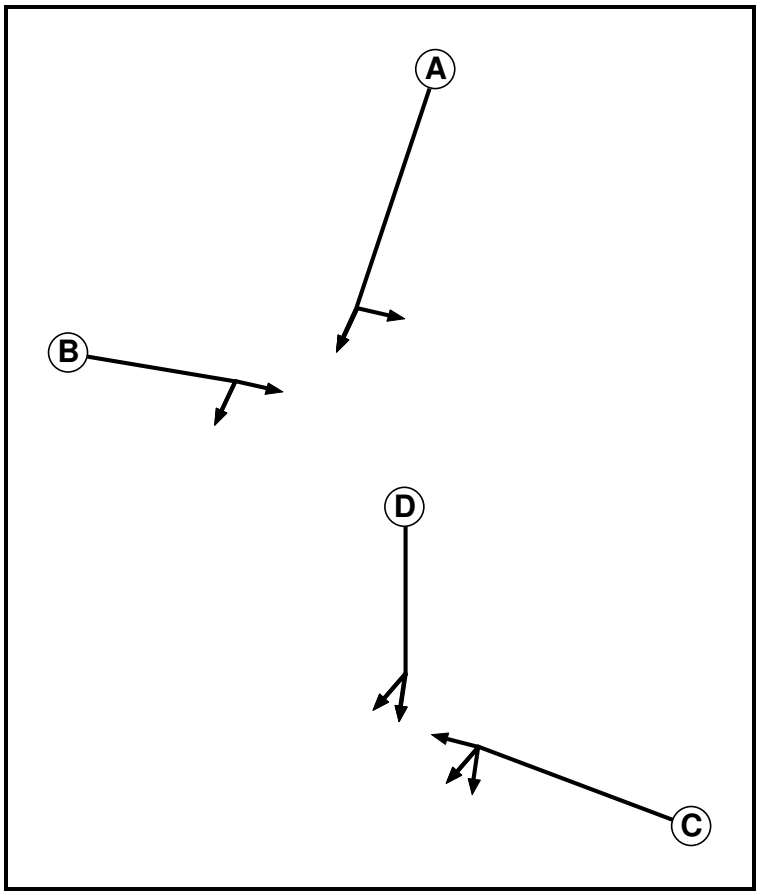
	To Stage		
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

	To Stage		
		1	2
From Stage	1		6
	2	6	

C3

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

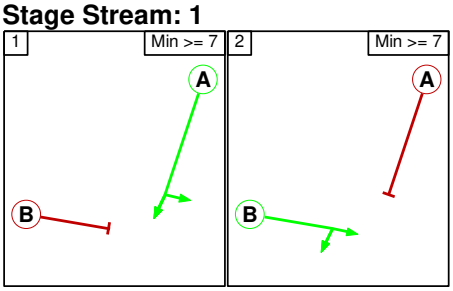
Terminating Phase	Starting Phase A	B	C	D
A		6	-	-
B	6		-	-
C	-	-		6
D	-	-	6	

Phases in Stage

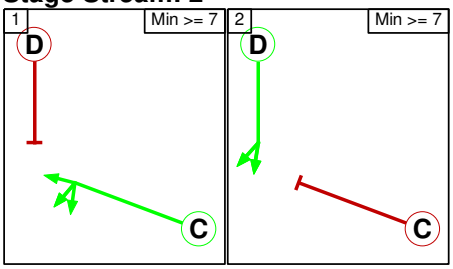
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Prohibited Stage Change

Stage Stream: 1

	To Stage		
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

	To Stage		
		1	2
From Stage	1		6
	2	6	

Give-Way Lane Input Data

Junction: J1: Baynards Green

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)
J1:1/1 (A43 North)	J1:2/1 (Ahead)	1233	0	J1:12/1	0.30	All	-	-	-	-	-
				J1:12/2	0.30	All					
	J1:3/1 (Left)	1233	0	J1:12/1	0.30	All					
J1:1/2 (A43 North)	J1:2/2 (Ahead)	1233	0	J1:12/1	0.30	All	-	-	-	-	-
				J1:12/2	0.30	All					
J1:4/1 (B4100 East)	J1:5/1 (Left)	729	0	J1:2/1	0.24	All	-	-	-	-	-
	J1:6/1 (Ahead)	729	0	J1:2/1	0.24	All					
				J1:2/2	0.24	All					
J1:4/2 (B4100 East)	J1:6/2 (Ahead)	729	0	J1:2/1	0.24	All	-	-	-	-	-
				J1:2/2	0.24	All					
J1:7/1 (A43 South)	J1:8/1 (Ahead)	1268	0	J1:6/1	0.31	All	-	-	-	-	-
				J1:6/2	0.31	All					
	J1:9/1 (Ahead)	1268	0	J1:6/1	0.31	All					
J1:7/2 (A43 South)	J1:8/2 (Ahead)	1268	0	J1:6/1	0.31	All	-	-	-	-	-
				J1:6/2	0.31	All					
J1:10/1 (B4100 West)	J1:11/1 (Left)	882	0	J1:8/1	0.25	All	-	-	-	-	-
	J1:12/1 (Ahead)	883	0	J1:8/1	0.25	All					
				J1:8/2	0.25	All					
J1:10/2 (B4100 West)	J1:12/2 (Ahead)	883	0	J1:8/1	0.25	All	-	-	-	-	-
				J1:8/2	0.25	All					

Junction: J2: Padbury Roundabout

There are no Opposed Lanes in this Junction

Junction: J3: Cherwell											
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)**
J3:2/2 (A43)	J3:7/2 (Ahead)	1030	0	J3:9/1	0.48	All	-	-	-	-	-

Junction: J4: Unnamed Junction											
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)**
J4:1/1	J4:10/1 (Ahead)	1057	0	J4:7/1	0.28	All	-	-	-	-	-
J4:1/2	J4:10/2 (Ahead)	1057	0	J4:7/1	0.28	All	-	-	-	-	-
				J4:7/2	0.28	All					
J4:2/1	J4:3/1 (U-Turn)	1205	0	J4:6/1	0.31	All	-	-	-	-	-
J4:2/2	J4:4/1 (Ahead)	1205	0	J4:6/1	0.31	All	-	-	-	-	-
J4:9/1	J4:5/1 (Ahead)	1215	0	J4:4/1	0.32	All	-	-	-	-	-
	J4:7/1 (Ahead)	1215	0	J4:4/1	0.32	All					
J4:9/2	J4:7/2 (Ahead)	1215	0	J4:4/1	0.32	All	-	-	-	-	-

Lane Input Data

Junction: J1: Baynards Green												
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)**
J1:1/1 (A43 North)	O		2	3	60.0	Inf	-	-	-	-	-	-
J1:1/2 (A43 North)	O		2	3	60.0	Inf	-	-	-	-	-	-
J1:2/1	U		2	3	10.1	Inf	-	-	-	-	-	-
J1:2/2	U		2	3	10.1	Inf	-	-	-	-	-	-
J1:3/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:4/1 (B4100 East)	O		2	3	60.0	Inf	-	-	-	-	-	-
J1:4/2 (B4100 East)	O		2	3	5.0	Inf	-	-	-	-	-	-
J1:5/1	U		2	3	17.4	User	2000	-	-	-	-	-
J1:5/2	U		2	3	17.4	Inf	-	-	-	-	-	-
J1:6/1	U		2	3	7.0	Inf	-	-	-	-	-	-
J1:6/2	U		2	3	7.0	Inf	-	-	-	-	-	-
J1:7/1 (A43 South)	O		2	3	104.3	Inf	-	-	-	-	-	-
J1:7/2 (A43 South)	O		2	3	104.3	Inf	-	-	-	-	-	-
J1:8/1	U		2	3	8.2	Inf	-	-	-	-	-	-
J1:8/2	U		2	3	8.2	Inf	-	-	-	-	-	-
J1:9/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:10/1 (B4100 West)	O		2	3	60.0	Inf	-	-	-	-	-	-
J1:10/2 (B4100 West)	O		2	3	3.5	Inf	-	-	-	-	-	-
J1:11/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:11/2	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:12/1	U		2	3	7.8	Inf	-	-	-	-	-	-
J1:12/2	U		2	3	7.8	Inf	-	-	-	-	-	-

Junction: J2: Padbury Roundabout												
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)**
J2:1/1 (A43 north)	U	B	2	3	95.7	Geom	-	3.65	0.00	Y	Arm J2:2 Ahead	50.00
J2:1/2 (A43 north)	U	B	2	3	95.7	Geom	-	3.65	0.00	N	Arm J2:2 Ahead	50.00
J2:2/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:2/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:3/1 (A43 south)	U	C	2	3	52.2	Geom	-	3.65	0.00	Y	Arm J2:4 Ahead	30.00
J2:3/2 (A43 south)	U	C	2	3	52.2	Geom	-	3.65	0.00	N	Arm J2:4 Ahead	30.00
J2:4/1	U		2	3	13.0	Inf	-	-	-	-	-	-
J2:4/2	U		2	3	13.0	Inf	-	-	-	-	-	-
J2:5/1 (Junction 10 s'bound offslip)	U	D	2	3	10.8	Geom	-	3.65	0.00	Y	Arm J2:4 Left	40.00
J2:5/2 (Junction 10 s'bound offslip)	U	D	2	3	95.7	Geom	-	3.65	0.00	N	Arm J2:4 Left	50.00
											Arm J2:6 Ahead	50.00
J2:5/3 (Junction 10 s'bound offslip)	U	D	2	3	95.7	Geom	-	3.65	0.00	N	Arm J2:6 Ahead	50.00
J2:6/1	U	A	2	3	8.7	Geom	-	3.65	0.00	Y	Arm J2:2 Right	Inf
J2:6/2	U	A	2	3	8.7	Geom	-	3.65	0.00	N	Arm J2:2 Right	Inf

Junction: J3: Cherwell

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)
J3:1/1 (A43)	U	A	2	3	52.2	Geom	-	3.65	0.00	Y	Arm J3:4 Left	Inf
											Arm J3:10 Ahead	Inf
J3:1/2 (A43)	U	A	2	3	52.2	Geom	-	3.65	0.00	Y	Arm J3:10 Ahead	Inf
J3:1/3 (A43)	U	A	2	3	12.2	Geom	-	3.65	0.00	Y	Arm J3:10 Ahead	Inf
J3:2/1 (A43)	U		2	3	41.7	Inf	-	-	-	-	-	-
J3:2/2 (A43)	O		2	3	41.7	Inf	-	-	-	-	-	-
J3:3/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J3:3/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J3:4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J3:5/1 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm J3:11 Left	30.00
J3:5/2 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	N	Arm J3:6 Left	40.00
											Arm J3:9 Ahead	Inf
J3:6/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J3:6/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J3:7/1	U		2	3	7.0	Inf	-	-	-	-	-	-
J3:7/2	U		2	3	7.0	Inf	-	-	-	-	-	-
J3:8/1	U	B	2	3	5.2	User	1850	-	-	-	-	-
J3:9/1	U		2	3	7.8	Inf	-	-	-	-	-	-
J3:10/1	U	D	2	3	8.7	Geom	-	3.65	0.00	Y	Arm J3:11 Ahead	Inf
J3:10/2	U	D	2	3	8.7	Geom	-	3.65	0.00	N	Arm J3:11 Ahead	Inf
J3:10/3	U	D	2	3	8.7	Geom	-	3.65	0.00	N	Arm J3:6 Ahead	Inf
J3:11/1 (M40 SB onslip)	U		2	3	130.4	Inf	-	-	-	-	-	-
J3:11/2 (M40 SB onslip)	U		2	3	130.4	Inf	-	-	-	-	-	-
J3:12/1	U		2	3	173.9	Inf	-	-	-	-	-	-

Junction: J4: Unnamed Junction												
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)
J4:1/1	O		2	3	165.2	Inf	-	-	-	-	-	-
J4:1/2	O		2	3	8.7	Inf	-	-	-	-	-	-
J4:2/1	O		2	3	41.7	Inf	-	-	-	-	-	-
J4:2/2	O		2	3	41.7	Inf	-	-	-	-	-	-
J4:3/1	U		2	3	173.9	Inf	-	-	-	-	-	-
J4:4/1	U		2	3	9.6	Inf	-	-	-	-	-	-
J4:5/1	U		2	3	173.9	Inf	-	-	-	-	-	-
J4:6/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J4:7/1	U		2	3	7.8	Inf	-	-	-	-	-	-
J4:7/2	U		2	3	7.8	Inf	-	-	-	-	-	-
J4:8/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J4:8/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J4:9/1	O		2	3	173.9	Inf	-	-	-	-	-	-
J4:9/2	O		2	3	173.9	Inf	-	-	-	-	-	-
J4:10/1	U		2	3	8.7	Inf	-	-	-	-	-	-
J4:10/2	U		2	3	8.7	Inf	-	-	-	-	-	-
J4:11/1	U		2	3	104.3	Inf	-	-	-	-	-	-
J4:12/1	U		2	3	8.7	Inf	-	-	-	-	-	-
J4:13/1	U		2	3	87.0	Inf	-	-	-	-	-	-
J4:14/1	U		2	3	87.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2031 ref case - AM'	08:00	09:00	01:00	
2: '2031 ref case - PM'	17:00	18:00	01:00	
3: '2031 ref case - off-peak'	00:00	01:00	01:00	((F1+F2)/2)*.26
4: '2031 ref case - inter-peak'	12:00	13:00	01:00	((F1+F2)/2)*.89

Scenario 1: '2031 reference case - AM Peak' (FG1: '2031 ref case - AM', Plan 1: '2031 Reference Case - AM Peak')

Traffic Flows, Desired

Desired Flow :

		Destination							
		A	B	C	D	E	F	G	Tot.
Origin	A	0	446	112	1485	562	88	70	2763
	B	350	0	11	10	16	175	306	868
	C	78	4	0	295	57	145	3	582
	D	1098	8	211	40	66	0	63	1486
	E	225	25	28	61	0	318	39	696
	F	67	250	219	0	303	0	20	859
	G	72	296	1	110	11	1	0	491
	Tot.	1890	1029	582	2001	1015	727	501	7745

Traffic Lane Flows

Lane	Scenario 1: 2031 reference case - AM Peak
Junction: J1: Baynards Green	
J1:1/1	1387
J1:1/2	1376
J1:2/1	1064
J1:2/2	1376
J1:3/1	1029
J1:4/1 (with short)	868(In) 518(Out)
J1:4/2 (short)	350
J1:5/1	1276
J1:5/2	1306
J1:6/1	376
J1:6/2	350
J1:7/1	913
J1:7/2	967
J1:8/1	963
J1:8/2	1142
J1:9/1	501
J1:10/1 (with short)	491(In) 368(Out)
J1:10/2 (short)	123
J1:11/1	1035
J1:11/2	855
J1:12/1	583
J1:12/2	123
Junction: J2: Padbury Roundabout	
J2:1/1	1276
J2:1/2	1306
J2:2/1	1425
J2:2/2	1679
J2:3/1	826
J2:3/2	717
J2:4/1	913
J2:4/2	967
J2:5/1 (short)	87
J2:5/2 (with short)	486(In) 399(Out)
J2:5/3	373
J2:6/1	149
J2:6/2	373
Junction: J3: Cherwell	
J3:1/1	1255

J3:1/2 (with short)	1849(In) 693(Out)
J3:1/3 (short)	1156
J3:2/1	1279
J3:2/2	519
J3:3/1	1279
J3:3/2	264
J3:4/1	582
J3:5/1	295
J3:5/2	287
J3:6/1	409
J3:6/2	949
J3:7/1	1279
J3:7/2	604
J3:8/1	340
J3:9/1	85
J3:10/1	912
J3:10/2	794
J3:10/3	1156
J3:11/1	1207
J3:11/2	794
J3:12/1	2001
Junction: J4: Unnamed Junction	
J4:1/1 (with short)	696(In) 289(Out)
J4:1/2 (short)	407
J4:2/1	409
J4:2/2	949
J4:3/1	727
J4:4/1	949
J4:5/1	1015
J4:6/1	318
J4:7/1	749
J4:7/2	671
J4:8/1	1038
J4:8/2	760
J4:9/1	815
J4:9/2	671
J4:10/1	1038
J4:10/2	1078
J4:11/1	1486
J4:12/1	696
J4:13/1	696
J4:14/1	1015

Lane Saturation Flows

Junction: J1: Baynards Green								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (A43 North Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:1/2 (A43 North Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:2/1	Infinite Saturation Flow						Inf	Inf
J1:2/2	Infinite Saturation Flow						Inf	Inf
J1:3/1	Infinite Saturation Flow						Inf	Inf
J1:4/1 (B4100 East Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:4/2 (B4100 East Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:5/1	This lane uses a directly entered Saturation Flow						2000	2000
J1:5/2	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:6/2	Infinite Saturation Flow						Inf	Inf
J1:7/1 (A43 South Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:7/2 (A43 South Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:8/1	Infinite Saturation Flow						Inf	Inf
J1:8/2	Infinite Saturation Flow						Inf	Inf
J1:9/1	Infinite Saturation Flow						Inf	Inf
J1:10/1 (B4100 West Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:10/2 (B4100 West Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:11/1	Infinite Saturation Flow						Inf	Inf
J1:11/2	Infinite Saturation Flow						Inf	Inf
J1:12/1	Infinite Saturation Flow						Inf	Inf
J1:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J2: Padbury Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (A43 north)	3.65	0.00	Y	Arm J2:2 Ahead	50.00	100.0 %	1922	1922
J2:1/2 (A43 north)	3.65	0.00	N	Arm J2:2 Ahead	50.00	100.0 %	2058	2058
J2:2/1	Infinite Saturation Flow						Inf	Inf
J2:2/2	Infinite Saturation Flow						Inf	Inf
J2:3/1 (A43 south)	3.65	0.00	Y	Arm J2:4 Ahead	30.00	100.0 %	1886	1886
J2:3/2 (A43 south)	3.65	0.00	N	Arm J2:4 Ahead	30.00	100.0 %	2019	2019
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm J2:4 Left	40.00	100.0 %	1908	1908
J2:5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J2:4 Left	50.00	62.7 %	2058	2058
				Arm J2:6 Ahead	50.00	37.3 %		
J2:5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J2:6 Ahead	50.00	100.0 %	2058	2058
J2:6/1	3.65	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1980	1980
J2:6/2	3.65	0.00	N	Arm J2:2 Right	Inf	100.0 %	2120	2120

Junction: J3: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1 (A43)	3.65	0.00	Y	Arm J3:4 Left	Inf	27.3 %	1980	1980
				Arm J3:10 Ahead	Inf	72.7 %		
J3:1/2 (A43)	3.65	0.00	Y	Arm J3:10 Ahead	Inf	100.0 %	1980	1980
J3:1/3 (A43)	3.65	0.00	Y	Arm J3:10 Ahead	Inf	100.0 %	1980	1980
J3:2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:3/1	Infinite Saturation Flow						Inf	Inf
J3:3/2	Infinite Saturation Flow						Inf	Inf
J3:4/1	Infinite Saturation Flow						Inf	Inf
J3:5/1 (MSA)	3.50	0.00	Y	Arm J3:11 Left	30.00	100.0 %	1871	1871
J3:5/2 (MSA)	3.50	0.00	N	Arm J3:6 Left	40.00	70.4 %	2051	2051
				Arm J3:9 Ahead	Inf	29.6 %		
J3:6/1	Infinite Saturation Flow						Inf	Inf
J3:6/2	Infinite Saturation Flow						Inf	Inf
J3:7/1	Infinite Saturation Flow						Inf	Inf
J3:7/2	Infinite Saturation Flow						Inf	Inf
J3:8/1	This lane uses a directly entered Saturation Flow						1850	1850
J3:9/1	Infinite Saturation Flow						Inf	Inf
J3:10/1	3.65	0.00	Y	Arm J3:11 Ahead	Inf	100.0 %	1980	1980
J3:10/2	3.65	0.00	N	Arm J3:11 Ahead	Inf	100.0 %	2120	2120
J3:10/3	3.65	0.00	N	Arm J3:6 Ahead	Inf	100.0 %	2120	2120
J3:11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf

Junction: J4: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J4:1/1	Infinite Saturation Flow						Inf	Inf
J4:1/2	Infinite Saturation Flow						Inf	Inf
J4:2/1	Infinite Saturation Flow						Inf	Inf
J4:2/2	Infinite Saturation Flow						Inf	Inf
J4:3/1	Infinite Saturation Flow						Inf	Inf
J4:4/1	Infinite Saturation Flow						Inf	Inf
J4:5/1	Infinite Saturation Flow						Inf	Inf
J4:6/1	Infinite Saturation Flow						Inf	Inf
J4:7/1	Infinite Saturation Flow						Inf	Inf
J4:7/2	Infinite Saturation Flow						Inf	Inf
J4:8/1	Infinite Saturation Flow						Inf	Inf
J4:8/2	Infinite Saturation Flow						Inf	Inf
J4:9/1	Infinite Saturation Flow						Inf	Inf
J4:9/2	Infinite Saturation Flow						Inf	Inf
J4:10/1	Infinite Saturation Flow						Inf	Inf
J4:10/2	Infinite Saturation Flow						Inf	Inf
J4:11/1	Infinite Saturation Flow						Inf	Inf
J4:12/1	Infinite Saturation Flow						Inf	Inf
J4:13/1	Infinite Saturation Flow						Inf	Inf
J4:14/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2031 reference case - PM Peak' (FG2: '2031 ref case - PM', Plan 1: '2031 Reference Case - AM Peak')

Traffic Flows, Desired

Desired Flow :

		Destination							
		A	B	C	D	E	F	G	Tot.
Origin	A	0	467	81	894	223	85	45	1795
	B	637	0	25	10	19	186	372	1249
	C	119	4	0	258	17	196	6	600
	D	1597	10	248	67	76	0	50	2048
	E	395	9	20	21	0	214	10	669
	F	87	207	229	0	258	0	24	805
	G	37	244	1	35	11	0	0	328
	Tot.	2872	941	604	1285	604	681	507	7494

Traffic Lane Flows

Lane	Scenario 2: 2031 reference case - PM Peak
Junction: J1: Baynards Green	
J1:1/1	914
J1:1/2	881
J1:2/1	494
J1:2/2	881
J1:3/1	941
J1:4/1 (with short)	1249(In) 612(Out)
J1:4/2 (short)	637
J1:5/1	734
J1:5/2	836
J1:6/1	417
J1:6/2	637
J1:7/1	1254
J1:7/2	1264
J1:8/1	1482
J1:8/2	1583
J1:9/1	507
J1:10/1 (with short)	328(In) 281(Out)
J1:10/2 (short)	47
J1:11/1	1519
J1:11/2	1353
J1:12/1	474
J1:12/2	47
Junction: J2: Padbury Roundabout	
J2:1/1	734
J2:1/2	836
J2:2/1	861
J2:2/2	1196
J2:3/1	1173
J2:3/2	1027
J2:4/1	1254
J2:4/2	1264
J2:5/1 (short)	81
J2:5/2 (with short)	445(In) 364(Out)
J2:5/3	360
J2:6/1	127
J2:6/2	360
Junction: J3: Cherwell	
J3:1/1	774

J3:1/2 (with short)	1283(In) 501(Out)
J3:1/3 (short)	782
J3:2/1	1888
J3:2/2	539
J3:3/1	1888
J3:3/2	312
J3:4/1	604
J3:5/1	258
J3:5/2	342
J3:6/1	467
J3:6/2	528
J3:7/1	1888
J3:7/2	668
J3:8/1	356
J3:9/1	129
J3:10/1	448
J3:10/2	579
J3:10/3	782
J3:11/1	706
J3:11/2	579
J3:12/1	1285
Junction: J4: Unnamed Junction	
J4:1/1 (with short)	669(In) 414(Out)
J4:1/2 (short)	255
J4:2/1	467
J4:2/2	528
J4:3/1	681
J4:4/1	528
J4:5/1	604
J4:6/1	214
J4:7/1	953
J4:7/2	1019
J4:8/1	1367
J4:8/2	1060
J4:9/1	1029
J4:9/2	1019
J4:10/1	1367
J4:10/2	1274
J4:11/1	2048
J4:12/1	669
J4:13/1	669
J4:14/1	604

Lane Saturation Flows

Junction: J1: Baynards Green								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (A43 North Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:1/2 (A43 North Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:2/1	Infinite Saturation Flow						Inf	Inf
J1:2/2	Infinite Saturation Flow						Inf	Inf
J1:3/1	Infinite Saturation Flow						Inf	Inf
J1:4/1 (B4100 East Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:4/2 (B4100 East Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:5/1	This lane uses a directly entered Saturation Flow						2000	2000
J1:5/2	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:6/2	Infinite Saturation Flow						Inf	Inf
J1:7/1 (A43 South Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:7/2 (A43 South Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:8/1	Infinite Saturation Flow						Inf	Inf
J1:8/2	Infinite Saturation Flow						Inf	Inf
J1:9/1	Infinite Saturation Flow						Inf	Inf
J1:10/1 (B4100 West Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:10/2 (B4100 West Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:11/1	Infinite Saturation Flow						Inf	Inf
J1:11/2	Infinite Saturation Flow						Inf	Inf
J1:12/1	Infinite Saturation Flow						Inf	Inf
J1:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J2: Padbury Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (A43 north)	3.65	0.00	Y	Arm J2:2 Ahead	50.00	100.0 %	1922	1922
J2:1/2 (A43 north)	3.65	0.00	N	Arm J2:2 Ahead	50.00	100.0 %	2058	2058
J2:2/1	Infinite Saturation Flow						Inf	Inf
J2:2/2	Infinite Saturation Flow						Inf	Inf
J2:3/1 (A43 south)	3.65	0.00	Y	Arm J2:4 Ahead	30.00	100.0 %	1886	1886
J2:3/2 (A43 south)	3.65	0.00	N	Arm J2:4 Ahead	30.00	100.0 %	2019	2019
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm J2:4 Left	40.00	100.0 %	1908	1908
J2:5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J2:4 Left	50.00	65.1 %	2058	2058
				Arm J2:6 Ahead	50.00	34.9 %		
J2:5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J2:6 Ahead	50.00	100.0 %	2058	2058
J2:6/1	3.65	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1980	1980
J2:6/2	3.65	0.00	N	Arm J2:2 Right	Inf	100.0 %	2120	2120

Junction: J3: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1 (A43)	3.65	0.00	Y	Arm J3:4 Left	Inf	43.4 %	1980	1980
				Arm J3:10 Ahead	Inf	56.6 %		
J3:1/2 (A43)	3.65	0.00	Y	Arm J3:10 Ahead	Inf	100.0 %	1980	1980
J3:1/3 (A43)	3.65	0.00	Y	Arm J3:10 Ahead	Inf	100.0 %	1980	1980
J3:2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:3/1	Infinite Saturation Flow						Inf	Inf
J3:3/2	Infinite Saturation Flow						Inf	Inf
J3:4/1	Infinite Saturation Flow						Inf	Inf
J3:5/1 (MSA)	3.50	0.00	Y	Arm J3:11 Left	30.00	100.0 %	1871	1871
J3:5/2 (MSA)	3.50	0.00	N	Arm J3:6 Left	40.00	62.3 %	2057	2057
				Arm J3:9 Ahead	Inf	37.7 %		
J3:6/1	Infinite Saturation Flow						Inf	Inf
J3:6/2	Infinite Saturation Flow						Inf	Inf
J3:7/1	Infinite Saturation Flow						Inf	Inf
J3:7/2	Infinite Saturation Flow						Inf	Inf
J3:8/1	This lane uses a directly entered Saturation Flow						1850	1850
J3:9/1	Infinite Saturation Flow						Inf	Inf
J3:10/1	3.65	0.00	Y	Arm J3:11 Ahead	Inf	100.0 %	1980	1980
J3:10/2	3.65	0.00	N	Arm J3:11 Ahead	Inf	100.0 %	2120	2120
J3:10/3	3.65	0.00	N	Arm J3:6 Ahead	Inf	100.0 %	2120	2120
J3:11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf

Junction: J4: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J4:1/1	Infinite Saturation Flow						Inf	Inf
J4:1/2	Infinite Saturation Flow						Inf	Inf
J4:2/1	Infinite Saturation Flow						Inf	Inf
J4:2/2	Infinite Saturation Flow						Inf	Inf
J4:3/1	Infinite Saturation Flow						Inf	Inf
J4:4/1	Infinite Saturation Flow						Inf	Inf
J4:5/1	Infinite Saturation Flow						Inf	Inf
J4:6/1	Infinite Saturation Flow						Inf	Inf
J4:7/1	Infinite Saturation Flow						Inf	Inf
J4:7/2	Infinite Saturation Flow						Inf	Inf
J4:8/1	Infinite Saturation Flow						Inf	Inf
J4:8/2	Infinite Saturation Flow						Inf	Inf
J4:9/1	Infinite Saturation Flow						Inf	Inf
J4:9/2	Infinite Saturation Flow						Inf	Inf
J4:10/1	Infinite Saturation Flow						Inf	Inf
J4:10/2	Infinite Saturation Flow						Inf	Inf
J4:11/1	Infinite Saturation Flow						Inf	Inf
J4:12/1	Infinite Saturation Flow						Inf	Inf
J4:13/1	Infinite Saturation Flow						Inf	Inf
J4:14/1	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2031 reference case - Off-peak (% AM)' (FG3: '2031 ref case - off-peak', Plan 1: '2031 Reference Case - AM Peak')

Traffic Flows, Desired

Desired Flow :

		Destination							
		A	B	C	D	E	F	G	Tot.
Origin	A	0	119	25	309	102	22	15	592
	B	128	0	5	3	5	47	88	276
	C	26	1	0	72	10	44	1	154
	D	350	2	60	14	18	0	15	459
	E	81	4	6	11	0	69	6	177
	F	20	59	58	0	73	0	6	216
	G	14	70	0	19	3	0	0	106
	Tot.	619	255	154	428	211	182	131	1980

Traffic Lane Flows

Lane	Scenario 3: 2031 reference case - Off-peak (% AM)
Junction: J1: Baynards Green	
J1:1/1	221
J1:1/2	371
J1:2/1	124
J1:2/2	371
J1:3/1	255
J1:4/1 (with short)	276(In) 148(Out)
J1:4/2 (short)	128
J1:5/1	184
J1:5/2	356
J1:6/1	103
J1:6/2	128
J1:7/1	248
J1:7/2	323
J1:8/1	284
J1:8/2	387
J1:9/1	131
J1:10/1 (with short)	106(In) 84(Out)
J1:10/2 (short)	22
J1:11/1	298
J1:11/2	321
J1:12/1	136
J1:12/2	22
Junction: J2: Padbury Roundabout	
J2:1/1	184
J2:1/2	356
J2:2/1	236
J2:2/2	435
J2:3/1	227
J2:3/2	259
J2:4/1	248
J2:4/2	323
J2:5/1 (short)	21
J2:5/2 (with short)	137(In) 116(Out)
J2:5/3	79
J2:6/1	52
J2:6/2	79
Junction: J3: Cherwell	
J3:1/1	211

J3:1/2 (with short)	460(In) 208(Out)
J3:1/3 (short)	252
J3:2/1	458
J3:2/2	91
J3:3/1	458
J3:3/2	28
J3:4/1	154
J3:5/1	72
J3:5/2	82
J3:6/1	113
J3:6/2	193
J3:7/1	458
J3:7/2	119
J3:8/1	91
J3:9/1	28
J3:10/1	124
J3:10/2	232
J3:10/3	252
J3:11/1	196
J3:11/2	232
J3:12/1	428
Junction: J4: Unnamed Junction	
J4:1/1 (with short)	177(In) 91(Out)
J4:1/2 (short)	86
J4:2/1	113
J4:2/2	193
J4:3/1	182
J4:4/1	193
J4:5/1	211
J4:6/1	69
J4:7/1	367
J4:7/2	74
J4:8/1	458
J4:8/2	91
J4:9/1	385
J4:9/2	74
J4:10/1	458
J4:10/2	160
J4:11/1	459
J4:12/1	177
J4:13/1	177
J4:14/1	211

Lane Saturation Flows

Junction: J1: Baynards Green								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (A43 North Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:1/2 (A43 North Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:2/1	Infinite Saturation Flow						Inf	Inf
J1:2/2	Infinite Saturation Flow						Inf	Inf
J1:3/1	Infinite Saturation Flow						Inf	Inf
J1:4/1 (B4100 East Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:4/2 (B4100 East Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:5/1	This lane uses a directly entered Saturation Flow						2000	2000
J1:5/2	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:6/2	Infinite Saturation Flow						Inf	Inf
J1:7/1 (A43 South Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:7/2 (A43 South Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:8/1	Infinite Saturation Flow						Inf	Inf
J1:8/2	Infinite Saturation Flow						Inf	Inf
J1:9/1	Infinite Saturation Flow						Inf	Inf
J1:10/1 (B4100 West Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:10/2 (B4100 West Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:11/1	Infinite Saturation Flow						Inf	Inf
J1:11/2	Infinite Saturation Flow						Inf	Inf
J1:12/1	Infinite Saturation Flow						Inf	Inf
J1:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J2: Padbury Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (A43 north)	3.65	0.00	Y	Arm J2:2 Ahead	50.00	100.0 %	1922	1922
J2:1/2 (A43 north)	3.65	0.00	N	Arm J2:2 Ahead	50.00	100.0 %	2058	2058
J2:2/1	Infinite Saturation Flow						Inf	Inf
J2:2/2	Infinite Saturation Flow						Inf	Inf
J2:3/1 (A43 south)	3.65	0.00	Y	Arm J2:4 Ahead	30.00	100.0 %	1886	1886
J2:3/2 (A43 south)	3.65	0.00	N	Arm J2:4 Ahead	30.00	100.0 %	2019	2019
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm J2:4 Left	40.00	100.0 %	1908	1908
J2:5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J2:4 Left	50.00	55.2 %	2058	2058
				Arm J2:6 Ahead	50.00	44.8 %		
J2:5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J2:6 Ahead	50.00	100.0 %	2058	2058
J2:6/1	3.65	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1980	1980
J2:6/2	3.65	0.00	N	Arm J2:2 Right	Inf	100.0 %	2120	2120

Junction: J3: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1 (A43)	3.65	0.00	Y	Arm J3:4 Left	Inf	41.7 %	1980	1980
				Arm J3:10 Ahead	Inf	58.3 %		
J3:1/2 (A43)	3.65	0.00	Y	Arm J3:10 Ahead	Inf	100.0 %	1980	1980
J3:1/3 (A43)	3.65	0.00	Y	Arm J3:10 Ahead	Inf	100.0 %	1980	1980
J3:2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:3/1	Infinite Saturation Flow						Inf	Inf
J3:3/2	Infinite Saturation Flow						Inf	Inf
J3:4/1	Infinite Saturation Flow						Inf	Inf
J3:5/1 (MSA)	3.50	0.00	Y	Arm J3:11 Left	30.00	100.0 %	1871	1871
J3:5/2 (MSA)	3.50	0.00	N	Arm J3:6 Left	40.00	65.9 %	2054	2054
				Arm J3:9 Ahead	Inf	34.1 %		
J3:6/1	Infinite Saturation Flow						Inf	Inf
J3:6/2	Infinite Saturation Flow						Inf	Inf
J3:7/1	Infinite Saturation Flow						Inf	Inf
J3:7/2	Infinite Saturation Flow						Inf	Inf
J3:8/1	This lane uses a directly entered Saturation Flow						1850	1850
J3:9/1	Infinite Saturation Flow						Inf	Inf
J3:10/1	3.65	0.00	Y	Arm J3:11 Ahead	Inf	100.0 %	1980	1980
J3:10/2	3.65	0.00	N	Arm J3:11 Ahead	Inf	100.0 %	2120	2120
J3:10/3	3.65	0.00	N	Arm J3:6 Ahead	Inf	100.0 %	2120	2120
J3:11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf

Junction: J4: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J4:1/1	Infinite Saturation Flow						Inf	Inf
J4:1/2	Infinite Saturation Flow						Inf	Inf
J4:2/1	Infinite Saturation Flow						Inf	Inf
J4:2/2	Infinite Saturation Flow						Inf	Inf
J4:3/1	Infinite Saturation Flow						Inf	Inf
J4:4/1	Infinite Saturation Flow						Inf	Inf
J4:5/1	Infinite Saturation Flow						Inf	Inf
J4:6/1	Infinite Saturation Flow						Inf	Inf
J4:7/1	Infinite Saturation Flow						Inf	Inf
J4:7/2	Infinite Saturation Flow						Inf	Inf
J4:8/1	Infinite Saturation Flow						Inf	Inf
J4:8/2	Infinite Saturation Flow						Inf	Inf
J4:9/1	Infinite Saturation Flow						Inf	Inf
J4:9/2	Infinite Saturation Flow						Inf	Inf
J4:10/1	Infinite Saturation Flow						Inf	Inf
J4:10/2	Infinite Saturation Flow						Inf	Inf
J4:11/1	Infinite Saturation Flow						Inf	Inf
J4:12/1	Infinite Saturation Flow						Inf	Inf
J4:13/1	Infinite Saturation Flow						Inf	Inf
J4:14/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2031 reference case - Inter-peak (% AM)' (FG4: '2031 ref case - inter-peak', Plan 1: '2031 Reference Case - AM Peak')

Traffic Flows, Desired

Desired Flow :

		Destination							
		A	B	C	D	E	F	G	Tot.
Origin	A	0	406	86	1059	349	77	51	2028
	B	439	0	16	9	16	161	302	943
	C	88	4	0	246	33	152	4	527
	D	1199	8	204	48	63	0	50	1572
	E	276	15	21	36	0	237	22	607
	F	69	203	199	0	250	0	20	741
	G	49	240	1	65	10	0	0	365
	Tot.	2120	876	527	1463	721	627	449	6783

Traffic Lane Flows

Lane	Scenario 4: 2031 reference case - Inter-peak (% AM)
Junction: J1: Baynards Green	
J1:1/1	1018
J1:1/2	1010
J1:2/1	688
J1:2/2	1010
J1:3/1	876
J1:4/1 (with short)	943(In) 504(Out)
J1:4/2 (short)	439
J1:5/1	890
J1:5/2	959
J1:6/1	353
J1:6/2	439
J1:7/1	964
J1:7/2	994
J1:8/1	1087
J1:8/2	1214
J1:9/1	449
J1:10/1 (with short)	365(In) 289(Out)
J1:10/2 (short)	76
J1:11/1	1136
J1:11/2	984
J1:12/1	470
J1:12/2	76
Junction: J2: Padbury Roundabout	
J2:1/1	890
J2:1/2	959
J2:2/1	1023
J2:2/2	1275
J2:3/1	881
J2:3/2	785
J2:4/1	964
J2:4/2	994
J2:5/1 (short)	83
J2:5/2 (with short)	425(In) 342(Out)
J2:5/3	316
J2:6/1	133
J2:6/2	316
Junction: J3: Cherwell	
J3:1/1	919

J3:1/2 (with short)	1379(In) 516(Out)
J3:1/3 (short)	863
J3:2/1	1341
J3:2/2	538
J3:3/1	1341
J3:3/2	325
J3:4/1	527
J3:5/1	246
J3:5/2	281
J3:6/1	390
J3:6/2	658
J3:7/1	1341
J3:7/2	634
J3:8/1	309
J3:9/1	96
J3:10/1	627
J3:10/2	590
J3:10/3	863
J3:11/1	873
J3:11/2	590
J3:12/1	1463
Junction: J4: Unnamed Junction	
J4:1/1 (with short)	607(In) 313(Out)
J4:1/2 (short)	294
J4:2/1	390
J4:2/2	658
J4:3/1	627
J4:4/1	658
J4:5/1	721
J4:6/1	237
J4:7/1	798
J4:7/2	711
J4:8/1	1111
J4:8/2	768
J4:9/1	861
J4:9/2	711
J4:10/1	1111
J4:10/2	1005
J4:11/1	1572
J4:12/1	607
J4:13/1	607
J4:14/1	721

Lane Saturation Flows

Junction: J1: Baynards Green								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (A43 North Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:1/2 (A43 North Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:2/1	Infinite Saturation Flow						Inf	Inf
J1:2/2	Infinite Saturation Flow						Inf	Inf
J1:3/1	Infinite Saturation Flow						Inf	Inf
J1:4/1 (B4100 East Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:4/2 (B4100 East Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:5/1	This lane uses a directly entered Saturation Flow						2000	2000
J1:5/2	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:6/2	Infinite Saturation Flow						Inf	Inf
J1:7/1 (A43 South Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:7/2 (A43 South Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:8/1	Infinite Saturation Flow						Inf	Inf
J1:8/2	Infinite Saturation Flow						Inf	Inf
J1:9/1	Infinite Saturation Flow						Inf	Inf
J1:10/1 (B4100 West Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:10/2 (B4100 West Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:11/1	Infinite Saturation Flow						Inf	Inf
J1:11/2	Infinite Saturation Flow						Inf	Inf
J1:12/1	Infinite Saturation Flow						Inf	Inf
J1:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J2: Padbury Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (A43 north)	3.65	0.00	Y	Arm J2:2 Ahead	50.00	100.0 %	1922	1922
J2:1/2 (A43 north)	3.65	0.00	N	Arm J2:2 Ahead	50.00	100.0 %	2058	2058
J2:2/1	Infinite Saturation Flow						Inf	Inf
J2:2/2	Infinite Saturation Flow						Inf	Inf
J2:3/1 (A43 south)	3.65	0.00	Y	Arm J2:4 Ahead	30.00	100.0 %	1886	1886
J2:3/2 (A43 south)	3.65	0.00	N	Arm J2:4 Ahead	30.00	100.0 %	2019	2019
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm J2:4 Left	40.00	100.0 %	1908	1908
J2:5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J2:4 Left	50.00	61.1 %	2058	2058
				Arm J2:6 Ahead	50.00	38.9 %		
J2:5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J2:6 Ahead	50.00	100.0 %	2058	2058
J2:6/1	3.65	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1980	1980
J2:6/2	3.65	0.00	N	Arm J2:2 Right	Inf	100.0 %	2120	2120

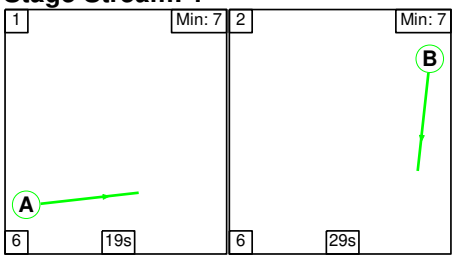
Junction: J3: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1 (A43)	3.65	0.00	Y	Arm J3:4 Left	Inf	32.9 %	1980	1980
				Arm J3:10 Ahead	Inf	67.1 %		
J3:1/2 (A43)	3.65	0.00	Y	Arm J3:10 Ahead	Inf	100.0 %	1980	1980
J3:1/3 (A43)	3.65	0.00	Y	Arm J3:10 Ahead	Inf	100.0 %	1980	1980
J3:2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:3/1	Infinite Saturation Flow						Inf	Inf
J3:3/2	Infinite Saturation Flow						Inf	Inf
J3:4/1	Infinite Saturation Flow						Inf	Inf
J3:5/1 (MSA)	3.50	0.00	Y	Arm J3:11 Left	30.00	100.0 %	1871	1871
J3:5/2 (MSA)	3.50	0.00	N	Arm J3:6 Left	40.00	65.8 %	2054	2054
				Arm J3:9 Ahead	Inf	34.2 %		
J3:6/1	Infinite Saturation Flow						Inf	Inf
J3:6/2	Infinite Saturation Flow						Inf	Inf
J3:7/1	Infinite Saturation Flow						Inf	Inf
J3:7/2	Infinite Saturation Flow						Inf	Inf
J3:8/1	This lane uses a directly entered Saturation Flow						1850	1850
J3:9/1	Infinite Saturation Flow						Inf	Inf
J3:10/1	3.65	0.00	Y	Arm J3:11 Ahead	Inf	100.0 %	1980	1980
J3:10/2	3.65	0.00	N	Arm J3:11 Ahead	Inf	100.0 %	2120	2120
J3:10/3	3.65	0.00	N	Arm J3:6 Ahead	Inf	100.0 %	2120	2120
J3:11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf

Junction: J4: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J4:1/1	Infinite Saturation Flow						Inf	Inf
J4:1/2	Infinite Saturation Flow						Inf	Inf
J4:2/1	Infinite Saturation Flow						Inf	Inf
J4:2/2	Infinite Saturation Flow						Inf	Inf
J4:3/1	Infinite Saturation Flow						Inf	Inf
J4:4/1	Infinite Saturation Flow						Inf	Inf
J4:5/1	Infinite Saturation Flow						Inf	Inf
J4:6/1	Infinite Saturation Flow						Inf	Inf
J4:7/1	Infinite Saturation Flow						Inf	Inf
J4:7/2	Infinite Saturation Flow						Inf	Inf
J4:8/1	Infinite Saturation Flow						Inf	Inf
J4:8/2	Infinite Saturation Flow						Inf	Inf
J4:9/1	Infinite Saturation Flow						Inf	Inf
J4:9/2	Infinite Saturation Flow						Inf	Inf
J4:10/1	Infinite Saturation Flow						Inf	Inf
J4:10/2	Infinite Saturation Flow						Inf	Inf
J4:11/1	Infinite Saturation Flow						Inf	Inf
J4:12/1	Infinite Saturation Flow						Inf	Inf
J4:13/1	Infinite Saturation Flow						Inf	Inf
J4:14/1	Infinite Saturation Flow						Inf	Inf

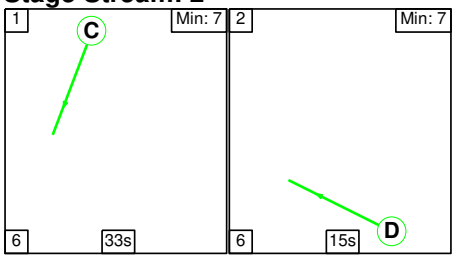
Scenario 1: '2031 reference case - AM Peak' (FG1: '2031 ref case - AM', Plan 1: '2031 Reference Case - AM Peak')
C1

Stage Sequence Diagram

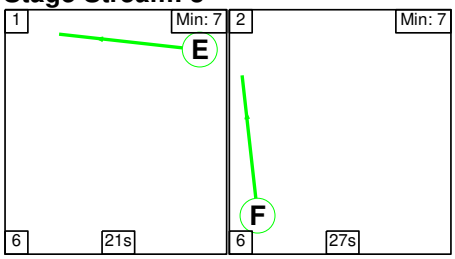
Stage Stream: 1



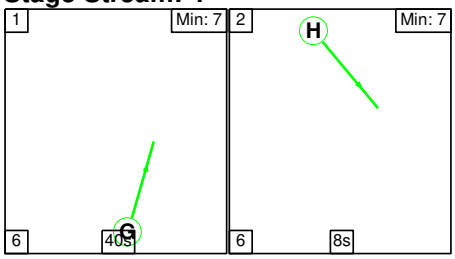
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	19	29
Change Point	55	20

Stage Stream: 2

Stage	1	2
Duration	33	15
Change Point	20	59

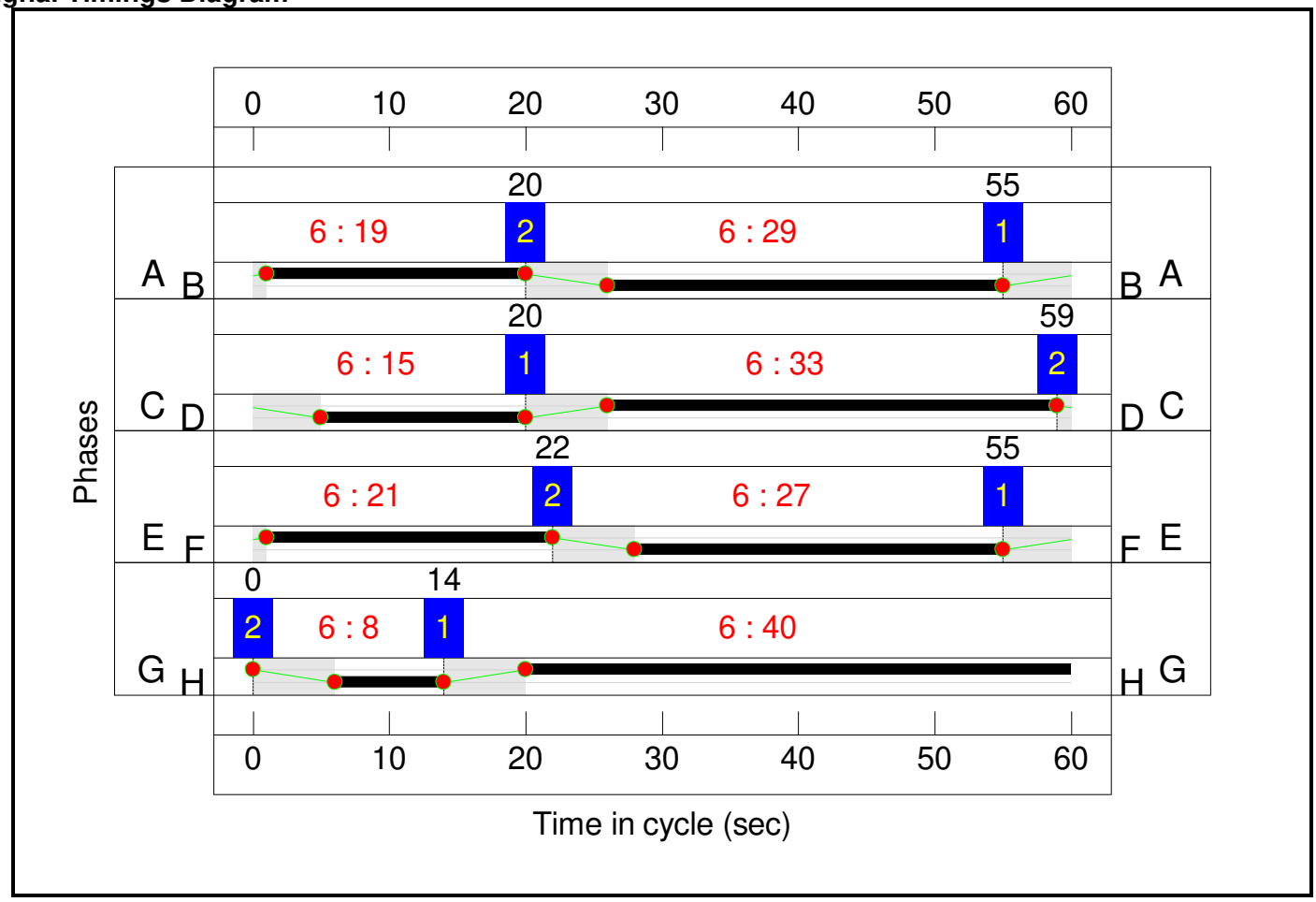
Stage Stream: 3

Stage	1	2
Duration	21	27
Change Point	55	22

Stage Stream: 4

Stage	1	2
Duration	40	8
Change Point	14	0

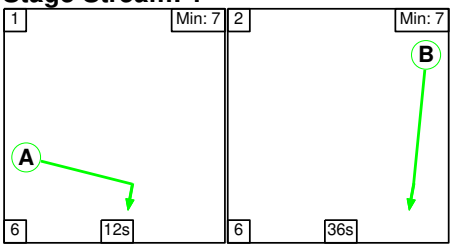
Signal Timings Diagram



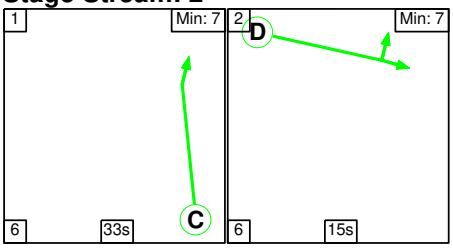
C2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

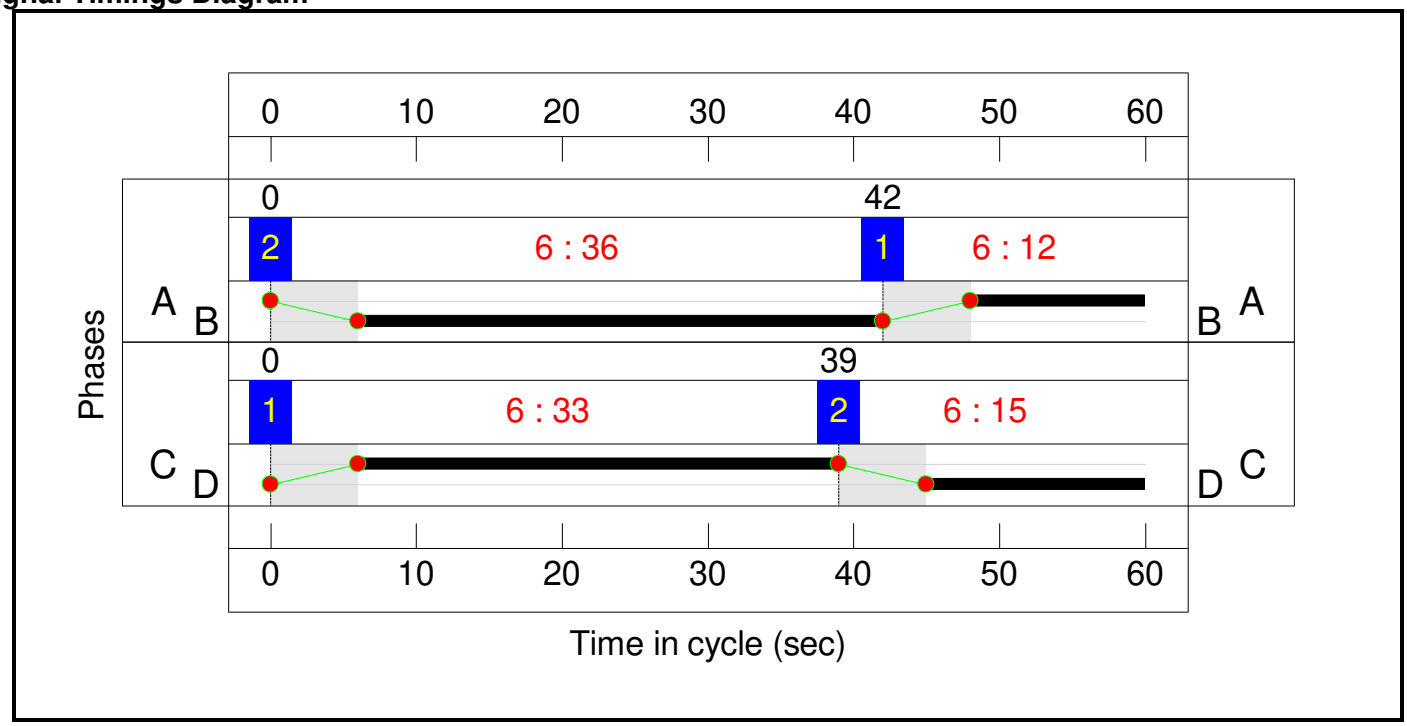
Stage Stream: 1

Stage	1	2
Duration	12	36
Change Point	42	0

Stage Stream: 2

Stage	1	2
Duration	33	15
Change Point	0	39

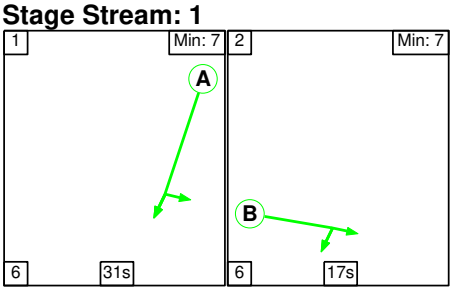
Signal Timings Diagram



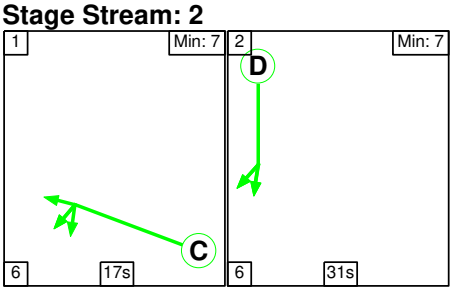
C3

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

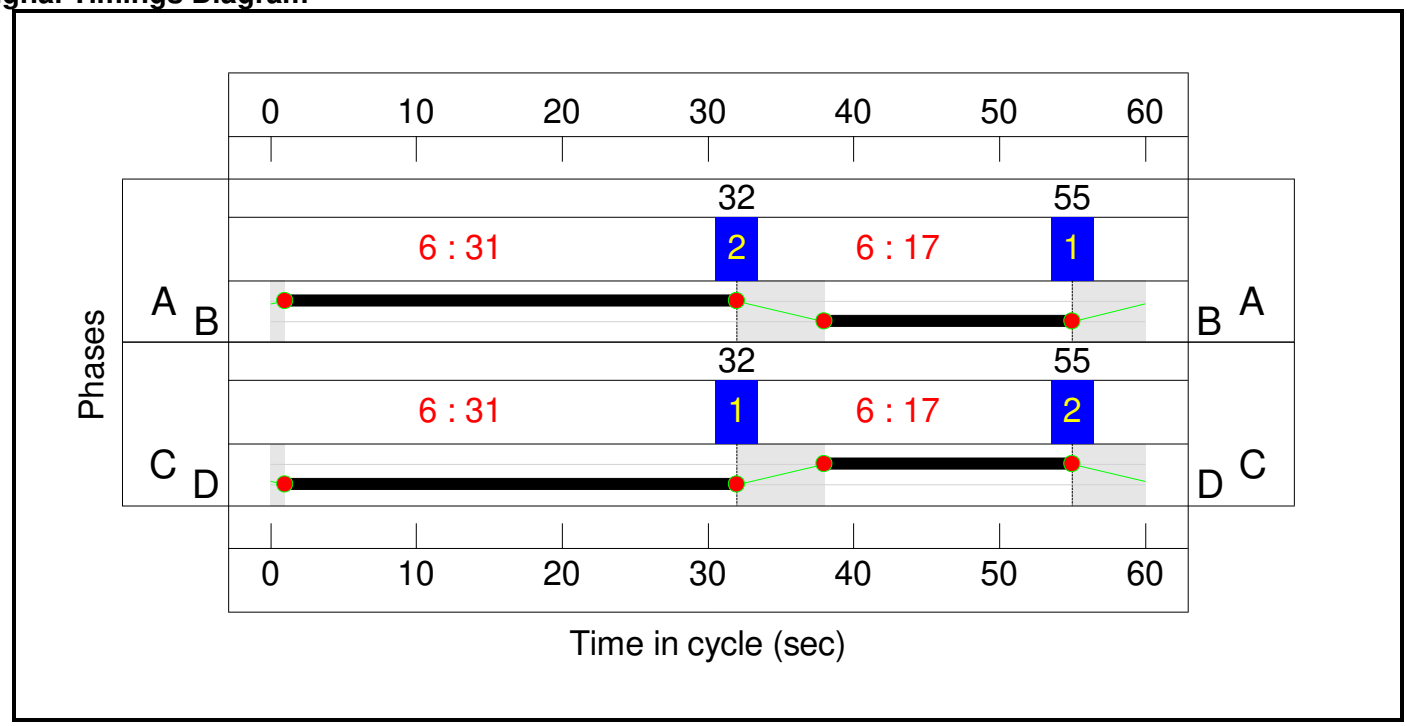
Stage Stream: 1

Stage	1	2
Duration	31	17
Change Point	55	32

Stage Stream: 2

Stage	1	2
Duration	17	31
Change Point	32	55

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: Reference Case Network Model	-	-	**N/A**	-	-		-	-	-	-	-	-	**146.8%**
J1: Baynards Green	-	-	**N/A**	-	-		-	-	-	-	-	-	**146.8%**
1/1	A43 North Ahead Left	O	N/A	N/A	-		-	-	-	1387	Inf	1033	134.3%
1/2	A43 North Ahead	O	N/A	N/A	-		-	-	-	1376	Inf	1021	134.7%
4/1+4/2	B4100 East Left Ahead	O	N/A	N/A	-		-	-	-	868	Inf : Inf	353+286	146.8 : 122.3%
5/1	Ahead	U	N/A	N/A	-		-	-	-	1276	2000	2000	48.4%
7/1	A43 South Ahead Ahead2	O	N/A	N/A	-		-	-	-	913	Inf	1129	80.9%
7/2	A43 South Ahead	O	N/A	N/A	-		-	-	-	967	Inf	1098	88.0%
10/1+10/2	B4100 West Left Ahead	O	N/A	N/A	-		-	-	-	491	Inf : Inf	417+139	88.2 : 88.2%
J2: Padbury Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**81.7%**
1/1	A43 north Ahead	U	2:1	N/A	C2:B		1	36	-	1276	1922	1185	81.7%
1/2	A43 north Ahead	U	2:1	N/A	C2:B		1	36	-	1306	2058	1269	76.4%
3/1	A43 south Ahead	U	2:2	N/A	C2:C		1	33	-	826	1886	1069	77.3%
3/2	A43 south Ahead	U	2:2	N/A	C2:C		1	33	-	717	2019	1144	62.7%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	2:2	N/A	C2:D		1	15	-	486	2058:1908	549+120	72.7 : 72.7%
5/3	Junction 10 s'bound offslip Ahead	U	2:2	N/A	C2:D		1	15	-	373	2058	549	68.0%
6/1	Right	U	2:1	N/A	C2:A		1	12	-	149	1980	429	34.7%
6/2	Right	U	2:1	N/A	C2:A		1	12	-	373	2120	459	81.2%
J3: Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**97.3%**
1/1	A43 Left Ahead	U	3:1	N/A	C3:A		1	31	-	1255	1980	1056	94.6%
1/2+1/3	A43 Ahead	U	3:1	N/A	C3:A		1	31	-	1849	1980:1980	561+936	94.8 : 97.3%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	519	Inf	989	52.5%

5/1	MSA Left	U	3:2	N/A	C3:C		1	17	-	295	1871	561	52.6%
5/2	MSA Left Ahead	U	3:2	N/A	C3:C		1	17	-	287	2051	615	46.6%
8/1	Ahead Right	U	3:1	N/A	C3:B		1	17	-	340	1850	555	61.3%
10/1	Ahead	U	3:2	N/A	C3:D		1	31	-	912	1980	1056	65.2%
10/2	Ahead	U	3:2	N/A	C3:D		1	31	-	794	2120	1131	55.6%
10/3	Ahead	U	3:2	N/A	C3:D		1	31	-	1156	2120	1131	80.1%
J4: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.8%**
1/1+1/2	Ahead	O	N/A	N/A	-		-	-	-	696	Inf : Inf	468+659	61.7 : 61.7%
2/1	U-Turn	O	N/A	N/A	-		-	-	-	409	Inf	1106	28.3%
2/2	Ahead	O	N/A	N/A	-		-	-	-	949	Inf	1106	71.9%
9/1	Ahead Ahead2	O	N/A	N/A	-		-	-	-	815	Inf	961	84.8%
9/2	Ahead	O	N/A	N/A	-		-	-	-	671	Inf	961	69.9%

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: Reference Case Network Model	**-**	**-**	**10699**	**0**	**0**	**71.6**	**518.0**	**0.0**	**589.6**	**-**	**-**	**-**	**-**
J1: Baynards Green	**-**	**-**	**6194**	**0**	**0**	**40.7**	**484.1**	**0.0**	**524.8**	**-**	**-**	**-**	**-**
1/1	1387	1033	1033	0	0	14.7	179.0	-	193.7	502.8	69.4	179.0	248.4
1/2	1376	1021	1021	0	0	14.8	179.3	-	194.2	508.0	68.8	179.3	248.1
4/1+4/2	868	639	1278	0	0	9.7	116.3	-	126.0	522.6	22.6	116.3	139.0
5/1	968	968	-	-	-	0.0	0.5	-	0.5	1.7	0.0	0.5	0.5
7/1	913	913	913	0	0	0.8	2.1	-	2.9	11.3	13.0	2.1	15.1
7/2	967	967	967	0	0	0.6	3.5	-	4.1	15.1	11.0	3.5	14.5
10/1+10/2	491	491	982	0	0	0.1	3.4	-	3.5	25.9	4.7	3.4	8.1
J2: Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**13.9**	**8.7**	**0.0**	**22.6**	**-**	**-**	**-**	**-**
1/1	968	968	-	-	-	2.4	2.2	-	4.6	17.1	12.0	2.2	14.2
1/2	969	969	-	-	-	2.2	1.6	-	3.8	14.3	11.6	1.6	13.2
3/1	826	826	-	-	-	2.3	1.7	-	4.0	17.4	10.7	1.7	12.4
3/2	717	717	-	-	-	1.7	0.8	-	2.6	12.9	8.1	0.8	9.0
5/2+5/1	486	486	-	-	-	2.6	1.3	-	3.9	29.2	6.0	1.3	7.3
5/3	373	373	-	-	-	2.0	1.0	-	3.1	29.8	5.5	1.0	6.5
6/1	149	149	-	-	-	0.2	0.0	-	0.2	3.7	0.2	0.0	0.2
6/2	373	373	-	-	-	0.4	0.0	-	0.4	3.5	0.8	0.0	0.8
J3: Cherwell	**-**	**-**	**519**	**0**	**0**	**16.3**	**19.1**	**0.0**	**35.5**	**-**	**-**	**-**	**-**
1/1	999	999	-	-	-	4.0	7.0	-	11.1	39.9	13.8	7.0	20.8
1/2+1/3	1442	1434	-	-	-	6.0	9.8	-	15.8	39.5	25.2	9.8	35.0
2/2	519	519	519	0	0	0.0	0.6	-	0.6	3.8	0.0	0.6	0.6
5/1	295	295	-	-	-	1.4	0.6	-	2.0	24.2	4.0	0.6	4.6
5/2	287	287	-	-	-	1.4	0.4	-	1.8	22.6	3.8	0.4	4.3
8/1	340	340	-	-	-	1.7	0.8	-	2.5	26.3	4.8	0.8	5.6
10/1	688	688	-	-	-	0.5	0.0	-	0.5	2.7	1.1	0.0	1.1
10/2	629	629	-	-	-	0.9	0.0	-	0.9	5.0	8.5	0.0	8.5

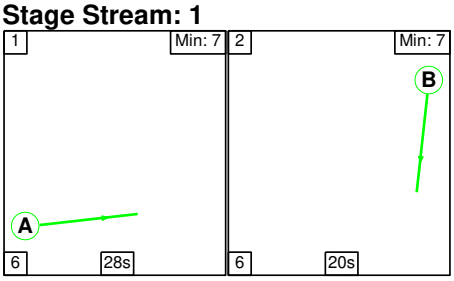
10/3	906	906	-	-	-	0.4	0.0	-	0.4	1.6	0.9	0.0	0.9
J4: Unnamed Junction	**-**	**-**	**3986**	**0**	**0**	**0.7**	**6.1**	**0.0**	**6.8**	**-**	**-**	**-**	**-**
1/1+1/2	696	696	1392	0	0	0.0	0.8	-	0.8	4.2	0.0	0.8	0.8
2/1	313	313	313	0	0	0.0	0.2	-	0.2	2.3	0.0	0.2	0.2
2/2	795	795	795	0	0	0.7	1.3	-	1.9	8.8	10.9	1.3	12.2
9/1	815	815	815	0	0	0.0	2.7	-	2.7	11.9	0.0	2.7	2.7
9/2	671	671	671	0	0	0.0	1.1	-	1.1	6.2	0.0	1.1	1.1

C1	Stream: 1 PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	60
C1	Stream: 3 PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	60
C1	Stream: 4 PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	60
C2	Stream: 1 PRC for Signalled Lanes (%):	10.2	Total Delay for Signalled Lanes (pcuHr):	8.97	Cycle Time (s):	60
C2	Stream: 2 PRC for Signalled Lanes (%):	16.4	Total Delay for Signalled Lanes (pcuHr):	13.59	Cycle Time (s):	60
C3	Stream: 1 PRC for Signalled Lanes (%):	-8.1	Total Delay for Signalled Lanes (pcuHr):	29.36	Cycle Time (s):	60
C3	Stream: 2 PRC for Signalled Lanes (%):	12.3	Total Delay for Signalled Lanes (pcuHr):	5.56	Cycle Time (s):	60
	PRC Over All Lanes (%):	-63.1	Total Delay Over All Lanes(pcuHr):	589.62		

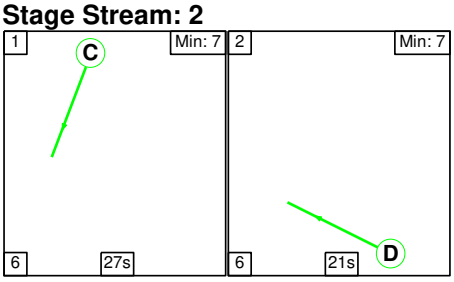
Scenario 2: '2031 reference case - PM Peak' (FG2: '2031 ref case - PM', Plan 1: '2031 Reference Case - AM Peak')
C1

Stage Sequence Diagram

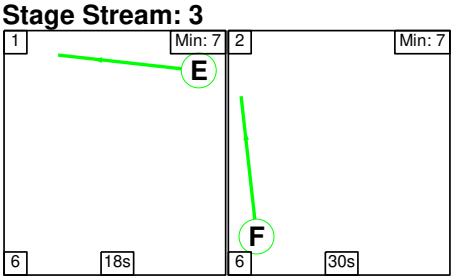
Stage Stream: 1



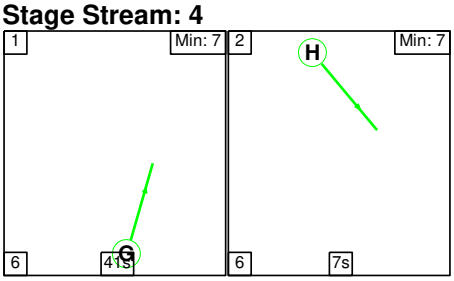
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	28	20
Change Point	58	32

Stage Stream: 2

Stage	1	2
Duration	27	21
Change Point	29	2

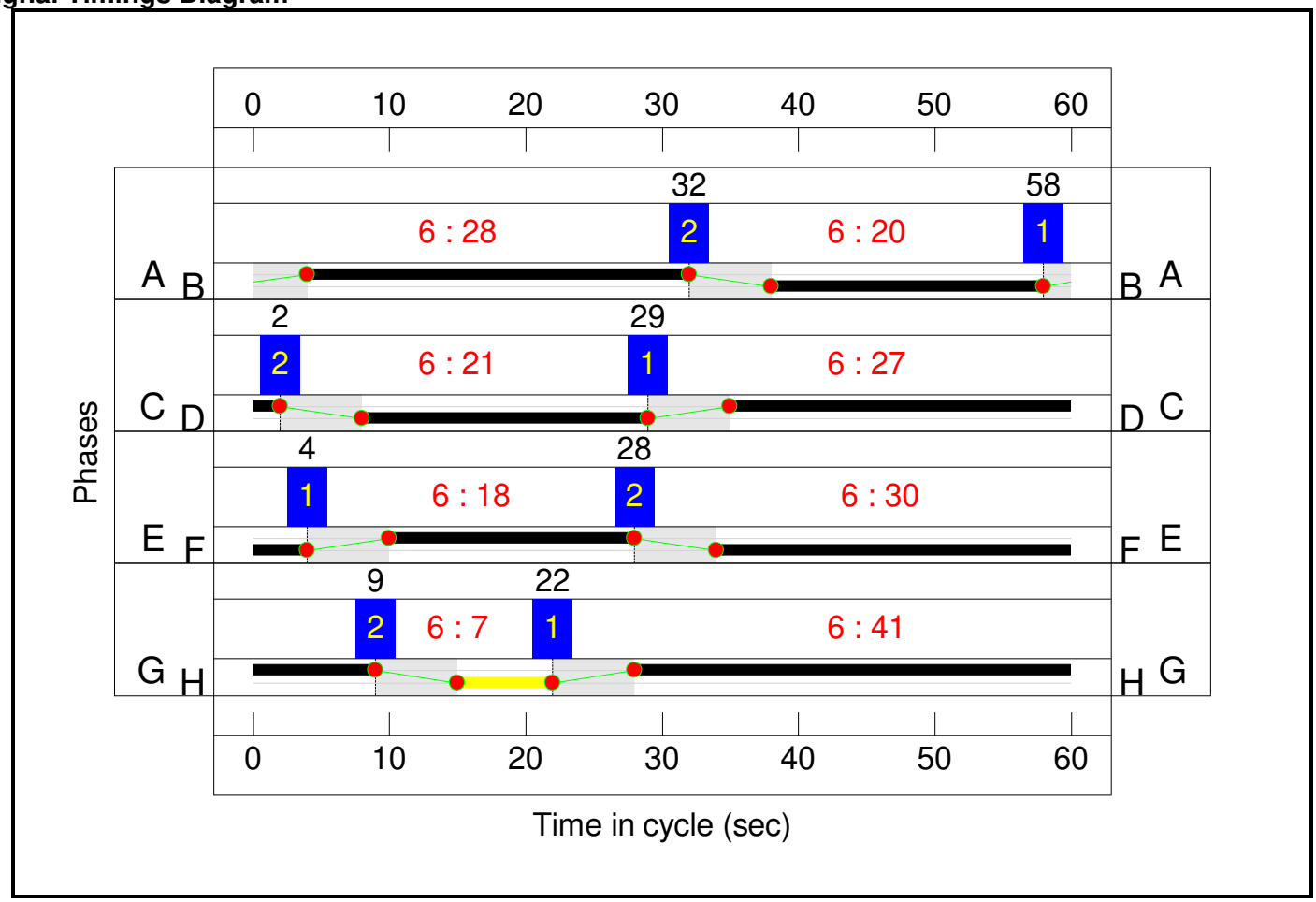
Stage Stream: 3

Stage	1	2
Duration	18	30
Change Point	4	28

Stage Stream: 4

Stage	1	2
Duration	41	7
Change Point	22	9

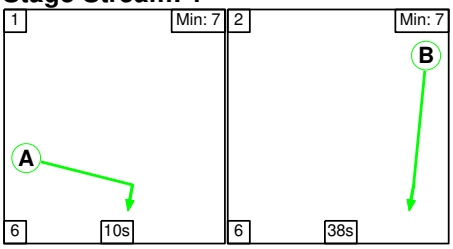
Signal Timings Diagram



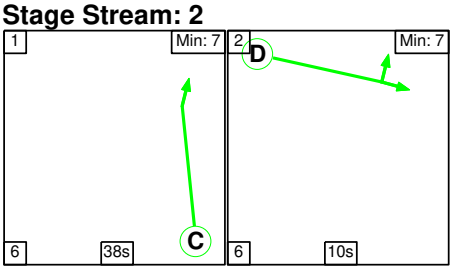
C2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

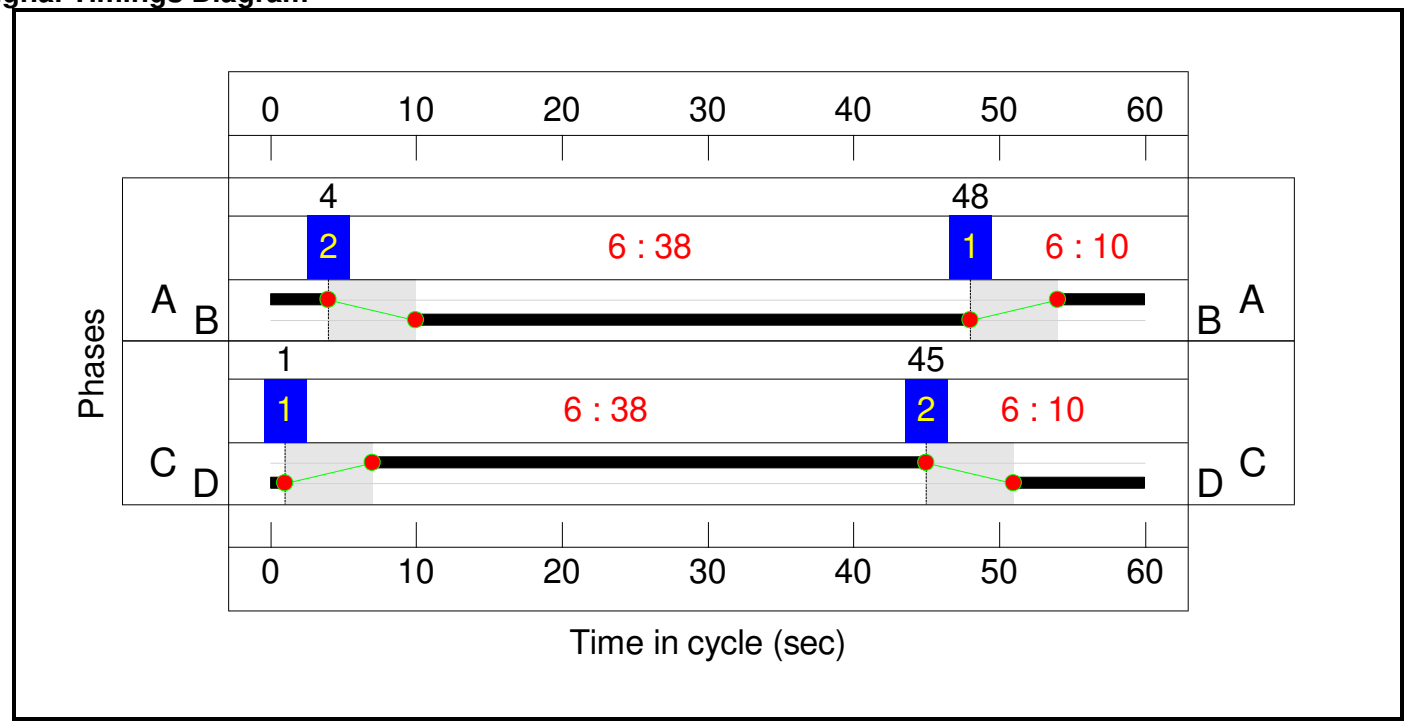
Stage Stream: 1

Stage	1	2
Duration	10	38
Change Point	48	4

Stage Stream: 2

Stage	1	2
Duration	38	10
Change Point	1	45

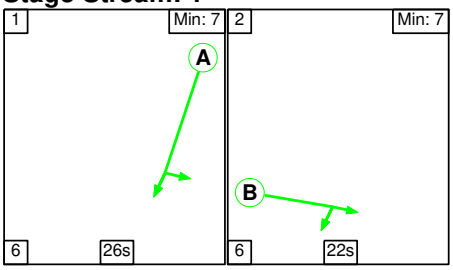
Signal Timings Diagram



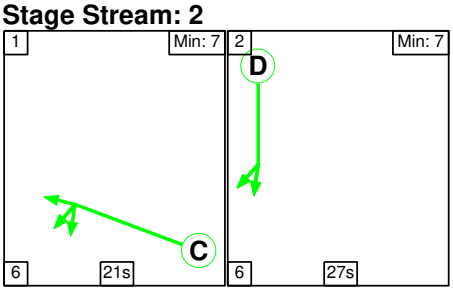
C3

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

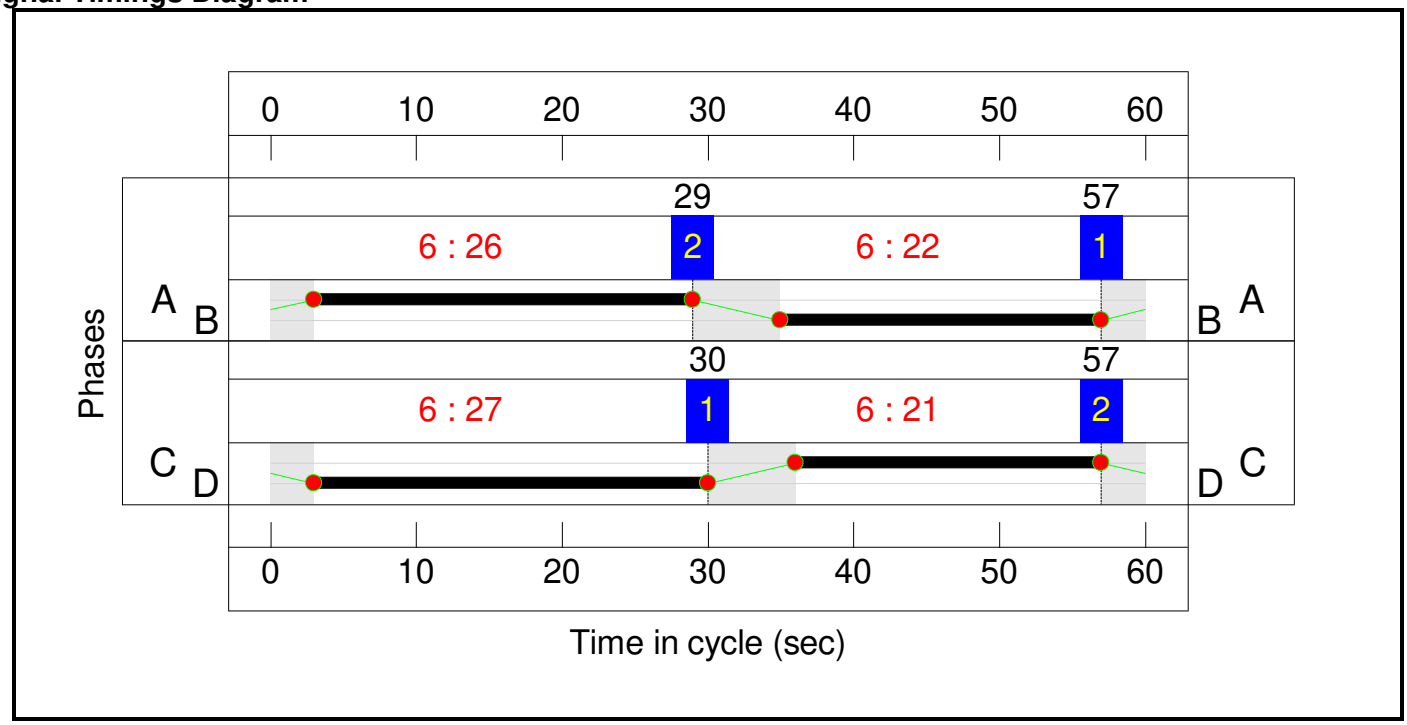
Stage Stream: 1

Stage	1	2
Duration	26	22
Change Point	57	29

Stage Stream: 2

Stage	1	2
Duration	21	27
Change Point	30	57

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: Reference Case Network Model	-	-	**N/A**	-	-		-	-	-	-	-	-	**159.6%**
J1: Baynards Green	-	-	**N/A**	-	-		-	-	-	-	-	-	**159.6%**
1/1	A43 North Ahead Left	O	N/A	N/A	-		-	-	-	914	Inf	1113	82.1%
1/2	A43 North Ahead	O	N/A	N/A	-		-	-	-	881	Inf	1077	81.8%
4/1+4/2	B4100 East Left Ahead	O	N/A	N/A	-		-	-	-	1249	Inf : Inf	462+399	132.5 : 159.6%
5/1	Ahead	U	N/A	N/A	-		-	-	-	734	2000	2000	33.8%
7/1	A43 South Ahead Ahead2	O	N/A	N/A	-		-	-	-	1254	Inf	1051	119.3%
7/2	A43 South Ahead	O	N/A	N/A	-		-	-	-	1264	Inf	1043	121.2%
10/1+10/2	B4100 West Left Ahead	O	N/A	N/A	-		-	-	-	328	Inf : Inf	297+50	94.7 : 94.7%
J2: Padbury Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**96.5%**
1/1	A43 north Ahead	U	2:1	N/A	C2:B		1	38	-	734	1922	1249	54.0%
1/2	A43 north Ahead	U	2:1	N/A	C2:B		1	38	-	836	2058	1338	62.5%
3/1	A43 south Ahead	U	2:2	N/A	C2:C		1	38	-	1173	1886	1226	95.7%
3/2	A43 south Ahead	U	2:2	N/A	C2:C		1	38	-	1027	2019	1312	78.3%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	2:2	N/A	C2:D		1	10	-	445	2058:1908	377+84	96.5 : 96.5%
5/3	Junction 10 s'bound offslip Ahead	U	2:2	N/A	C2:D		1	10	-	360	2058	377	95.4%
6/1	Right	U	2:1	N/A	C2:A		1	10	-	127	1980	363	35.0%
6/2	Right	U	2:1	N/A	C2:A		1	10	-	360	2120	389	92.6%
J3: Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**94.0%**
1/1	A43 Left Ahead	U	3:1	N/A	C3:A		1	26	-	774	1980	891	86.1%
1/2+1/3	A43 Ahead	U	3:1	N/A	C3:A		1	26	-	1283	1980:1980	532+830	94.0 : 88.2%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	539	Inf	968	55.7%

5/1	MSA Left	U	3:2	N/A	C3:C		1	21	-	258	1871	686	37.6%
5/2	MSA Left Ahead	U	3:2	N/A	C3:C		1	21	-	342	2057	754	45.3%
8/1	Ahead Right	U	3:1	N/A	C3:B		1	22	-	356	1850	709	50.2%
10/1	Ahead	U	3:2	N/A	C3:D		1	27	-	448	1980	924	48.4%
10/2	Ahead	U	3:2	N/A	C3:D		1	27	-	579	2120	989	58.4%
10/3	Ahead	U	3:2	N/A	C3:D		1	27	-	782	2120	989	74.0%
J4: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**98.2%**
1/1+1/2	Ahead	O	N/A	N/A	-		-	-	-	669	Inf : Inf	790+505	52.4 : 50.5%
2/1	U-Turn	O	N/A	N/A	-		-	-	-	467	Inf	1139	37.0%
2/2	Ahead	O	N/A	N/A	-		-	-	-	528	Inf	1139	46.0%
9/1	Ahead Ahead2	O	N/A	N/A	-		-	-	-	1029	Inf	1048	98.2%
9/2	Ahead	O	N/A	N/A	-		-	-	-	1019	Inf	1048	97.3%

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: Reference Case Network Model	**-**	**-**	**11136**	**0**	**0**	**63.9**	**481.4**	**0.0**	**545.3**	**-**	**-**	**-**	**-**
J1: Baynards Green	**-**	**-**	**6266**	**0**	**0**	**33.9**	**423.5**	**0.0**	**457.4**	**-**	**-**	**-**	**-**
1/1	914	914	914	0	0	0.0	2.2	-	2.2	8.9	0.0	2.2	2.2
1/2	881	881	881	0	0	0.0	2.2	-	2.2	9.0	0.0	2.2	2.2
4/1+4/2	1249	861	1721	0	0	16.2	195.7	-	212.0	611.0	41.4	195.7	237.2
5/1	675	675	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.3	0.3
7/1	1254	1050	1050	0	0	9.0	104.4	-	113.4	325.5	62.7	104.4	167.1
7/2	1264	1043	1043	0	0	8.6	113.2	-	121.8	346.8	63.2	113.2	176.4
10/1+10/2	328	328	656	0	0	0.0	5.6	-	5.6	61.2	0.0	5.6	5.6
J2: Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**14.5**	**24.9**	**0.0**	**39.5**	**-**	**-**	**-**	**-**
1/1	675	675	-	-	-	1.1	0.6	-	1.6	8.8	6.0	0.6	6.6
1/2	836	836	-	-	-	1.4	0.8	-	2.3	9.8	8.1	0.8	9.0
3/1	1173	1173	-	-	-	3.6	8.4	-	12.1	37.0	18.4	8.4	26.8
3/2	1027	1027	-	-	-	2.5	1.8	-	4.3	15.1	13.1	1.8	14.9
5/2+5/1	445	445	-	-	-	2.9	7.2	-	10.2	82.3	6.0	7.2	13.2
5/3	360	360	-	-	-	2.4	6.1	-	8.5	85.3	5.9	6.1	12.0
6/1	127	127	-	-	-	0.1	0.0	-	0.1	3.8	0.2	0.0	0.2
6/2	360	360	-	-	-	0.4	0.0	-	0.4	3.6	0.7	0.0	0.7
J3: Cherwell	**-**	**-**	**539**	**0**	**0**	**14.6**	**9.2**	**0.0**	**23.8**	**-**	**-**	**-**	**-**
1/1	767	767	-	-	-	3.5	2.9	-	6.4	30.2	11.1	2.9	14.0
1/2+1/3	1231	1231	-	-	-	6.2	4.4	-	10.6	31.0	20.0	4.4	24.4
2/2	539	539	539	0	0	0.0	0.6	-	0.6	4.2	0.0	0.6	0.6
5/1	258	258	-	-	-	1.0	0.3	-	1.3	18.2	3.2	0.3	3.5
5/2	342	342	-	-	-	1.4	0.4	-	1.8	18.8	4.3	0.4	4.7
8/1	356	356	-	-	-	1.3	0.5	-	1.8	18.2	4.3	0.5	4.8
10/1	447	447	-	-	-	0.3	0.0	-	0.3	2.3	0.6	0.0	0.6
10/2	578	578	-	-	-	0.7	0.0	-	0.7	4.4	3.0	0.0	3.0

10/3	732	732	-	-	-	0.3	0.0	-	0.3	1.4	0.5	0.0	0.5
J4: Unnamed Junction	**-**	**-**	**4331**	**0**	**0**	**0.9**	**23.7**	**0.0**	**24.6**	**-**	**-**	**-**	**-**
1/1+1/2	669	669	1338	0	0	0.0	0.5	-	0.5	2.9	0.0	0.5	0.5
2/1	421	421	421	0	0	0.0	0.3	-	0.3	2.5	0.0	0.3	0.3
2/2	523	523	523	0	0	0.1	0.4	-	0.6	3.8	5.1	0.4	5.5
9/1	1029	1029	1029	0	0	0.4	12.1	-	12.5	43.7	14.6	12.1	26.6
9/2	1019	1019	1019	0	0	0.4	10.3	-	10.7	37.9	13.3	10.3	23.7

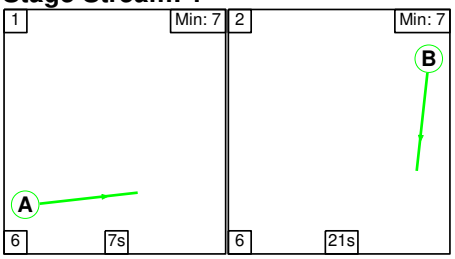
C1	Stream: 1 PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	60
C1	Stream: 3 PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	60
C1	Stream: 4 PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	60
C2	Stream: 1 PRC for Signalled Lanes (%):	-2.9	Total Delay for Signalled Lanes (pcuHr):	4.42	Cycle Time (s):	60
C2	Stream: 2 PRC for Signalled Lanes (%):	-7.2	Total Delay for Signalled Lanes (pcuHr):	35.06	Cycle Time (s):	60
C3	Stream: 1 PRC for Signalled Lanes (%):	-4.4	Total Delay for Signalled Lanes (pcuHr):	18.84	Cycle Time (s):	60
C3	Stream: 2 PRC for Signalled Lanes (%):	21.7	Total Delay for Signalled Lanes (pcuHr):	4.36	Cycle Time (s):	60
	PRC Over All Lanes (%):	-77.4	Total Delay Over All Lanes(pcuHr):	545.28		

Scenario 3: '2031 reference case - Off-peak (% AM)' (FG3: '2031 ref case - off-peak', Plan 1: '2031 Reference Case - AM Peak')

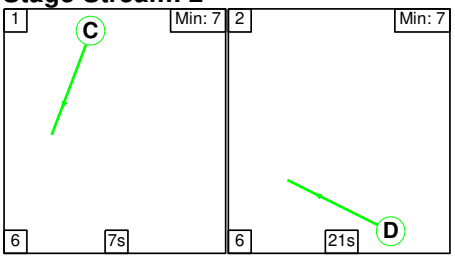
C1

Stage Sequence Diagram

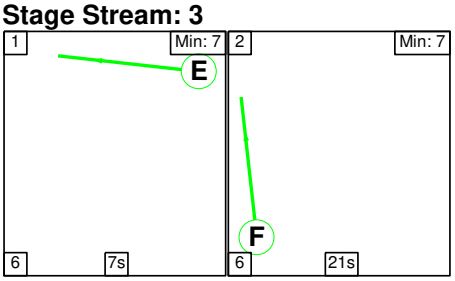
Stage Stream: 1



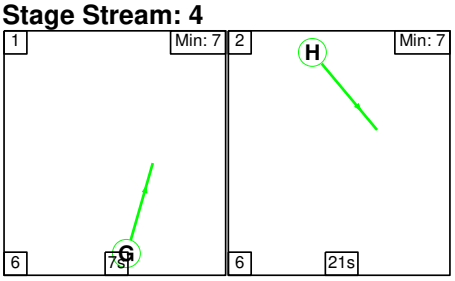
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	7	21
Change Point	0	13

Stage Stream: 2

Stage	1	2
Duration	7	21
Change Point	0	13

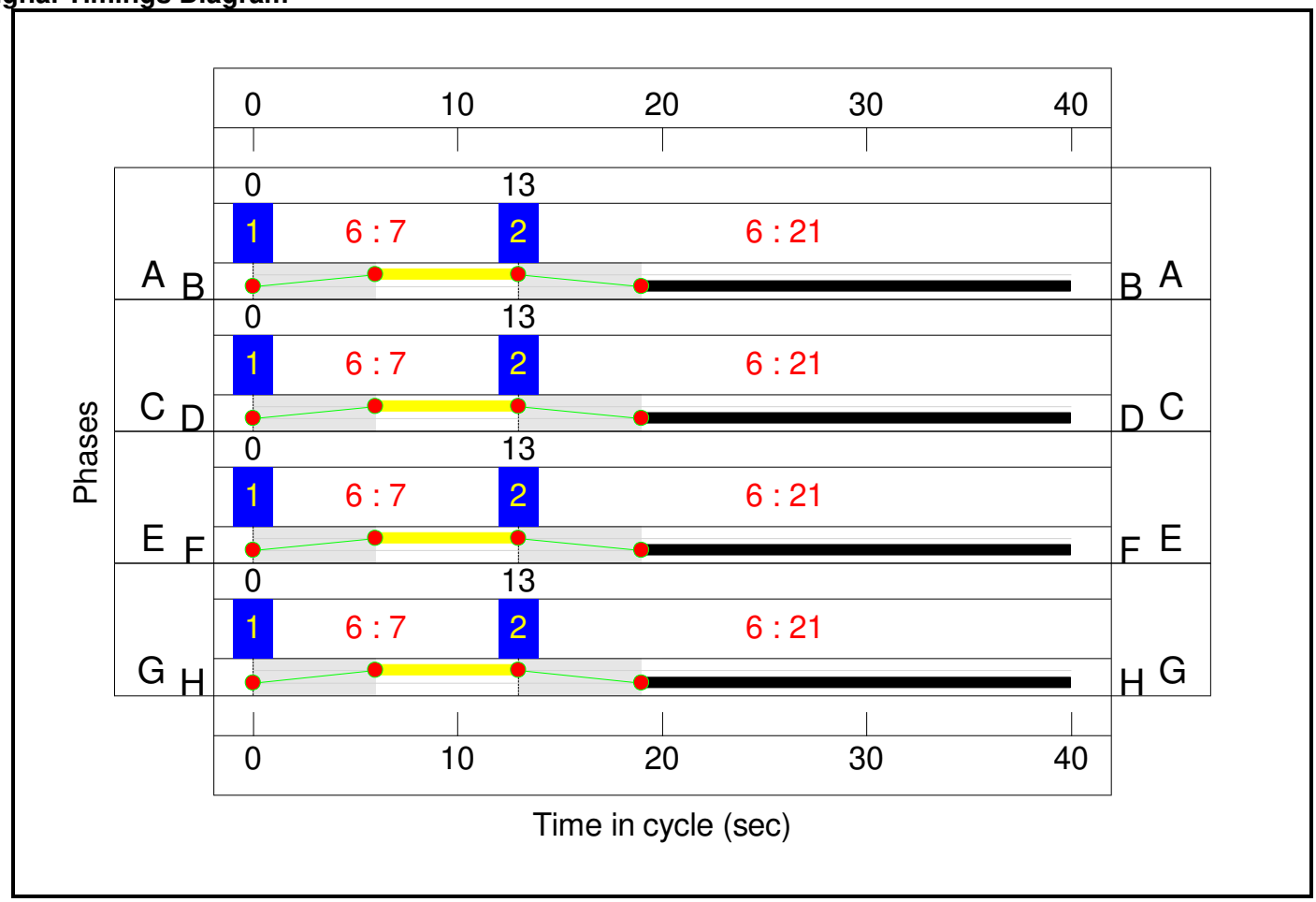
Stage Stream: 3

Stage	1	2
Duration	7	21
Change Point	0	13

Stage Stream: 4

Stage	1	2
Duration	7	21
Change Point	0	13

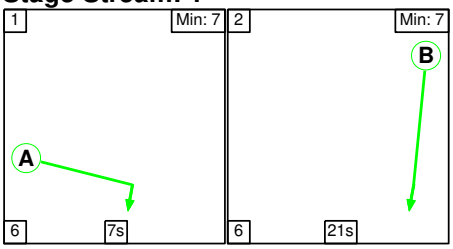
Signal Timings Diagram



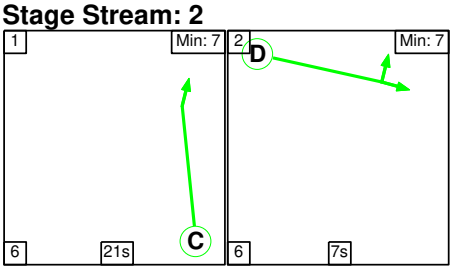
C2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

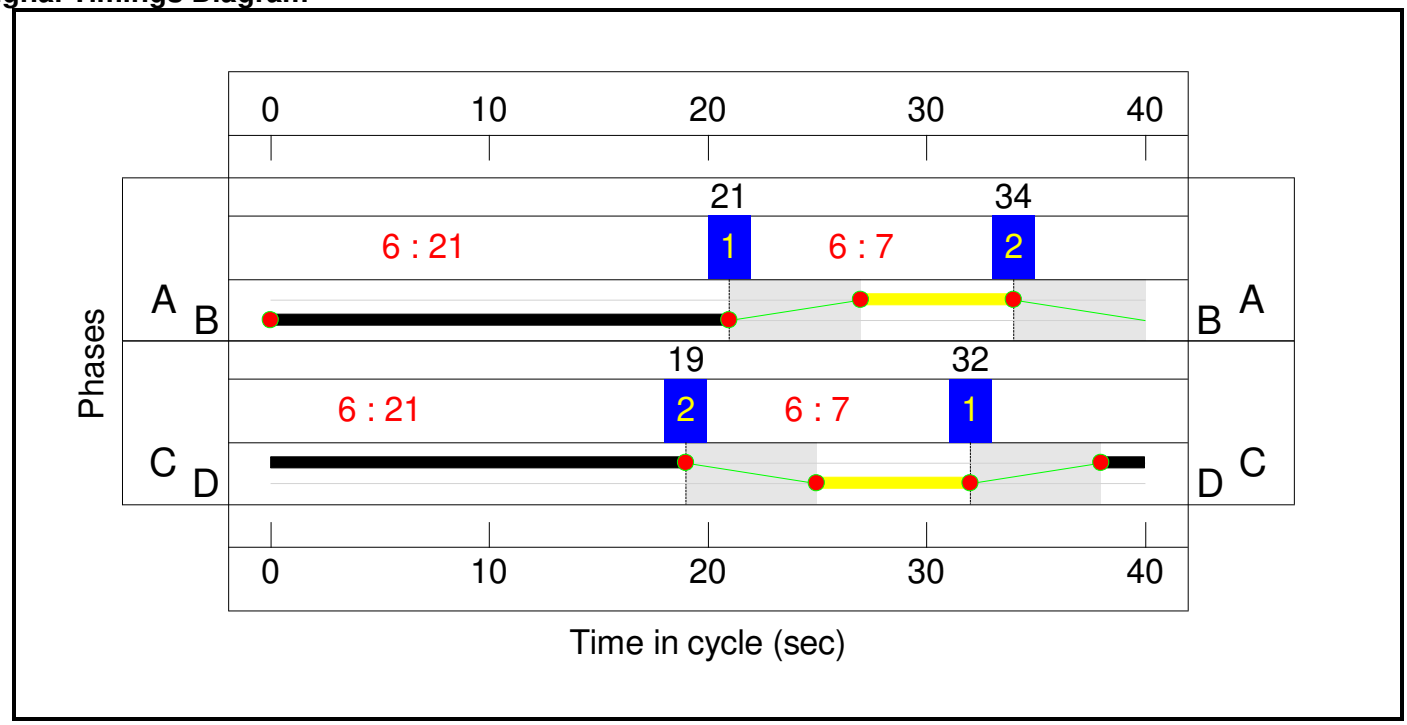
Stage Stream: 1

Stage	1	2
Duration	7	21
Change Point	21	34

Stage Stream: 2

Stage	1	2
Duration	21	7
Change Point	32	19

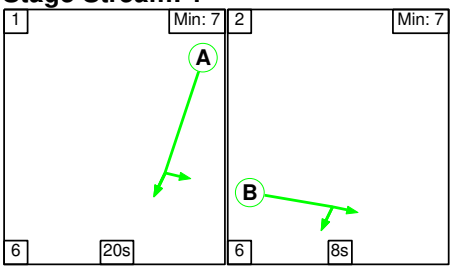
Signal Timings Diagram



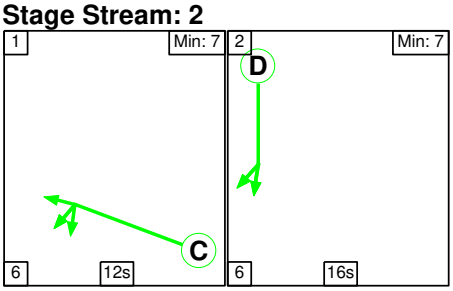
C3

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

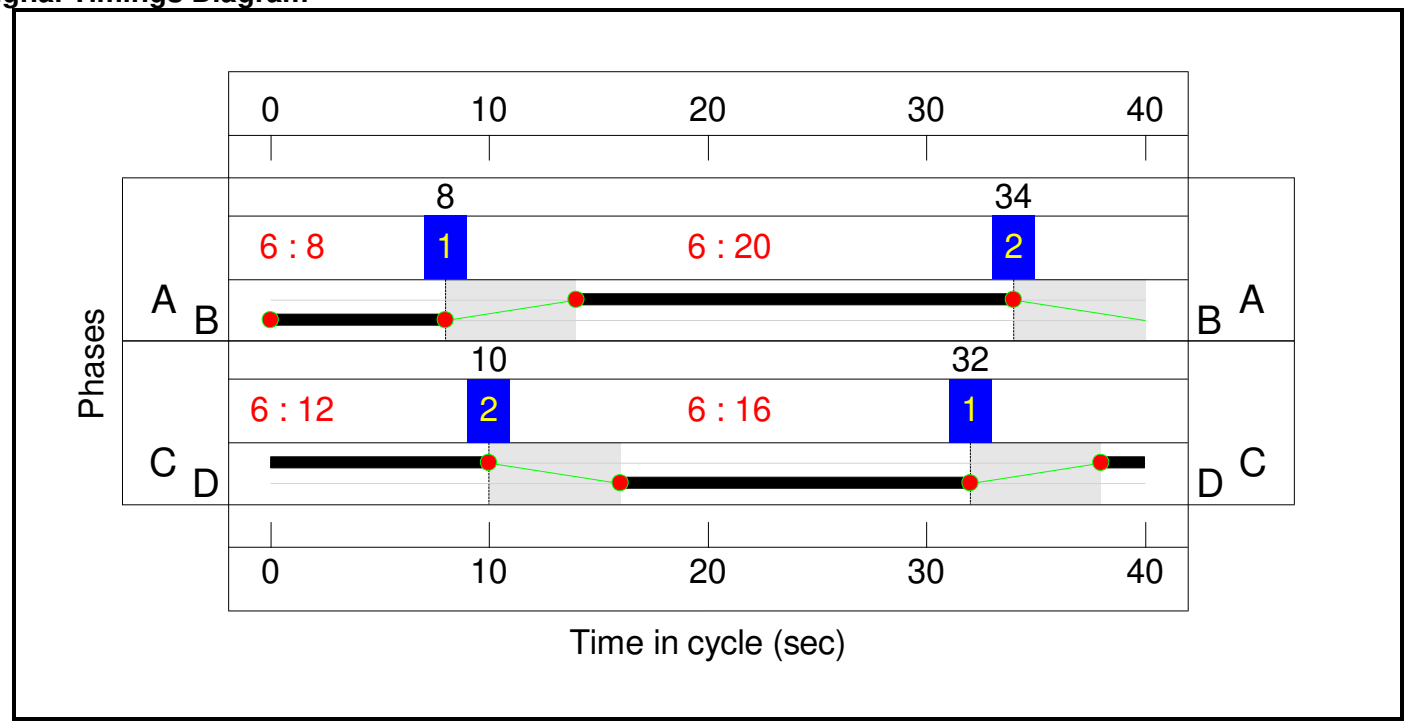
Stage Stream: 1

Stage	1	2
Duration	20	8
Change Point	8	34

Stage Stream: 2

Stage	1	2
Duration	12	16
Change Point	32	10

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: Reference Case Network Model	-	-	**N/A**	-	-		-	-	-	-	-	-	**33.4%**
J1: Baynards Green	-	-	**N/A**	-	-		-	-	-	-	-	-	**31.3%**
1/1	A43 North Ahead Left	O	N/A	N/A	-		-	-	-	221	Inf	1189	18.6%
1/2	A43 North Ahead	O	N/A	N/A	-		-	-	-	371	Inf	1186	31.3%
4/1+4/2	B4100 East Left Ahead	O	N/A	N/A	-		-	-	-	276	Inf : Inf	643+610	23.0 : 21.0%
5/1	Ahead	U	N/A	N/A	-		-	-	-	184	2000	2000	9.2%
7/1	A43 South Ahead Ahead2	O	N/A	N/A	-		-	-	-	248	Inf	1201	20.7%
7/2	A43 South Ahead	O	N/A	N/A	-		-	-	-	323	Inf	1196	27.0%
10/1+10/2	B4100 West Left Ahead	O	N/A	N/A	-		-	-	-	106	Inf : Inf	729+191	11.5 : 11.5%
J2: Padbury Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**31.5%**
1/1	A43 north Ahead	U	2:1	N/A	C2:B		1	21	-	184	1922	1057	17.4%
1/2	A43 north Ahead	U	2:1	N/A	C2:B		1	21	-	356	2058	1132	31.5%
3/1	A43 south Ahead	U	2:2	N/A	C2:C		1	21	-	227	1886	1037	21.9%
3/2	A43 south Ahead	U	2:2	N/A	C2:C		1	21	-	259	2019	1110	23.3%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	2:2	N/A	C2:D		1	7	-	137	2058:1908	412+75	28.2 : 28.2%
5/3	Junction 10 s'bound offslip Ahead	U	2:2	N/A	C2:D		1	7	-	79	2058	412	19.2%
6/1	Right	U	2:1	N/A	C2:A		1	7	-	52	1980	396	13.1%
6/2	Right	U	2:1	N/A	C2:A		1	7	-	79	2120	424	18.6%
J3: Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**28.0%**
1/1	A43 Left Ahead	U	3:1	N/A	C3:A		1	20	-	211	1980	1040	20.3%
1/2+1/3	A43 Ahead	U	3:1	N/A	C3:A		1	20	-	460	1980:1980	868+1040	24.0 : 24.2%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	91	Inf	1017	9.0%

5/1	MSA Left	U	3:2	N/A	C3:C		1	12	-	72	1871	608	11.8%
5/2	MSA Left Ahead	U	3:2	N/A	C3:C		1	12	-	82	2054	668	12.3%
8/1	Ahead Right	U	3:1	N/A	C3:B		1	8	-	91	1850	416	21.9%
10/1	Ahead	U	3:2	N/A	C3:D		1	16	-	124	1980	842	14.7%
10/2	Ahead	U	3:2	N/A	C3:D		1	16	-	232	2120	901	25.7%
10/3	Ahead	U	3:2	N/A	C3:D		1	16	-	252	2120	901	28.0%
J4: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**33.4%**
1/1+1/2	Ahead	O	N/A	N/A	-		-	-	-	177	Inf : Inf	954+933	9.5 : 9.2%
2/1	U-Turn	O	N/A	N/A	-		-	-	-	113	Inf	1184	9.5%
2/2	Ahead	O	N/A	N/A	-		-	-	-	193	Inf	1184	16.3%
9/1	Ahead Ahead2	O	N/A	N/A	-		-	-	-	385	Inf	1153	33.4%
9/2	Ahead	O	N/A	N/A	-		-	-	-	74	Inf	1153	6.4%

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: Reference Case Network Model	**-**	**-**	**3137**	**0**	**0**	**4.0**	**3.0**	**0.0**	**7.0**	**-**	**-**	**-**	**-**
J1: Baynards Green	**-**	**-**	**1927**	**0**	**0**	**0.0**	**0.9**	**0.0**	**0.9**	**-**	**-**	**-**	**-**
1/1	221	221	221	0	0	0.0	0.1	-	0.1	1.9	0.0	0.1	0.1
1/2	371	371	371	0	0	0.0	0.2	-	0.2	2.2	0.0	0.2	0.2
4/1+4/2	276	276	552	0	0	0.0	0.1	-	0.1	1.8	0.0	0.1	0.1
5/1	184	184	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.1	0.1
7/1	248	248	248	0	0	0.0	0.1	-	0.1	1.9	0.0	0.1	0.1
7/2	323	323	323	0	0	0.0	0.2	-	0.2	2.1	0.0	0.2	0.2
10/1+10/2	106	106	212	0	0	0.0	0.1	-	0.1	2.2	0.0	0.1	0.1
J2: Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**2.3**	**0.9**	**0.0**	**3.2**	**-**	**-**	**-**	**-**
1/1	184	184	-	-	-	0.2	0.1	-	0.3	6.5	1.0	0.1	1.1
1/2	356	356	-	-	-	0.5	0.2	-	0.7	7.2	2.1	0.2	2.3
3/1	227	227	-	-	-	0.3	0.1	-	0.5	7.4	1.3	0.1	1.5
3/2	259	259	-	-	-	0.4	0.2	-	0.5	7.1	1.5	0.2	1.6
5/2+5/1	137	137	-	-	-	0.5	0.2	-	0.7	18.7	1.1	0.2	1.3
5/3	79	79	-	-	-	0.3	0.1	-	0.4	18.8	0.7	0.1	0.8
6/1	52	52	-	-	-	0.0	0.0	-	0.0	1.9	0.0	0.0	0.0
6/2	79	79	-	-	-	0.0	0.0	-	0.0	1.9	0.1	0.0	0.1
J3: Cherwell	**-**	**-**	**91**	**0**	**0**	**1.7**	**0.6**	**0.0**	**2.3**	**-**	**-**	**-**	**-**
1/1	211	211	-	-	-	0.2	0.1	-	0.3	5.7	0.9	0.1	1.1
1/2+1/3	460	460	-	-	-	0.3	0.2	-	0.5	3.9	1.0	0.2	1.2
2/2	91	91	91	0	0	0.0	0.0	-	0.0	1.9	0.0	0.0	0.0
5/1	72	72	-	-	-	0.2	0.1	-	0.3	12.9	0.6	0.1	0.6
5/2	82	82	-	-	-	0.2	0.1	-	0.3	12.6	0.6	0.1	0.7
8/1	91	91	-	-	-	0.3	0.1	-	0.5	18.2	0.8	0.1	0.9
10/1	124	124	-	-	-	0.1	0.0	-	0.1	2.8	0.2	0.0	0.2
10/2	232	232	-	-	-	0.2	0.0	-	0.2	3.5	0.6	0.0	0.6

10/3	252	252	-	-	-	0.1	0.0	-	0.1	1.9	0.2	0.0	0.2
J4: Unnamed Junction	**-**	**-**	**1119**	**0**	**0**	**0.0**	**0.5**	**0.0**	**0.5**	**-**	**-**	**-**	**-**
1/1+1/2	177	177	354	0	0	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1
2/1	113	113	113	0	0	0.0	0.1	-	0.1	1.7	0.0	0.1	0.1
2/2	193	193	193	0	0	0.0	0.1	-	0.1	1.8	0.0	0.1	0.1
9/1	385	385	385	0	0	0.0	0.3	-	0.3	2.3	0.0	0.3	0.3
9/2	74	74	74	0	0	0.0	0.0	-	0.0	1.7	0.0	0.0	0.0

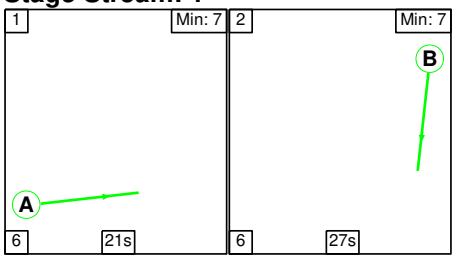
C1	Stream: 1 PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	40
C1	Stream: 2 PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	40
C1	Stream: 3 PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	40
C1	Stream: 4 PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	40
C2	Stream: 1 PRC for Signalled Lanes (%):	186.2	Total Delay for Signalled Lanes (pcuHr):	1.12	Cycle Time (s):	40
C2	Stream: 2 PRC for Signalled Lanes (%):	219.3	Total Delay for Signalled Lanes (pcuHr):	2.10	Cycle Time (s):	40
C3	Stream: 1 PRC for Signalled Lanes (%):	271.2	Total Delay for Signalled Lanes (pcuHr):	1.29	Cycle Time (s):	40
C3	Stream: 2 PRC for Signalled Lanes (%):	221.8	Total Delay for Signalled Lanes (pcuHr):	1.00	Cycle Time (s):	40
	PRC Over All Lanes (%):	169.6	Total Delay Over All Lanes(pcuHr):	6.96		

Scenario 4: '2031 reference case - Inter-peak (% AM)' (FG4: '2031 ref case - inter-peak', Plan 1: '2031 Reference Case - AM Peak')

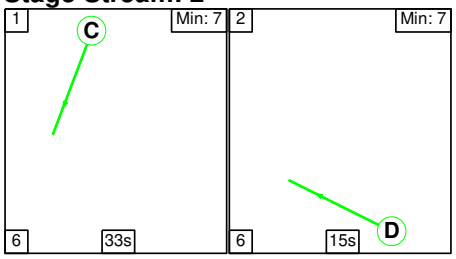
C1

Stage Sequence Diagram

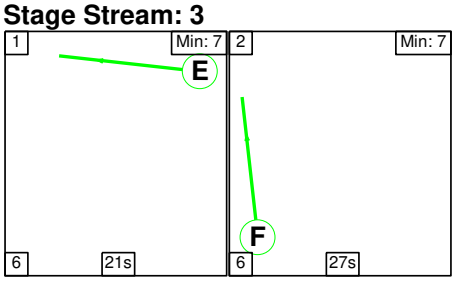
Stage Stream: 1



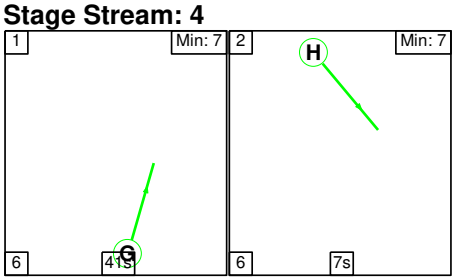
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	21	27
Change Point	56	23

Stage Stream: 2

Stage	1	2
Duration	33	15
Change Point	21	0

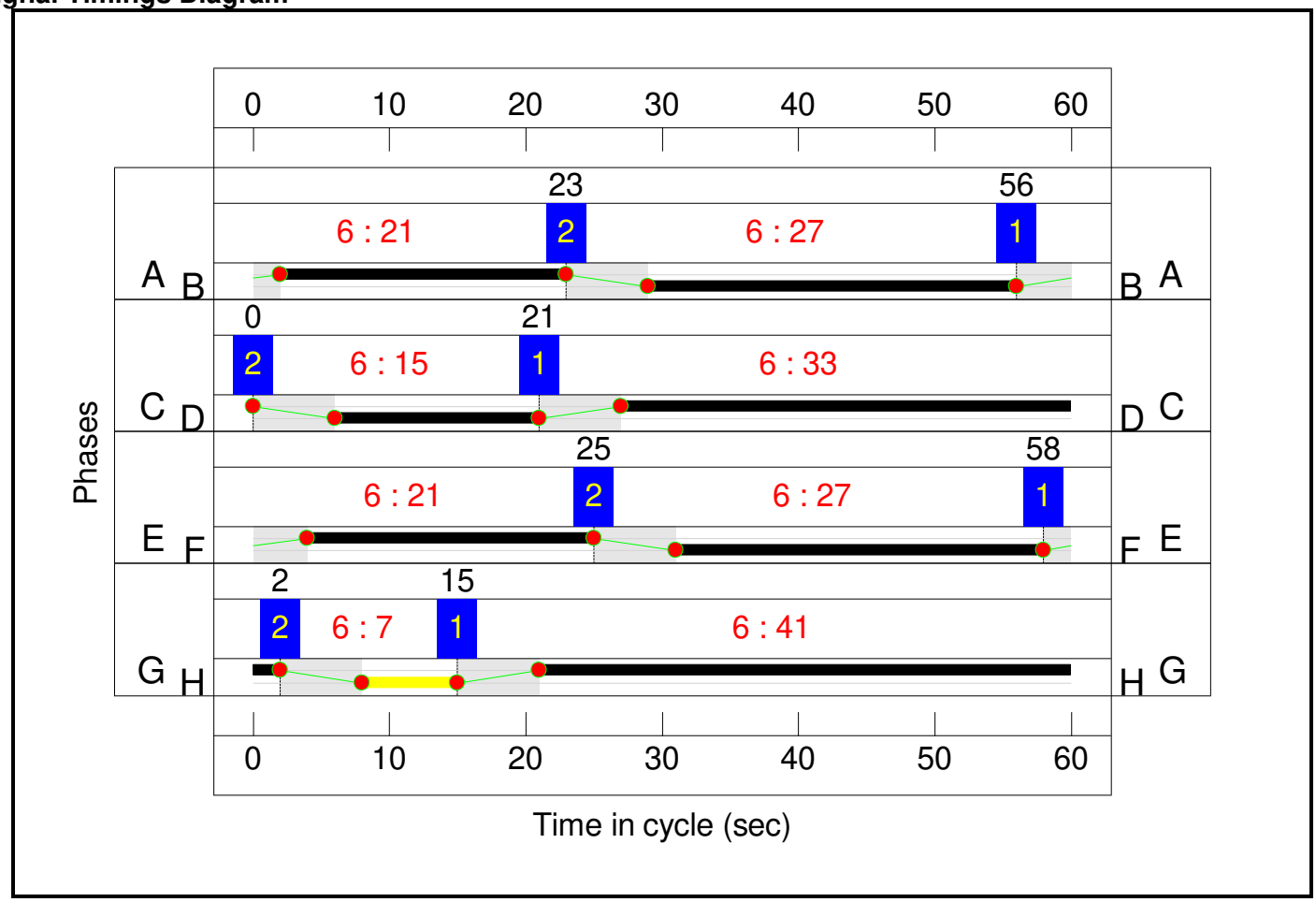
Stage Stream: 3

Stage	1	2
Duration	21	27
Change Point	58	25

Stage Stream: 4

Stage	1	2
Duration	41	7
Change Point	15	2

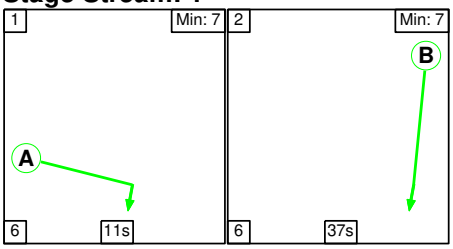
Signal Timings Diagram



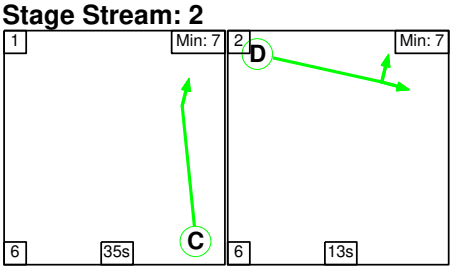
C2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

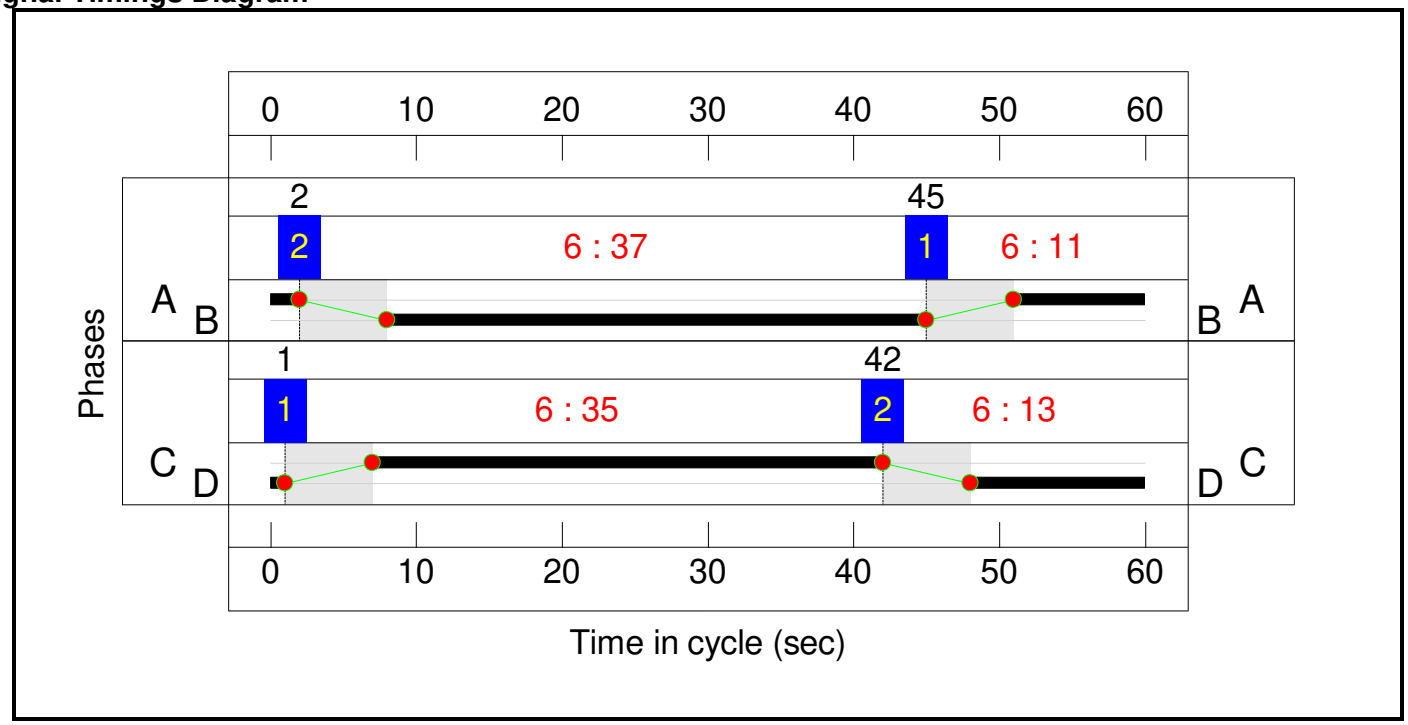
Stage Stream: 1

Stage	1	2
Duration	11	37
Change Point	45	2

Stage Stream: 2

Stage	1	2
Duration	35	13
Change Point	1	42

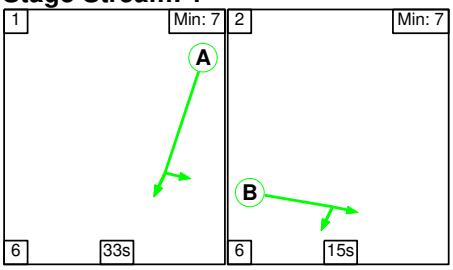
Signal Timings Diagram



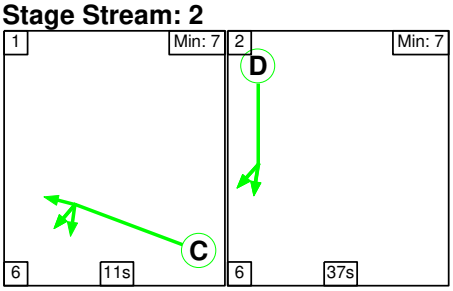
C3

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

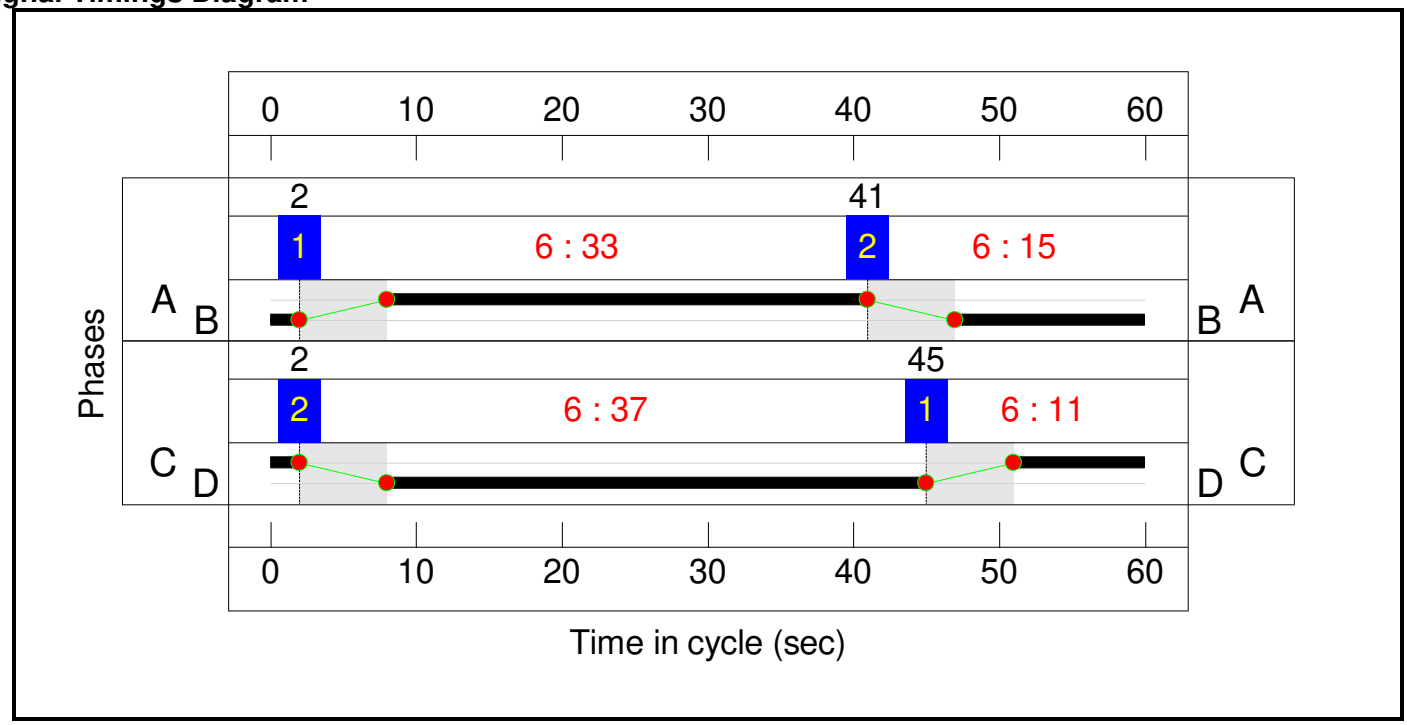
Stage Stream: 1

Stage	1	2
Duration	33	15
Change Point	2	41

Stage Stream: 2

Stage	1	2
Duration	11	37
Change Point	45	2

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: Reference Case Network Model	-	-	**N/A**	-	-		-	-	-	-	-	-	**136.6%**
J1: Baynards Green	-	-	**N/A**	-	-		-	-	-	-	-	-	**136.6%**
1/1	A43 North Ahead Left	O	N/A	N/A	-		-	-	-	1018	Inf	1078	94.4%
1/2	A43 North Ahead	O	N/A	N/A	-		-	-	-	1010	Inf	1069	94.5%
4/1+4/2	B4100 East Left Ahead	O	N/A	N/A	-		-	-	-	943	Inf : Inf	388+321	129.8 : 136.6%
5/1	Ahead	U	N/A	N/A	-		-	-	-	890	2000	2000	42.2%
7/1	A43 South Ahead Ahead2	O	N/A	N/A	-		-	-	-	964	Inf	1089	88.5%
7/2	A43 South Ahead	O	N/A	N/A	-		-	-	-	994	Inf	1080	92.0%
10/1+10/2	B4100 West Left Ahead	O	N/A	N/A	-		-	-	-	365	Inf : Inf	364+96	79.4 : 79.4%
J2: Padbury Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**77.9%**
1/1	A43 north Ahead	U	2:1	N/A	C2:B		1	37	-	890	1922	1217	69.3%
1/2	A43 north Ahead	U	2:1	N/A	C2:B		1	37	-	959	2058	1303	73.6%
3/1	A43 south Ahead	U	2:2	N/A	C2:C		1	35	-	881	1886	1132	77.9%
3/2	A43 south Ahead	U	2:2	N/A	C2:C		1	35	-	785	2019	1211	64.8%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	2:2	N/A	C2:D		1	13	-	425	2058:1908	480+117	71.2 : 71.2%
5/3	Junction 10 s'bound offslip Ahead	U	2:2	N/A	C2:D		1	13	-	316	2058	480	65.8%
6/1	Right	U	2:1	N/A	C2:A		1	11	-	133	1980	396	33.6%
6/2	Right	U	2:1	N/A	C2:A		1	11	-	316	2120	424	74.5%
J3: Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**88.2%**
1/1	A43 Left Ahead	U	3:1	N/A	C3:A		1	33	-	919	1980	1122	81.5%
1/2+1/3	A43 Ahead	U	3:1	N/A	C3:A		1	33	-	1379	1980:1980	584+977	88.2 : 84.2%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	538	Inf	984	54.7%

5/1	MSA Left	U	3:2	N/A	C3:C		1	11	-	246	1871	374	65.7%
5/2	MSA Left Ahead	U	3:2	N/A	C3:C		1	11	-	281	2054	411	68.4%
8/1	Ahead Right	U	3:1	N/A	C3:B		1	15	-	309	1850	493	62.6%
10/1	Ahead	U	3:2	N/A	C3:D		1	37	-	627	1980	1254	49.9%
10/2	Ahead	U	3:2	N/A	C3:D		1	37	-	590	2120	1343	43.9%
10/3	Ahead	U	3:2	N/A	C3:D		1	37	-	863	2120	1343	61.3%
J4: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**85.6%**
1/1+1/2	Ahead	O	N/A	N/A	-		-	-	-	607	Inf : Inf	834+634	37.6 : 46.3%
2/1	U-Turn	O	N/A	N/A	-		-	-	-	390	Inf	1131	31.2%
2/2	Ahead	O	N/A	N/A	-		-	-	-	658	Inf	1131	57.8%
9/1	Ahead Ahead2	O	N/A	N/A	-		-	-	-	861	Inf	1006	85.6%
9/2	Ahead	O	N/A	N/A	-		-	-	-	711	Inf	1006	70.7%

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: Reference Case Network Model	**-**	**-**	**10467**	**0**	**0**	**35.0**	**164.5**	**0.0**	**199.5**	**-**	**-**	**-**	**-**
J1: Baynards Green	**-**	**-**	**6136**	**0**	**0**	**11.9**	**143.3**	**0.0**	**155.2**	**-**	**-**	**-**	**-**
1/1	1018	1018	1018	0	0	0.1	6.9	-	7.0	24.6	7.4	6.9	14.2
1/2	1010	1010	1010	0	0	0.0	6.9	-	6.9	24.6	0.0	6.9	6.9
4/1+4/2	943	710	1420	0	0	9.8	118.6	-	128.3	489.9	24.2	118.6	142.7
5/1	844	844	-	-	-	0.0	0.4	-	0.4	1.6	0.0	0.4	0.4
7/1	964	964	964	0	0	1.2	3.6	-	4.8	18.0	14.3	3.6	17.9
7/2	994	994	994	0	0	0.9	5.1	-	6.0	21.7	14.1	5.1	19.3
10/1+10/2	365	365	730	0	0	0.0	1.9	-	1.9	18.3	0.0	1.9	1.9
J2: Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**12.0**	**7.3**	**0.0**	**19.3**	**-**	**-**	**-**	**-**
1/1	844	844	-	-	-	1.7	1.1	-	2.8	11.9	8.8	1.1	9.9
1/2	959	959	-	-	-	2.0	1.4	-	3.4	12.7	10.9	1.4	12.3
3/1	881	881	-	-	-	2.1	1.7	-	3.9	15.7	11.1	1.7	12.9
3/2	785	785	-	-	-	1.6	0.9	-	2.5	11.4	8.6	0.9	9.5
5/2+5/1	425	425	-	-	-	2.4	1.2	-	3.7	31.0	5.2	1.2	6.4
5/3	316	316	-	-	-	1.8	1.0	-	2.8	31.7	4.7	1.0	5.7
6/1	133	133	-	-	-	0.1	0.0	-	0.1	3.0	0.1	0.0	0.1
6/2	316	316	-	-	-	0.2	0.0	-	0.2	2.8	0.6	0.0	0.6
J3: Cherwell	**-**	**-**	**538**	**0**	**0**	**10.9**	**8.5**	**0.0**	**19.4**	**-**	**-**	**-**	**-**
1/1	914	914	-	-	-	2.0	2.2	-	4.1	16.3	8.0	2.2	10.2
1/2+1/3	1338	1338	-	-	-	3.7	2.9	-	6.6	17.7	25.4	2.9	28.3
2/2	538	538	538	0	0	0.0	0.6	-	0.6	4.0	0.0	0.6	0.6
5/1	246	246	-	-	-	1.5	0.9	-	2.5	36.0	3.8	0.9	4.7
5/2	281	281	-	-	-	1.7	1.1	-	2.8	35.9	4.3	1.1	5.4
8/1	309	309	-	-	-	1.7	0.8	-	2.5	29.1	4.5	0.8	5.3
10/1	626	626	-	-	-	0.0	0.0	-	0.0	0.2	0.2	0.0	0.2
10/2	589	589	-	-	-	0.3	0.0	-	0.3	1.6	1.2	0.0	1.2

10/3	822	822	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J4: Unnamed Junction	**-**	**-**	**3793**	**0**	**0**	**0.2**	**5.3**	**0.0**	**5.6**	**-**	**-**	**-**	**-**
1/1+1/2	607	607	1214	0	0	0.0	0.4	-	0.4	2.1	0.0	0.4	0.4
2/1	353	353	353	0	0	0.0	0.2	-	0.2	2.3	0.0	0.2	0.2
2/2	654	654	654	0	0	0.2	0.7	-	0.9	5.0	7.3	0.7	8.0
9/1	861	861	861	0	0	0.0	2.9	-	2.9	12.0	6.0	2.9	8.8
9/2	711	711	711	0	0	0.0	1.2	-	1.2	6.1	0.0	1.2	1.2

C1	Stream: 1 PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	60
C1	Stream: 3 PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	60
C1	Stream: 4 PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	60
C2	Stream: 1 PRC for Signalled Lanes (%):	20.8	Total Delay for Signalled Lanes (pcuHr):	6.54	Cycle Time (s):	60
C2	Stream: 2 PRC for Signalled Lanes (%):	15.6	Total Delay for Signalled Lanes (pcuHr):	12.78	Cycle Time (s):	60
C3	Stream: 1 PRC for Signalled Lanes (%):	2.0	Total Delay for Signalled Lanes (pcuHr):	13.22	Cycle Time (s):	60
C3	Stream: 2 PRC for Signalled Lanes (%):	31.6	Total Delay for Signalled Lanes (pcuHr):	5.55	Cycle Time (s):	60
	PRC Over All Lanes (%):	-51.7	Total Delay Over All Lanes(pcuHr):	199.47		

APPENDIX B

AECOM MODEL CHECKING REPORT

LINSIG V3 Model Checking Report

AECOM

Project:	**Oxfordshire SRFI-M40 Junction 10**	Job No:	**60659714 - HE SPC EoE 2021-24**
Model:	**220307 Network - Option 25 BG roundabout**	Model Submitted:	**28/04/2021**

Modelled By: ADC Infrastructure **Checked by: Fakhar Alam** **Approved by:**

This note is to document the checks made to LINSIG models. Once completed this should be filed with the model, or model outputs for future reference.

Results Key

× - Changes required before work is signed off
? – Changes may be required before work is signed off, further work required
✓ - No further changes required before work is signed off

File Checked: 220307 Network - Option 25 BG roundabout

Network Information					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
FA -03/05/22	Scenario title(s) entered	✓			
FA -03/05/22	Project name entered	✓			
FA -03/05/22	Modeller details recorded	✓			
FA -03/05/22	Network location details entered	×		Network location added.	
FA -03/05/22	File name is logical	✓			

Network Setup

Junction Drawings:
Sat Flow Measurements / Calculations:

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
	Junctions				
FA -03/05/22	Appropriate junctions setup	✓			
FA -03/05/22	Junction info/ signal controllers complete	✓			
FA -03/05/22	Logical arm structure setup	✓			
	Lanes				
FA -03/05/22	Lane setup reflects junction drawings	×	B4100 Roundabout: Arm 6 has a single lane whereas the drawing shows two lanes.	No longer applicable as B4100 roundabout removed from proposal.	
FA -03/05/22	Check each lane that is signal controlled	✓			
FA -03/05/22	Lanes matched to controller and phase	✓	Ardley Roundabout: Is Arm 12 a part of the Ardley Roundabout?		
FA -03/05/22	Lane length appropriate	N/A	Cannot be verified as no CAD information available.		
FA -03/05/22	Custom occupancy (if req)	N/A			
	Saturation Flows				
FA -03/05/22	Justified method to derive saturation flows	✓	RR67 has been used to derive saturation flows		
FA -03/05/22	Check observed sat flows (if used)	N/A			
FA -03/05/22	Check RR67 sat flows calculations (if used)	?	RR67 has been used to determine the saturation flows for the circulatory arms. According to LTN 1/09, a saturation flow of 1900 PCU/Hr is recommended to be applied to circulatory lanes. Some turning radii information missing on the turning lanes whereas a few lanes have been incorrectly marked as “Nearside Lanes”.	Entry and circulating saturation flows within the model are based on RR67, as per the advice provided in NH model reviews for the models used to identify the previously agreed Options 18 and 19. However, we have reviewed all saturation flows within the model and mended accordingly such that use of nearside lanes is consistent and radii are correctly applied.	
FA -03/05/22	Check external sat flows calculations (if used)	N/A			
FA -03/05/22	Check sat flows for any bottleneck links	?	Merging lanes have been modelled with unconstrained saturation flow. This is not expected to appropriately model traffic behaviour at the merge. Modelling merges is a limitation of the LinSig software and would ideally need to be tested in microsimulation modelling.	Assessment of the M40 J10 junction complex, including the site access and Ardley Bypass, will be undertaken using micro-simulation (VISSIM). The Reference Case VISSIM model has been prepared and agreed with NH.	
	Advanced Lane Settings				
FA -03/05/22	Use of start / end green displacements (if req)	✓			
FA -03/05/22	Use of queue limits on short links (if req)	?	Excess queue limit used on some circulatory arms. It is recommended that the limiter is set to three quarters of the total length of the lane as per the user manual. This has not been carried out. Any particular reason to this?	Internal queue lengths at each junction have been managed through manual coordination of the green times such that storage capacity is not exceeded. This will also be demonstrated in the VISSIM model.	
FA -03/05/22	Use of weightings for optimiser constraints (if req)	✓			
FA -03/05/22	Use of random delay or queue de-sliver (if req)	✓			
	Give Ways				
FA -03/05/22	Check each lane that is priority controlled	✓			
FA -03/05/22	Measurement of max/min flow when giving way	✓			
FA -03/05/22	Flow when opposing traffic stopped reasonable	✓			

Traffic Engineering
Tel. 0121 262 6795
www.aecom.com
Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

FA -03/05/22	Measurement of give-way co-efficient	?	The give-way parameters for Junction 2 Arm 2 for both lanes are not consistent with JCT parameters, have they been extracted from Arcady?	Give-way parameters for Junction 2 Arm 2 have reverted to JCT parameters.	
FA -03/05/22	Measurement of clear conflict time of opposing traffic	✓			
FA -03/05/22	Check all controlling movements identified	N/A			
FA -03/05/22	Measurement of storage in front of stop-line	N/A			
FA -03/05/22	Max turns in inter-green reasonable	N/A			
FA -03/05/22	Measurement of non-blocking storage	N/A			
	Lane Connectors				
FA -03/05/22	Lane connectors provided reasonable	?	Although connectors have been provided to the appropriate lanes, the “Custom Lane Length” option within LinSig has not been used. The lack of this assumes the distance between stopline to stopline to be the same for all possible movements to the link.	Custom lane lengths added where appropriate.	
FA -03/05/22	Cruise time reasonable	✓	A range of cruise time values has been used. It is assumed that these values are based on the judgement of the modeller rather than on-site data. The use of varying cruise time across the different options will have impact on the journey time outputs.	Cruise speeds based on modeller judgment.	
FA -03/05/22	Default platoon dispersion used unless observed	✓			
	Zones				
FA -03/05/22	Zones match O-D matrix	✓	Flows have been assumed to be correct. No OD data supplied to review the flows against.	Traffic flow derivation is discussed in Technical Note 6.	
	Pedestrians				
FA -03/05/22	Ped crossings represented by ped links (if req)	×	Ardley Roundabout: The staggered pedestrian crossing on A43 has not been modelled in the network. Signalised pedestrian crossing on M40 NB On-slip has not been coded. Cherwell Roundabout: Pedestrian crossing on M40 SB On-Slip and MSA services arm has not been coded.	Proposed Toucan crossings coded at the Ardley, Cherwell and Baynards Green roundabouts	
FA -03/05/22	Ped link data correct (if req)	N/A			
FA -03/05/22	Ped connector walk times reasonable (if req)	N/A			
FA -03/05/22	Ped links matched to appropriate phases (if req)	×	The pedestrian crossings have not been modelled hence no phases defined.	Proposed Toucan crossings coded at the Ardley, Cherwell and Baynards Green roundabouts	
FA -03/05/22	Ped zones match ped O-D matrix (if req)	N/A			

Controllers

Controller Specifications: Intergreen Calculations:

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
	General Controller Set-up				
FA -03/05/22	Sufficient controllers setup	✓			
FA -03/05/22	Multiple stage streams setup correctly (if req)	✓			
FA -03/05/22	Non-standard filters setup correctly (if req)	N/A			
	Signal Settings				
FA -03/05/22	Check phases for each controller	×	Pedestrian crossing phases has not been coded.	Proposed Toucan crossings coded at the Ardley, Cherwell and Baynards Green roundabouts	
FA -03/05/22	Check phase mins/type reasonable	✓			
FA -03/05/22	Check inter-greens calculations/coding	×	No CAD drawing supplied to review the intergreens against. Has consideration for high-speed road been made in the intergreen calculations. A review of the pdf drawing indicates that some of the intergreens might be higher than the inputted values for e.g. the intergreens between circulatory arm (10) and MSA arm (5) of Cherwell Roundabout.	Intergreens have been reviewed and are judged to be appropriate. A further review will be undertaken as part of the VISSIM modelling, at which stage approved layout drawings should be available. An additional second has been added to account for high-speed entry phases.	
FA -03/05/22	Stages reasonable	✓			
FA -03/05/22	Phase delays reasonable (if req)	✓			

Stage Sequences

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
FA -03/05/22	Check stage sequences observed / optimised	✓			
FA -03/05/22	Check stage timings observed / optimised	✓			

Traffic Counts and Calculations

Traffic Flow Data:
Matrix Calculations:
Lane Balancing Calculations:
Site Observations:

Checked by/date	Checks Made	Result	Comments	Action taken after Audit	Checked by/date
FA -03/05/22	Suitability of traffic surveys undertaken	N/A			

Tel. 0121 262 6795
www.aecom.com

Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

FA -03/05/22	Are there sufficient site observations	N/A			
FA -03/05/22	Check O-D matrix calculations	N/A	Flows have been assumed to be correct. No OD data supplied to review the flows against.		
FA -03/05/22	Are lane balancing calculations sufficient / consistent	N/A			
FA -03/05/22	Does lane balancing match lining	N/A	Customised delay-based assignment used.		
FA -03/05/22	Does lane balancing match matrices	N/A	It is difficult to predict traffic behaviour whilst choosing lanes as this is a proposed model.		

Traffic Flows					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
FA -03/05/22	Traffic & ped flow (if req) groups setup	✓			
FA -03/05/22	Desired flows match O-D matrices	✓			
FA -03/05/22	Actual flows match desired flows	✓			
FA -03/05/22	Inappropriate routes closed	✓			
FA -03/05/22	Route flows match lane balancing	N/A	Customised delay-based assignment used.		

Modelling					
Checked by/date	**Checks Made**	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
FA -03/05/22	Scenario set up with correct options	✓			
FA -03/05/22	Cycle time appropriate for network control	✓			
FA -03/05/22	Cycle time optimised (if req)	✓			

Results					
	Checks Made	**Result**	**Comments**	**Action taken after Audit**	**Checked by/date**
FA -03/05/22	Are all values as expected (Demand Flows, Green Times etc)	✓			
FA -03/05/22	Deg Sat >100% for existing situation with no modelled suppressed demand?	N/A			
FA -03/05/22	Deg Sat appropriate? Validated?	✓	No validation undertaken as this is a proposed model. Unaware if this proposed model has been coded on a validated base model.		
FA -03/05/22	Capacity conclusions	✓	Positive PRC for all modelled scenarios.		
FA -03/05/22	If suppressed demand has been modelled, do queues validate?	N/A			
FA -03/05/22	Queues appropriate?	✓	Queues predicted to be contained within the link lengths.		
FA -03/05/22	Queue limits exceeded?	✓			
FA -03/05/22	Queuing conclusions (will exit blocking modify these?)	✓	Traffic merging between Padbury Roundabout and B4100 Roundabout would need to be modelled in microsimulation modelling to understand if any queue formation will block back on to the junctions.		
FA -03/05/22	If suppressed demand has been modelled do journey times validate?	N/A			
FA -03/05/22	Journey time conclusions?	✓	Some very minor discrepancies exist between the journey time in the model as compared to the outputs presented as Appendix B in the Technical Note for the option. The minor discrepancies would not alter the outcome of the results.		

Conclusions and Recommendations

- The issues observed as part of the review of the model have been detailed above.
- The exists traffic merges in both the north and south direction between Padbury and B4100 roundabouts. Modelling traffic behaviour at merging is one of LinSig's key limitation. Caution should be exercised as a high volume of merging traffic might block back on to the junction and cause significant delays which will negatively impact the journey time results.
- It is appreciated that this is a proposed model hence it is difficult to record cruise times. It is recommended that cruise time is kept consistent across all the options as a quicker/slower cruise time will have journey time implications.
- Inputting "Custom Lane Length" on the connector will make the model more robust. There would be varying distance between stopline to stopline for the links feeding into a certain arm. Longer/shorter custom lane length is expected to influence the journey time.
- Coding pedestrian crossings into the network is expected to negatively impact the results.
- The intergreens would need to be reviewed against design drawings with considerations made for high-speed road.
- Making the above changes might have an appreciable impact on the model results.

Tel. 0121 262 6795
www.aecom.com

Colmore Plaza
Colmore Circus Queensway
BIRMINGHAM
B4 6AT
United Kingdom

APPENDIX C

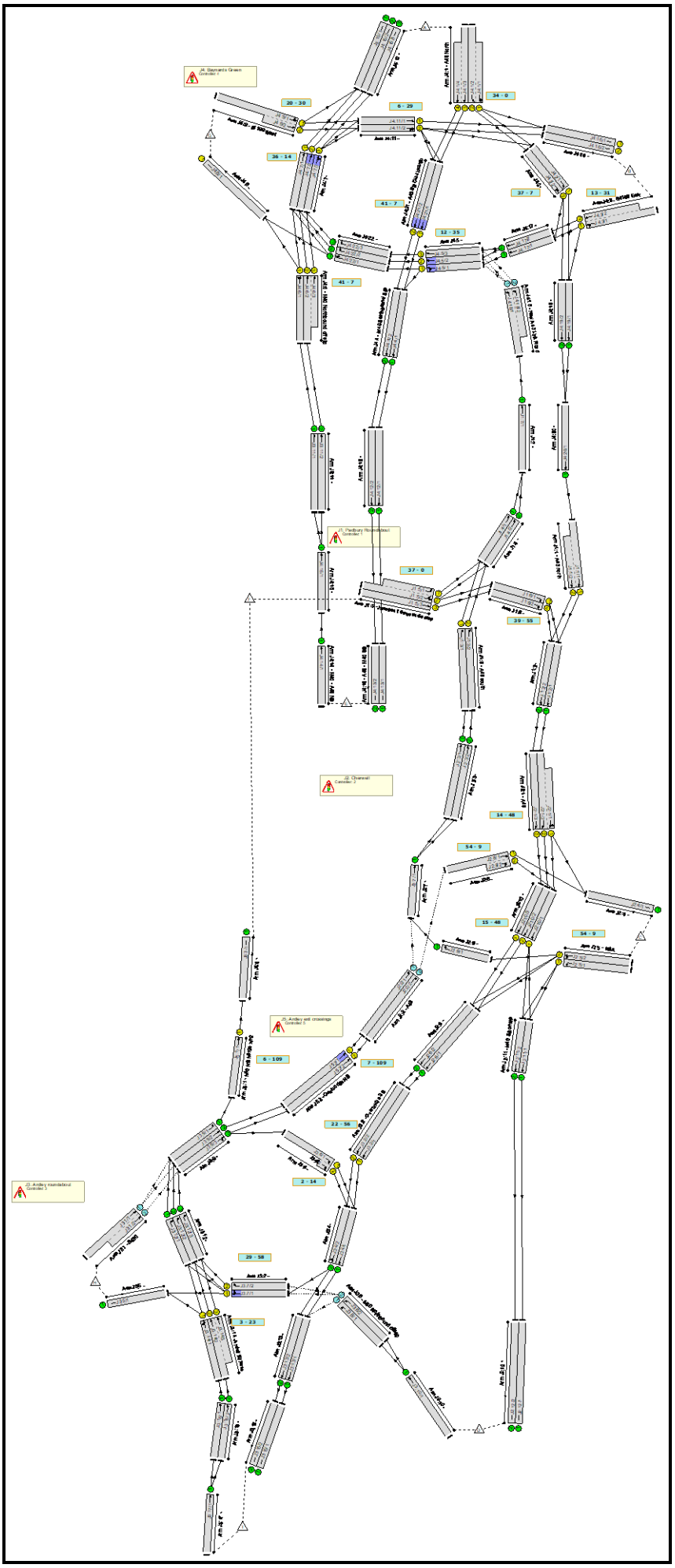
OPTION 25a LINSIG MODEL

Full Input Data And Results

User and Project Details

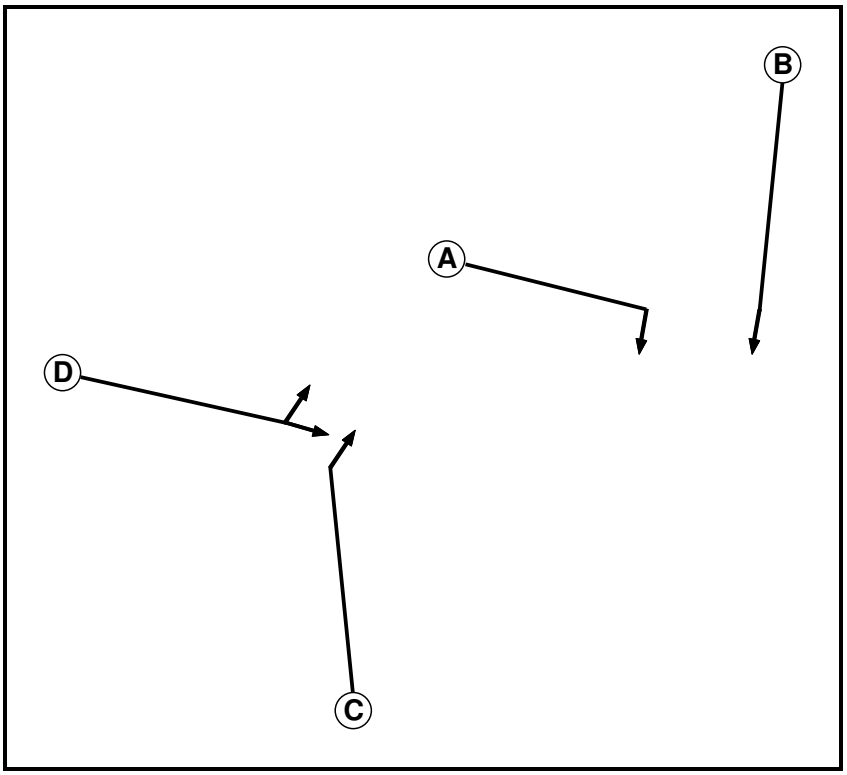
Project:	**Oxfordshire SRFI**
Title:	**Option25a Network Model - revised following NH comments**
Location:	M40 Junction 10, Oxfordshire
Additional detail:	Entry and exit links configured to be consistent with do something cases for comparison.
File name:	221214 Network - Option 25a.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



C1 - Padbury

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

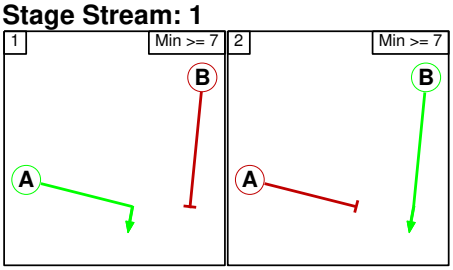
		Starting Phase			
		A	B	C	D
Terminating Phase	A		6	-	-
	B	6		-	-
	C	-	-		6
	D	-	-	6	

Phases in Stage

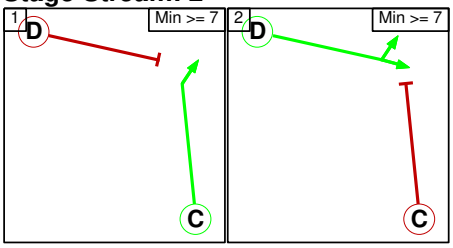
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Prohibited Stage Change

Stage Stream: 1

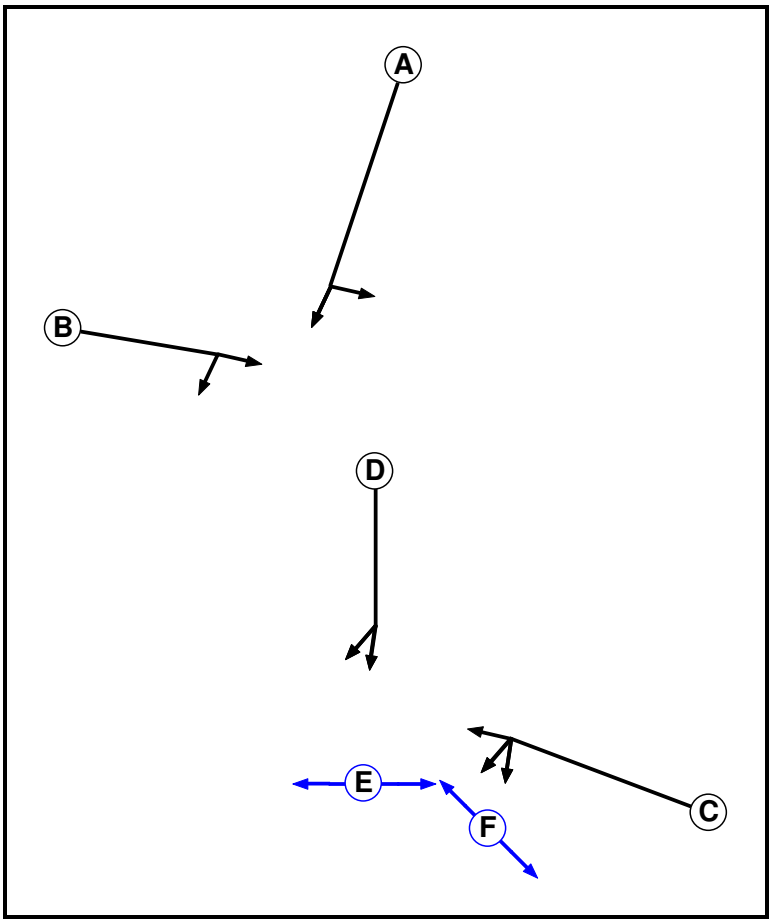
	To Stage		
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

	To Stage		
		1	2
From Stage	1		6
	2	6	

C2 - Cherwell

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
E	Pedestrian	2		6	6
F	Pedestrian	2		6	6

Phase Intergreens Matrix

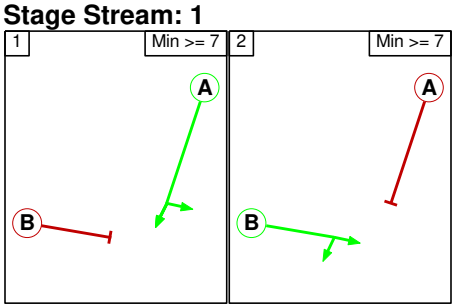
		Starting Phase					
		A	B	C	D	E	F
Terminating Phase	A		6	-	-	-	-
	B	5		-	-	-	-
	C	-	-		6	-	5
	D	-	-	6		7	-
	E	-	-	-	6		-
	F	-	-	6	-	-	

Phases in Stage

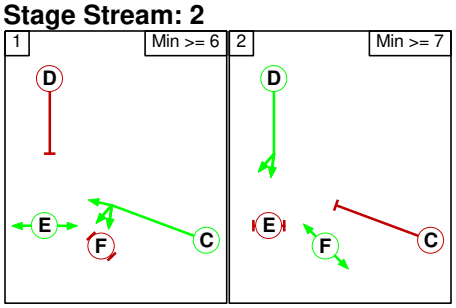
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C E
2	2	D F

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Prohibited Stage Change

Stage Stream: 1

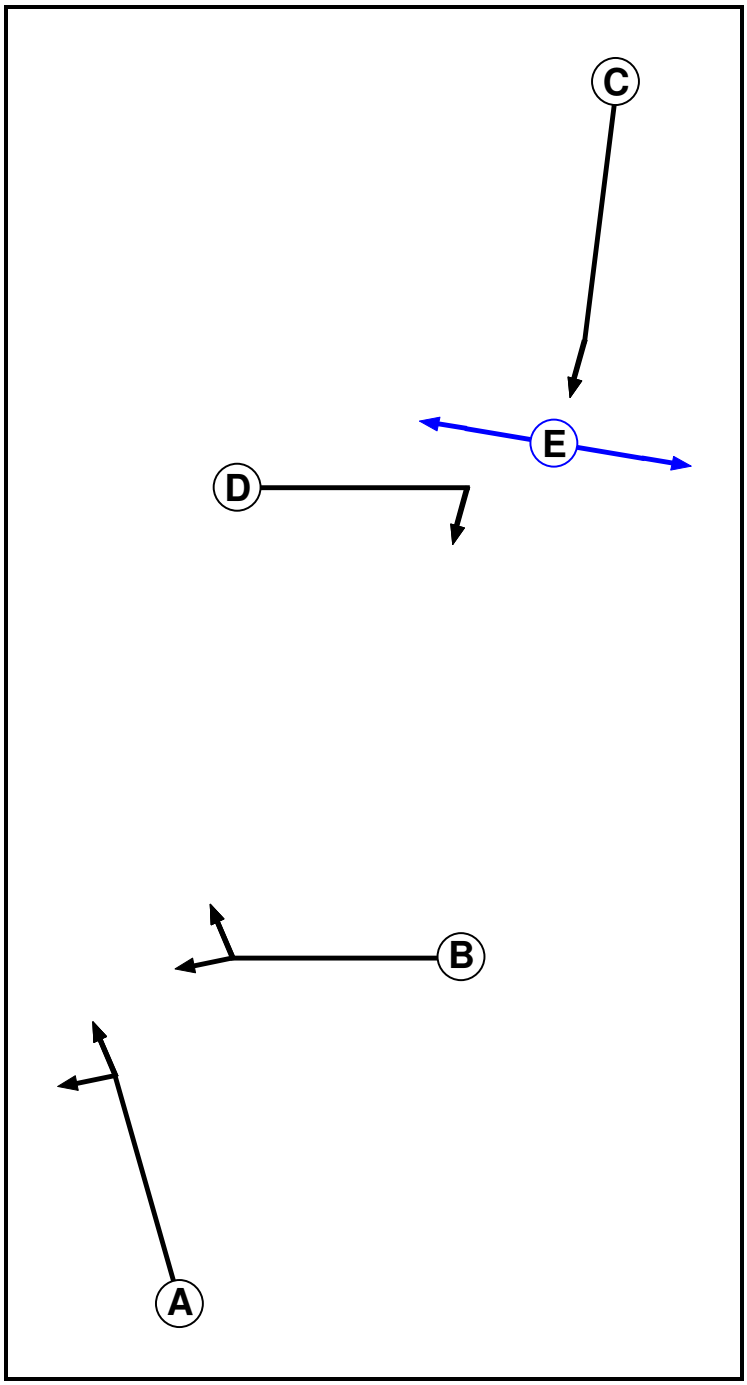
		To Stage	
		1	2
From Stage	1		6
	2	5	

Stage Stream: 2

		To Stage	
		1	2
From Stage	1		6
	2	7	

C3 - Ardley

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
E	Pedestrian	2		6	6

Phase Intergreens Matrix

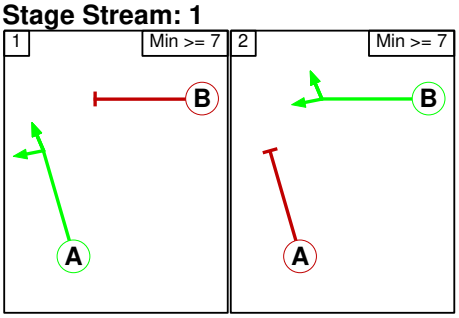
		Starting Phase				
		A	B	C	D	E
Terminating Phase	A		6	-	-	-
	B	5		-	-	-
	C	-	-		6	6
	D	-	-	5		-
	E	-	-	8	-	

Phases in Stage

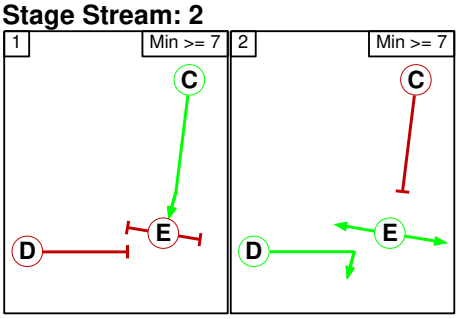
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D E

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Prohibited Stage Change

Stage Stream: 1

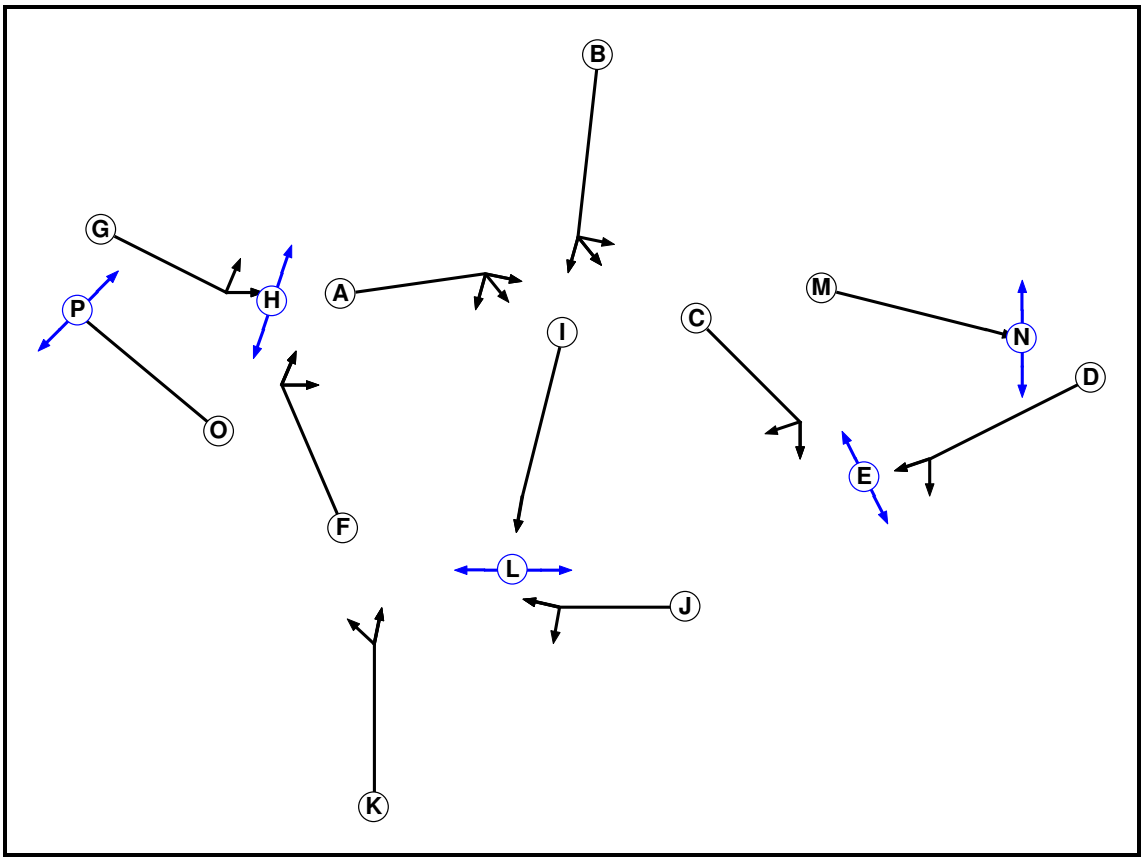
		To Stage		
			1	2
From Stage	1			6
	2	5		

Stage Stream: 2

		To Stage		
			1	2
From Stage	1			6
	2	8		

C4 - Baynards Green

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
E	Pedestrian	2		6	6
F	Traffic	4		7	7
G	Traffic	4		7	7
H	Pedestrian	4		6	6
I	Traffic	3		7	7
J	Traffic	3		7	7
K	Traffic	3		7	7
L	Pedestrian	3		6	6
M	Traffic	5		7	7
N	Pedestrian	5		6	6
O	Traffic	6		7	7
P	Pedestrian	6		6	6

Phase Intergreens Matrix

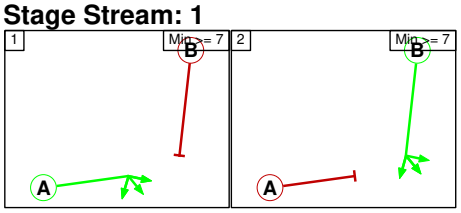
Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
A		5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B	6		-	-	-	-	-	-	-	-	-	-	-	-	-	-
C	-	-		5	-	-	-	-	-	-	-	-	-	-	-	-
D	-	-	6		6	-	-	-	-	-	-	-	-	-	-	-
E	-	-	-	6		-	-	-	-	-	-	-	-	-	-	-
F	-	-	-	-	-		5	-	-	-	-	-	-	-	-	-
G	-	-	-	-	-	6		6	-	-	-	-	-	-	-	-
H	-	-	-	-	-	-	6		-	-	-	-	-	-	-	-
I	-	-	-	-	-	-	-	-		5	-	5	-	-	-	-
J	-	-	-	-	-	-	-	-	5		6	-	-	-	-	-
K	-	-	-	-	-	-	-	-	-	5		-	-	-	-	-
L	-	-	-	-	-	-	-	-	6	-	-		-	-	-	-
M	-	-	-	-	-	-	-	-	-	-	-	-		6	-	-
N	-	-	-	-	-	-	-	-	-	-	-	-	6		-	-
O	-	-	-	-	-	-	-	-	-	-	-	-	-	-		6
P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	

Phases in Stage

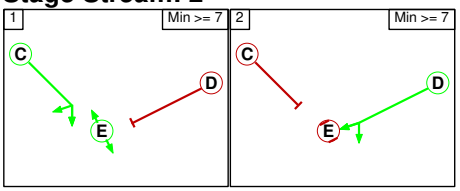
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C E
2	2	D
3	1	J L
3	2	I K
4	1	F H
4	2	G
5	1	M
5	2	N
6	1	O
6	2	P

Stage Diagram

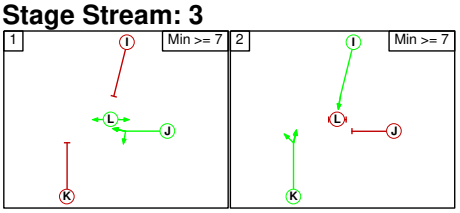
Stage Stream: 1



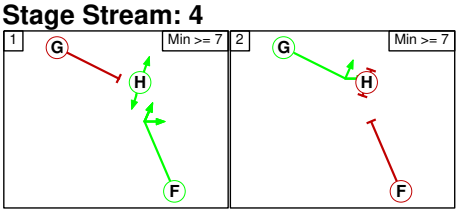
Stage Stream: 2



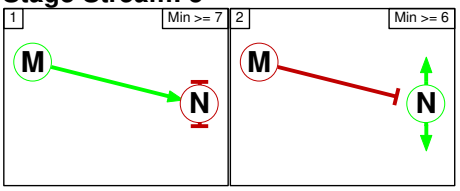
Stage Stream: 3



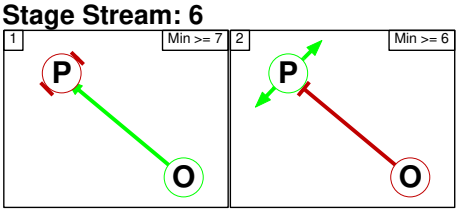
Stage Stream: 4



Stage Stream: 5



Stage Stream: 6



Prohibited Stage Change

Stage Stream: 1

	To Stage		
		1	2
From Stage	1		5
	2	6	

Stage Stream: 2

	To Stage		
		1	2
From Stage	1		6
	2	6	

Stage Stream: 3

	To Stage		
		1	2
From Stage	1		6
	2	5	

Stage Stream: 4

From Stage \ To Stage	1	2
1		6
2	6	

Stage Stream: 5

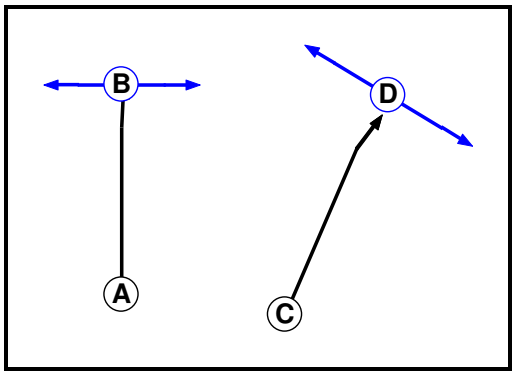
From Stage \ To Stage	1	2
1		6
2	6	

Stage Stream: 6

From Stage \ To Stage	1	2
1		6
2	6	

C5 - Ardley exit crossings

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Pedestrian	1		5	5
C	Traffic	2		7	7
D	Pedestrian	2		5	5

Phase Intergreens Matrix

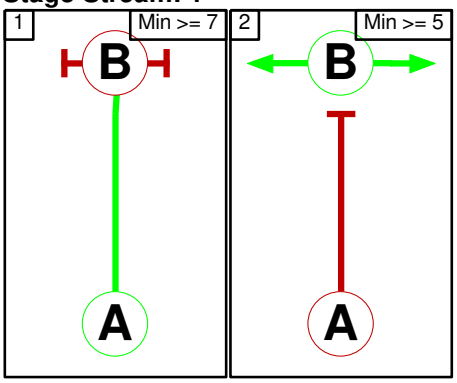
		Starting Phase			
		A	B	C	D
Terminating Phase	A		6	-	-
	B	6		-	-
	C	-	-		6
	D	-	-	7	

Phases in Stage

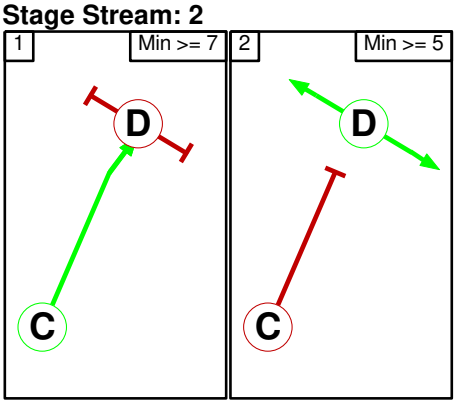
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Prohibited Stage Change

Stage Stream: 1

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

From Stage \ To Stage		1	2
	1		6
	2	7	

Give-Way Lane Input Data

Junction: J1: Padbury Roundabout

There are no Opposed Lanes in this Junction

Junction: J2: Cherwell

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)
J2:2/1 (A43)	J2:7/1 (Ahead)	1000	0	J2:9/1	0.33	All	-	-	-	-	-
J2:2/2 (A43)	J2:8/1 (Ahead)	1000	0	J2:9/1	0.33	All	-	-	-	-	-

Junction: J3: Ardley roundabout

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)
J3:1/1 (B430)	J3:9/1 (Ahead)	1000	0	J3:12/1	0.33	All	-	-	-	-	-
				J3:12/2	0.33	All					
	J3:9/2 (Ahead)	1000	0	J3:12/1	0.33	All					
				J3:12/2	0.33	All					
J3:1/2 (B430)	J3:9/3 (Ahead)	1057	0	J3:12/1	0.28	All	-	-	-	-	-
				J3:11/2	0.28	All					
				J3:12/3	0.28	All					
J3:8/1 (M40 Northbound offslip)	J3:13/1 (Left)	1000	0	J3:4/1	0.33	All	-	-	-	-	-
J3:8/2 (M40 Northbound offslip)	J3:7/1 (Ahead)	1000	0	J3:4/1	0.33	All	-	-	-	-	-
				J3:4/2	0.33	All					
	J3:7/2 (Ahead)	1000	0	J3:4/1	0.33	All					
				J3:4/2	0.33	All					

Junction: J4: Baynards Green											
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)**
J4:18/1 (New A43 Link Road)	J4:5/1 (Left)	1125	0	J4:17/1	0.26	All	-	-	-	-	-
	J4:5/2 (Left)	1125	0	J4:17/1	0.26	All					
				J4:17/2	0.26	All					
J4:18/2 (New A43 Link Road)	J4:5/3 (Left)	1175	0	J4:17/1	0.26	All	-	-	-	-	-
				J4:17/2	0.26	All					

Junction: J5: Ardley exit crossings
There are no Opposed Lanes in this Junction

Lane Input Data

Junction: J1: Padbury Roundabout												
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)**
J1:1/1 (A43 north)	U	B	2	3	60.9	Geom	-	3.65	0.00	Y	Arm J1:2 Ahead	50.00
J1:1/2 (A43 north)	U	B	2	3	14.8	Geom	-	3.65	0.00	N	Arm J1:2 Ahead	50.00
J1:2/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J1:2/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J1:3/1 (A43 south)	U	C	2	3	52.2	Geom	-	3.65	0.00	Y	Arm J1:4 Ahead	30.00
J1:3/2 (A43 south)	U	C	2	3	52.2	Geom	-	3.65	0.00	N	Arm J1:4 Ahead	30.00
J1:4/1	U		2	3	8.7	Inf	-	-	-	-	-	-
J1:4/2	U		2	3	8.7	Inf	-	-	-	-	-	-
J1:5/1 (Junction 10 s'bound offslip)	U	D	2	3	10.8	Geom	-	3.65	0.00	Y	Arm J1:4 Left	40.00
J1:5/2 (Junction 10 s'bound offslip)	U	D	2	3	113.0	Geom	-	3.65	0.00	N	Arm J1:4 Left	50.00
											Arm J1:6 Ahead	50.00
J1:5/3 (Junction 10 s'bound offslip)	U	D	2	3	113.0	Geom	-	3.65	0.00	N	Arm J1:6 Ahead	50.00
J1:6/1	U	A	2	3	8.7	User	2080	-	-	-	-	-
J1:6/2	U	A	2	3	8.7	User	2080	-	-	-	-	-
J1:7/1	U		2	3	36.5	Inf	-	-	-	-	-	-

Junction: J2: Cherwell

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)
J2:1/1 (A43)	U	A	2	3	13.9	Geom	-	3.65	0.00	Y	Arm J2:4 Left	80.00
											Arm J2:10 Ahead	80.00
J2:1/2 (A43)	U	A	2	3	52.2	Geom	-	3.65	0.00	N	Arm J2:10 Ahead	80.00
J2:1/3 (A43)	U	A	2	3	52.2	Geom	-	3.65	0.00	N	Arm J2:10 Ahead	80.00
J2:2/1 (A43)	O		2	3	30.4	Inf	-	-	-	-	-	-
J2:2/2 (A43)	O		2	3	30.4	Inf	-	-	-	-	-	-
J2:3/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:3/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:5/1 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm J2:11 Left	20.00
J2:5/2 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm J2:6 Left	Inf
											Arm J2:9 Ahead	Inf
J2:6/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:6/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:7/1	U		2	3	7.0	Inf	-	-	-	-	-	-
J2:8/1	U	B	2	3	11.8	Geom	-	4.00	0.00	Y	Arm J2:4 Ahead	30.00
J2:8/2	U	B	2	3	5.0	Geom	-	4.00	0.00	Y	Arm J2:10 Right	30.00
J2:9/1	U		2	3	7.8	Inf	-	-	-	-	-	-
J2:10/1	U	D	2	3	8.7	Geom	-	3.65	0.00	Y	Arm J2:11 Ahead	Inf
J2:10/2	U	D	2	3	8.7	Geom	-	3.65	0.00	N	Arm J2:6 Ahead	Inf
J2:10/3	U	D	2	3	8.7	Geom	-	3.65	0.00	N	Arm J2:6 Ahead	Inf
J2:11/1 (M40 SB onslip)	U		2	3	130.4	Inf	-	-	-	-	-	-
J2:11/2 (M40 SB onslip)	U		2	3	130.4	Inf	-	-	-	-	-	-
J2:12/1	U		2	3	173.9	Inf	-	-	-	-	-	-
J2:12/2	U		2	3	173.9	Inf	-	-	-	-	-	-

Junction: J3: Ardley roundabout

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)
J3:1/1 (B430)	O		2	3	60.0	Inf	-	-	-	-	-	-
J3:1/2 (B430)	O		2	3	8.7	Inf	-	-	-	-	-	-
J3:2/1 (Overbridge SB)	U	C	2	3	27.0	Geom	-	3.65	0.00	Y	Arm J3:4 Ahead	35.00
J3:2/2 (Overbridge SB)	U	C	2	3	27.0	Geom	-	3.65	0.00	N	Arm J3:4 Ahead	35.00
J3:3/1	U		2	3	165.2	Inf	-	-	-	-	-	-
J3:4/1	U		2	3	10.4	Inf	-	-	-	-	-	-
J3:4/2	U		2	3	10.4	Inf	-	-	-	-	-	-
J3:5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J3:6/1	U	D	2	3	9.6	Geom	-	3.65	0.00	Y	Arm J3:4 Right	40.00
J3:6/2	U	D	2	3	2.6	Geom	-	3.65	0.00	N	Arm J3:4 Right	40.00
J3:7/1	U	B	2	3	8.7	Geom	-	3.65	0.00	Y	Arm J3:5 Ahead	50.00
											Arm J3:12 Right	50.00
J3:7/2	U	B	2	3	8.7	Geom	-	3.65	0.00	N	Arm J3:12 Right	50.00
J3:8/1 (M40 Northbound offslip)	O		2	3	173.9	Inf	-	-	-	-	-	-
J3:8/2 (M40 Northbound offslip)	O		2	3	173.9	Inf	-	-	-	-	-	-
J3:9/1	U		2	3	16.5	Inf	-	-	-	-	-	-
J3:9/2	U		2	3	16.5	Inf	-	-	-	-	-	-
J3:9/3	U		2	3	16.5	Inf	-	-	-	-	-	-
J3:10/1	U		2	3	104.3	Inf	-	-	-	-	-	-
J3:11/1	U		2	3	69.6	Inf	-	-	-	-	-	-
J3:11/2	U		2	3	69.6	Inf	-	-	-	-	-	-
J3:12/1	U		2	3	13.9	Inf	-	-	-	-	-	-
J3:12/2	U		2	3	13.9	Inf	-	-	-	-	-	-
J3:12/3	U		2	3	13.9	Inf	-	-	-	-	-	-
J3:13/1	U		2	3	87.0	Inf	-	-	-	-	-	-
J3:13/2	U		2	3	87.0	Inf	-	-	-	-	-	-
J3:14/1 (Ardley Bypass)	U	A	2	3	104.3	Geom	-	3.65	0.00	Y	Arm J3:5 Left	30.00
											Arm J3:12 Ahead	35.00
J3:14/2 (Ardley Bypass)	U	A	2	3	104.3	Geom	-	3.65	0.00	N	Arm J3:12 Ahead	35.00

J3:14/3 (Ardley Bypass)	U	A	2	3	10.4	Geom	-	3.65	0.00	N	Arm J3:12 Ahead	35.00
J3:15/1	U		2	3	113.0	Inf	-	-	-	-	-	-
J3:15/2	U		2	3	113.0	Inf	-	-	-	-	-	-
J3:16/1	U		2	3	87.0	Inf	-	-	-	-	-	-
J3:16/2	U		2	3	87.0	Inf	-	-	-	-	-	-
J3:17/1	U		2	3	8.7	Inf	-	-	-	-	-	-

Junction: J4: Baynards Green

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)
J4:1/1 (A43 North)	U	B	2	3	20.9	Geom	-	3.65	0.00	Y	Arm J4:2 Ahead	60.00
											Arm J4:16 Left	60.00
J4:1/2 (A43 North)	U	B	2	3	60.0	Geom	-	3.65	0.00	N	Arm J4:2 Ahead	60.00
J4:1/3 (A43 North)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm J4:21 Ahead	60.00
J4:1/4 (A43 North)	U	B	2	3	18.3	Geom	-	3.65	0.00	N	Arm J4:21 Ahead	60.00
J4:2/1	U	C	2	3	15.7	User	1950	-	-	-	-	-
J4:2/2	U	C	2	3	15.7	User	2080	-	-	-	-	-
J4:3/1 (B4100 East)	U	D	2	3	60.0	Geom	-	3.65	0.00	Y	Arm J4:17 Ahead	30.00
											Arm J4:19 Left	30.00
J4:3/2 (B4100 East)	U	D	2	3	12.2	Geom	-	3.65	0.00	N	Arm J4:17 Ahead	30.00
J4:4/1 (M40 Southbound Slip)	U		2	3	17.4	Inf	-	-	-	-	-	-
J4:4/2 (M40 Southbound Slip)	U		2	3	17.4	Inf	-	-	-	-	-	-
J4:5/1	U	J	2	3	6.1	Geom	-	3.65	0.00	Y	Arm J4:4 Left	50.00
											Arm J4:22 Ahead	Inf
J4:5/2	U	J	2	3	6.1	Geom	-	3.65	0.00	N	Arm J4:22 Ahead	50.00
J4:5/3	U	J	2	3	6.1	Geom	-	3.65	0.00	N	Arm J4:22 Ahead	50.00
J4:6/1 (M40 Northbound off slip)	U	K	2	3	139.1	Geom	-	3.65	0.00	Y	Arm J4:7 Ahead	40.00
											Arm J4:8 Left	30.00
J4:6/2 (M40 Northbound off slip)	U	K	2	3	139.1	Geom	-	3.65	0.00	N	Arm J4:7 Ahead	40.00
J4:6/3 (M40 Northbound off slip)	U	K	2	3	20.9	Geom	-	3.65	0.00	N	Arm J4:7 Ahead	40.00
J4:7/1	U	F	2	3	15.7	Geom	-	3.65	0.00	Y	Arm J4:10 Ahead	40.00
J4:7/2	U	F	2	3	15.7	Geom	-	3.65	0.00	N	Arm J4:10 Ahead	40.00
J4:7/3	U	F	2	3	15.7	Geom	-	3.65	0.00	N	Arm J4:10 Ahead	40.00
											Arm J4:11 Right	40.00
J4:8/1	U	O	2	3	17.4	Geom	-	3.65	0.00	Y		

J4:9/1 (B4100 West)	U	G	2	3	60.0	Geom	-	3.50	0.00	Y	Arm J4:10 Left	30.00
											Arm J4:11 Ahead	65.00
J4:9/2 (B4100 West)	U	G	2	3	7.0	Geom	-	3.50	0.00	N	Arm J4:11 Ahead	65.00
J4:10/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J4:10/2	U		2	3	60.0	User	2050	-	-	-	-	-
J4:10/3	U		2	3	60.0	User	2050	-	-	-	-	-
J4:11/1	U	A	2	3	11.3	User	2070	-	-	-	-	-
J4:11/2	U	A	2	3	11.3	User	2070	-	-	-	-	-
J4:12/1	U		2	3	173.9	Inf	-	-	-	-	-	-
J4:12/2	U		2	3	173.9	Inf	-	-	-	-	-	-
J4:13/1 (A43 - M40 SB)	U		2	3	173.9	Inf	-	-	-	-	-	-
J4:13/2 (A43 - M40 SB)	U		2	3	173.9	Inf	-	-	-	-	-	-
J4:14/1 (M40 - A43 NB)	U		2	3	17.4	Inf	-	-	-	-	-	-
J4:15/1	U		2	3	173.9	Inf	-	-	-	-	-	-
J4:16/1	U	M	2	3	20.0	Geom	-	3.65	0.00	Y		
J4:16/2	U	M	2	3	20.0	Geom	-	3.65	0.00	Y		
J4:17/1	U		2	3	10.4	Inf	-	-	-	-	-	-
J4:17/2	U		2	3	10.4	Inf	-	-	-	-	-	-
J4:18/1 (New A43 Link Road)	O		2	3	60.9	Inf	-	-	-	-	-	-
J4:18/2 (New A43 Link Road)	O		2	3	10.4	Inf	-	-	-	-	-	-
J4:19/1	U		2	3	8.7	Inf	-	-	-	-	-	-
J4:19/2	U		2	3	8.7	Inf	-	-	-	-	-	-
J4:20/1	U		2	3	36.5	Inf	-	-	-	-	-	-
J4:21/1 (A43 SB Cut-through)	U	I	2	3	18.3	Geom	-	3.65	0.00	Y	Arm J4:4 Ahead	Inf
J4:21/2 (A43 SB Cut-through)	U	I	2	3	18.3	Geom	-	3.65	0.00	N	Arm J4:4 Ahead	Inf
J4:22/1	U		2	3	4.7	Inf	-	-	-	-	-	-
J4:22/2	U		2	3	4.7	Inf	-	-	-	-	-	-
J4:22/3	U		2	3	4.7	Inf	-	-	-	-	-	-

Junction: J5: Ardley exit crossings												
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)**
J5:1/1 (M40 NB Merge xing)	U	A	2	3	9.6	Geom	-	3.65	0.00	Y	Arm J3:3 Ahead	Inf
J5:2/1 (Overbridge NB)	U	C	2	3	9.6	Geom	-	3.65	0.00	Y	Arm J2:2 Ahead	Inf
J5:2/2 (Overbridge NB)	U	C	2	3	9.6	Geom	-	3.65	0.00	N	Arm J2:2 Ahead	Inf

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2031 Opt 25 - AM'	08:00	09:00	01:00	
2: '2031 Opt 25 - PM'	17:00	18:00	01:00	
3: '2031 Opt 25 - off-peak'	00:00	01:00	01:00	((F1+F2)/2)*0.26
4: '2031 Opt 25 - inter-peak'	12:00	13:00	01:00	((F1+F2)/2)*0.89

Scenario 1: '2031 Option 25 - AM Peak' (FG1: '2031 Opt 25 - AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination									
		A	B	C	D	E	F	G	H	I	Tot.
Origin	A	0	446	112	0	1485	88	70	86	745	3032
	B	350	0	11	0	10	175	306	2	14	868
	C	78	4	0	295	0	145	3	9	48	582
	D	0	0	211	0	0	0	0	9	437	657
	E	1098	8	0	0	0	0	63	0	0	1169
	F	67	250	219	0	0	0	20	48	458	1062
	G	72	296	1	0	110	1	0	2	9	491
	H	42	6	6	10	0	64	5	0	26	159
	I	302	19	22	232	0	327	34	201	0	1137
	Tot.	2009	1029	582	537	1605	800	501	357	1737	9157

Traffic Lane Flows

Lane	Scenario 1: 2031 Option 25 - AM Peak
Junction: J1: Padbury Roundabout	
J1:1/1 (with short)	1246(In) 837(Out)
J1:1/2 (short)	409
J1:2/1	1229
J1:2/2	742
J1:3/1	237
J1:3/2	256
J1:4/1	506
J1:4/2	324
J1:5/1 (short)	269
J1:5/2 (with short)	729(In) 460(Out)
J1:5/3	333
J1:6/1	392
J1:6/2	333
J1:7/1	830
Junction: J2: Cherwell	
J2:1/1 (short)	343
J2:1/2 (with short)	1229(In) 886(Out)
J2:1/3	742
J2:2/1	408
J2:2/2	481
J2:3/1	237
J2:3/2	256
J2:4/1	582
J2:5/1	295
J2:5/2	287
J2:6/1	925
J2:6/2	905
J2:7/1	493
J2:8/1 (with short)	481(In) 239(Out)
J2:8/2 (short)	242
J2:9/1	85
J2:10/1	242
J2:10/2	886
J2:10/3	742
J2:11/1	269
J2:11/2	268
J2:12/1	269

J2:12/2	268
Junction: J3: Ardley roundabout	
J3:1/1 (with short)	159(In) 117(Out)
J3:1/2 (short)	42
J3:2/1	925
J3:2/2	905
J3:3/1	800
J3:4/1	951
J3:4/2	905
J3:5/1	357
J3:6/1 (with short)	26(In) 26(Out)
J3:6/2 (short)	0
J3:7/1	565
J3:7/2	211
J3:8/1	437
J3:8/2	220
J3:9/1	800
J3:9/2	408
J3:9/3	507
J3:10/1	657
J3:11/1	354
J3:11/2	815
J3:12/1	736
J3:12/2	355
J3:12/3	465
J3:13/1	1388
J3:13/2	349
J3:14/1	528
J3:14/2 (with short)	609(In) 355(Out)
J3:14/3 (short)	254
J3:15/1	1388
J3:15/2	349
J3:16/1	528
J3:16/2	609
J3:17/1	1137
Junction: J4: Baynards Green	
J4:1/1 (short)	747
J4:1/2 (with short)	1547(In) 800(Out)
J4:1/3 (with short)	1485(In) 717(Out)
J4:1/4 (short)	768
J4:2/1	314

J4:2/2	800
J4:3/1 (with short)	868(In) 519(Out)
J4:3/2 (short)	349
J4:4/1	780
J4:4/2	825
J4:5/1	568
J4:5/2	576
J4:5/3	422
J4:6/1	354
J4:6/2 (with short)	815(In) 426(Out)
J4:6/3 (short)	389
J4:7/1	607
J4:7/2	806
J4:7/3	811
J4:8/1	501
J4:9/1 (with short)	491(In) 235(Out)
J4:9/2 (short)	256
J4:10/1	679
J4:10/2	806
J4:10/3	524
J4:11/1	260
J4:11/2	446
J4:12/1	780
J4:12/2	825
J4:13/1	780
J4:13/2	825
J4:14/1	1169
J4:15/1	1169
J4:16/1	706
J4:16/2	323
J4:17/1	387
J4:17/2	349
J4:18/1 (with short)	830(In) 422(Out)
J4:18/2 (short)	408
J4:19/1	516
J4:19/2	730
J4:20/1	1246
J4:21/1	770
J4:21/2	825
J4:22/1	558
J4:22/2	576
J4:22/3	422

Junction: J5: Ardley exit crossings	
J5:1/1	800
J5:2/1	408
J5:2/2	481

Lane Saturation Flows

Junction: J1: Padbury Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (A43 north)	3.65	0.00	Y	Arm J1:2 Ahead	50.00	100.0 %	1922	1922
J1:1/2 (A43 north)	3.65	0.00	N	Arm J1:2 Ahead	50.00	100.0 %	2058	2058
J1:2/1	Infinite Saturation Flow						Inf	Inf
J1:2/2	Infinite Saturation Flow						Inf	Inf
J1:3/1 (A43 south)	3.65	0.00	Y	Arm J1:4 Ahead	30.00	100.0 %	1886	1886
J1:3/2 (A43 south)	3.65	0.00	N	Arm J1:4 Ahead	30.00	100.0 %	2019	2019
J1:4/1	Infinite Saturation Flow						Inf	Inf
J1:4/2	Infinite Saturation Flow						Inf	Inf
J1:5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm J1:4 Left	40.00	100.0 %	1908	1908
J1:5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:4 Left	50.00	14.8 %	2058	2058
				Arm J1:6 Ahead	50.00	85.2 %		
J1:5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:6 Ahead	50.00	100.0 %	2058	2058
J1:6/1	This lane uses a directly entered Saturation Flow						2080	2080
J1:6/2	This lane uses a directly entered Saturation Flow						2080	2080
J1:7/1	Infinite Saturation Flow						Inf	Inf

Junction: J2: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (A43)	3.65	0.00	Y	Arm J2:4 Left	80.00	100.0 %	1944	1944
				Arm J2:10 Ahead	80.00	0.0 %		
J2:1/2 (A43)	3.65	0.00	N	Arm J2:10 Ahead	80.00	100.0 %	2081	2081
J2:1/3 (A43)	3.65	0.00	N	Arm J2:10 Ahead	80.00	100.0 %	2081	2081
J2:2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:3/1	Infinite Saturation Flow						Inf	Inf
J2:3/2	Infinite Saturation Flow						Inf	Inf
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:5/1 (MSA)	3.50	0.00	Y	Arm J2:11 Left	20.00	100.0 %	1828	1828
J2:5/2 (MSA)	3.50	0.00	Y	Arm J2:6 Left	Inf	70.4 %	1965	1965
				Arm J2:9 Ahead	Inf	29.6 %		
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:6/2	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:8/1	4.00	0.00	Y	Arm J2:4 Ahead	30.00	100.0 %	1919	1919
J2:8/2	4.00	0.00	Y	Arm J2:10 Right	30.00	100.0 %	1919	1919
J2:9/1	Infinite Saturation Flow						Inf	Inf
J2:10/1	3.65	0.00	Y	Arm J2:11 Ahead	Inf	100.0 %	1980	1980
J2:10/2	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:10/3	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:12/1	Infinite Saturation Flow						Inf	Inf
J2:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J3: Ardley roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1 (B430 Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:1/2 (B430 Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:2/1 (Overbridge SB)	3.65	0.00	Y	Arm J3:4 Ahead	35.00	100.0 %	1899	1899
J3:2/2 (Overbridge SB)	3.65	0.00	N	Arm J3:4 Ahead	35.00	100.0 %	2033	2033
J3:3/1	Infinite Saturation Flow						Inf	Inf
J3:4/1	Infinite Saturation Flow						Inf	Inf
J3:4/2	Infinite Saturation Flow						Inf	Inf
J3:5/1	Infinite Saturation Flow						Inf	Inf
J3:6/1	3.65	0.00	Y	Arm J3:4 Right	40.00	100.0 %	1908	1908
J3:6/2	3.65	0.00	N	Arm J3:4 Right	40.00	0.0 %	2120	2120
J3:7/1	3.65	0.00	Y	Arm J3:5 Ahead	50.00	27.6 %	1922	1922
				Arm J3:12 Right	50.00	72.4 %		
J3:7/2	3.65	0.00	N	Arm J3:12 Right	50.00	100.0 %	2058	2058
J3:8/1 (M40 Northbound offslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:8/2 (M40 Northbound offslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:9/1	Infinite Saturation Flow						Inf	Inf
J3:9/2	Infinite Saturation Flow						Inf	Inf
J3:9/3	Infinite Saturation Flow						Inf	Inf
J3:10/1	Infinite Saturation Flow						Inf	Inf
J3:11/1	Infinite Saturation Flow						Inf	Inf
J3:11/2	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf
J3:12/2	Infinite Saturation Flow						Inf	Inf
J3:12/3	Infinite Saturation Flow						Inf	Inf
J3:13/1	Infinite Saturation Flow						Inf	Inf
J3:13/2	Infinite Saturation Flow						Inf	Inf
J3:14/1 (Ardley Bypass)	3.65	0.00	Y	Arm J3:5 Left	30.00	38.1 %	1894	1894
				Arm J3:12 Ahead	35.00	61.9 %		
J3:14/2 (Ardley Bypass)	3.65	0.00	N	Arm J3:12 Ahead	35.00	100.0 %	2033	2033
J3:14/3 (Ardley Bypass)	3.65	0.00	N	Arm J3:12 Ahead	35.00	100.0 %	2033	2033
J3:15/1	Infinite Saturation Flow						Inf	Inf
J3:15/2	Infinite Saturation Flow						Inf	Inf
J3:16/1	Infinite Saturation Flow						Inf	Inf
J3:16/2	Infinite Saturation Flow						Inf	Inf
J3:17/1	Infinite Saturation Flow						Inf	Inf

Junction: J4: Baynards Green

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (A43 North)	3.65	0.00	Y	Arm J4:2 Ahead	60.00	40.3 %	1932	1932
				Arm J4:16 Left	60.00	59.7 %		
J4:1/2 (A43 North)	3.65	0.00	N	Arm J4:2 Ahead	60.00	100.0 %	2068	2068
J4:1/3 (A43 North)	3.65	0.00	Y	Arm J4:21 Ahead	60.00	100.0 %	1932	1932
J4:1/4 (A43 North)	3.65	0.00	N	Arm J4:21 Ahead	60.00	100.0 %	2068	2068
J4:2/1	This lane uses a directly entered Saturation Flow						1950	1950
J4:2/2	This lane uses a directly entered Saturation Flow						2080	2080
J4:3/1 (B4100 East)	3.65	0.00	Y	Arm J4:17 Ahead	30.00	61.1 %	1886	1886
				Arm J4:19 Left	30.00	38.9 %		
J4:3/2 (B4100 East)	3.65	0.00	N	Arm J4:17 Ahead	30.00	100.0 %	2019	2019
J4:4/1 (M40 Southbound Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:4/2 (M40 Southbound Slip Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:5/1	3.65	0.00	Y	Arm J4:4 Left	50.00	1.8 %	1979	1979
				Arm J4:22 Ahead	Inf	98.2 %		
J4:5/2	3.65	0.00	N	Arm J4:22 Ahead	50.00	100.0 %	2058	2058
J4:5/3	3.65	0.00	N	Arm J4:22 Ahead	50.00	100.0 %	2058	2058
J4:6/1 (M40 Northbound off slip)	3.65	0.00	Y	Arm J4:7 Ahead	40.00	82.2 %	1904	1904
				Arm J4:8 Left	30.00	17.8 %		
J4:6/2 (M40 Northbound off slip)	3.65	0.00	N	Arm J4:7 Ahead	40.00	100.0 %	2043	2043
J4:6/3 (M40 Northbound off slip)	3.65	0.00	N	Arm J4:7 Ahead	40.00	100.0 %	2043	2043
J4:7/1	3.65	0.00	Y	Arm J4:10 Ahead	40.00	100.0 %	1908	1908
J4:7/2	3.65	0.00	N	Arm J4:10 Ahead	40.00	100.0 %	2043	2043
J4:7/3	3.65	0.00	N	Arm J4:10 Ahead	40.00	64.6 %	2043	2043
				Arm J4:11 Right	40.00	35.4 %		
J4:8/1	3.65	0.00	Y				1980	1980
J4:9/1 (B4100 West)	3.50	0.00	Y	Arm J4:10 Left	30.00	30.6 %	1905	1905
				Arm J4:11 Ahead	65.00	69.4 %		
J4:9/2 (B4100 West)	3.50	0.00	N	Arm J4:11 Ahead	65.00	100.0 %	2058	2058
J4:10/1	Infinite Saturation Flow						Inf	Inf
J4:10/2	This lane uses a directly entered Saturation Flow						2050	2050
J4:10/3	This lane uses a directly entered Saturation Flow						2050	2050
J4:11/1	This lane uses a directly entered Saturation Flow						2070	2070
J4:11/2	This lane uses a directly entered Saturation Flow						2070	2070
J4:12/1	Infinite Saturation Flow						Inf	Inf
J4:12/2	Infinite Saturation Flow						Inf	Inf

J4:13/1 (A43 - M40 SB Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:13/2 (A43 - M40 SB Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:14/1 (M40 - A43 NB Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:15/1	Infinite Saturation Flow						Inf	Inf
J4:16/1	3.65	0.00	Y				1980	1980
J4:16/2	3.65	0.00	Y				1980	1980
J4:17/1	Infinite Saturation Flow						Inf	Inf
J4:17/2	Infinite Saturation Flow						Inf	Inf
J4:18/1 (New A43 Link Road Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:18/2 (New A43 Link Road Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:19/1	Infinite Saturation Flow						Inf	Inf
J4:19/2	Infinite Saturation Flow						Inf	Inf
J4:20/1	Infinite Saturation Flow						Inf	Inf
J4:21/1 (A43 SB Cut-through)	3.65	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1980	1980
J4:21/2 (A43 SB Cut-through)	3.65	0.00	N	Arm J4:4 Ahead	Inf	100.0 %	2120	2120
J4:22/1	Infinite Saturation Flow						Inf	Inf
J4:22/2	Infinite Saturation Flow						Inf	Inf
J4:22/3	Infinite Saturation Flow						Inf	Inf

Junction: J5: Ardley exit crossings

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J5:1/1 (M40 NB Merge xing)	3.65	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1980	1980
J5:2/1 (Overbridge NB)	3.65	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1980	1980
J5:2/2 (Overbridge NB)	3.65	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2120	2120

Scenario 2: '2031 Option 25 - PM Peak' (FG2: '2031 Opt 25 - PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination									
		A	B	C	D	E	F	G	H	I	Tot.
Origin	A	0	467	81	0	894	85	45	30	345	1947
	B	637	0	25	0	10	186	372	2	17	1249
	C	119	4	0	258	0	196	6	2	15	600
	D	0	0	248	0	0	0	0	10	291	549
	E	1597	10	0	0	0	0	50	0	0	1657
	F	87	207	229	0	0	0	24	36	326	909
	G	37	244	1	0	35	0	0	1	10	328
	H	67	1	3	4	0	36	1	0	127	239
	I	603	8	17	401	0	391	9	249	0	1678
	Tot.	3147	941	604	663	939	894	507	330	1131	9156

Traffic Lane Flows

Lane	Scenario 2: 2031 Option 25 - PM Peak
Junction: J1: Padbury Roundabout	
J1:1/1 (with short)	783(In) 364(Out)
J1:1/2 (short)	419
J1:2/1	814
J1:2/2	560
J1:3/1	380
J1:3/2	438
J1:4/1	668
J1:4/2	468
J1:5/1 (short)	288
J1:5/2 (with short)	768(In) 480(Out)
J1:5/3	141
J1:6/1	450
J1:6/2	141
J1:7/1	1136
Junction: J2: Cherwell	
J2:1/1 (short)	336
J2:1/2 (with short)	814(In) 478(Out)
J2:1/3	560
J2:2/1	689
J2:2/2	673
J2:3/1	380
J2:3/2	438
J2:4/1	604
J2:5/1	258
J2:5/2	342
J2:6/1	493
J2:6/2	758
J2:7/1	818
J2:8/1 (with short)	673(In) 268(Out)
J2:8/2 (short)	405
J2:9/1	129
J2:10/1	405
J2:10/2	478
J2:10/3	560
J2:11/1	331
J2:11/2	332
J2:12/1	331

J2:12/2	332
Junction: J3: Ardley roundabout	
J3:1/1 (with short)	239(In) 105(Out)
J3:1/2 (short)	134
J3:2/1	493
J3:2/2	758
J3:3/1	894
J3:4/1	580
J3:4/2	798
J3:5/1	330
J3:6/1 (with short)	127(In) 87(Out)
J3:6/2 (short)	40
J3:7/1	548
J3:7/2	248
J3:8/1	291
J3:8/2	258
J3:9/1	894
J3:9/2	689
J3:9/3	800
J3:10/1	549
J3:11/1	486
J3:11/2	1171
J3:12/1	858
J3:12/2	620
J3:12/3	666
J3:13/1	871
J3:13/2	260
J3:14/1	640
J3:14/2 (with short)	1038(In) 620(Out)
J3:14/3 (short)	418
J3:15/1	871
J3:15/2	260
J3:16/1	640
J3:16/2	1038
J3:17/1	1678
Junction: J4: Baynards Green	
J4:1/1 (short)	511
J4:1/2 (with short)	1053(In) 542(Out)
J4:1/3 (with short)	894(In) 432(Out)
J4:1/4 (short)	462
J4:2/1	56

J4:2/2	542
J4:3/1 (with short)	1249(In) 657(Out)
J4:3/2 (short)	592
J4:4/1	459
J4:4/2	480
J4:5/1	729
J4:5/2	889
J4:5/3	582
J4:6/1	486
J4:6/2 (with short)	1171(In) 573(Out)
J4:6/3 (short)	598
J4:7/1	1018
J4:7/2	1142
J4:7/3	1180
J4:8/1	507
J4:9/1 (with short)	328(In) 159(Out)
J4:9/2 (short)	169
J4:10/1	1055
J4:10/2	1142
J4:10/3	950
J4:11/1	241
J4:11/2	280
J4:12/1	459
J4:12/2	480
J4:13/1	459
J4:13/2	480
J4:14/1	1657
J4:15/1	1657
J4:16/1	708
J4:16/2	233
J4:17/1	472
J4:17/2	592
J4:18/1 (with short)	1136(In) 570(Out)
J4:18/2 (short)	566
J4:19/1	286
J4:19/2	497
J4:20/1	783
J4:21/1	449
J4:21/2	480
J4:22/1	719
J4:22/2	889
J4:22/3	582

Junction: J5: Ardley exit crossings	
J5:1/1	894
J5:2/1	689
J5:2/2	673

Lane Saturation Flows

Junction: J1: Padbury Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (A43 north)	3.65	0.00	Y	Arm J1:2 Ahead	50.00	100.0 %	1922	1922
J1:1/2 (A43 north)	3.65	0.00	N	Arm J1:2 Ahead	50.00	100.0 %	2058	2058
J1:2/1	Infinite Saturation Flow						Inf	Inf
J1:2/2	Infinite Saturation Flow						Inf	Inf
J1:3/1 (A43 south)	3.65	0.00	Y	Arm J1:4 Ahead	30.00	100.0 %	1886	1886
J1:3/2 (A43 south)	3.65	0.00	N	Arm J1:4 Ahead	30.00	100.0 %	2019	2019
J1:4/1	Infinite Saturation Flow						Inf	Inf
J1:4/2	Infinite Saturation Flow						Inf	Inf
J1:5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm J1:4 Left	40.00	100.0 %	1908	1908
J1:5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:4 Left	50.00	6.3 %	2058	2058
				Arm J1:6 Ahead	50.00	93.8 %		
J1:5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:6 Ahead	50.00	100.0 %	2058	2058
J1:6/1	This lane uses a directly entered Saturation Flow						2080	2080
J1:6/2	This lane uses a directly entered Saturation Flow						2080	2080
J1:7/1	Infinite Saturation Flow						Inf	Inf

Junction: J2: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (A43)	3.65	0.00	Y	Arm J2:4 Left	80.00	100.0 %	1944	1944
				Arm J2:10 Ahead	80.00	0.0 %		
J2:1/2 (A43)	3.65	0.00	N	Arm J2:10 Ahead	80.00	100.0 %	2081	2081
J2:1/3 (A43)	3.65	0.00	N	Arm J2:10 Ahead	80.00	100.0 %	2081	2081
J2:2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:3/1	Infinite Saturation Flow						Inf	Inf
J2:3/2	Infinite Saturation Flow						Inf	Inf
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:5/1 (MSA)	3.50	0.00	Y	Arm J2:11 Left	20.00	100.0 %	1828	1828
J2:5/2 (MSA)	3.50	0.00	Y	Arm J2:6 Left	Inf	62.3 %	1965	1965
				Arm J2:9 Ahead	Inf	37.7 %		
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:6/2	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:8/1	4.00	0.00	Y	Arm J2:4 Ahead	30.00	100.0 %	1919	1919
J2:8/2	4.00	0.00	Y	Arm J2:10 Right	30.00	100.0 %	1919	1919
J2:9/1	Infinite Saturation Flow						Inf	Inf
J2:10/1	3.65	0.00	Y	Arm J2:11 Ahead	Inf	100.0 %	1980	1980
J2:10/2	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:10/3	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:12/1	Infinite Saturation Flow						Inf	Inf
J2:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J3: Ardley roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1 (B430 Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:1/2 (B430 Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:2/1 (Overbridge SB)	3.65	0.00	Y	Arm J3:4 Ahead	35.00	100.0 %	1899	1899
J3:2/2 (Overbridge SB)	3.65	0.00	N	Arm J3:4 Ahead	35.00	100.0 %	2033	2033
J3:3/1	Infinite Saturation Flow						Inf	Inf
J3:4/1	Infinite Saturation Flow						Inf	Inf
J3:4/2	Infinite Saturation Flow						Inf	Inf
J3:5/1	Infinite Saturation Flow						Inf	Inf
J3:6/1	3.65	0.00	Y	Arm J3:4 Right	40.00	100.0 %	1908	1908
J3:6/2	3.65	0.00	N	Arm J3:4 Right	40.00	100.0 %	2043	2043
J3:7/1	3.65	0.00	Y	Arm J3:5 Ahead	50.00	14.8 %	1922	1922
				Arm J3:12 Right	50.00	85.2 %		
J3:7/2	3.65	0.00	N	Arm J3:12 Right	50.00	100.0 %	2058	2058
J3:8/1 (M40 Northbound offslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:8/2 (M40 Northbound offslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:9/1	Infinite Saturation Flow						Inf	Inf
J3:9/2	Infinite Saturation Flow						Inf	Inf
J3:9/3	Infinite Saturation Flow						Inf	Inf
J3:10/1	Infinite Saturation Flow						Inf	Inf
J3:11/1	Infinite Saturation Flow						Inf	Inf
J3:11/2	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf
J3:12/2	Infinite Saturation Flow						Inf	Inf
J3:12/3	Infinite Saturation Flow						Inf	Inf
J3:13/1	Infinite Saturation Flow						Inf	Inf
J3:13/2	Infinite Saturation Flow						Inf	Inf
J3:14/1 (Ardley Bypass)	3.65	0.00	Y	Arm J3:5 Left	30.00	38.9 %	1894	1894
				Arm J3:12 Ahead	35.00	61.1 %		
J3:14/2 (Ardley Bypass)	3.65	0.00	N	Arm J3:12 Ahead	35.00	100.0 %	2033	2033
J3:14/3 (Ardley Bypass)	3.65	0.00	N	Arm J3:12 Ahead	35.00	100.0 %	2033	2033
J3:15/1	Infinite Saturation Flow						Inf	Inf
J3:15/2	Infinite Saturation Flow						Inf	Inf
J3:16/1	Infinite Saturation Flow						Inf	Inf
J3:16/2	Infinite Saturation Flow						Inf	Inf
J3:17/1	Infinite Saturation Flow						Inf	Inf

Junction: J4: Baynards Green

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (A43 North)	3.65	0.00	Y	Arm J4:2 Ahead	60.00	8.6 %	1932	1932
				Arm J4:16 Left	60.00	91.4 %		
J4:1/2 (A43 North)	3.65	0.00	N	Arm J4:2 Ahead	60.00	100.0 %	2068	2068
J4:1/3 (A43 North)	3.65	0.00	Y	Arm J4:21 Ahead	60.00	100.0 %	1932	1932
J4:1/4 (A43 North)	3.65	0.00	N	Arm J4:21 Ahead	60.00	100.0 %	2068	2068
J4:2/1	This lane uses a directly entered Saturation Flow						1950	1950
J4:2/2	This lane uses a directly entered Saturation Flow						2080	2080
J4:3/1 (B4100 East)	3.65	0.00	Y	Arm J4:17 Ahead	30.00	65.0 %	1886	1886
				Arm J4:19 Left	30.00	35.0 %		
J4:3/2 (B4100 East)	3.65	0.00	N	Arm J4:17 Ahead	30.00	100.0 %	2019	2019
J4:4/1 (M40 Southbound Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:4/2 (M40 Southbound Slip Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:5/1	3.65	0.00	Y	Arm J4:4 Left	50.00	1.4 %	1979	1979
				Arm J4:22 Ahead	Inf	98.6 %		
J4:5/2	3.65	0.00	N	Arm J4:22 Ahead	50.00	100.0 %	2058	2058
J4:5/3	3.65	0.00	N	Arm J4:22 Ahead	50.00	100.0 %	2058	2058
J4:6/1 (M40 Northbound off slip)	3.65	0.00	Y	Arm J4:7 Ahead	40.00	89.7 %	1906	1906
				Arm J4:8 Left	30.00	10.3 %		
J4:6/2 (M40 Northbound off slip)	3.65	0.00	N	Arm J4:7 Ahead	40.00	100.0 %	2043	2043
J4:6/3 (M40 Northbound off slip)	3.65	0.00	N	Arm J4:7 Ahead	40.00	100.0 %	2043	2043
J4:7/1	3.65	0.00	Y	Arm J4:10 Ahead	40.00	100.0 %	1908	1908
J4:7/2	3.65	0.00	N	Arm J4:10 Ahead	40.00	100.0 %	2043	2043
J4:7/3	3.65	0.00	N	Arm J4:10 Ahead	40.00	80.5 %	2043	2043
				Arm J4:11 Right	40.00	19.5 %		
J4:8/1	3.65	0.00	Y				1980	1980
J4:9/1 (B4100 West)	3.50	0.00	Y	Arm J4:10 Left	30.00	23.3 %	1909	1909
				Arm J4:11 Ahead	65.00	76.7 %		
J4:9/2 (B4100 West)	3.50	0.00	N	Arm J4:11 Ahead	65.00	100.0 %	2058	2058
J4:10/1	Infinite Saturation Flow						Inf	Inf
J4:10/2	This lane uses a directly entered Saturation Flow						2050	2050
J4:10/3	This lane uses a directly entered Saturation Flow						2050	2050
J4:11/1	This lane uses a directly entered Saturation Flow						2070	2070
J4:11/2	This lane uses a directly entered Saturation Flow						2070	2070
J4:12/1	Infinite Saturation Flow						Inf	Inf
J4:12/2	Infinite Saturation Flow						Inf	Inf

J4:13/1 (A43 - M40 SB Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:13/2 (A43 - M40 SB Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:14/1 (M40 - A43 NB Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:15/1	Infinite Saturation Flow						Inf	Inf
J4:16/1	3.65	0.00	Y				1980	1980
J4:16/2	3.65	0.00	Y				1980	1980
J4:17/1	Infinite Saturation Flow						Inf	Inf
J4:17/2	Infinite Saturation Flow						Inf	Inf
J4:18/1 (New A43 Link Road Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:18/2 (New A43 Link Road Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:19/1	Infinite Saturation Flow						Inf	Inf
J4:19/2	Infinite Saturation Flow						Inf	Inf
J4:20/1	Infinite Saturation Flow						Inf	Inf
J4:21/1 (A43 SB Cut-through)	3.65	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1980	1980
J4:21/2 (A43 SB Cut-through)	3.65	0.00	N	Arm J4:4 Ahead	Inf	100.0 %	2120	2120
J4:22/1	Infinite Saturation Flow						Inf	Inf
J4:22/2	Infinite Saturation Flow						Inf	Inf
J4:22/3	Infinite Saturation Flow						Inf	Inf

Junction: J5: Ardley exit crossings

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J5:1/1 (M40 NB Merge xing)	3.65	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1980	1980
J5:2/1 (Overbridge NB)	3.65	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1980	1980
J5:2/2 (Overbridge NB)	3.65	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2120	2120

Scenario 3: '2031 Option 25 - Off Peak' (FG3: '2031 Opt 25 - off-peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination									
		A	B	C	D	E	F	G	H	I	Tot.
Origin	A	0	119	25	0	309	22	15	15	142	647
	B	128	0	5	0	3	47	88	1	4	276
	C	26	1	0	72	0	44	1	1	8	153
	D	0	0	60	0	0	0	0	2	95	157
	E	350	2	0	0	0	0	15	0	0	367
	F	20	59	58	0	0	0	6	11	102	256
	G	14	70	0	0	19	0	0	0	2	105
	H	14	1	1	2	0	13	1	0	20	52
	I	118	4	5	82	0	93	6	59	0	367
	Tot.	670	256	154	156	331	219	132	89	373	2380

Traffic Lane Flows

Lane	Scenario 3: 2031 Option 25 - Off Peak
Junction: J1: Padbury Roundabout	
J1:1/1 (with short)	263(In) 148(Out)
J1:1/2 (short)	115
J1:2/1	264
J1:2/2	170
J1:3/1	67
J1:3/2	105
J1:4/1	137
J1:4/2	120
J1:5/1 (short)	70
J1:5/2 (with short)	201(In) 131(Out)
J1:5/3	55
J1:6/1	116
J1:6/2	55
J1:7/1	257
Junction: J2: Cherwell	
J2:1/1 (short)	88
J2:1/2 (with short)	264(In) 176(Out)
J2:1/3	170
J2:2/1	144
J2:2/2	150
J2:3/1	67
J2:3/2	105
J2:4/1	154
J2:5/1	72
J2:5/2	81
J2:6/1	183
J2:6/2	216
J2:7/1	172
J2:8/1 (with short)	150(In) 66(Out)
J2:8/2 (short)	84
J2:9/1	28
J2:10/1	84
J2:10/2	176
J2:10/3	170
J2:11/1	78
J2:11/2	78
J2:12/1	78

J2:12/2	78
Junction: J3: Ardley roundabout	
J3:1/1 (with short)	52(In) 29(Out)
J3:1/2 (short)	23
J3:2/1	183
J3:2/2	216
J3:3/1	219
J3:4/1	183
J3:4/2	236
J3:5/1	89
J3:6/1 (with short)	20(In) 0(Out)
J3:6/2 (short)	20
J3:7/1	143
J3:7/2	60
J3:8/1	95
J3:8/2	62
J3:9/1	219
J3:9/2	144
J3:9/3	170
J3:10/1	157
J3:11/1	116
J3:11/2	251
J3:12/1	206
J3:12/2	128
J3:12/3	147
J3:13/1	278
J3:13/2	95
J3:14/1	152
J3:14/2 (with short)	215(In) 128(Out)
J3:14/3 (short)	87
J3:15/1	278
J3:15/2	95
J3:16/1	152
J3:16/2	215
J3:17/1	367
Junction: J4: Baynards Green	
J4:1/1 (short)	172
J4:1/2 (with short)	338(In) 166(Out)
J4:1/3 (with short)	309(In) 150(Out)
J4:1/4 (short)	159
J4:2/1	55

J4:2/2	166
J4:3/1 (with short)	276(In) 173(Out)
J4:3/2 (short)	103
J4:4/1	161
J4:4/2	170
J4:5/1	216
J4:5/2	202
J4:5/3	73
J4:6/1	116
J4:6/2 (with short)	251(In) 106(Out)
J4:6/3 (short)	145
J4:7/1	286
J4:7/2	219
J4:7/3	218
J4:8/1	132
J4:9/1 (with short)	105(In) 64(Out)
J4:9/2 (short)	41
J4:10/1	300
J4:10/2	219
J4:10/3	151
J4:11/1	75
J4:11/2	83
J4:12/1	161
J4:12/2	170
J4:13/1	161
J4:13/2	170
J4:14/1	367
J4:15/1	367
J4:16/1	194
J4:16/2	62
J4:17/1	131
J4:17/2	103
J4:18/1 (with short)	257(In) 189(Out)
J4:18/2 (short)	68
J4:19/1	112
J4:19/2	151
J4:20/1	263
J4:21/1	158
J4:21/2	170
J4:22/1	213
J4:22/2	202
J4:22/3	73

Junction: J5: Ardley exit crossings	
J5:1/1	219
J5:2/1	144
J5:2/2	150

Lane Saturation Flows

Junction: J1: Padbury Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (A43 north)	3.65	0.00	Y	Arm J1:2 Ahead	50.00	100.0 %	1922	1922
J1:1/2 (A43 north)	3.65	0.00	N	Arm J1:2 Ahead	50.00	100.0 %	2058	2058
J1:2/1	Infinite Saturation Flow						Inf	Inf
J1:2/2	Infinite Saturation Flow						Inf	Inf
J1:3/1 (A43 south)	3.65	0.00	Y	Arm J1:4 Ahead	30.00	100.0 %	1886	1886
J1:3/2 (A43 south)	3.65	0.00	N	Arm J1:4 Ahead	30.00	100.0 %	2019	2019
J1:4/1	Infinite Saturation Flow						Inf	Inf
J1:4/2	Infinite Saturation Flow						Inf	Inf
J1:5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm J1:4 Left	40.00	100.0 %	1908	1908
J1:5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:4 Left	50.00	11.5 %	2058	2058
				Arm J1:6 Ahead	50.00	88.5 %		
J1:5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:6 Ahead	50.00	100.0 %	2058	2058
J1:6/1	This lane uses a directly entered Saturation Flow						2080	2080
J1:6/2	This lane uses a directly entered Saturation Flow						2080	2080
J1:7/1	Infinite Saturation Flow						Inf	Inf

Junction: J2: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (A43)	3.65	0.00	Y	Arm J2:4 Left	80.00	100.0 %	1944	1944
				Arm J2:10 Ahead	80.00	0.0 %		
J2:1/2 (A43)	3.65	0.00	N	Arm J2:10 Ahead	80.00	100.0 %	2081	2081
J2:1/3 (A43)	3.65	0.00	N	Arm J2:10 Ahead	80.00	100.0 %	2081	2081
J2:2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:3/1	Infinite Saturation Flow						Inf	Inf
J2:3/2	Infinite Saturation Flow						Inf	Inf
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:5/1 (MSA)	3.50	0.00	Y	Arm J2:11 Left	20.00	100.0 %	1828	1828
J2:5/2 (MSA)	3.50	0.00	Y	Arm J2:6 Left	Inf	65.4 %	1965	1965
				Arm J2:9 Ahead	Inf	34.6 %		
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:6/2	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:8/1	4.00	0.00	Y	Arm J2:4 Ahead	30.00	100.0 %	1919	1919
J2:8/2	4.00	0.00	Y	Arm J2:10 Right	30.00	100.0 %	1919	1919
J2:9/1	Infinite Saturation Flow						Inf	Inf
J2:10/1	3.65	0.00	Y	Arm J2:11 Ahead	Inf	100.0 %	1980	1980
J2:10/2	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:10/3	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:12/1	Infinite Saturation Flow						Inf	Inf
J2:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J3: Ardley roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1 (B430 Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:1/2 (B430 Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:2/1 (Overbridge SB)	3.65	0.00	Y	Arm J3:4 Ahead	35.00	100.0 %	1899	1899
J3:2/2 (Overbridge SB)	3.65	0.00	N	Arm J3:4 Ahead	35.00	100.0 %	2033	2033
J3:3/1	Infinite Saturation Flow						Inf	Inf
J3:4/1	Infinite Saturation Flow						Inf	Inf
J3:4/2	Infinite Saturation Flow						Inf	Inf
J3:5/1	Infinite Saturation Flow						Inf	Inf
J3:6/1	3.65	0.00	Y	Arm J3:4 Right	40.00	0.0 %	1980	1980
J3:6/2	3.65	0.00	N	Arm J3:4 Right	40.00	100.0 %	2043	2043
J3:7/1	3.65	0.00	Y	Arm J3:5 Ahead	50.00	21.0 %	1922	1922
				Arm J3:12 Right	50.00	79.0 %		
J3:7/2	3.65	0.00	N	Arm J3:12 Right	50.00	100.0 %	2058	2058
J3:8/1 (M40 Northbound offslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:8/2 (M40 Northbound offslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:9/1	Infinite Saturation Flow						Inf	Inf
J3:9/2	Infinite Saturation Flow						Inf	Inf
J3:9/3	Infinite Saturation Flow						Inf	Inf
J3:10/1	Infinite Saturation Flow						Inf	Inf
J3:11/1	Infinite Saturation Flow						Inf	Inf
J3:11/2	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf
J3:12/2	Infinite Saturation Flow						Inf	Inf
J3:12/3	Infinite Saturation Flow						Inf	Inf
J3:13/1	Infinite Saturation Flow						Inf	Inf
J3:13/2	Infinite Saturation Flow						Inf	Inf
J3:14/1 (Ardley Bypass)	3.65	0.00	Y	Arm J3:5 Left	30.00	38.8 %	1894	1894
				Arm J3:12 Ahead	35.00	61.2 %		
J3:14/2 (Ardley Bypass)	3.65	0.00	N	Arm J3:12 Ahead	35.00	100.0 %	2033	2033
J3:14/3 (Ardley Bypass)	3.65	0.00	N	Arm J3:12 Ahead	35.00	100.0 %	2033	2033
J3:15/1	Infinite Saturation Flow						Inf	Inf
J3:15/2	Infinite Saturation Flow						Inf	Inf
J3:16/1	Infinite Saturation Flow						Inf	Inf
J3:16/2	Infinite Saturation Flow						Inf	Inf
J3:17/1	Infinite Saturation Flow						Inf	Inf

Junction: J4: Baynards Green

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (A43 North)	3.65	0.00	Y	Arm J4:2 Ahead	60.00	30.8 %	1932	1932
				Arm J4:16 Left	60.00	69.2 %		
J4:1/2 (A43 North)	3.65	0.00	N	Arm J4:2 Ahead	60.00	100.0 %	2068	2068
J4:1/3 (A43 North)	3.65	0.00	Y	Arm J4:21 Ahead	60.00	100.0 %	1932	1932
J4:1/4 (A43 North)	3.65	0.00	N	Arm J4:21 Ahead	60.00	100.0 %	2068	2068
J4:2/1	This lane uses a directly entered Saturation Flow						1950	1950
J4:2/2	This lane uses a directly entered Saturation Flow						2080	2080
J4:3/1 (B4100 East)	3.65	0.00	Y	Arm J4:17 Ahead	30.00	67.1 %	1886	1886
				Arm J4:19 Left	30.00	32.9 %		
J4:3/2 (B4100 East)	3.65	0.00	N	Arm J4:17 Ahead	30.00	100.0 %	2019	2019
J4:4/1 (M40 Southbound Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:4/2 (M40 Southbound Slip Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:5/1	3.65	0.00	Y	Arm J4:4 Left	50.00	1.4 %	1979	1979
				Arm J4:22 Ahead	Inf	98.6 %		
J4:5/2	3.65	0.00	N	Arm J4:22 Ahead	50.00	100.0 %	2058	2058
J4:5/3	3.65	0.00	N	Arm J4:22 Ahead	50.00	100.0 %	2058	2058
J4:6/1 (M40 Northbound off slip)	3.65	0.00	Y	Arm J4:7 Ahead	40.00	87.1 %	1905	1905
				Arm J4:8 Left	30.00	12.9 %		
J4:6/2 (M40 Northbound off slip)	3.65	0.00	N	Arm J4:7 Ahead	40.00	100.0 %	2043	2043
J4:6/3 (M40 Northbound off slip)	3.65	0.00	N	Arm J4:7 Ahead	40.00	100.0 %	2043	2043
J4:7/1	3.65	0.00	Y	Arm J4:10 Ahead	40.00	100.0 %	1908	1908
J4:7/2	3.65	0.00	N	Arm J4:10 Ahead	40.00	100.0 %	2043	2043
J4:7/3	3.65	0.00	N	Arm J4:10 Ahead	40.00	69.3 %	2043	2043
				Arm J4:11 Right	40.00	30.7 %		
J4:8/1	3.65	0.00	Y				1980	1980
J4:9/1 (B4100 West)	3.50	0.00	Y	Arm J4:10 Left	30.00	21.9 %	1910	1910
				Arm J4:11 Ahead	65.00	78.1 %		
J4:9/2 (B4100 West)	3.50	0.00	N	Arm J4:11 Ahead	65.00	100.0 %	2058	2058
J4:10/1	Infinite Saturation Flow						Inf	Inf
J4:10/2	This lane uses a directly entered Saturation Flow						2050	2050
J4:10/3	This lane uses a directly entered Saturation Flow						2050	2050
J4:11/1	This lane uses a directly entered Saturation Flow						2070	2070
J4:11/2	This lane uses a directly entered Saturation Flow						2070	2070
J4:12/1	Infinite Saturation Flow						Inf	Inf
J4:12/2	Infinite Saturation Flow						Inf	Inf

J4:13/1 (A43 - M40 SB Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:13/2 (A43 - M40 SB Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:14/1 (M40 - A43 NB Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:15/1	Infinite Saturation Flow						Inf	Inf
J4:16/1	3.65	0.00	Y				1980	1980
J4:16/2	3.65	0.00	Y				1980	1980
J4:17/1	Infinite Saturation Flow						Inf	Inf
J4:17/2	Infinite Saturation Flow						Inf	Inf
J4:18/1 (New A43 Link Road Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:18/2 (New A43 Link Road Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:19/1	Infinite Saturation Flow						Inf	Inf
J4:19/2	Infinite Saturation Flow						Inf	Inf
J4:20/1	Infinite Saturation Flow						Inf	Inf
J4:21/1 (A43 SB Cut-through)	3.65	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1980	1980
J4:21/2 (A43 SB Cut-through)	3.65	0.00	N	Arm J4:4 Ahead	Inf	100.0 %	2120	2120
J4:22/1	Infinite Saturation Flow						Inf	Inf
J4:22/2	Infinite Saturation Flow						Inf	Inf
J4:22/3	Infinite Saturation Flow						Inf	Inf

Junction: J5: Ardley exit crossings

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J5:1/1 (M40 NB Merge xing)	3.65	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1980	1980
J5:2/1 (Overbridge NB)	3.65	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1980	1980
J5:2/2 (Overbridge NB)	3.65	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2120	2120

Scenario 4: '2031 Option 25 - Inter Peak' (FG4: '2031 Opt 25 - inter-peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination									
		A	B	C	D	E	F	G	H	I	Tot.
Origin	A	0	406	86	0	1059	77	51	52	485	2216
	B	439	0	16	0	9	161	302	2	14	943
	C	88	4	0	246	0	152	4	5	28	527
	D	0	0	204	0	0	0	0	8	324	536
	E	1199	8	0	0	0	0	50	0	0	1257
	F	69	203	199	0	0	0	20	37	349	877
	G	49	240	1	0	65	0	0	1	8	364
	H	49	3	4	6	0	45	3	0	68	178
	I	403	12	17	282	0	320	19	200	0	1253
	Tot.	2296	876	527	534	1133	755	449	305	1276	8151

Traffic Lane Flows

Lane	Scenario 4: 2031 Option 25 - Inter Peak
Junction: J1: Padbury Roundabout	
J1:1/1 (with short)	903(In) 579(Out)
J1:1/2 (short)	324
J1:2/1	911
J1:2/2	577
J1:3/1	279
J1:3/2	306
J1:4/1	438
J1:4/2	439
J1:5/1 (short)	159
J1:5/2 (with short)	624(In) 465(Out)
J1:5/3	253
J1:6/1	332
J1:6/2	253
J1:7/1	877
Junction: J2: Cherwell	
J2:1/1 (short)	302
J2:1/2 (with short)	911(In) 609(Out)
J2:1/3	577
J2:2/1	489
J2:2/2	513
J2:3/1	279
J2:3/2	306
J2:4/1	527
J2:5/1	246
J2:5/2	281
J2:6/1	637
J2:6/2	734
J2:7/1	585
J2:8/1 (with short)	513(In) 225(Out)
J2:8/2 (short)	288
J2:9/1	96
J2:10/1	288
J2:10/2	609
J2:10/3	577
J2:11/1	267
J2:11/2	267
J2:12/1	267

J2:12/2	267
Junction: J3: Ardley roundabout	
J3:1/1 (with short)	178(In) 100(Out)
J3:1/2 (short)	78
J3:2/1	637
J3:2/2	734
J3:3/1	755
J3:4/1	690
J3:4/2	749
J3:5/1	305
J3:6/1 (with short)	68(In) 53(Out)
J3:6/2 (short)	15
J3:7/1	495
J3:7/2	204
J3:8/1	324
J3:8/2	212
J3:9/1	755
J3:9/2	489
J3:9/3	581
J3:10/1	536
J3:11/1	433
J3:11/2	824
J3:12/1	710
J3:12/2	434
J3:12/3	503
J3:13/1	1014
J3:13/2	262
J3:14/1	520
J3:14/2 (with short)	733(In) 434(Out)
J3:14/3 (short)	299
J3:15/1	1014
J3:15/2	262
J3:16/1	520
J3:16/2	733
J3:17/1	1253
Junction: J4: Baynards Green	
J4:1/1 (short)	558
J4:1/2 (with short)	1157(In) 599(Out)
J4:1/3 (with short)	1059(In) 511(Out)
J4:1/4 (short)	548
J4:2/1	162

J4:2/2	599
J4:3/1 (with short)	943(In) 509(Out)
J4:3/2 (short)	434
J4:4/1	551
J4:4/2	582
J4:5/1	559
J4:5/2	648
J4:5/3	471
J4:6/1	433
J4:6/2 (with short)	824(In) 479(Out)
J4:6/3 (short)	345
J4:7/1	795
J4:7/2	866
J4:7/3	816
J4:8/1	449
J4:9/1 (with short)	364(In) 130(Out)
J4:9/2 (short)	234
J4:10/1	844
J4:10/2	866
J4:10/3	586
J4:11/1	179
J4:11/2	366
J4:12/1	551
J4:12/2	582
J4:13/1	551
J4:13/2	582
J4:14/1	1257
J4:15/1	1257
J4:16/1	585
J4:16/2	291
J4:17/1	367
J4:17/2	434
J4:18/1 (with short)	877(In) 432(Out)
J4:18/2 (short)	445
J4:19/1	355
J4:19/2	548
J4:20/1	903
J4:21/1	542
J4:21/2	582
J4:22/1	550
J4:22/2	648
J4:22/3	471

Junction: J5: Ardley exit crossings	
J5:1/1	755
J5:2/1	489
J5:2/2	513

Lane Saturation Flows

Junction: J1: Padbury Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (A43 north)	3.65	0.00	Y	Arm J1:2 Ahead	50.00	100.0 %	1922	1922
J1:1/2 (A43 north)	3.65	0.00	N	Arm J1:2 Ahead	50.00	100.0 %	2058	2058
J1:2/1	Infinite Saturation Flow						Inf	Inf
J1:2/2	Infinite Saturation Flow						Inf	Inf
J1:3/1 (A43 south)	3.65	0.00	Y	Arm J1:4 Ahead	30.00	100.0 %	1886	1886
J1:3/2 (A43 south)	3.65	0.00	N	Arm J1:4 Ahead	30.00	100.0 %	2019	2019
J1:4/1	Infinite Saturation Flow						Inf	Inf
J1:4/2	Infinite Saturation Flow						Inf	Inf
J1:5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm J1:4 Left	40.00	100.0 %	1908	1908
J1:5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:4 Left	50.00	28.6 %	2058	2058
				Arm J1:6 Ahead	50.00	71.4 %		
J1:5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:6 Ahead	50.00	100.0 %	2058	2058
J1:6/1	This lane uses a directly entered Saturation Flow						2080	2080
J1:6/2	This lane uses a directly entered Saturation Flow						2080	2080
J1:7/1	Infinite Saturation Flow						Inf	Inf

Junction: J2: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (A43)	3.65	0.00	Y	Arm J2:4 Left	80.00	100.0 %	1944	1944
				Arm J2:10 Ahead	80.00	0.0 %		
J2:1/2 (A43)	3.65	0.00	N	Arm J2:10 Ahead	80.00	100.0 %	2081	2081
J2:1/3 (A43)	3.65	0.00	N	Arm J2:10 Ahead	80.00	100.0 %	2081	2081
J2:2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:3/1	Infinite Saturation Flow						Inf	Inf
J2:3/2	Infinite Saturation Flow						Inf	Inf
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:5/1 (MSA)	3.50	0.00	Y	Arm J2:11 Left	20.00	100.0 %	1828	1828
J2:5/2 (MSA)	3.50	0.00	Y	Arm J2:6 Left	Inf	65.8 %	1965	1965
				Arm J2:9 Ahead	Inf	34.2 %		
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:6/2	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:8/1	4.00	0.00	Y	Arm J2:4 Ahead	30.00	100.0 %	1919	1919
J2:8/2	4.00	0.00	Y	Arm J2:10 Right	30.00	100.0 %	1919	1919
J2:9/1	Infinite Saturation Flow						Inf	Inf
J2:10/1	3.65	0.00	Y	Arm J2:11 Ahead	Inf	100.0 %	1980	1980
J2:10/2	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:10/3	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:12/1	Infinite Saturation Flow						Inf	Inf
J2:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J3: Ardley roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1 (B430 Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:1/2 (B430 Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:2/1 (Overbridge SB)	3.65	0.00	Y	Arm J3:4 Ahead	35.00	100.0 %	1899	1899
J3:2/2 (Overbridge SB)	3.65	0.00	N	Arm J3:4 Ahead	35.00	100.0 %	2033	2033
J3:3/1	Infinite Saturation Flow						Inf	Inf
J3:4/1	Infinite Saturation Flow						Inf	Inf
J3:4/2	Infinite Saturation Flow						Inf	Inf
J3:5/1	Infinite Saturation Flow						Inf	Inf
J3:6/1	3.65	0.00	Y	Arm J3:4 Right	40.00	100.0 %	1908	1908
J3:6/2	3.65	0.00	N	Arm J3:4 Right	40.00	100.0 %	2043	2043
J3:7/1	3.65	0.00	Y	Arm J3:5 Ahead	50.00	21.2 %	1922	1922
				Arm J3:12 Right	50.00	78.8 %		
J3:7/2	3.65	0.00	N	Arm J3:12 Right	50.00	100.0 %	2058	2058
J3:8/1 (M40 Northbound offslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:8/2 (M40 Northbound offslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:9/1	Infinite Saturation Flow						Inf	Inf
J3:9/2	Infinite Saturation Flow						Inf	Inf
J3:9/3	Infinite Saturation Flow						Inf	Inf
J3:10/1	Infinite Saturation Flow						Inf	Inf
J3:11/1	Infinite Saturation Flow						Inf	Inf
J3:11/2	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf
J3:12/2	Infinite Saturation Flow						Inf	Inf
J3:12/3	Infinite Saturation Flow						Inf	Inf
J3:13/1	Infinite Saturation Flow						Inf	Inf
J3:13/2	Infinite Saturation Flow						Inf	Inf
J3:14/1 (Ardley Bypass)	3.65	0.00	Y	Arm J3:5 Left	30.00	38.5 %	1894	1894
				Arm J3:12 Ahead	35.00	61.5 %		
J3:14/2 (Ardley Bypass)	3.65	0.00	N	Arm J3:12 Ahead	35.00	100.0 %	2033	2033
J3:14/3 (Ardley Bypass)	3.65	0.00	N	Arm J3:12 Ahead	35.00	100.0 %	2033	2033
J3:15/1	Infinite Saturation Flow						Inf	Inf
J3:15/2	Infinite Saturation Flow						Inf	Inf
J3:16/1	Infinite Saturation Flow						Inf	Inf
J3:16/2	Infinite Saturation Flow						Inf	Inf
J3:17/1	Infinite Saturation Flow						Inf	Inf

Junction: J4: Baynards Green

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (A43 North)	3.65	0.00	Y	Arm J4:2 Ahead	60.00	27.2 %	1932	1932
				Arm J4:16 Left	60.00	72.8 %		
J4:1/2 (A43 North)	3.65	0.00	N	Arm J4:2 Ahead	60.00	100.0 %	2068	2068
J4:1/3 (A43 North)	3.65	0.00	Y	Arm J4:21 Ahead	60.00	100.0 %	1932	1932
J4:1/4 (A43 North)	3.65	0.00	N	Arm J4:21 Ahead	60.00	100.0 %	2068	2068
J4:2/1	This lane uses a directly entered Saturation Flow						1950	1950
J4:2/2	This lane uses a directly entered Saturation Flow						2080	2080
J4:3/1 (B4100 East)	3.65	0.00	Y	Arm J4:17 Ahead	30.00	62.1 %	1886	1886
				Arm J4:19 Left	30.00	37.9 %		
J4:3/2 (B4100 East)	3.65	0.00	N	Arm J4:17 Ahead	30.00	100.0 %	2019	2019
J4:4/1 (M40 Southbound Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:4/2 (M40 Southbound Slip Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:5/1	3.65	0.00	Y	Arm J4:4 Left	50.00	1.6 %	1979	1979
				Arm J4:22 Ahead	Inf	98.4 %		
J4:5/2	3.65	0.00	N	Arm J4:22 Ahead	50.00	100.0 %	2058	2058
J4:5/3	3.65	0.00	N	Arm J4:22 Ahead	50.00	100.0 %	2058	2058
J4:6/1 (M40 Northbound off slip)	3.65	0.00	Y	Arm J4:7 Ahead	40.00	88.5 %	1906	1906
				Arm J4:8 Left	30.00	11.5 %		
J4:6/2 (M40 Northbound off slip)	3.65	0.00	N	Arm J4:7 Ahead	40.00	100.0 %	2043	2043
J4:6/3 (M40 Northbound off slip)	3.65	0.00	N	Arm J4:7 Ahead	40.00	100.0 %	2043	2043
J4:7/1	3.65	0.00	Y	Arm J4:10 Ahead	40.00	100.0 %	1908	1908
J4:7/2	3.65	0.00	N	Arm J4:10 Ahead	40.00	100.0 %	2043	2043
J4:7/3	3.65	0.00	N	Arm J4:10 Ahead	40.00	71.8 %	2043	2043
				Arm J4:11 Right	40.00	28.2 %		
J4:8/1	3.65	0.00	Y				1980	1980
J4:9/1 (B4100 West)	3.50	0.00	Y	Arm J4:10 Left	30.00	37.7 %	1902	1902
				Arm J4:11 Ahead	65.00	62.3 %		
J4:9/2 (B4100 West)	3.50	0.00	N	Arm J4:11 Ahead	65.00	100.0 %	2058	2058
J4:10/1	Infinite Saturation Flow						Inf	Inf
J4:10/2	This lane uses a directly entered Saturation Flow						2050	2050
J4:10/3	This lane uses a directly entered Saturation Flow						2050	2050
J4:11/1	This lane uses a directly entered Saturation Flow						2070	2070
J4:11/2	This lane uses a directly entered Saturation Flow						2070	2070
J4:12/1	Infinite Saturation Flow						Inf	Inf
J4:12/2	Infinite Saturation Flow						Inf	Inf

J4:13/1 (A43 - M40 SB Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:13/2 (A43 - M40 SB Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:14/1 (M40 - A43 NB Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:15/1	Infinite Saturation Flow						Inf	Inf
J4:16/1	3.65	0.00	Y				1980	1980
J4:16/2	3.65	0.00	Y				1980	1980
J4:17/1	Infinite Saturation Flow						Inf	Inf
J4:17/2	Infinite Saturation Flow						Inf	Inf
J4:18/1 (New A43 Link Road Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:18/2 (New A43 Link Road Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:19/1	Infinite Saturation Flow						Inf	Inf
J4:19/2	Infinite Saturation Flow						Inf	Inf
J4:20/1	Infinite Saturation Flow						Inf	Inf
J4:21/1 (A43 SB Cut-through)	3.65	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1980	1980
J4:21/2 (A43 SB Cut-through)	3.65	0.00	N	Arm J4:4 Ahead	Inf	100.0 %	2120	2120
J4:22/1	Infinite Saturation Flow						Inf	Inf
J4:22/2	Infinite Saturation Flow						Inf	Inf
J4:22/3	Infinite Saturation Flow						Inf	Inf

Junction: J5: Ardley exit crossings

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J5:1/1 (M40 NB Merge xing)	3.65	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1980	1980
J5:2/1 (Overbridge NB)	3.65	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1980	1980
J5:2/2 (Overbridge NB)	3.65	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2120	2120

Scenario 1: '2031 Option 25 - AM Peak' (FG1: '2031 Opt 25 - AM', Plan 1: 'Network Control Plan 1')
C1 - Padbury

Stage Timings

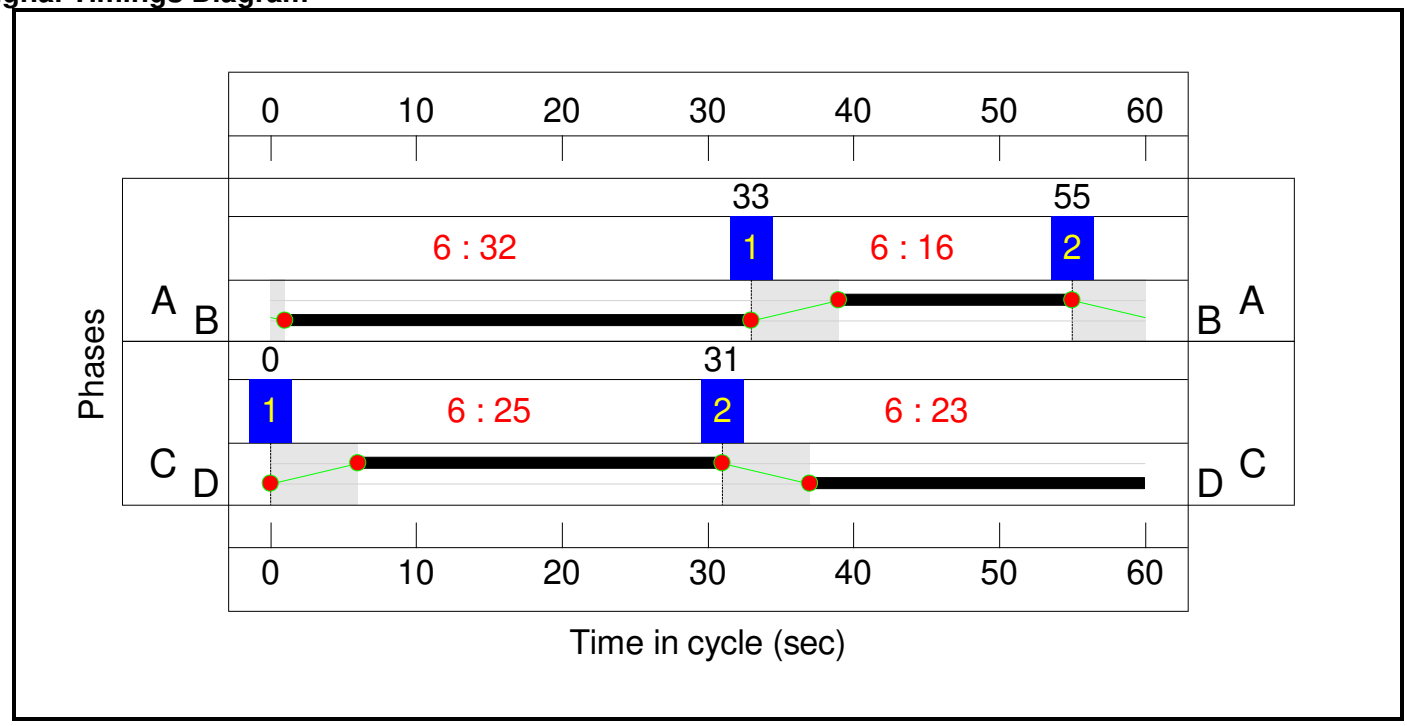
Stage Stream: 1

Stage	1	2
Duration	16	32
Change Point	33	55

Stage Stream: 2

Stage	1	2
Duration	25	23
Change Point	0	31

Signal Timings Diagram



C2 - Cherwell

Stage Timings

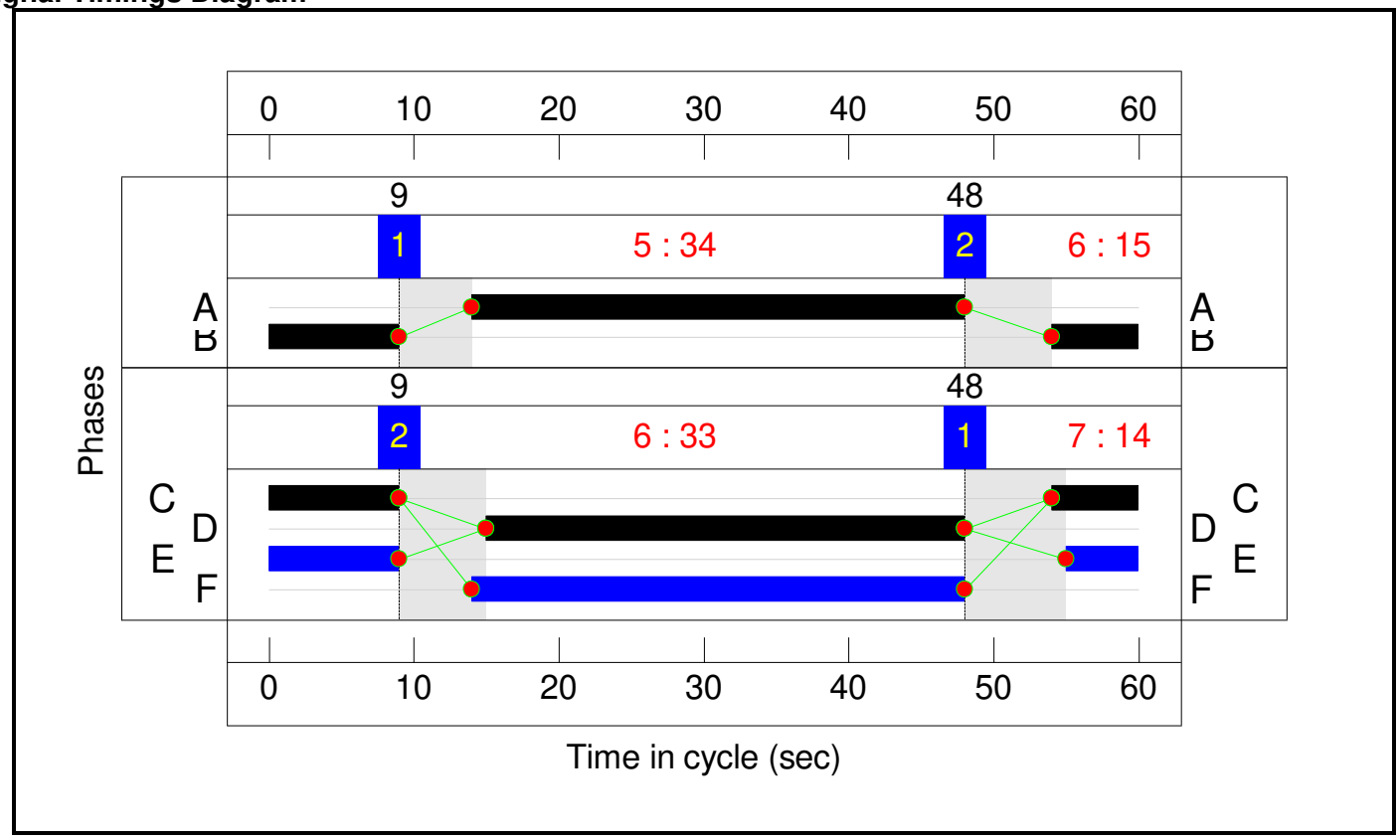
Stage Stream: 1

Stage	1	2
Duration	34	15
Change Point	9	48

Stage Stream: 2

Stage	1	2
Duration	14	33
Change Point	48	9

Signal Timings Diagram



C3 - Ardley

Stage Timings

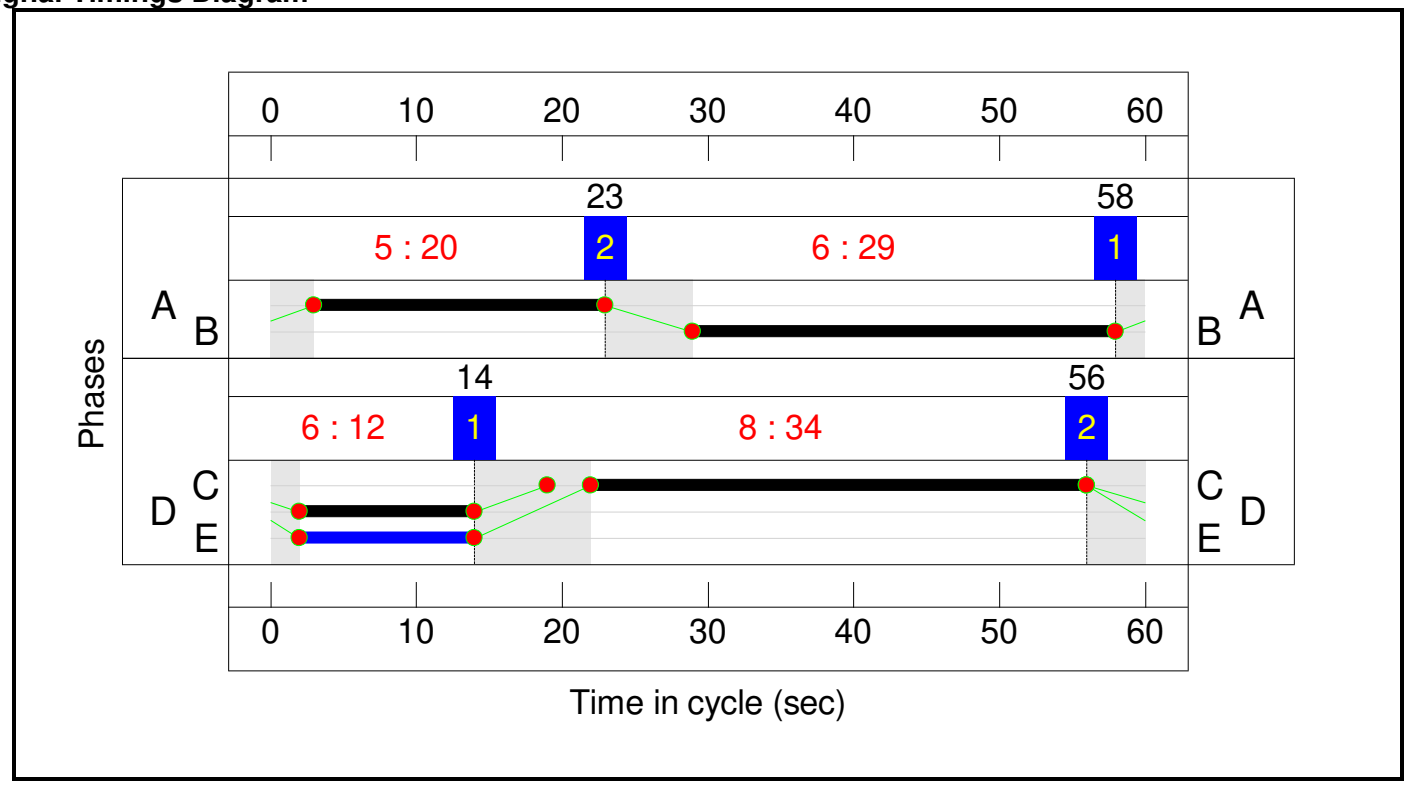
Stage Stream: 1

Stage	1	2
Duration	20	29
Change Point	58	23

Stage Stream: 2

Stage	1	2
Duration	34	12
Change Point	14	56

Signal Timings Diagram



C4 - Baynards Green

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	23	26
Change Point	0	29

Stage Stream: 2

Stage	1	2
Duration	30	18
Change Point	31	7

Stage Stream: 3

Stage	1	2
Duration	23	26
Change Point	7	35

Stage Stream: 4

Stage	1	2
Duration	38	10
Change Point	30	14

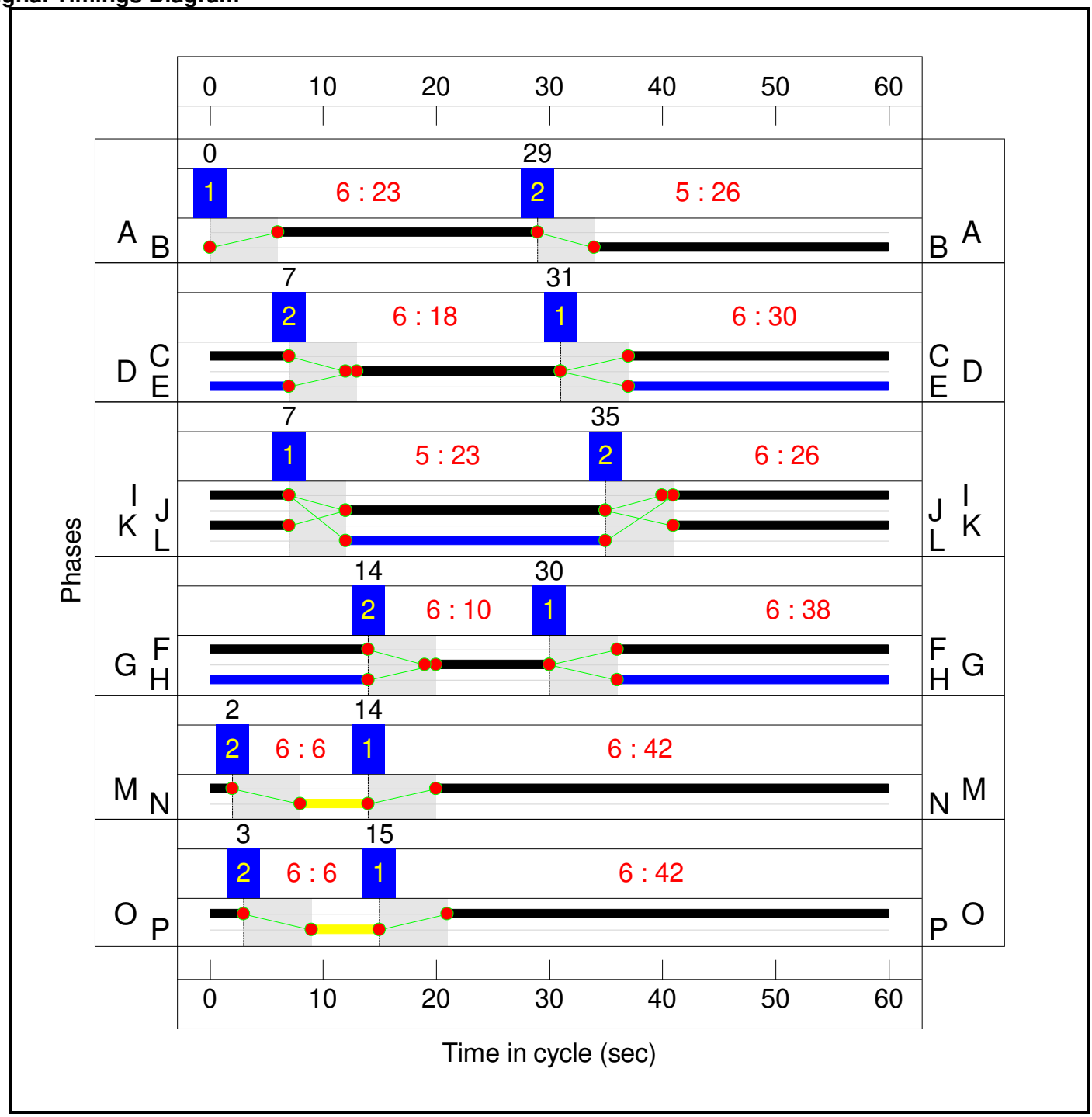
Stage Stream: 5

Stage	1	2
Duration	42	6
Change Point	14	2

Stage Stream: 6

Stage	1	2
Duration	42	6
Change Point	15	3

Signal Timings Diagram



C5 - Ardley exit crossings

Stage Timings

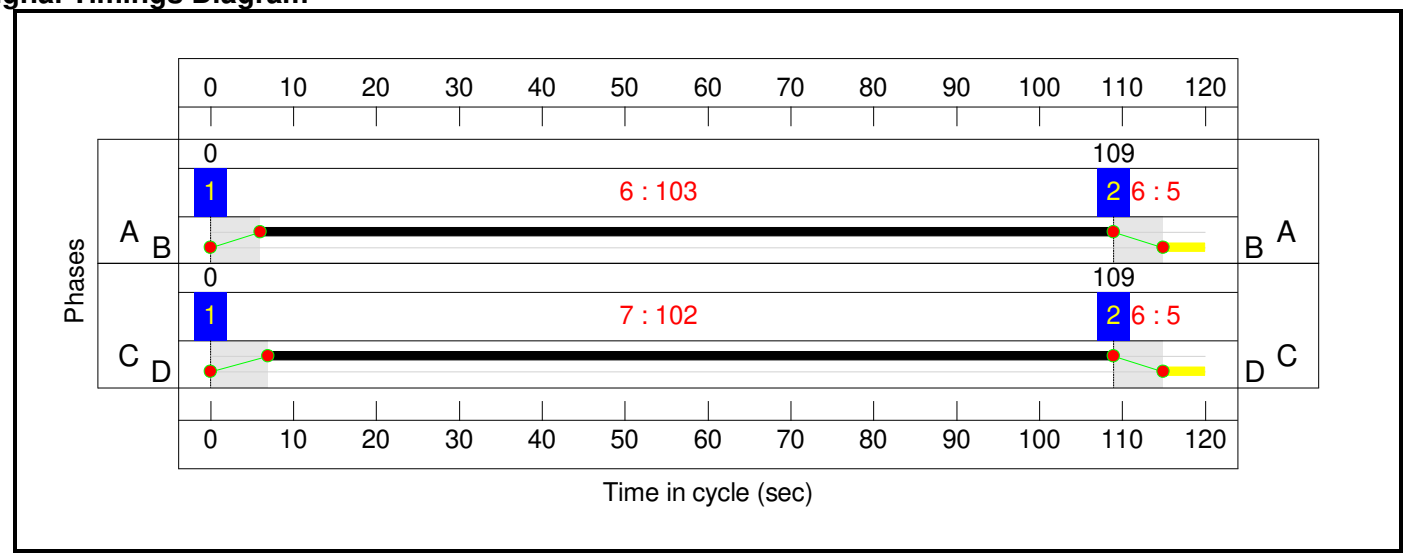
Stage Stream: 1

Stage	1	2
Duration	103	5
Change Point	0	109

Stage Stream: 2

Stage	1	2
Duration	102	5
Change Point	0	109

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: Option25a Network Model - revised following NH comments	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.9%**
J1: Padbury Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**81.6%**
1/1+1/2	A43 north Ahead	U	1:1	N/A	C1:B		1	32	-	1246	1922:2058	1026+501	81.6 : 81.6%
2/1	Ahead	U	N/A	N/A	-		-	-	-	1229	Inf	Inf	0.0%
2/2	Ahead	U	N/A	N/A	-		-	-	-	742	Inf	Inf	0.0%
3/1	A43 south Ahead	U	1:2	N/A	C1:C		1	25	-	237	1886	817	29.0%
3/2	A43 south Ahead	U	1:2	N/A	C1:C		1	25	-	256	2019	875	29.3%
4/1	Ahead	U	N/A	N/A	-		-	-	-	506	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	324	Inf	Inf	0.0%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	1:2	N/A	C1:D		1	23	-	729	2058:1908	780+456	59.0 : 59.0%
5/3	Junction 10 s'bound offslip Ahead	U	1:2	N/A	C1:D		1	23	-	333	2058	823	40.5%
6/1	Right	U	1:1	N/A	C1:A		1	16	-	392	2080	589	66.5%
6/2	Right	U	1:1	N/A	C1:A		1	16	-	333	2080	589	56.5%
7/1	Ahead	U	N/A	N/A	-		-	-	-	830	Inf	Inf	0.0%
J2: Cherwell	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**78.3%**
1/2+1/1	A43 Left Ahead	U	2:1	N/A	C2:A		1	34	-	1229	2081:1944	1132+438	78.3 : 78.3%
1/3	A43 Ahead	U	2:1	N/A	C2:A		1	34	-	742	2081	1214	61.1%
2/1	A43 Ahead	O	N/A	N/A	-		-	-	-	408	Inf	972	42.0%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	481	Inf	972	49.5%
3/1	Ahead	U	N/A	N/A	-		-	-	-	237	Inf	Inf	0.0%
3/2	Ahead	U	N/A	N/A	-		-	-	-	256	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	582	Inf	Inf	0.0%
5/1	MSA Left	U	2:2	N/A	C2:C		1	15	-	295	1828	487	60.5%

5/2	MSA Left Ahead	U	2:2	N/A	C2:C		1	15	-	287	1965	524	54.8%
6/1	Ahead	U	N/A	N/A	-		-	-	-	925	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	905	Inf	Inf	0.0%
7/1	Ahead	U	N/A	N/A	-		-	-	-	493	Inf	Inf	0.0%
8/1+8/2	Ahead Right	U	2:1	N/A	C2:B		1	15	-	481	1919:1919	408+413	58.6 : 58.6%
9/1	Right	U	N/A	N/A	-		-	-	-	85	Inf	Inf	0.0%
10/1	Ahead	U	2:2	N/A	C2:D		1	33	-	242	1980	1122	21.6%
10/2	Ahead	U	2:2	N/A	C2:D		1	33	-	886	2120	1201	73.8%
10/3	Ahead	U	2:2	N/A	C2:D		1	33	-	742	2120	1201	61.8%
11/1	M40 SB onslip Ahead	U	N/A	N/A	-		-	-	-	269	Inf	Inf	0.0%
11/2	M40 SB onslip Ahead	U	N/A	N/A	-		-	-	-	268	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	269	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	268	Inf	Inf	0.0%
J3: Ardley roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**83.5%**
1/1+1/2	B430 Ahead	O	N/A	N/A	-		-	-	-	159	Inf : Inf	647+232	18.1 : 18.1%
2/1	Overbridge SB Ahead	U	3:2	N/A	C3:C		1	34	-	925	1899	1108	83.5%
2/2	Overbridge SB Ahead	U	3:2	N/A	C3:C		1	34	-	905	2033	1186	76.3%
3/1		U	N/A	N/A	-		-	-	-	800	Inf	Inf	0.0%
4/1	Ahead	U	N/A	N/A	-		-	-	-	951	Inf	Inf	0.0%
4/2	Right Ahead	U	N/A	N/A	-		-	-	-	905	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	357	Inf	Inf	0.0%
6/1+6/2	Right	U	3:2	N/A	C3:D		1	12	-	26	1908:2120	413+0	6.3 : 0.0%
7/1	Ahead Right	U	3:1	N/A	C3:B		1	29	-	565	1922	961	58.8%
7/2	Right	U	3:1	N/A	C3:B		1	29	-	211	2058	1029	20.5%
8/1	M40 Northbound offslip Left	O	N/A	N/A	-		-	-	-	437	Inf	686	63.7%
8/2	M40 Northbound offslip Ahead	O	N/A	N/A	-		-	-	-	220	Inf	467	47.1%
9/1	Left	U	N/A	N/A	-		-	-	-	800	Inf	Inf	0.0%
9/2	Ahead	U	N/A	N/A	-		-	-	-	408	Inf	Inf	0.0%

9/3	Right Ahead	U	N/A	N/A	-		-	-	-	507	Inf	Inf	0.0%
10/1	Ahead	U	N/A	N/A	-		-	-	-	657	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	354	Inf	Inf	0.0%
11/2	Ahead	U	N/A	N/A	-		-	-	-	815	Inf	Inf	0.0%
12/1	Right	U	N/A	N/A	-		-	-	-	736	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	355	Inf	Inf	0.0%
12/3	Right	U	N/A	N/A	-		-	-	-	465	Inf	Inf	0.0%
13/1	Ahead	U	N/A	N/A	-		-	-	-	1388	Inf	Inf	0.0%
13/2	Ahead	U	N/A	N/A	-		-	-	-	349	Inf	Inf	0.0%
14/1	Ardley Bypass Left Ahead	U	3:1	N/A	C3:A		1	20	-	528	1894	663	79.7%
14/2+14/3	Ardley Bypass Ahead	U	3:1	N/A	C3:A		1	20	-	609	2033:2033	678+485	52.4 : 52.4%
15/1		U	N/A	N/A	-		-	-	-	1388	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	349	Inf	Inf	0.0%
16/1	Ahead	U	N/A	N/A	-		-	-	-	528	Inf	Inf	0.0%
16/2	Ahead	U	N/A	N/A	-		-	-	-	609	Inf	Inf	0.0%
17/1	Ahead	U	N/A	N/A	-		-	-	-	1137	Inf	Inf	0.0%
J4: Baynards Green	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.9%**
1/2+1/1	A43 North Ahead Left	U	4:1	N/A	C4:B		1	26	-	1547	2068:1932	931+869	86.0 : 85.9%
1/3+1/4	A43 North Ahead	U	4:1	N/A	C4:B		1	26	-	1485	1932:2068	869+931	82.5 : 82.5%
2/1	Ahead	U	4:2	N/A	C4:C		1	30	-	314	1950	1007	31.2%
2/2	Right Ahead	U	4:2	N/A	C4:C		1	30	-	800	2080	1075	74.4%
3/1+3/2	B4100 East Ahead Left	U	4:2	N/A	C4:D		1	18	-	868	1886:2019	597+402	86.9 : 86.9%
4/1	M40 Southbound Slip Ahead	U	N/A	N/A	-		-	-	-	780	Inf	Inf	0.0%
4/2	M40 Southbound Slip Ahead	U	N/A	N/A	-		-	-	-	825	Inf	Inf	0.0%
5/1	Left Ahead	U	4:3	N/A	C4:J		1	23	-	568	1979	792	71.8%
5/2	Ahead	U	4:3	N/A	C4:J		1	23	-	576	2058	823	70.0%
5/3	Ahead	U	4:3	N/A	C4:J		1	23	-	422	2058	823	51.3%

6/1	M40 Northbound off slip Ahead Left	U	4:3	N/A	C4:K		1	26	-	354	1904	857	41.3%
6/2+6/3	M40 Northbound off slip Ahead	U	4:3	N/A	C4:K		1	26	-	815	2043:2043	919+919	46.3 : 42.3%
7/1	Ahead	U	4:4	N/A	C4:F		1	38	-	607	1908	1240	48.9%
7/2	Ahead	U	4:4	N/A	C4:F		1	38	-	806	2043	1328	60.7%
7/3	Ahead Right	U	4:4	N/A	C4:F		1	38	-	811	2043	1328	61.1%
8/1		U	4:6	N/A	C4:O		1	42	-	501	1980	1419	35.3%
9/1+9/2	B4100 West Left Ahead	U	4:4	N/A	C4:G		1	10	-	491	1905:2058	349+377	67.3 : 67.9%
10/1		U	N/A	N/A	-		-	-	-	679	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	806	2050	2050	39.3%
10/3		U	N/A	N/A	-		-	-	-	524	2050	2050	25.6%
11/1	Ahead	U	4:1	N/A	C4:A		1	23	-	260	2070	828	31.4%
11/2	Right Ahead Right2	U	4:1	N/A	C4:A		1	23	-	446	2070	828	53.9%
12/1	Ahead	U	N/A	N/A	-		-	-	-	780	Inf	Inf	0.0%
12/2	Ahead	U	N/A	N/A	-		-	-	-	825	Inf	Inf	0.0%
13/1	A43 - M40 SB	U	N/A	N/A	-		-	-	-	780	Inf	Inf	0.0%
13/2	A43 - M40 SB	U	N/A	N/A	-		-	-	-	825	Inf	Inf	0.0%
14/1	M40 - A43 NB Ahead	U	N/A	N/A	-		-	-	-	1169	Inf	Inf	0.0%
15/1	Ahead	U	N/A	N/A	-		-	-	-	1169	Inf	Inf	0.0%
16/1		U	4:5	N/A	C4:M		1	42	-	706	1980	1419	49.8%
16/2		U	4:5	N/A	C4:M		1	42	-	323	1980	1419	22.8%
17/1	Ahead	U	N/A	N/A	-		-	-	-	387	Inf	Inf	0.0%
17/2	Ahead	U	N/A	N/A	-		-	-	-	349	Inf	Inf	0.0%
18/1+18/2	New A43 Link Road Left	O	N/A	N/A	-		-	-	-	830	Inf : Inf	956+983	44.1 : 41.5%
19/1	Ahead	U	N/A	N/A	-		-	-	-	516	Inf	Inf	0.0%
19/2	Ahead	U	N/A	N/A	-		-	-	-	730	Inf	Inf	0.0%
20/1	Ahead	U	N/A	N/A	-		-	-	-	1246	Inf	Inf	0.0%
21/1	A43 SB Cut-through Ahead	U	4:3	N/A	C4:I		1	26	-	770	1980	891	86.4%

21/2	A43 SB Cut-through Ahead	U	4:3	N/A	C4:I		1	26	-	825	2120	954	86.5%
22/1	Right Ahead	U	N/A	N/A	-		-	-	-	558	Inf	Inf	0.0%
22/2	Right	U	N/A	N/A	-		-	-	-	576	Inf	Inf	0.0%
22/3	Right	U	N/A	N/A	-		-	-	-	422	Inf	Inf	0.0%
J5: Ardley exit crossings	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**46.6%**
1/1	M40 NB Merge xing Ahead	U	5:1	N/A	C5:A		1	103	-	800	1980	1716	46.6%
2/1	Overbridge NB Ahead	U	5:2	N/A	C5:C		1	102	-	408	1980	1699	24.0%
2/2	Overbridge NB Ahead	U	5:2	N/A	C5:C		1	102	-	481	2120	1820	26.4%

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: Option25a Network Model - revised following NH comments	**-**	**-**	**3524**	**0**	**0**	**66.0**	**26.0**	**0.0**	**92.0**	**-**	**-**	**-**	**-**
J1: Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**8.7**	**3.6**	**0.0**	**12.3**	**-**	**-**	**-**	**-**
1/1+1/2	1246	1246	-	-	-	2.3	2.2	-	4.5	13.0	28.1	2.2	30.3
2/1	1229	1229	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	742	742	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	237	237	-	-	-	0.6	0.2	-	0.8	12.4	2.1	0.2	2.3
3/2	256	256	-	-	-	0.7	0.2	-	0.9	12.2	2.3	0.2	2.5
4/1	506	506	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	324	324	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	729	729	-	-	-	2.7	0.7	-	3.4	17.0	5.9	0.7	6.6
5/3	333	333	-	-	-	1.2	0.3	-	1.5	16.6	3.9	0.3	4.2
6/1	392	392	-	-	-	0.7	0.0	-	0.7	6.0	1.2	0.0	1.2
6/2	333	333	-	-	-	0.5	0.0	-	0.5	5.9	0.8	0.0	0.8
7/1	830	830	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Cherwell	**-**	**-**	**889**	**0**	**0**	**11.4**	**5.5**	**0.0**	**16.9**	**-**	**-**	**-**	**-**
1/2+1/1	1229	1229	-	-	-	2.0	1.8	-	3.8	11.2	5.4	1.8	7.2
1/3	742	742	-	-	-	2.1	0.8	-	2.9	14.2	10.0	0.8	10.8
2/1	408	408	408	0	0	0.0	0.4	-	0.4	3.2	0.0	0.4	0.4
2/2	481	481	481	0	0	0.0	0.5	-	0.5	3.7	0.0	0.5	0.5
3/1	237	237	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	256	256	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	582	582	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	295	295	-	-	-	1.6	0.8	-	2.3	28.5	4.3	0.8	5.0
5/2	287	287	-	-	-	1.5	0.6	-	2.1	26.5	4.1	0.6	4.7
6/1	925	925	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	905	905	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	493	493	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

8/1+8/2	481	481	-	-	-	2.5	0.7	-	3.2	23.7	3.4	0.7	4.1
9/1	85	85	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	242	242	-	-	-	1.1	0.0	-	1.1	16.2	4.0	0.0	4.0
10/2	886	886	-	-	-	0.4	0.0	-	0.4	1.8	1.0	0.0	1.0
10/3	742	742	-	-	-	0.2	0.0	-	0.2	0.8	0.4	0.0	0.4
11/1	269	269	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	268	268	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	269	269	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	268	268	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J3: Ardley roundabout	**-**	**-**	**975**	**0**	**0**	**9.1**	**4.7**	**0.0**	**13.9**	**-**	**-**	**-**	**-**
1/1+1/2	159	159	318	0	0	0.0	0.1	-	0.1	3.2	0.3	0.1	0.4
2/1	925	925	-	-	-	0.8	0.0	-	0.8	3.3	2.8	0.0	2.8
2/2	905	905	-	-	-	0.9	0.0	-	0.9	3.5	4.0	0.0	4.0
3/1	800	800	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	951	951	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	905	905	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	357	357	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1+6/2	26	26	-	-	-	0.1	0.0	-	0.1	18.2	0.3	0.0	0.3
7/1	565	565	-	-	-	0.4	0.7	-	1.1	7.2	1.4	0.7	2.1
7/2	211	211	-	-	-	1.1	0.1	-	1.2	20.8	3.4	0.1	3.5
8/1	437	437	437	0	0	0.0	0.9	-	0.9	7.5	2.9	0.9	3.8
8/2	220	220	220	0	0	0.6	0.4	-	1.0	17.0	2.4	0.4	2.9
9/1	800	800	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	408	408	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/3	507	507	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	657	657	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	354	354	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	815	815	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	736	736	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	355	355	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/3	465	465	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	1388	1388	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

13/2	349	349	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	528	528	-	-	-	2.6	1.9	-	4.5	30.6	7.9	1.9	9.8
14/2+14/3	609	609	-	-	-	2.5	0.5	-	3.1	18.2	4.6	0.5	5.2
15/1	1388	1388	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	349	349	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/1	528	528	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/2	609	609	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/1	1137	1137	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J4: Baynards Green	**-**	**-**	**1660**	**0**	**0**	**35.9**	**11.4**	**0.0**	**47.3**	**-**	**-**	**-**	**-**
1/2+1/1	1547	1547	-	-	-	6.4	3.0	-	9.3	21.8	11.8	3.0	14.8
1/3+1/4	1485	1485	-	-	-	6.0	2.3	-	8.3	20.1	11.1	2.3	13.4
2/1	314	314	-	-	-	0.0	0.0	-	0.0	0.3	0.2	0.0	0.2
2/2	800	800	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1+3/2	868	868	-	-	-	4.4	3.2	-	7.6	31.5	8.1	3.2	11.2
4/1	780	780	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	825	825	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	568	568	-	-	-	1.4	0.0	-	1.4	8.8	3.7	0.0	3.7
5/2	576	576	-	-	-	1.4	0.0	-	1.4	8.7	3.4	0.0	3.4
5/3	422	422	-	-	-	1.3	0.0	-	1.3	10.9	5.3	0.0	5.3
6/1	354	354	-	-	-	1.1	0.4	-	1.4	14.7	3.9	0.4	4.3
6/2+6/3	815	815	-	-	-	2.6	0.4	-	3.0	13.1	4.9	0.4	5.2
7/1	607	607	-	-	-	1.2	0.0	-	1.2	6.9	5.3	0.0	5.3
7/2	806	806	-	-	-	1.2	0.0	-	1.2	5.3	6.9	0.0	6.9
7/3	811	811	-	-	-	1.8	0.0	-	1.8	8.1	7.6	0.0	7.6
8/1	501	501	-	-	-	0.0	0.3	-	0.3	2.2	0.2	0.3	0.5
9/1+9/2	491	491	-	-	-	3.1	1.0	-	4.1	30.4	3.9	1.0	4.9
10/1	679	679	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	806	806	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.3	0.3
10/3	524	524	-	-	-	0.0	0.2	-	0.2	1.2	0.0	0.2	0.2
11/1	260	260	-	-	-	0.8	0.0	-	0.8	11.7	2.1	0.0	2.1
11/2	446	446	-	-	-	1.6	0.0	-	1.6	13.3	4.0	0.0	4.0
12/1	780	780	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

12/2	825	825	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	780	780	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	825	825	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	1169	1169	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	1169	1169	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/1	706	706	-	-	-	0.4	0.0	-	0.4	2.3	2.9	0.0	2.9
16/2	323	323	-	-	-	0.3	0.0	-	0.3	3.7	3.6	0.0	3.6
17/1	387	387	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/2	349	349	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
18/1+18/2	830	830	1660	0	0	0.0	0.4	-	0.4	1.7	2.1	0.4	2.5
19/1	516	516	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
19/2	730	730	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
20/1	1246	1246	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
21/1	770	770	-	-	-	0.4	0.0	-	0.4	1.8	0.9	0.0	0.9
21/2	825	825	-	-	-	0.4	0.0	-	0.4	1.8	0.9	0.0	0.9
22/1	558	558	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
22/2	576	576	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
22/3	422	422	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J5: Ardley exit crossings	**-**	**-**	**0**	**0**	**0**	**0.8**	**0.8**	**0.0**	**1.6**	**-**	**-**	**-**	**-**
1/1	800	800	-	-	-	0.4	0.4	-	0.8	3.8	5.8	0.4	6.2
2/1	408	408	-	-	-	0.2	0.2	-	0.3	2.9	2.4	0.2	2.5
2/2	481	481	-	-	-	0.2	0.2	-	0.4	2.9	2.8	0.2	3.0

C1 - Padbury	Stream: 1	PRC for Signalled Lanes (%):	10.3	Total Delay for Signalled Lanes (pcuHr):	5.70	Cycle Time (s): 60
C1 - Padbury	Stream: 2	PRC for Signalled Lanes (%):	52.7	Total Delay for Signalled Lanes (pcuHr):	6.65	Cycle Time (s): 60
C2 - Cherwell	Stream: 1	PRC for Signalled Lanes (%):	14.9	Total Delay for Signalled Lanes (pcuHr):	9.91	Cycle Time (s): 60
C2 - Cherwell	Stream: 2	PRC for Signalled Lanes (%):	22.0	Total Delay for Signalled Lanes (pcuHr):	6.14	Cycle Time (s): 60
C3 - Ardley	Stream: 1	PRC for Signalled Lanes (%):	13.0	Total Delay for Signalled Lanes (pcuHr):	9.93	Cycle Time (s): 60
C3 - Ardley	Stream: 2	PRC for Signalled Lanes (%):	7.8	Total Delay for Signalled Lanes (pcuHr):	1.85	Cycle Time (s): 60
C4 - Baynards Green	Stream: 1	PRC for Signalled Lanes (%):	4.7	Total Delay for Signalled Lanes (pcuHr):	20.12	Cycle Time (s): 60
C4 - Baynards Green	Stream: 2	PRC for Signalled Lanes (%):	3.6	Total Delay for Signalled Lanes (pcuHr):	7.62	Cycle Time (s): 60
C4 - Baynards Green	Stream: 3	PRC for Signalled Lanes (%):	4.1	Total Delay for Signalled Lanes (pcuHr):	9.29	Cycle Time (s): 60
C4 - Baynards Green	Stream: 4	PRC for Signalled Lanes (%):	32.6	Total Delay for Signalled Lanes (pcuHr):	8.33	Cycle Time (s): 60
C4 - Baynards Green	Stream: 5	PRC for Signalled Lanes (%):	80.9	Total Delay for Signalled Lanes (pcuHr):	0.78	Cycle Time (s): 60
C4 - Baynards Green	Stream: 6	PRC for Signalled Lanes (%):	154.9	Total Delay for Signalled Lanes (pcuHr):	0.31	Cycle Time (s): 60
C5 - Ardley exit crossings	Stream: 1	PRC for Signalled Lanes (%):	93.0	Total Delay for Signalled Lanes (pcuHr):	0.83	Cycle Time (s): 120
C5 - Ardley exit crossings	Stream: 2	PRC for Signalled Lanes (%):	240.5	Total Delay for Signalled Lanes (pcuHr):	0.72	Cycle Time (s): 120
		PRC Over All Lanes (%):	3.6	Total Delay Over All Lanes(pcuHr):	91.99	

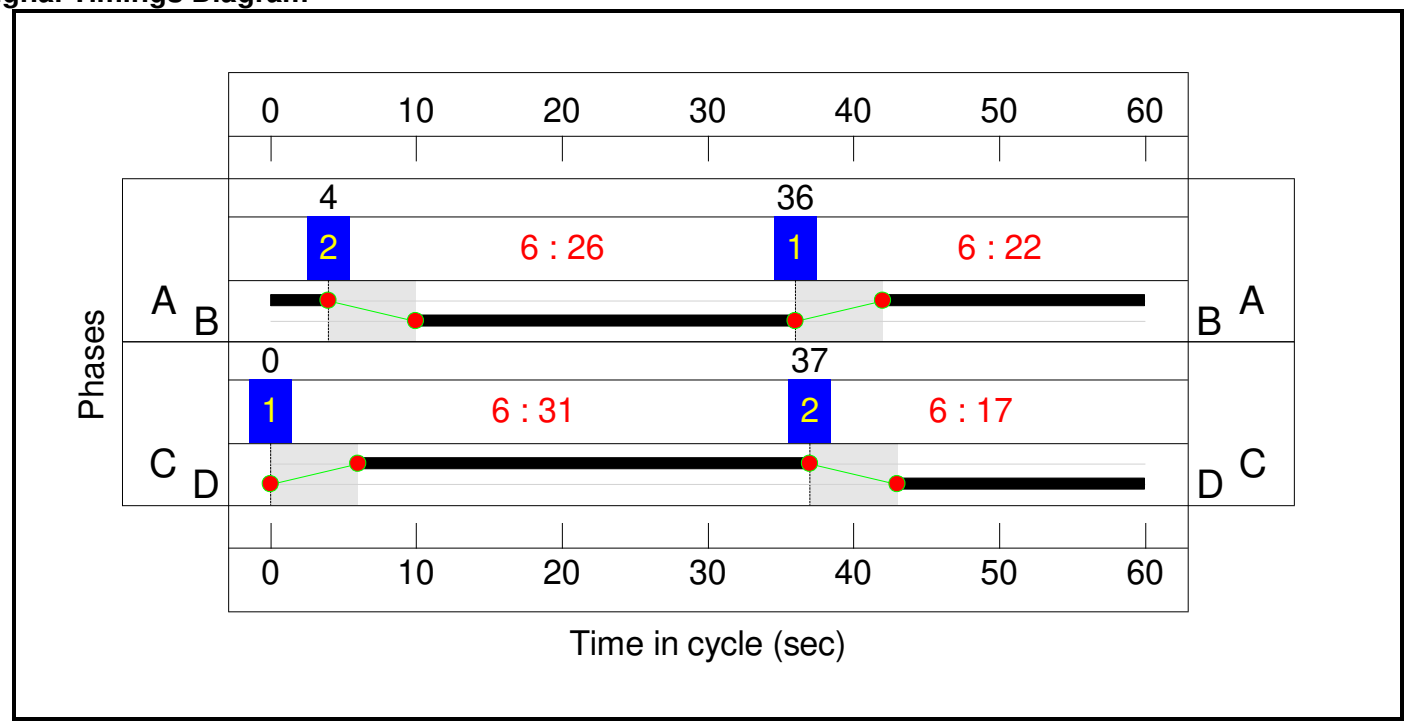
Scenario 2: '2031 Option 25 - PM Peak' (FG2: '2031 Opt 25 - PM', Plan 1: 'Network Control Plan 1')
C1 - Padbury
Stage Timings
Stage Stream: 1

Stage	1	2
Duration	22	26
Change Point	36	4

Stage Stream: 2

Stage	1	2
Duration	31	17
Change Point	0	37

Signal Timings Diagram



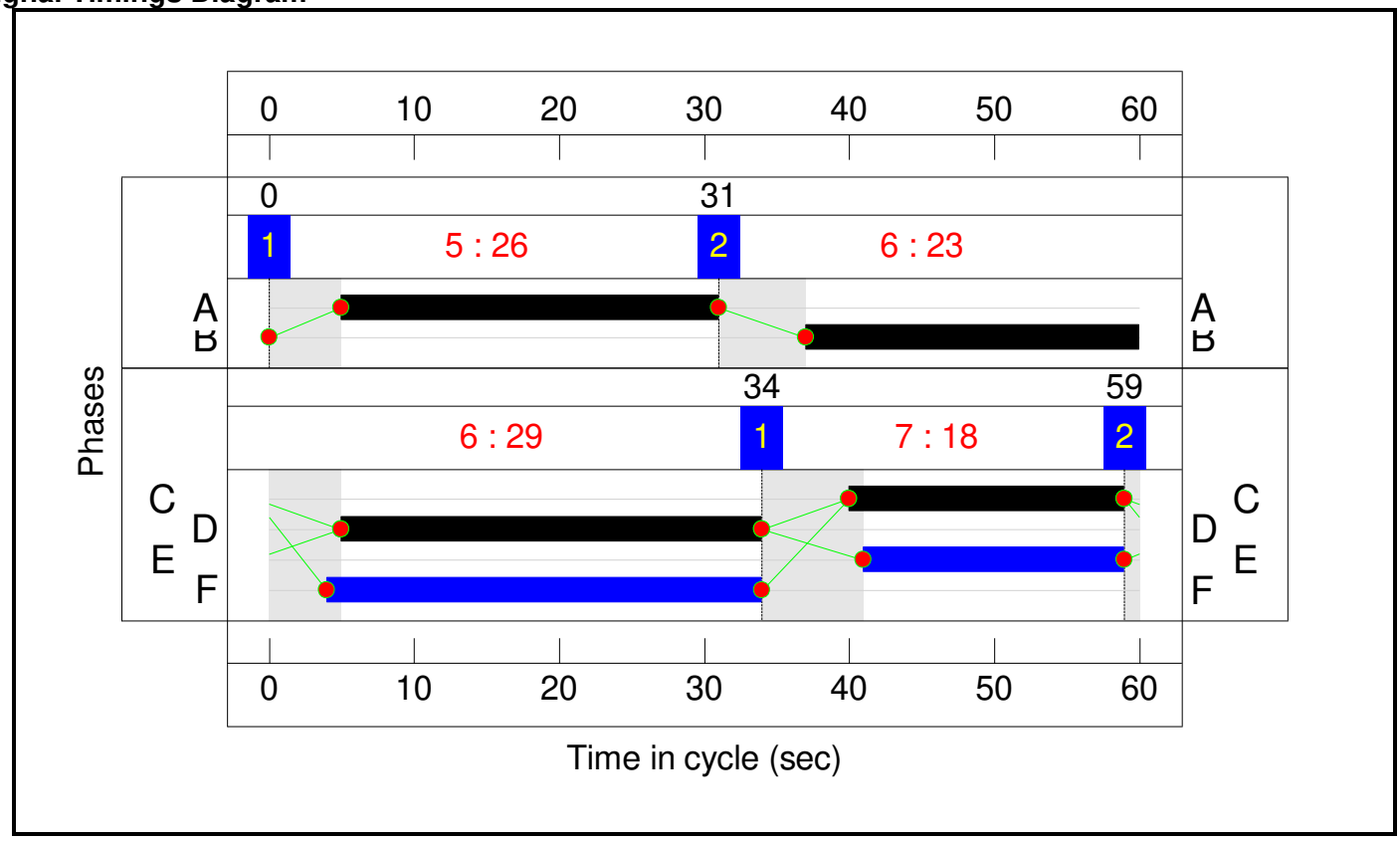
C2 - Cherwell
Stage Timings
Stage Stream: 1

Stage	1	2
Duration	26	23
Change Point	0	31

Stage Stream: 2

Stage	1	2
Duration	18	29
Change Point	34	59

Signal Timings Diagram



C3 - Ardley

Stage Timings

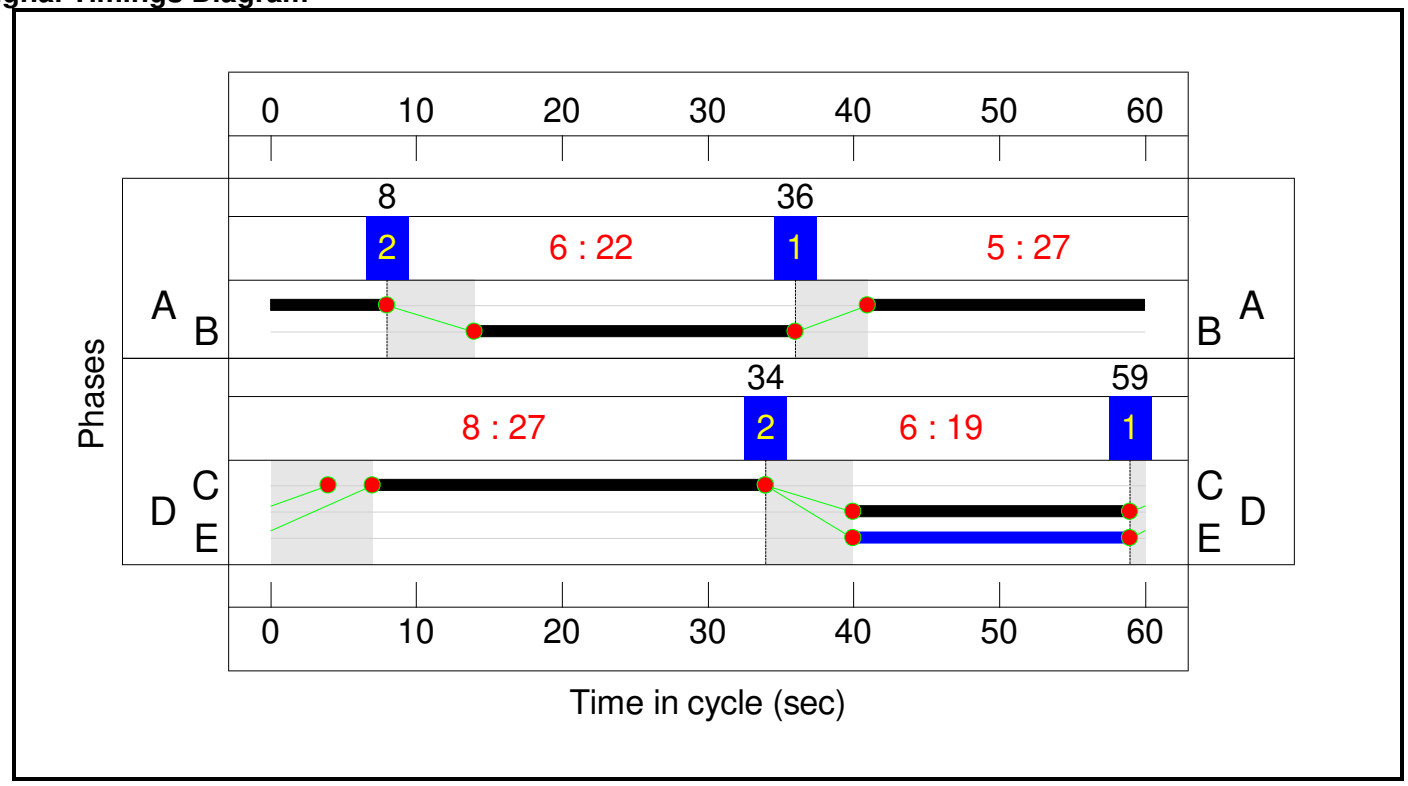
Stage Stream: 1

Stage	1	2
Duration	27	22
Change Point	36	8

Stage Stream: 2

Stage	1	2
Duration	27	19
Change Point	59	34

Signal Timings Diagram



C4 - Baynards Green

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	32	17
Change Point	22	0

Stage Stream: 2

Stage	1	2
Duration	25	23
Change Point	59	30

Stage Stream: 3

Stage	1	2
Duration	30	19
Change Point	31	6

Stage Stream: 4

Stage	1	2
Duration	41	7
Change Point	50	37

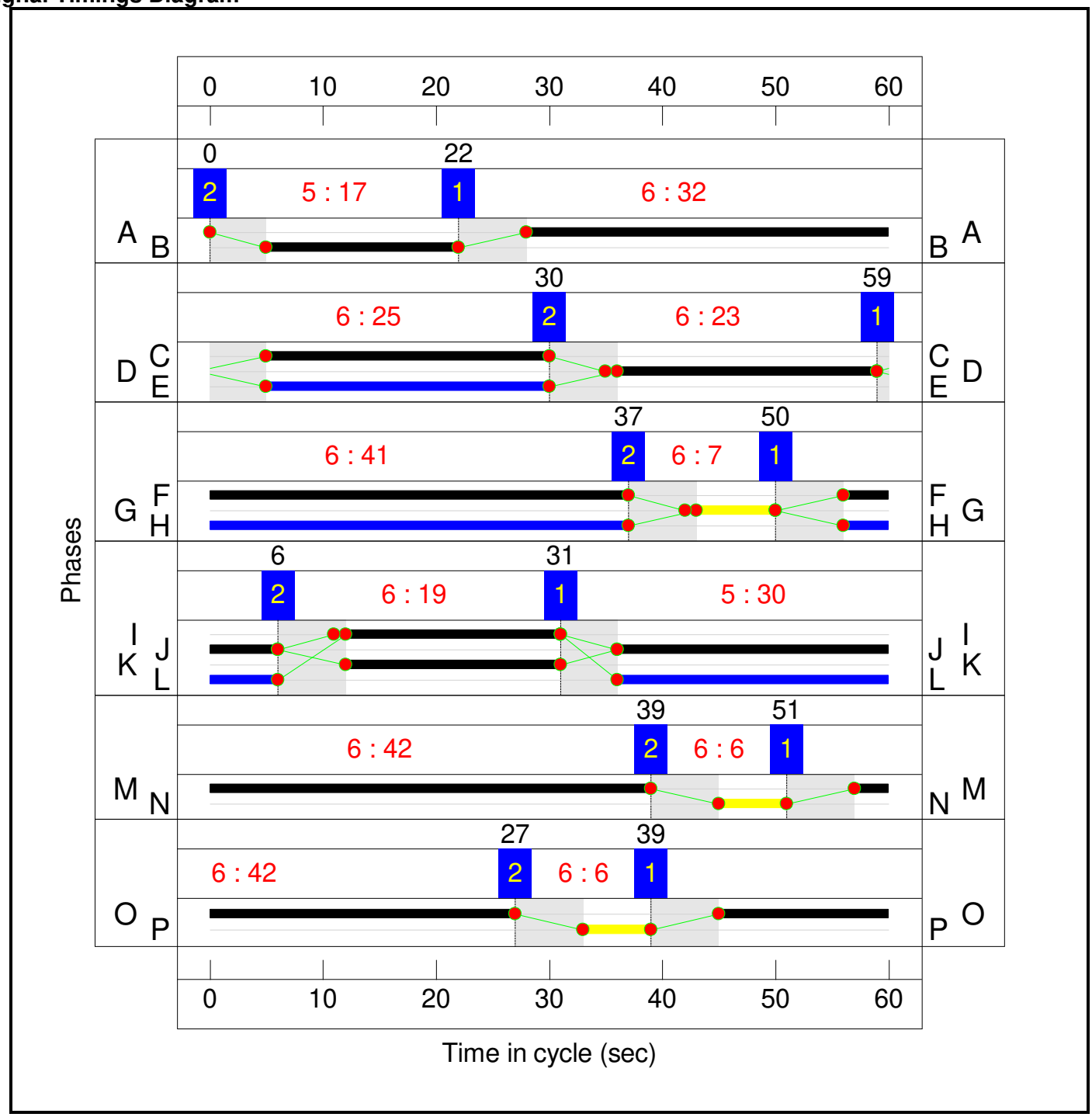
Stage Stream: 5

Stage	1	2
Duration	42	6
Change Point	51	39

Stage Stream: 6

Stage	1	2
Duration	42	6
Change Point	39	27

Signal Timings Diagram



C5 - Ardley exit crossings

Stage Timings

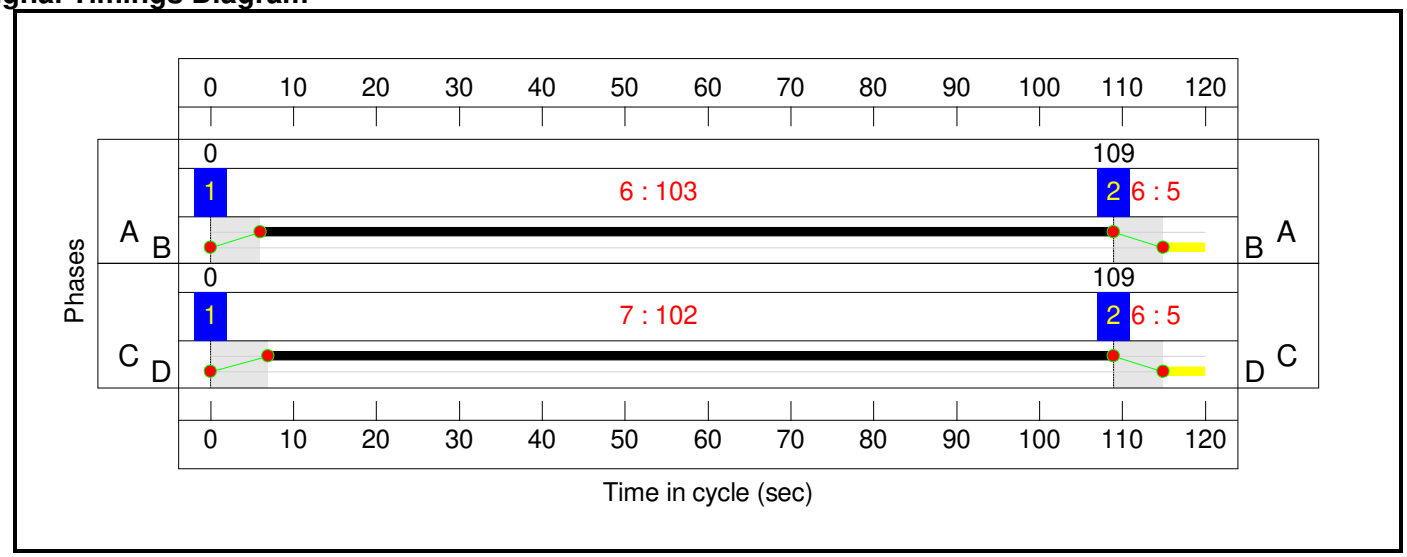
Stage Stream: 1

Stage	1	2
Duration	103	5
Change Point	0	109

Stage Stream: 2

Stage	1	2
Duration	102	5
Change Point	0	109

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: Option25a Network Model - revised following NH comments	-	-	**N/A**	-	-		-	-	-	-	-	-	**88.2%**
J1: Padbury Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**77.7%**
1/1+1/2	A43 north Ahead	U	1:1	N/A	C1:B		1	26	-	783	1922:2058	805+926	45.2 : 45.2%
2/1	Ahead	U	N/A	N/A	-		-	-	-	814	Inf	Inf	0.0%
2/2	Ahead	U	N/A	N/A	-		-	-	-	560	Inf	Inf	0.0%
3/1	A43 south Ahead	U	1:2	N/A	C1:C		1	31	-	380	1886	1006	37.8%
3/2	A43 south Ahead	U	1:2	N/A	C1:C		1	31	-	438	2019	1077	40.7%
4/1	Ahead	U	N/A	N/A	-		-	-	-	668	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	468	Inf	Inf	0.0%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	1:2	N/A	C1:D		1	17	-	768	2058:1908	617+370	77.7 : 77.7%
5/3	Junction 10 s'bound offslip Ahead	U	1:2	N/A	C1:D		1	17	-	141	2058	617	22.8%
6/1	Right	U	1:1	N/A	C1:A		1	22	-	450	2080	797	56.4%
6/2	Right	U	1:1	N/A	C1:A		1	22	-	141	2080	797	17.7%
7/1	Ahead	U	N/A	N/A	-		-	-	-	1136	Inf	Inf	0.0%
J2: Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**72.0%**
1/2+1/1	A43 Left Ahead	U	2:1	N/A	C2:A		1	26	-	814	2081:1944	916+644	52.2 : 52.2%
1/3	A43 Ahead	U	2:1	N/A	C2:A		1	26	-	560	2081	936	59.8%
2/1	A43 Ahead	O	N/A	N/A	-		-	-	-	689	Inf	957	72.0%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	673	Inf	957	70.3%
3/1	Ahead	U	N/A	N/A	-		-	-	-	380	Inf	Inf	0.0%
3/2	Ahead	U	N/A	N/A	-		-	-	-	438	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	604	Inf	Inf	0.0%
5/1	MSA Left	U	2:2	N/A	C2:C		1	19	-	258	1828	609	42.3%

5/2	MSA Left Ahead	U	2:2	N/A	C2:C		1	19	-	342	1965	655	52.2%
6/1	Ahead	U	N/A	N/A	-		-	-	-	493	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	758	Inf	Inf	0.0%
7/1	Ahead	U	N/A	N/A	-		-	-	-	818	Inf	Inf	0.0%
8/1+8/2	Ahead Right	U	2:1	N/A	C2:B		1	23	-	673	1919:1919	390+589	68.8 : 68.8%
9/1	Right	U	N/A	N/A	-		-	-	-	129	Inf	Inf	0.0%
10/1	Ahead	U	2:2	N/A	C2:D		1	29	-	405	1980	990	40.9%
10/2	Ahead	U	2:2	N/A	C2:D		1	29	-	478	2120	1060	45.1%
10/3	Ahead	U	2:2	N/A	C2:D		1	29	-	560	2120	1060	52.8%
11/1	M40 SB onslip Ahead	U	N/A	N/A	-		-	-	-	331	Inf	Inf	0.0%
11/2	M40 SB onslip Ahead	U	N/A	N/A	-		-	-	-	332	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	331	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	332	Inf	Inf	0.0%
J3: Ardley roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**79.9%**
1/1+1/2	B430 Ahead	O	N/A	N/A	-		-	-	-	239	Inf : Inf	266+340	39.4 : 39.4%
2/1	Overbridge SB Ahead	U	3:2	N/A	C3:C		1	27	-	493	1899	886	55.6%
2/2	Overbridge SB Ahead	U	3:2	N/A	C3:C		1	27	-	758	2033	949	79.9%
3/1		U	N/A	N/A	-		-	-	-	894	Inf	Inf	0.0%
4/1	Ahead	U	N/A	N/A	-		-	-	-	580	Inf	Inf	0.0%
4/2	Right Ahead	U	N/A	N/A	-		-	-	-	798	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	330	Inf	Inf	0.0%
6/1+6/2	Right	U	3:2	N/A	C3:D		1	19	-	127	1908:2043	501+230	17.4 : 17.4%
7/1	Ahead Right	U	3:1	N/A	C3:B		1	22	-	548	1922	737	74.4%
7/2	Right	U	3:1	N/A	C3:B		1	22	-	248	2058	789	31.4%
8/1	M40 Northbound offslip Left	O	N/A	N/A	-		-	-	-	291	Inf	808	36.0%
8/2	M40 Northbound offslip Ahead	O	N/A	N/A	-		-	-	-	258	Inf	589	43.8%
9/1	Left	U	N/A	N/A	-		-	-	-	894	Inf	Inf	0.0%

9/2	Ahead	U	N/A	N/A	-		-	-	-	689	Inf	Inf	0.0%
9/3	Right Ahead	U	N/A	N/A	-		-	-	-	800	Inf	Inf	0.0%
10/1	Ahead	U	N/A	N/A	-		-	-	-	549	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	486	Inf	Inf	0.0%
11/2	Ahead	U	N/A	N/A	-		-	-	-	1171	Inf	Inf	0.0%
12/1	Right	U	N/A	N/A	-		-	-	-	858	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	620	Inf	Inf	0.0%
12/3	Right	U	N/A	N/A	-		-	-	-	666	Inf	Inf	0.0%
13/1	Ahead	U	N/A	N/A	-		-	-	-	871	Inf	Inf	0.0%
13/2	Ahead	U	N/A	N/A	-		-	-	-	260	Inf	Inf	0.0%
14/1	Ardley Bypass Left Ahead	U	3:1	N/A	C3:A		1	27	-	640	1894	884	72.4%
14/2+14/3	Ardley Bypass Ahead	U	3:1	N/A	C3:A		1	27	-	1038	2033:2033	821+553	75.6 : 75.6%
15/1		U	N/A	N/A	-		-	-	-	871	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	260	Inf	Inf	0.0%
16/1	Ahead	U	N/A	N/A	-		-	-	-	640	Inf	Inf	0.0%
16/2	Ahead	U	N/A	N/A	-		-	-	-	1038	Inf	Inf	0.0%
17/1	Ahead	U	N/A	N/A	-		-	-	-	1678	Inf	Inf	0.0%
J4: Baynards Green	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.2%**
1/2+1/1	A43 North Ahead Left	U	4:1	N/A	C4:B		1	17	-	1053	2068:1932	620+580	87.4 : 88.2%
1/3+1/4	A43 North Ahead	U	4:1	N/A	C4:B		1	17	-	894	1932:2068	580+620	74.5 : 74.5%
2/1	Ahead	U	4:2	N/A	C4:C		1	25	-	56	1950	845	6.6%
2/2	Right Ahead	U	4:2	N/A	C4:C		1	25	-	542	2080	901	60.1%
3/1+3/2	B4100 East Ahead Left	U	4:2	N/A	C4:D		1	23	-	1249	1886:2019	747+673	87.9 : 87.9%
4/1	M40 Southbound Slip Ahead	U	N/A	N/A	-		-	-	-	459	Inf	Inf	0.0%
4/2	M40 Southbound Slip Ahead	U	N/A	N/A	-		-	-	-	480	Inf	Inf	0.0%
5/1	Left Ahead	U	4:3	N/A	C4:J		1	30	-	729	1979	1022	71.3%
5/2	Ahead	U	4:3	N/A	C4:J		1	30	-	889	2058	1063	83.6%
5/3	Ahead	U	4:3	N/A	C4:J		1	30	-	582	2058	1063	54.7%

6/1	M40 Northbound off slip Ahead Left	U	4:3	N/A	C4:K		1	19	-	486	1906	635	76.5%
6/2+6/3	M40 Northbound off slip Ahead	U	4:3	N/A	C4:K		1	19	-	1171	2043:2043	681+681	84.1 : 87.8%
7/1	Ahead	U	4:4	N/A	C4:F		1	41	-	1018	1908	1336	76.2%
7/2	Ahead	U	4:4	N/A	C4:F		1	41	-	1142	2043	1430	79.9%
7/3	Ahead Right	U	4:4	N/A	C4:F		1	41	-	1180	2043	1430	82.5%
8/1		U	4:6	N/A	C4:O		1	42	-	507	1980	1419	35.7%
9/1+9/2	B4100 West Left Ahead	U	4:4	N/A	C4:G		1	7	-	328	1909:2058	255+274	62.5 : 61.6%
10/1		U	N/A	N/A	-		-	-	-	1055	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	1142	2050	2050	55.7%
10/3		U	N/A	N/A	-		-	-	-	950	2050	2050	46.3%
11/1	Ahead	U	4:1	N/A	C4:A		1	32	-	241	2070	1139	21.2%
11/2	Right Ahead Right2	U	4:1	N/A	C4:A		1	32	-	280	2070	1139	24.6%
12/1	Ahead	U	N/A	N/A	-		-	-	-	459	Inf	Inf	0.0%
12/2	Ahead	U	N/A	N/A	-		-	-	-	480	Inf	Inf	0.0%
13/1	A43 - M40 SB	U	N/A	N/A	-		-	-	-	459	Inf	Inf	0.0%
13/2	A43 - M40 SB	U	N/A	N/A	-		-	-	-	480	Inf	Inf	0.0%
14/1	M40 - A43 NB Ahead	U	N/A	N/A	-		-	-	-	1657	Inf	Inf	0.0%
15/1	Ahead	U	N/A	N/A	-		-	-	-	1657	Inf	Inf	0.0%
16/1		U	4:5	N/A	C4:M		1	42	-	708	1980	1419	49.9%
16/2		U	4:5	N/A	C4:M		1	42	-	233	1980	1419	16.4%
17/1	Ahead	U	N/A	N/A	-		-	-	-	472	Inf	Inf	0.0%
17/2	Ahead	U	N/A	N/A	-		-	-	-	592	Inf	Inf	0.0%
18/1+18/2	New A43 Link Road Left	O	N/A	N/A	-		-	-	-	1136	Inf : Inf	887+898	64.3 : 63.0%
19/1	Ahead	U	N/A	N/A	-		-	-	-	286	Inf	Inf	0.0%
19/2	Ahead	U	N/A	N/A	-		-	-	-	497	Inf	Inf	0.0%
20/1	Ahead	U	N/A	N/A	-		-	-	-	783	Inf	Inf	0.0%
21/1	A43 SB Cut-through Ahead	U	4:3	N/A	C4:I		1	19	-	449	1980	660	68.0%

21/2	A43 SB Cut-through Ahead	U	4:3	N/A	C4:I		1	19	-	480	2120	707	67.9%
22/1	Right Ahead	U	N/A	N/A	-		-	-	-	719	Inf	Inf	0.0%
22/2	Right	U	N/A	N/A	-		-	-	-	889	Inf	Inf	0.0%
22/3	Right	U	N/A	N/A	-		-	-	-	582	Inf	Inf	0.0%
J5: Ardley exit crossings	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**52.1%**
1/1	M40 NB Merge xing Ahead	U	5:1	N/A	C5:A		1	103	-	894	1980	1716	52.1%
2/1	Overbridge NB Ahead	U	5:2	N/A	C5:C		1	102	-	689	1980	1699	40.5%
2/2	Overbridge NB Ahead	U	5:2	N/A	C5:C		1	102	-	673	2120	1820	37.0%

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: Option25a Network Model - revised following NH comments	**-**	**-**	**4661**	**0**	**0**	**71.5**	**31.3**	**0.0**	**102.7**	**-**	**-**	**-**	**-**
J1: Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**10.6**	**2.9**	**0.0**	**13.6**	**-**	**-**	**-**	**-**
1/1+1/2	783	783	-	-	-	4.3	0.4	-	4.7	21.8	16.5	0.4	16.9
2/1	814	814	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	560	560	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	380	380	-	-	-	0.8	0.3	-	1.1	10.1	3.9	0.3	4.2
3/2	438	438	-	-	-	0.9	0.3	-	1.3	10.3	4.6	0.3	4.9
4/1	668	668	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	468	468	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	768	768	-	-	-	3.9	1.7	-	5.7	26.5	7.2	1.7	8.9
5/3	141	141	-	-	-	0.6	0.1	-	0.8	19.6	1.8	0.1	1.9
6/1	450	450	-	-	-	0.0	0.0	-	0.0	0.4	0.1	0.0	0.1
6/2	141	141	-	-	-	0.0	0.0	-	0.0	0.3	0.0	0.0	0.0
7/1	1136	1136	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Cherwell	**-**	**-**	**1362**	**0**	**0**	**11.8**	**5.7**	**0.0**	**17.6**	**-**	**-**	**-**	**-**
1/2+1/1	814	814	-	-	-	1.8	0.5	-	2.4	10.5	4.7	0.5	5.2
1/3	560	560	-	-	-	2.3	0.7	-	3.1	19.8	6.1	0.7	6.8
2/1	689	689	689	0	0	0.0	1.3	-	1.3	6.6	0.0	1.3	1.3
2/2	673	673	673	0	0	0.0	1.2	-	1.2	6.3	0.0	1.2	1.2
3/1	380	380	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	438	438	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	604	604	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	258	258	-	-	-	1.1	0.4	-	1.5	20.6	3.3	0.4	3.7
5/2	342	342	-	-	-	1.5	0.5	-	2.1	21.9	4.6	0.5	5.1
6/1	493	493	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	758	758	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	818	818	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

8/1+8/2	673	673	-	-	-	2.5	1.1	-	3.6	19.1	5.2	1.1	6.3
9/1	129	129	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	405	405	-	-	-	2.5	0.0	-	2.5	22.4	6.8	0.0	6.8
10/2	478	478	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/3	560	560	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	331	331	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	332	332	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	331	331	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	332	332	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J3: Ardley roundabout	**-**	**-**	**1027**	**0**	**0**	**11.4**	**5.5**	**0.0**	**16.9**	**-**	**-**	**-**	**-**
1/1+1/2	239	239	478	0	0	0.1	0.3	-	0.5	7.0	0.6	0.3	0.9
2/1	493	493	-	-	-	1.1	0.0	-	1.1	7.7	2.6	0.0	2.6
2/2	758	758	-	-	-	2.3	0.0	-	2.3	11.1	6.5	0.0	6.5
3/1	894	894	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	580	580	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	798	798	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	330	330	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1+6/2	127	127	-	-	-	0.4	0.0	-	0.4	12.3	0.9	0.0	0.9
7/1	548	548	-	-	-	0.4	1.4	-	1.8	11.8	0.7	1.4	2.1
7/2	248	248	-	-	-	1.2	0.2	-	1.5	21.3	3.4	0.2	3.6
8/1	291	291	291	0	0	0.0	0.3	-	0.3	3.5	0.0	0.3	0.3
8/2	258	258	258	0	0	0.2	0.4	-	0.6	8.2	2.1	0.4	2.5
9/1	894	894	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	689	689	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/3	800	800	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	549	549	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	486	486	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	1171	1171	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	858	858	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	620	620	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/3	666	666	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	871	871	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

13/2	260	260	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	640	640	-	-	-	2.3	1.3	-	3.6	20.2	8.5	1.3	9.8
14/2+14/3	1038	1038	-	-	-	3.4	1.5	-	4.9	17.0	7.9	1.5	9.5
15/1	871	871	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	260	260	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/1	640	640	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/2	1038	1038	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/1	1678	1678	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J4: Baynards Green	**-**	**-**	**2272**	**0**	**0**	**36.4**	**16.0**	**0.0**	**52.4**	**-**	**-**	**-**	**-**
1/2+1/1	1053	1053	-	-	-	5.8	3.4	-	9.3	31.7	8.4	3.4	11.9
1/3+1/4	894	894	-	-	-	4.7	1.4	-	6.1	24.8	6.9	1.4	8.4
2/1	56	56	-	-	-	0.0	0.0	-	0.0	1.9	0.2	0.0	0.2
2/2	542	542	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1+3/2	1249	1249	-	-	-	5.5	3.5	-	9.0	26.1	10.0	3.5	13.5
4/1	459	459	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	480	480	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	729	729	-	-	-	0.7	0.0	-	0.7	3.6	3.3	0.0	3.3
5/2	889	889	-	-	-	0.6	0.0	-	0.6	2.5	2.3	0.0	2.3
5/3	582	582	-	-	-	1.6	0.0	-	1.6	10.1	7.3	0.0	7.3
6/1	486	486	-	-	-	2.4	1.6	-	4.0	29.7	7.2	1.6	8.7
6/2+6/3	1171	1171	-	-	-	6.1	3.0	-	9.1	27.8	9.3	3.0	12.3
7/1	1018	1018	-	-	-	1.4	0.0	-	1.4	5.0	9.6	0.0	9.6
7/2	1142	1142	-	-	-	1.0	0.0	-	1.0	3.0	8.8	0.0	8.8
7/3	1180	1180	-	-	-	1.7	0.0	-	1.7	5.1	9.5	0.0	9.5
8/1	507	507	-	-	-	0.1	0.3	-	0.4	2.5	0.3	0.3	0.6
9/1+9/2	328	328	-	-	-	2.2	0.8	-	3.0	33.5	2.6	0.8	3.4
10/1	1055	1055	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	1142	1142	-	-	-	0.0	0.6	-	0.6	2.0	0.0	0.6	0.6
10/3	950	950	-	-	-	0.0	0.4	-	0.4	1.6	0.0	0.4	0.4
11/1	241	241	-	-	-	0.8	0.0	-	0.8	11.7	1.9	0.0	1.9
11/2	280	280	-	-	-	0.7	0.0	-	0.7	9.3	1.8	0.0	1.8
12/1	459	459	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

12/2	480	480	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	459	459	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	480	480	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	1657	1657	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	1657	1657	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/1	708	708	-	-	-	0.1	0.0	-	0.1	0.3	2.0	0.0	2.0
16/2	233	233	-	-	-	0.1	0.0	-	0.1	0.9	2.0	0.0	2.0
17/1	472	472	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/2	592	592	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
18/1+18/2	1136	1136	2272	0	0	0.7	0.9	-	1.5	4.9	6.8	0.9	7.7
19/1	286	286	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
19/2	497	497	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
20/1	783	783	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
21/1	449	449	-	-	-	0.1	0.0	-	0.1	0.8	0.3	0.0	0.3
21/2	480	480	-	-	-	0.1	0.0	-	0.1	0.8	0.3	0.0	0.3
22/1	719	719	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
22/2	889	889	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
22/3	582	582	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J5: Ardley exit crossings	**-**	**-**	**0**	**0**	**0**	**1.2**	**1.2**	**0.0**	**2.3**	**-**	**-**	**-**	**-**
1/1	894	894	-	-	-	0.5	0.5	-	1.0	4.1	7.2	0.5	7.7
2/1	689	689	-	-	-	0.4	0.3	-	0.7	3.6	5.0	0.3	5.3
2/2	673	673	-	-	-	0.3	0.3	-	0.6	3.3	4.5	0.3	4.8

C1 - Padbury	Stream: 1	PRC for Signalled Lanes (%):	59.5	Total Delay for Signalled Lanes (pcuHr):	4.80	Cycle Time (s): 60
C1 - Padbury	Stream: 2	PRC for Signalled Lanes (%):	15.8	Total Delay for Signalled Lanes (pcuHr):	8.76	Cycle Time (s): 60
C2 - Cherwell	Stream: 1	PRC for Signalled Lanes (%):	30.8	Total Delay for Signalled Lanes (pcuHr):	9.03	Cycle Time (s): 60
C2 - Cherwell	Stream: 2	PRC for Signalled Lanes (%):	70.4	Total Delay for Signalled Lanes (pcuHr):	6.08	Cycle Time (s): 60
C3 - Ardley	Stream: 1	PRC for Signalled Lanes (%):	19.1	Total Delay for Signalled Lanes (pcuHr):	11.74	Cycle Time (s): 60
C3 - Ardley	Stream: 2	PRC for Signalled Lanes (%):	12.6	Total Delay for Signalled Lanes (pcuHr):	3.83	Cycle Time (s): 60
C4 - Baynards Green	Stream: 1	PRC for Signalled Lanes (%):	2.1	Total Delay for Signalled Lanes (pcuHr):	16.91	Cycle Time (s): 60
C4 - Baynards Green	Stream: 2	PRC for Signalled Lanes (%):	2.3	Total Delay for Signalled Lanes (pcuHr):	9.07	Cycle Time (s): 60
C4 - Baynards Green	Stream: 3	PRC for Signalled Lanes (%):	2.5	Total Delay for Signalled Lanes (pcuHr):	16.26	Cycle Time (s): 60
C4 - Baynards Green	Stream: 4	PRC for Signalled Lanes (%):	9.1	Total Delay for Signalled Lanes (pcuHr):	7.07	Cycle Time (s): 60
C4 - Baynards Green	Stream: 5	PRC for Signalled Lanes (%):	80.4	Total Delay for Signalled Lanes (pcuHr):	0.12	Cycle Time (s): 60
C4 - Baynards Green	Stream: 6	PRC for Signalled Lanes (%):	151.9	Total Delay for Signalled Lanes (pcuHr):	0.36	Cycle Time (s): 60
C5 - Ardley exit crossings	Stream: 1	PRC for Signalled Lanes (%):	72.8	Total Delay for Signalled Lanes (pcuHr):	1.03	Cycle Time (s): 120
C5 - Ardley exit crossings	Stream: 2	PRC for Signalled Lanes (%):	122.0	Total Delay for Signalled Lanes (pcuHr):	1.32	Cycle Time (s): 120
		PRC Over All Lanes (%):	2.1	Total Delay Over All Lanes(pcuHr):	102.74	

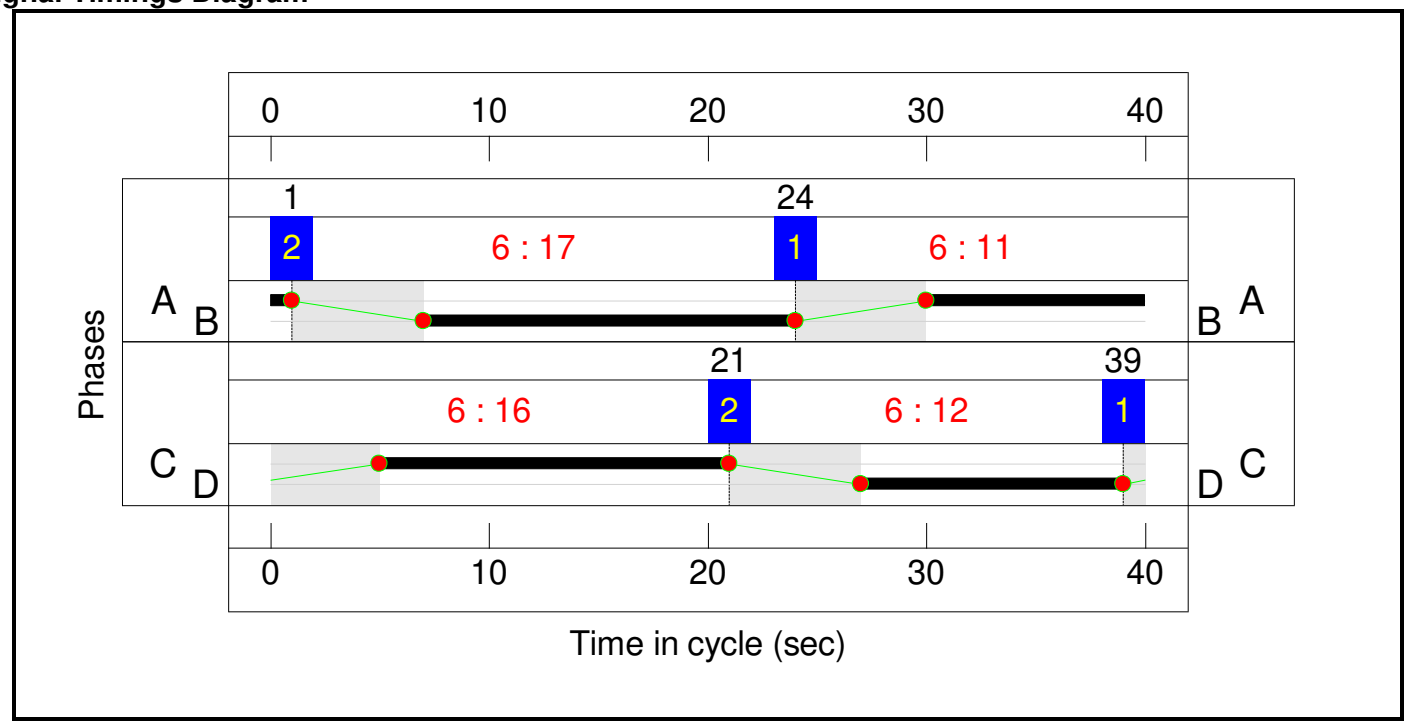
Scenario 3: '2031 Option 25 - Off Peak' (FG3: '2031 Opt 25 - off-peak', Plan 1: 'Network Control Plan 1')
C1 - Padbury
Stage Timings
Stage Stream: 1

Stage	1	2
Duration	11	17
Change Point	24	1

Stage Stream: 2

Stage	1	2
Duration	16	12
Change Point	39	21

Signal Timings Diagram



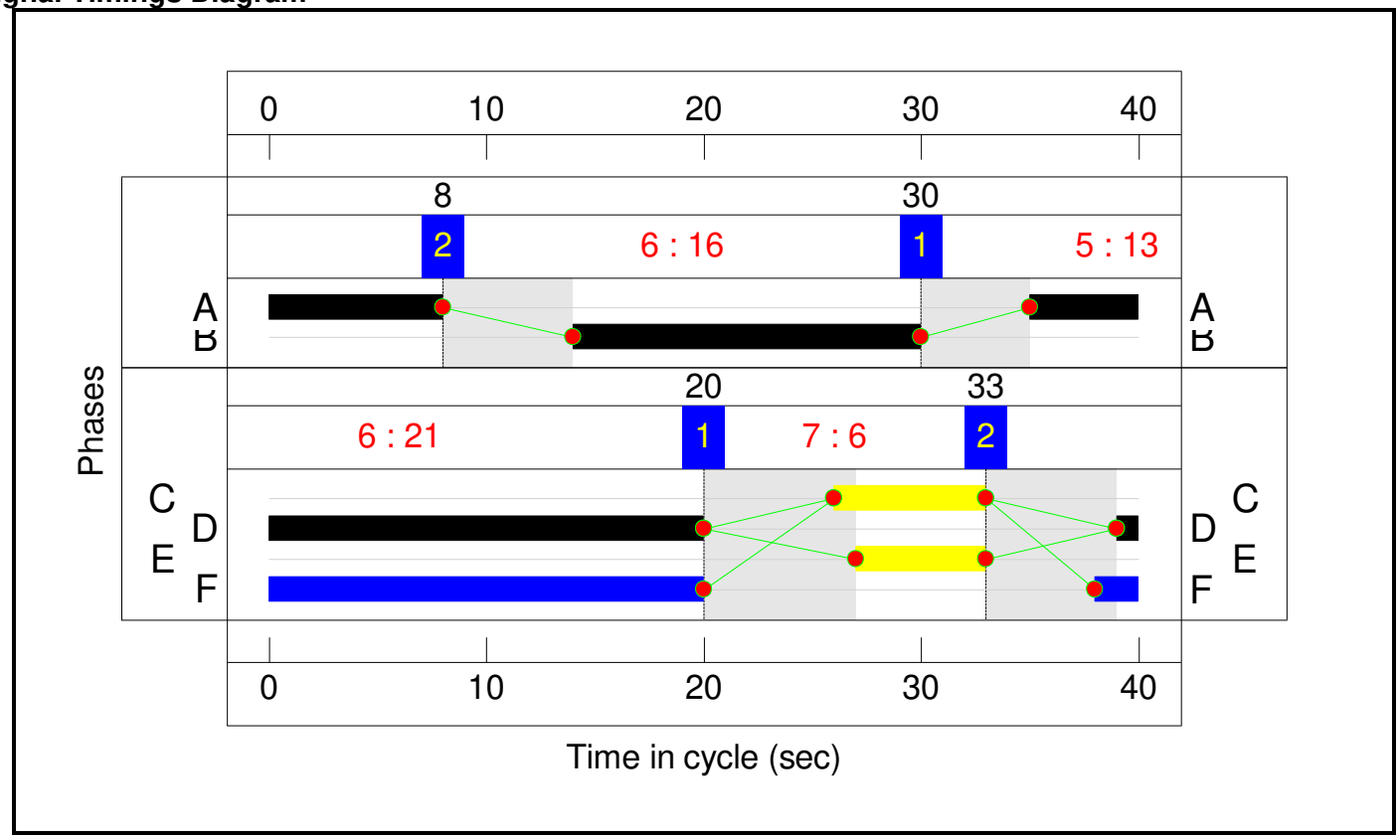
C2 - Cherwell
Stage Timings
Stage Stream: 1

Stage	1	2
Duration	13	16
Change Point	30	8

Stage Stream: 2

Stage	1	2
Duration	6	21
Change Point	20	33

Signal Timings Diagram



C3 - Ardley

Stage Timings

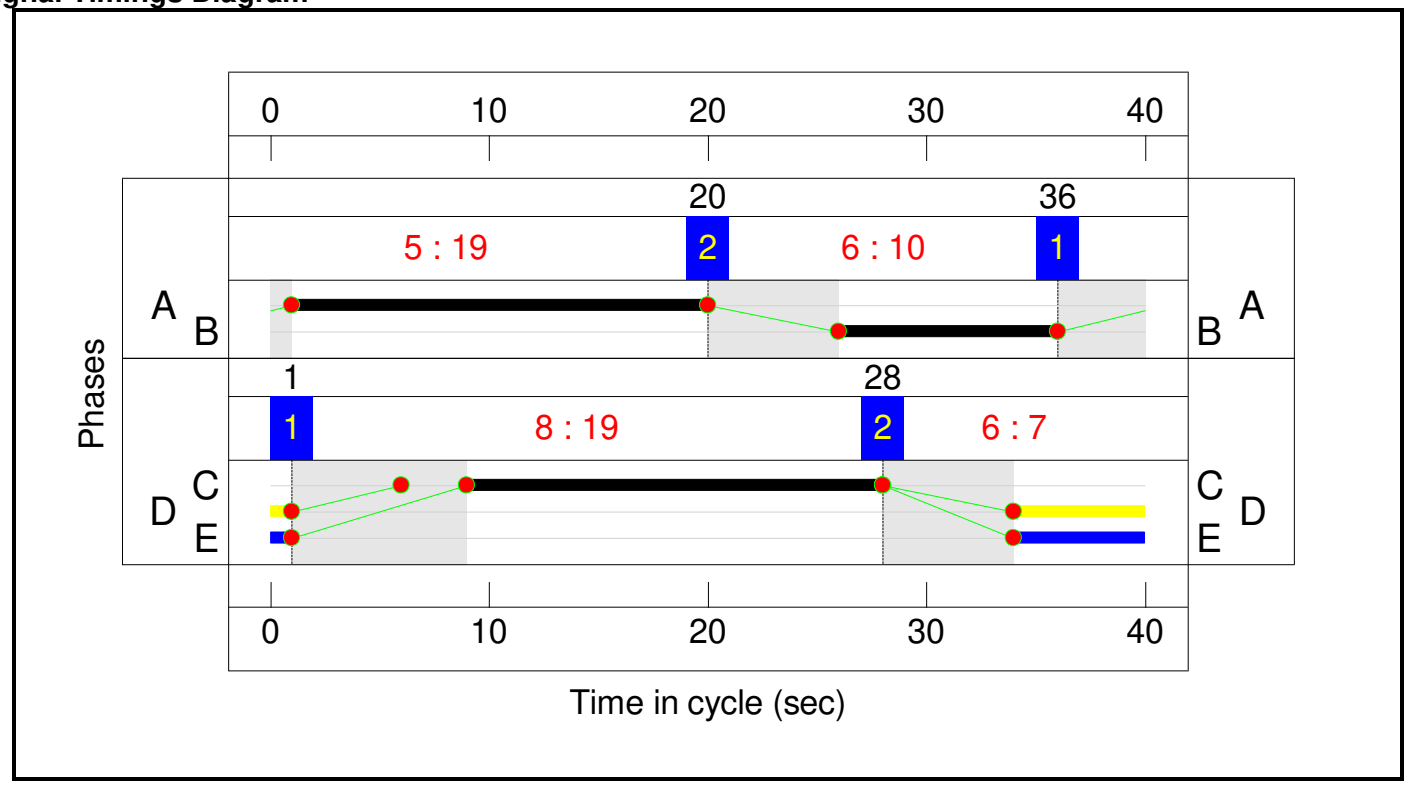
Stage Stream: 1

Stage	1	2
Duration	19	10
Change Point	36	20

Stage Stream: 2

Stage	1	2
Duration	19	7
Change Point	1	28

Signal Timings Diagram



C4 - Baynards Green

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	22	7
Change Point	12	0

Stage Stream: 2

Stage	1	2
Duration	21	7
Change Point	30	17

Stage Stream: 3

Stage	1	2
Duration	9	15
Change Point	20	34

Stage Stream: 4

Stage	1	2
Duration	21	7
Change Point	4	31

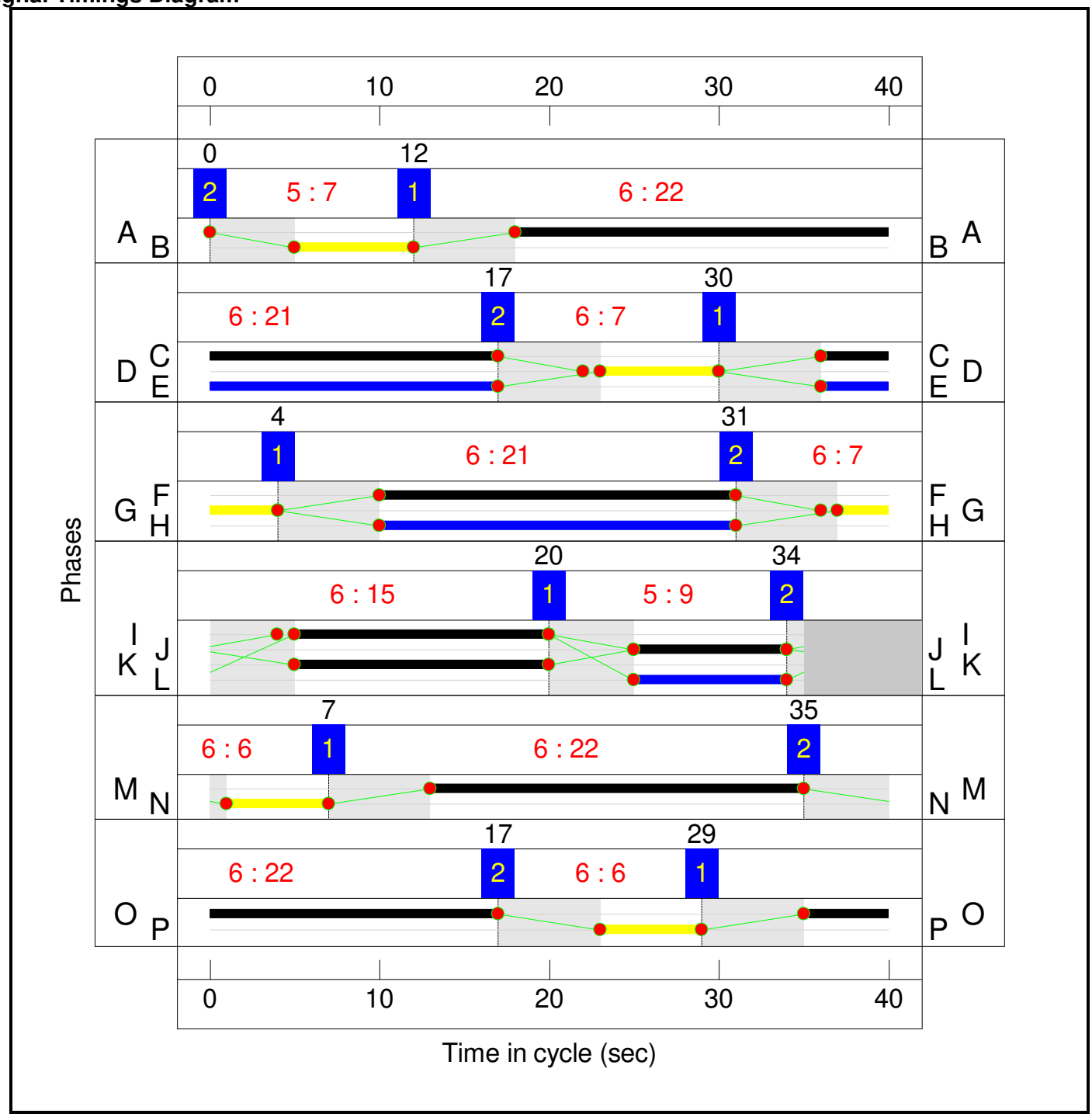
Stage Stream: 5

Stage	1	2
Duration	22	6
Change Point	7	35

Stage Stream: 6

Stage	1	2
Duration	22	6
Change Point	29	17

Signal Timings Diagram



C5 - Ardley exit crossings

Stage Timings

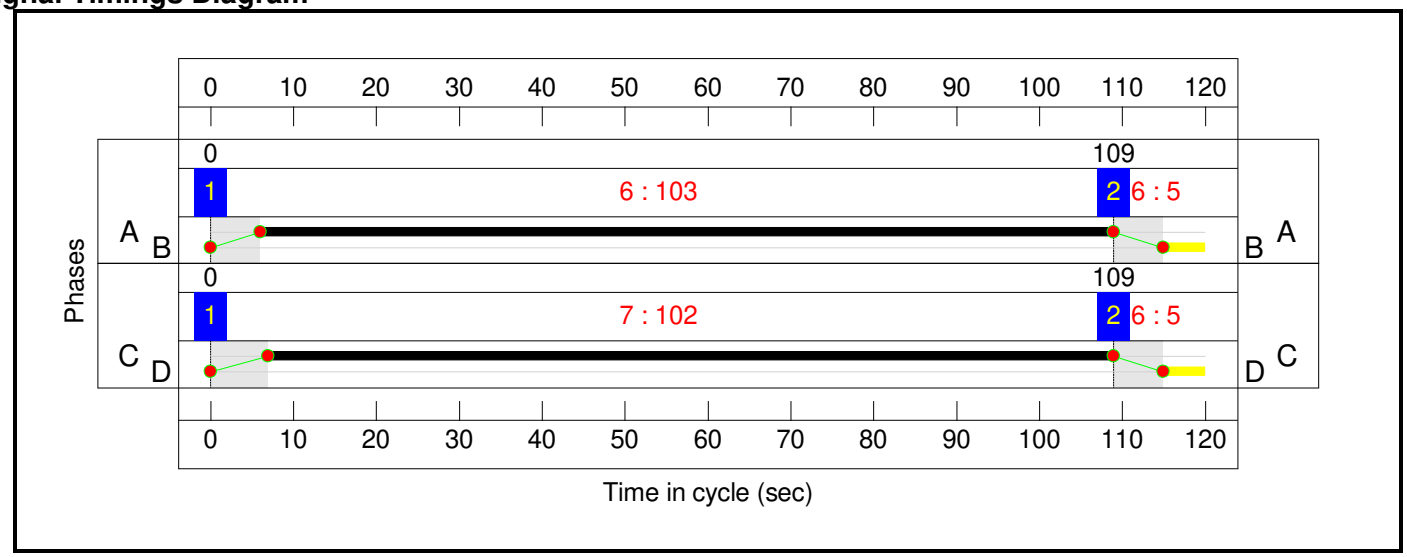
Stage Stream: 1

Stage	1	2
Duration	103	5
Change Point	0	109

Stage Stream: 2

Stage	1	2
Duration	102	5
Change Point	0	109

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: Option25a Network Model - revised following NH comments	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**45.9%**
J1: Padbury Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**19.6%**
1/1+1/2	A43 north Ahead	U	1:1	N/A	C1:B		1	17	-	263	1922:2058	865+798	17.1 : 14.4%
2/1	Ahead	U	N/A	N/A	-		-	-	-	264	Inf	Inf	0.0%
2/2	Ahead	U	N/A	N/A	-		-	-	-	170	Inf	Inf	0.0%
3/1	A43 south Ahead	U	1:2	N/A	C1:C		1	16	-	67	1886	802	8.4%
3/2	A43 south Ahead	U	1:2	N/A	C1:C		1	16	-	105	2019	858	12.2%
4/1	Ahead	U	N/A	N/A	-		-	-	-	137	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	120	Inf	Inf	0.0%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	1:2	N/A	C1:D		1	12	-	201	2058:1908	669+357	19.6 : 19.6%
5/3	Junction 10 s'bound offslip Ahead	U	1:2	N/A	C1:D		1	12	-	55	2058	669	8.2%
6/1	Right	U	1:1	N/A	C1:A		1	11	-	116	2080	624	18.6%
6/2	Right	U	1:1	N/A	C1:A		1	11	-	55	2080	624	8.8%
7/1	Ahead	U	N/A	N/A	-		-	-	-	257	Inf	Inf	0.0%
J2: Cherwell	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**24.2%**
1/2+1/1	A43 Left Ahead	U	2:1	N/A	C2:A		1	13	-	264	2081:1944	728+364	24.2 : 24.1%
1/3	A43 Ahead	U	2:1	N/A	C2:A		1	13	-	170	2081	728	23.3%
2/1	A43 Ahead	O	N/A	N/A	-		-	-	-	144	Inf	990	14.5%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	150	Inf	990	15.1%
3/1	Ahead	U	N/A	N/A	-		-	-	-	67	Inf	Inf	0.0%
3/2	Ahead	U	N/A	N/A	-		-	-	-	105	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	154	Inf	Inf	0.0%
5/1	MSA Left	U	2:2	N/A	C2:C		1	7	-	72	1828	366	19.7%

5/2	MSA Left Ahead	U	2:2	N/A	C2:C		1	7	-	81	1965	393	20.6%
6/1	Ahead	U	N/A	N/A	-		-	-	-	183	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	216	Inf	Inf	0.0%
7/1	Ahead	U	N/A	N/A	-		-	-	-	172	Inf	Inf	0.0%
8/1+8/2	Ahead Right	U	2:1	N/A	C2:B		1	16	-	150	1919:1919	522+665	12.6 : 12.6%
9/1	Right	U	N/A	N/A	-		-	-	-	28	Inf	Inf	0.0%
10/1	Ahead	U	2:2	N/A	C2:D		1	21	-	84	1980	1089	7.7%
10/2	Ahead	U	2:2	N/A	C2:D		1	21	-	176	2120	1166	15.1%
10/3	Ahead	U	2:2	N/A	C2:D		1	21	-	170	2120	1166	14.6%
11/1	M40 SB onslip Ahead	U	N/A	N/A	-		-	-	-	78	Inf	Inf	0.0%
11/2	M40 SB onslip Ahead	U	N/A	N/A	-		-	-	-	78	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	78	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	78	Inf	Inf	0.0%
J3: Ardley roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**27.1%**
1/1+1/2	B430 Ahead	O	N/A	N/A	-		-	-	-	52	Inf : Inf	891+888	3.3 : 2.6%
2/1	Overbridge SB Ahead	U	3:2	N/A	C3:C		1	19	-	183	1899	950	19.3%
2/2	Overbridge SB Ahead	U	3:2	N/A	C3:C		1	19	-	216	2033	1016	21.2%
3/1		U	N/A	N/A	-		-	-	-	219	Inf	Inf	0.0%
4/1	Ahead	U	N/A	N/A	-		-	-	-	183	Inf	Inf	0.0%
4/2	Right Ahead	U	N/A	N/A	-		-	-	-	236	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	89	Inf	Inf	0.0%
6/1+6/2	Right	U	3:2	N/A	C3:D		1	7	-	20	1980:2043	0+408	0.0 : 4.9%
7/1	Ahead Right	U	3:1	N/A	C3:B		1	10	-	143	1922	529	27.1%
7/2	Right	U	3:1	N/A	C3:B		1	10	-	60	2058	566	10.6%
8/1	M40 Northbound offslip Left	O	N/A	N/A	-		-	-	-	95	Inf	939	10.1%
8/2	M40 Northbound offslip Ahead	O	N/A	N/A	-		-	-	-	62	Inf	861	7.2%
9/1	Left	U	N/A	N/A	-		-	-	-	219	Inf	Inf	0.0%
9/2	Ahead	U	N/A	N/A	-		-	-	-	144	Inf	Inf	0.0%

9/3	Right Ahead	U	N/A	N/A	-		-	-	-	170	Inf	Inf	0.0%
10/1	Ahead	U	N/A	N/A	-		-	-	-	157	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	116	Inf	Inf	0.0%
11/2	Ahead	U	N/A	N/A	-		-	-	-	251	Inf	Inf	0.0%
12/1	Right	U	N/A	N/A	-		-	-	-	206	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	128	Inf	Inf	0.0%
12/3	Right	U	N/A	N/A	-		-	-	-	147	Inf	Inf	0.0%
13/1	Ahead	U	N/A	N/A	-		-	-	-	278	Inf	Inf	0.0%
13/2	Ahead	U	N/A	N/A	-		-	-	-	95	Inf	Inf	0.0%
14/1	Ardley Bypass Left Ahead	U	3:1	N/A	C3:A		1	19	-	152	1894	947	16.1%
14/2+14/3	Ardley Bypass Ahead	U	3:1	N/A	C3:A		1	19	-	215	2033:2033	988+671	13.0 : 13.0%
15/1		U	N/A	N/A	-		-	-	-	278	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	95	Inf	Inf	0.0%
16/1	Ahead	U	N/A	N/A	-		-	-	-	152	Inf	Inf	0.0%
16/2	Ahead	U	N/A	N/A	-		-	-	-	215	Inf	Inf	0.0%
17/1	Ahead	U	N/A	N/A	-		-	-	-	367	Inf	Inf	0.0%
J4: Baynards Green	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**45.9%**
1/2+1/1	A43 North Ahead Left	U	4:1	N/A	C4:B		1	7	-	338	2068:1932	414+386	40.1 : 44.5%
1/3+1/4	A43 North Ahead	U	4:1	N/A	C4:B		1	7	-	309	1932:2068	386+414	38.8 : 38.4%
2/1	Ahead	U	4:2	N/A	C4:C		1	21	-	55	1950	1073	5.1%
2/2	Right Ahead	U	4:2	N/A	C4:C		1	21	-	166	2080	1144	14.5%
3/1+3/2	B4100 East Ahead Left	U	4:2	N/A	C4:D		1	7	-	276	1886:2019	377+295	45.9 : 34.9%
4/1	M40 Southbound Slip Ahead	U	N/A	N/A	-		-	-	-	161	Inf	Inf	0.0%
4/2	M40 Southbound Slip Ahead	U	N/A	N/A	-		-	-	-	170	Inf	Inf	0.0%
5/1	Left Ahead	U	4:3	N/A	C4:J		1	9	-	216	1979	565	38.2%
5/2	Ahead	U	4:3	N/A	C4:J		1	9	-	202	2058	588	34.4%
5/3	Ahead	U	4:3	N/A	C4:J		1	9	-	73	2058	588	12.4%

6/1	M40 Northbound off slip Ahead Left	U	4:3	N/A	C4:K		1	15	-	116	1905	871	13.3%
6/2+6/3	M40 Northbound off slip Ahead	U	4:3	N/A	C4:K		1	15	-	251	2043:2043	863+934	12.3 : 15.5%
7/1	Ahead	U	4:4	N/A	C4:F		1	21	-	286	1908	1049	27.3%
7/2	Ahead	U	4:4	N/A	C4:F		1	21	-	219	2043	1124	19.5%
7/3	Ahead Right	U	4:4	N/A	C4:F		1	21	-	218	2043	1124	19.4%
8/1		U	4:6	N/A	C4:O		1	22	-	132	1980	1139	11.6%
9/1+9/2	B4100 West Left Ahead	U	4:4	N/A	C4:G		1	7	-	105	1910:2058	382+245	16.8 : 16.8%
10/1		U	N/A	N/A	-		-	-	-	300	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	219	2050	2050	10.7%
10/3		U	N/A	N/A	-		-	-	-	151	2050	2050	7.4%
11/1	Ahead	U	4:1	N/A	C4:A		1	22	-	75	2070	1190	6.3%
11/2	Right Ahead Right2	U	4:1	N/A	C4:A		1	22	-	83	2070	1190	7.0%
12/1	Ahead	U	N/A	N/A	-		-	-	-	161	Inf	Inf	0.0%
12/2	Ahead	U	N/A	N/A	-		-	-	-	170	Inf	Inf	0.0%
13/1	A43 - M40 SB	U	N/A	N/A	-		-	-	-	161	Inf	Inf	0.0%
13/2	A43 - M40 SB	U	N/A	N/A	-		-	-	-	170	Inf	Inf	0.0%
14/1	M40 - A43 NB Ahead	U	N/A	N/A	-		-	-	-	367	Inf	Inf	0.0%
15/1	Ahead	U	N/A	N/A	-		-	-	-	367	Inf	Inf	0.0%
16/1		U	4:5	N/A	C4:M		1	22	-	194	1980	1139	17.0%
16/2		U	4:5	N/A	C4:M		1	22	-	62	1980	1139	5.4%
17/1	Ahead	U	N/A	N/A	-		-	-	-	131	Inf	Inf	0.0%
17/2	Ahead	U	N/A	N/A	-		-	-	-	103	Inf	Inf	0.0%
18/1+18/2	New A43 Link Road Left	O	N/A	N/A	-		-	-	-	257	Inf : Inf	1076+387	17.6 : 17.6%
19/1	Ahead	U	N/A	N/A	-		-	-	-	112	Inf	Inf	0.0%
19/2	Ahead	U	N/A	N/A	-		-	-	-	151	Inf	Inf	0.0%
20/1	Ahead	U	N/A	N/A	-		-	-	-	263	Inf	Inf	0.0%
21/1	A43 SB Cut-through Ahead	U	4:3	N/A	C4:I		1	15	-	158	1980	905	17.5%

21/2	A43 SB Cut-through Ahead	U	4:3	N/A	C4:I		1	15	-	170	2120	969	17.5%
22/1	Right Ahead	U	N/A	N/A	-		-	-	-	213	Inf	Inf	0.0%
22/2	Right	U	N/A	N/A	-		-	-	-	202	Inf	Inf	0.0%
22/3	Right	U	N/A	N/A	-		-	-	-	73	Inf	Inf	0.0%
J5: Ardley exit crossings	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**12.8%**
1/1	M40 NB Merge xing Ahead	U	5:1	N/A	C5:A		1	103	-	219	1980	1716	12.8%
2/1	Overbridge NB Ahead	U	5:2	N/A	C5:C		1	102	-	144	1980	1699	8.5%
2/2	Overbridge NB Ahead	U	5:2	N/A	C5:C		1	102	-	150	2120	1820	8.2%

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: Option25a Network Model - revised following NH comments	**-**	**-**	**1069**	**0**	**0**	**13.2**	**3.4**	**0.0**	**16.6**	**-**	**-**	**-**	**-**
J1: Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**1.5**	**0.4**	**0.0**	**1.9**	**-**	**-**	**-**	**-**
1/1+1/2	263	263	-	-	-	0.5	0.1	-	0.6	7.6	1.5	0.1	1.6
2/1	264	264	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	170	170	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	67	67	-	-	-	0.1	0.0	-	0.2	8.6	0.4	0.0	0.4
3/2	105	105	-	-	-	0.2	0.1	-	0.2	8.1	0.6	0.1	0.6
4/1	137	137	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	120	120	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	201	201	-	-	-	0.5	0.1	-	0.7	11.8	1.0	0.1	1.1
5/3	55	55	-	-	-	0.1	0.0	-	0.2	12.4	0.4	0.0	0.5
6/1	116	116	-	-	-	0.0	0.0	-	0.0	1.4	0.1	0.0	0.1
6/2	55	55	-	-	-	0.0	0.0	-	0.0	1.4	0.0	0.0	0.0
7/1	257	257	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Cherwell	**-**	**-**	**294**	**0**	**0**	**2.3**	**0.8**	**0.0**	**3.1**	**-**	**-**	**-**	**-**
1/2+1/1	264	264	-	-	-	0.8	0.2	-	1.0	13.0	1.6	0.2	1.8
1/3	170	170	-	-	-	0.5	0.2	-	0.6	12.9	1.5	0.2	1.6
2/1	144	144	144	0	0	0.0	0.1	-	0.1	2.1	0.0	0.1	0.1
2/2	150	150	150	0	0	0.0	0.1	-	0.1	2.1	0.0	0.1	0.1
3/1	67	67	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	105	105	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	154	154	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	72	72	-	-	-	0.3	0.1	-	0.4	19.5	0.7	0.1	0.8
5/2	81	81	-	-	-	0.3	0.1	-	0.4	19.2	0.7	0.1	0.9
6/1	183	183	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	216	216	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	172	172	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

8/1+8/2	150	150	-	-	-	0.3	0.1	-	0.4	8.7	0.6	0.1	0.6
9/1	28	28	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	84	84	-	-	-	0.1	0.0	-	0.1	4.0	0.3	0.0	0.3
10/2	176	176	-	-	-	0.0	0.0	-	0.0	0.8	1.6	0.0	1.6
10/3	170	170	-	-	-	0.0	0.0	-	0.0	0.8	1.5	0.0	1.5
11/1	78	78	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	78	78	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	78	78	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	78	78	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J3: Ardley roundabout	**-**	**-**	**261**	**0**	**0**	**1.2**	**0.5**	**0.0**	**1.8**	**-**	**-**	**-**	**-**
1/1+1/2	52	52	104	0	0	0.0	0.0	-	0.0	1.1	0.0	0.0	0.0
2/1	183	183	-	-	-	0.0	0.0	-	0.0	0.6	0.1	0.0	0.1
2/2	216	216	-	-	-	0.1	0.0	-	0.1	2.2	0.7	0.0	0.7
3/1	219	219	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	183	183	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	236	236	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	89	89	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1+6/2	20	20	-	-	-	0.1	0.0	-	0.1	13.2	0.2	0.0	0.2
7/1	143	143	-	-	-	0.3	0.2	-	0.5	11.8	1.5	0.2	1.7
7/2	60	60	-	-	-	0.2	0.1	-	0.2	14.4	0.5	0.1	0.5
8/1	95	95	95	0	0	0.0	0.1	-	0.1	2.1	0.0	0.1	0.1
8/2	62	62	62	0	0	0.0	0.0	-	0.0	2.3	0.0	0.0	0.1
9/1	219	219	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	144	144	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/3	170	170	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	157	157	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	116	116	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	251	251	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	206	206	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	128	128	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/3	147	147	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	278	278	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

13/2	95	95	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	152	152	-	-	-	0.2	0.1	-	0.3	7.7	0.9	0.1	1.0
14/2+14/3	215	215	-	-	-	0.3	0.1	-	0.4	6.6	0.7	0.1	0.8
15/1	278	278	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	95	95	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/1	152	152	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/2	215	215	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/1	367	367	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J4: Baynards Green	**-**	**-**	**514**	**0**	**0**	**8.0**	**1.6**	**0.0**	**9.5**	**-**	**-**	**-**	**-**
1/2+1/1	338	338	-	-	-	1.3	0.4	-	1.7	17.9	1.7	0.4	2.0
1/3+1/4	309	309	-	-	-	1.2	0.3	-	1.5	17.6	1.5	0.3	1.8
2/1	55	55	-	-	-	0.0	0.0	-	0.0	0.8	0.0	0.0	0.0
2/2	166	166	-	-	-	0.0	0.0	-	0.0	0.5	0.0	0.0	0.0
3/1+3/2	276	276	-	-	-	1.1	0.3	-	1.4	18.4	1.7	0.3	2.0
4/1	161	161	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	170	170	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	216	216	-	-	-	0.6	0.0	-	0.6	10.0	1.7	0.0	1.7
5/2	202	202	-	-	-	0.6	0.0	-	0.6	9.9	1.5	0.0	1.5
5/3	73	73	-	-	-	0.2	0.0	-	0.2	9.3	0.5	0.0	0.5
6/1	116	116	-	-	-	0.2	0.1	-	0.3	7.9	0.6	0.1	0.7
6/2+6/3	251	251	-	-	-	0.4	0.1	-	0.5	6.7	0.8	0.1	0.9
7/1	286	286	-	-	-	0.4	0.0	-	0.4	4.8	1.7	0.0	1.7
7/2	219	219	-	-	-	0.3	0.0	-	0.3	4.6	1.2	0.0	1.2
7/3	218	218	-	-	-	0.3	0.0	-	0.3	4.5	1.2	0.0	1.2
8/1	132	132	-	-	-	0.1	0.1	-	0.2	5.7	0.7	0.1	0.7
9/1+9/2	105	105	-	-	-	0.4	0.1	-	0.5	16.7	0.6	0.1	0.7
10/1	300	300	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	219	219	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.1	0.1
10/3	151	151	-	-	-	0.0	0.0	-	0.0	0.9	0.0	0.0	0.0
11/1	75	75	-	-	-	0.2	0.0	-	0.2	11.4	0.7	0.0	0.7
11/2	83	83	-	-	-	0.2	0.0	-	0.2	8.8	0.7	0.0	0.7
12/1	161	161	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

12/2	170	170	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	161	161	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	170	170	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	367	367	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	367	367	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/1	194	194	-	-	-	0.0	0.0	-	0.0	0.4	0.6	0.0	0.6
16/2	62	62	-	-	-	0.0	0.0	-	0.0	2.0	0.1	0.0	0.1
17/1	131	131	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/2	103	103	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
18/1+18/2	257	257	514	0	0	0.0	0.1	-	0.1	1.5	0.0	0.1	0.1
19/1	112	112	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
19/2	151	151	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
20/1	263	263	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
21/1	158	158	-	-	-	0.2	0.0	-	0.2	5.6	0.8	0.0	0.8
21/2	170	170	-	-	-	0.3	0.0	-	0.3	5.6	0.9	0.0	0.9
22/1	213	213	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
22/2	202	202	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
22/3	73	73	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J5: Ardley exit crossings	**-**	**-**	**0**	**0**	**0**	**0.2**	**0.2**	**0.0**	**0.3**	**-**	**-**	**-**	**-**
1/1	219	219	-	-	-	0.1	0.1	-	0.1	2.4	1.0	0.1	1.1
2/1	144	144	-	-	-	0.1	0.0	-	0.1	2.5	0.7	0.0	0.8
2/2	150	150	-	-	-	0.1	0.0	-	0.1	2.4	0.8	0.0	0.8

C1 - Padbury	Stream: 1 PRC for Signalled Lanes (%):	384.1	Total Delay for Signalled Lanes (pcuHr):	0.62	Cycle Time (s):	40
C1 - Padbury	Stream: 2 PRC for Signalled Lanes (%):	359.5	Total Delay for Signalled Lanes (pcuHr):	1.25	Cycle Time (s):	40
C2 - Cherwell	Stream: 1 PRC for Signalled Lanes (%):	272.5	Total Delay for Signalled Lanes (pcuHr):	1.92	Cycle Time (s):	40
C2 - Cherwell	Stream: 2 PRC for Signalled Lanes (%):	336.7	Total Delay for Signalled Lanes (pcuHr):	0.99	Cycle Time (s):	40
C3 - Ardley	Stream: 1 PRC for Signalled Lanes (%):	232.7	Total Delay for Signalled Lanes (pcuHr):	1.43	Cycle Time (s):	40
C3 - Ardley	Stream: 2 PRC for Signalled Lanes (%):	323.5	Total Delay for Signalled Lanes (pcuHr):	0.23	Cycle Time (s):	40
C4 - Baynards Green	Stream: 1 PRC for Signalled Lanes (%):	102.2	Total Delay for Signalled Lanes (pcuHr):	3.63	Cycle Time (s):	40
C4 - Baynards Green	Stream: 2 PRC for Signalled Lanes (%):	96.2	Total Delay for Signalled Lanes (pcuHr):	1.45	Cycle Time (s):	40
C4 - Baynards Green	Stream: 3 PRC for Signalled Lanes (%):	135.6	Total Delay for Signalled Lanes (pcuHr):	2.58	Cycle Time (s):	35
C4 - Baynards Green	Stream: 4 PRC for Signalled Lanes (%):	230.2	Total Delay for Signalled Lanes (pcuHr):	1.42	Cycle Time (s):	40
C4 - Baynards Green	Stream: 5 PRC for Signalled Lanes (%):	428.2	Total Delay for Signalled Lanes (pcuHr):	0.06	Cycle Time (s):	40
C4 - Baynards Green	Stream: 6 PRC for Signalled Lanes (%):	676.3	Total Delay for Signalled Lanes (pcuHr):	0.21	Cycle Time (s):	40
C5 - Ardley exit crossings	Stream: 1 PRC for Signalled Lanes (%):	605.2	Total Delay for Signalled Lanes (pcuHr):	0.15	Cycle Time (s):	120
C5 - Ardley exit crossings	Stream: 2 PRC for Signalled Lanes (%):	962.2	Total Delay for Signalled Lanes (pcuHr):	0.20	Cycle Time (s):	120
	PRC Over All Lanes (%):	96.2	Total Delay Over All Lanes(pcuHr):	16.62		

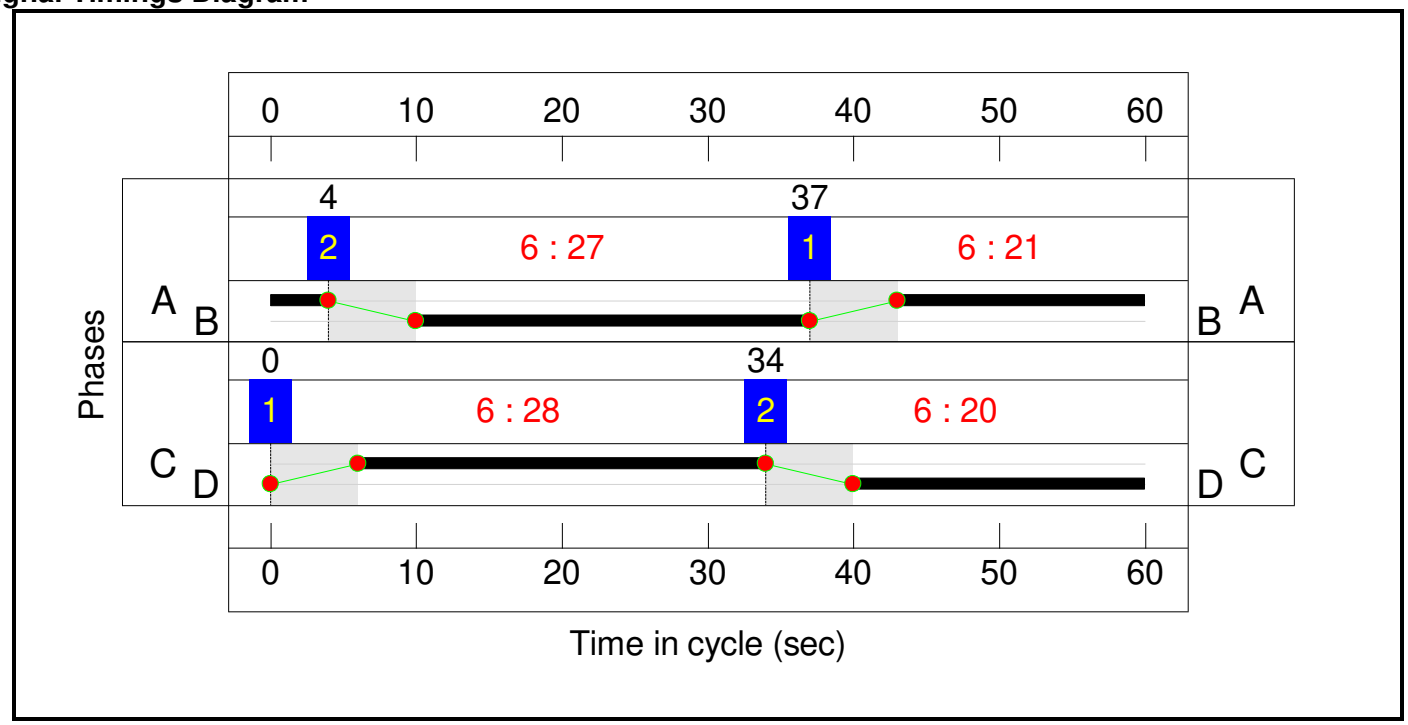
Scenario 4: '2031 Option 25 - Inter Peak' (FG4: '2031 Opt 25 - inter-peak', Plan 1: 'Network Control Plan 1')
C1 - Padbury
Stage Timings
Stage Stream: 1

Stage	1	2
Duration	21	27
Change Point	37	4

Stage Stream: 2

Stage	1	2
Duration	28	20
Change Point	0	34

Signal Timings Diagram



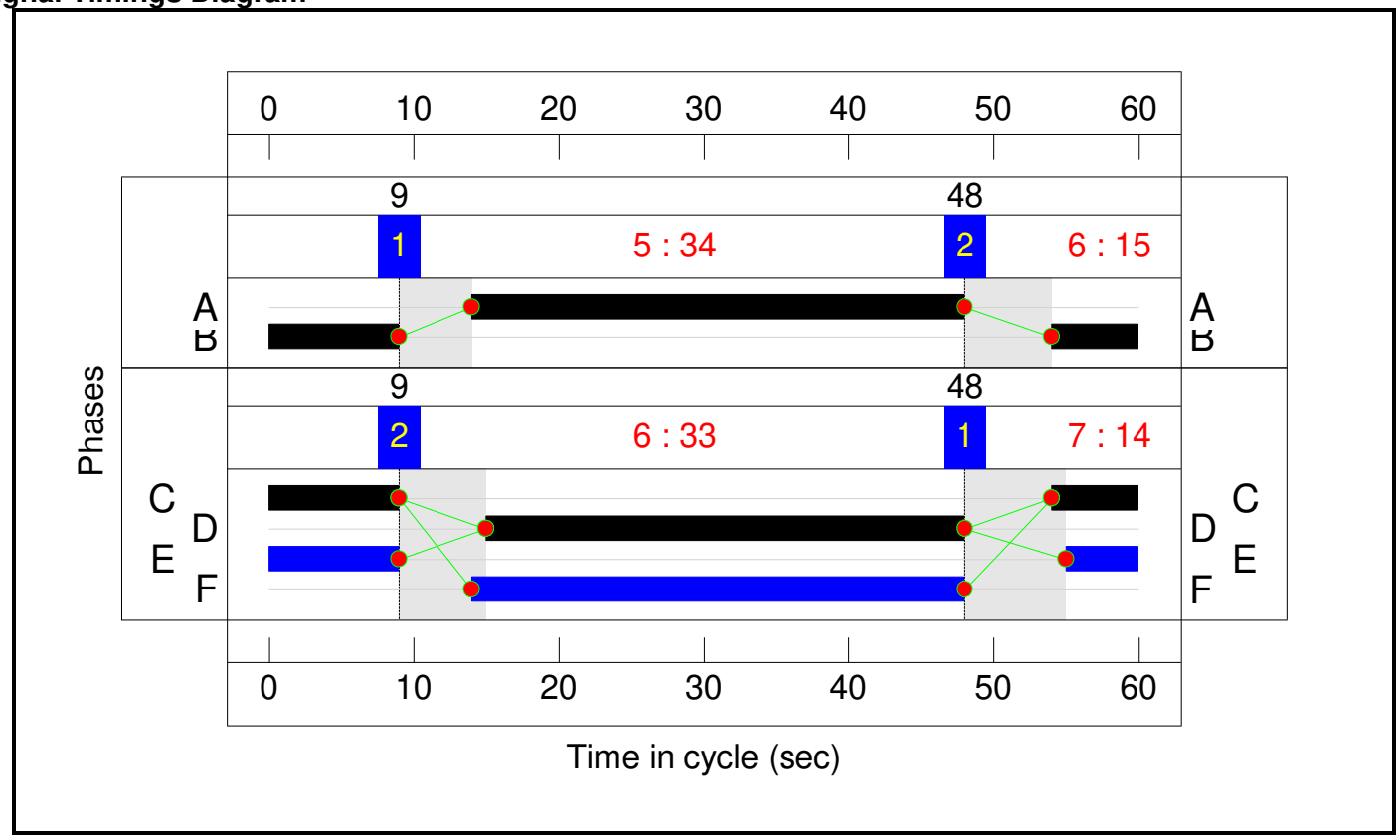
C2 - Cherwell
Stage Timings
Stage Stream: 1

Stage	1	2
Duration	34	15
Change Point	9	48

Stage Stream: 2

Stage	1	2
Duration	14	33
Change Point	48	9

Signal Timings Diagram



C3 - Ardley

Stage Timings

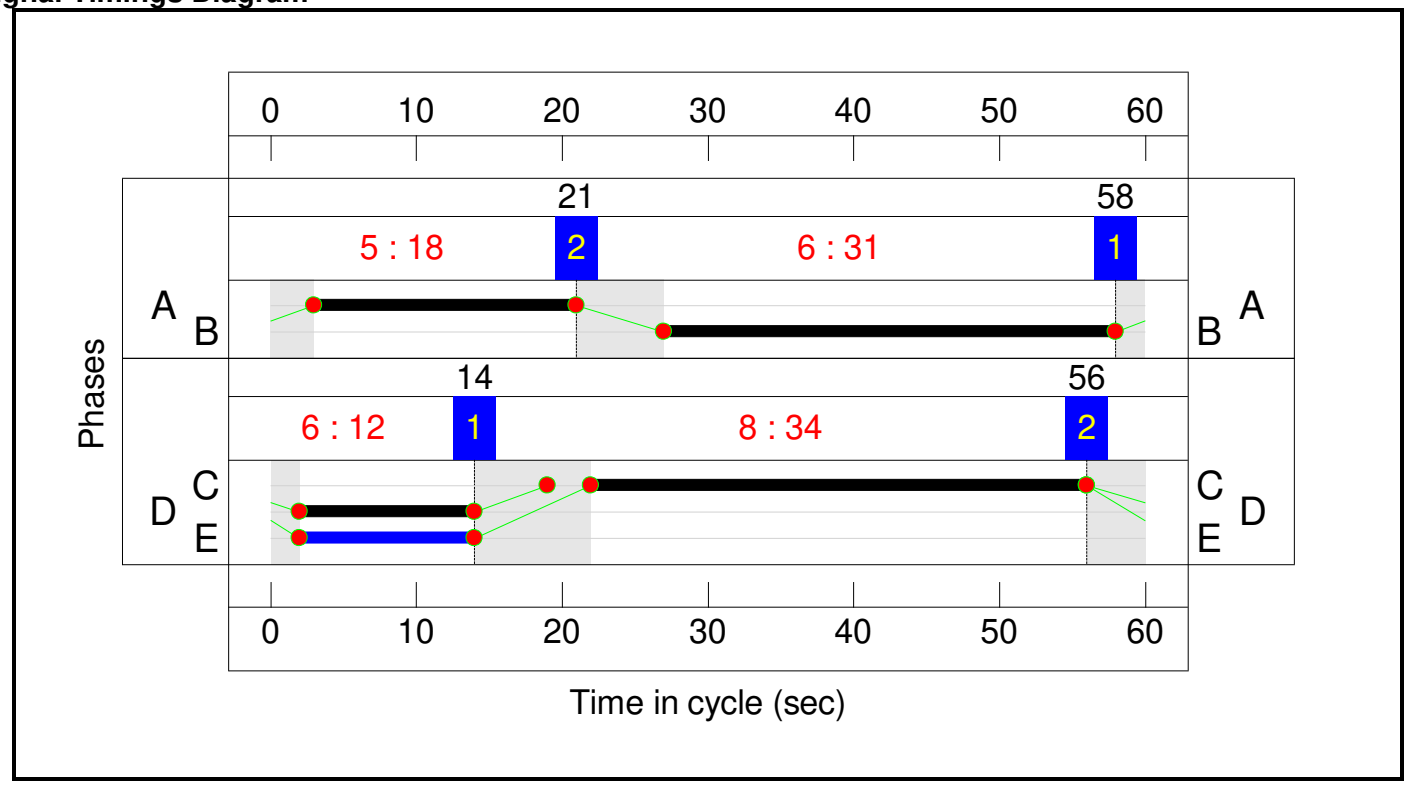
Stage Stream: 1

Stage	1	2
Duration	18	31
Change Point	58	21

Stage Stream: 2

Stage	1	2
Duration	34	12
Change Point	14	56

Signal Timings Diagram



C4 - Baynards Green

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	28	21
Change Point	0	34

Stage Stream: 2

Stage	1	2
Duration	28	20
Change Point	34	8

Stage Stream: 3

Stage	1	2
Duration	28	21
Change Point	7	40

Stage Stream: 4

Stage	1	2
Duration	41	7
Change Point	27	14

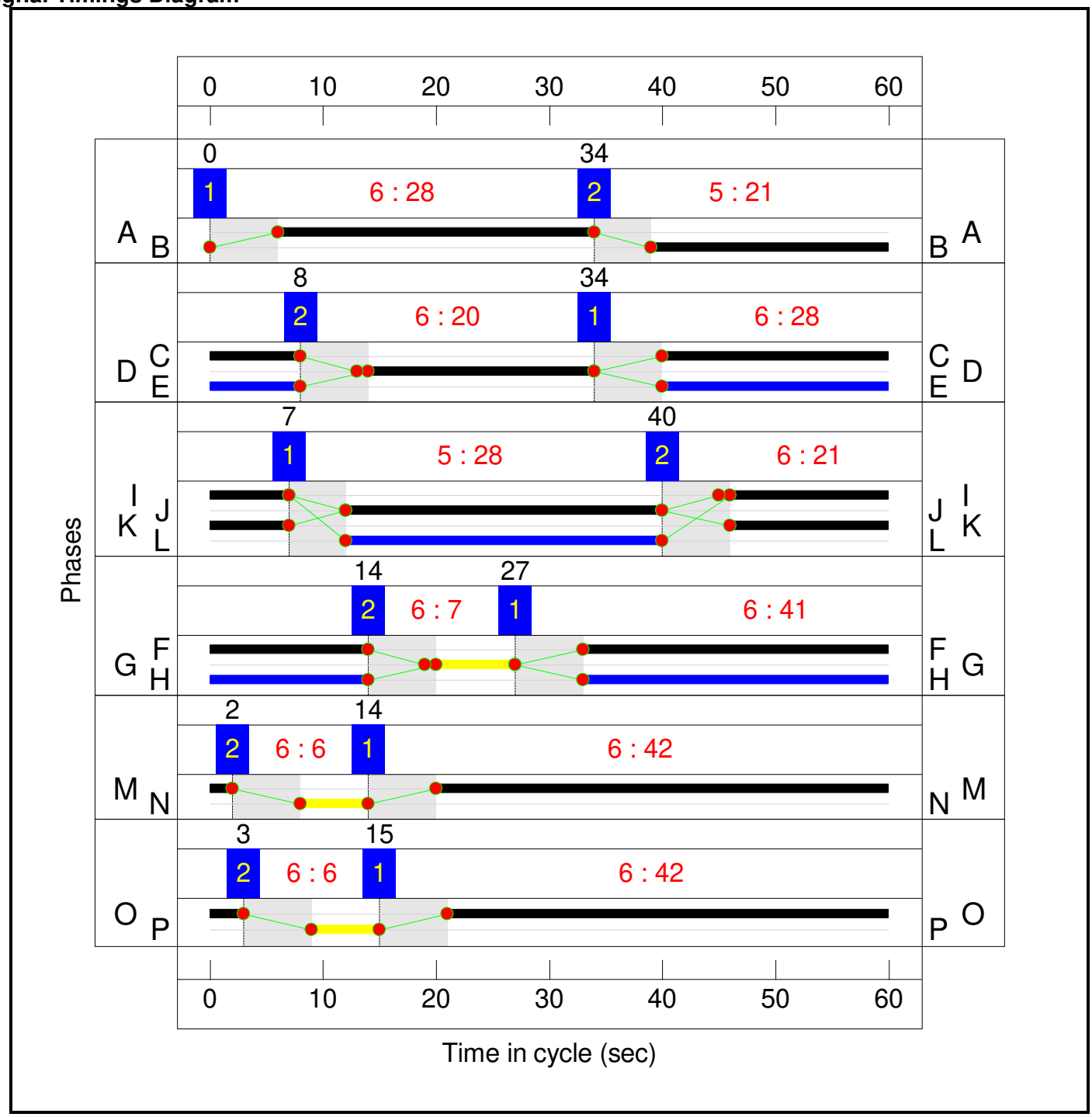
Stage Stream: 5

Stage	1	2
Duration	42	6
Change Point	14	2

Stage Stream: 6

Stage	1	2
Duration	42	6
Change Point	15	3

Signal Timings Diagram



C5 - Ardley exit crossings

Stage Timings

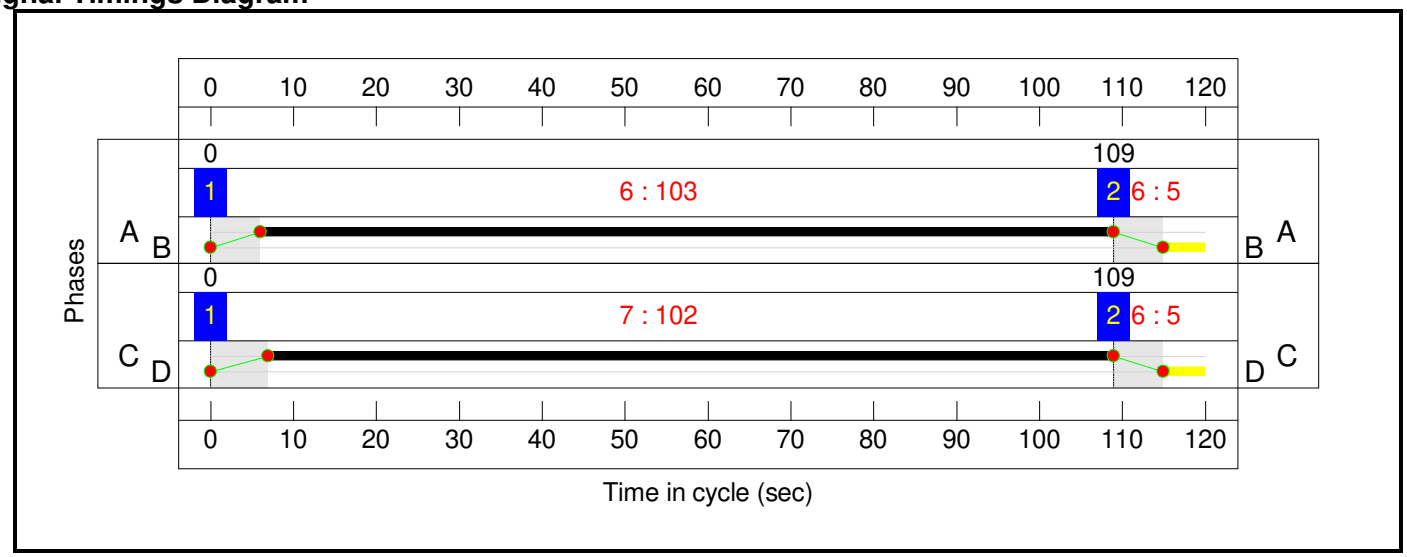
Stage Stream: 1

Stage	1	2
Duration	103	5
Change Point	0	109

Stage Stream: 2

Stage	1	2
Duration	102	5
Change Point	0	109

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: Option25a Network Model - revised following NH comments	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.7%**
J1: Padbury Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**64.6%**
1/1+1/2	A43 north Ahead	U	1:1	N/A	C1:B		1	27	-	903	1922:2058	897+502	64.6 : 64.6%
2/1	Ahead	U	N/A	N/A	-		-	-	-	911	Inf	Inf	0.0%
2/2	Ahead	U	N/A	N/A	-		-	-	-	577	Inf	Inf	0.0%
3/1	A43 south Ahead	U	1:2	N/A	C1:C		1	28	-	279	1886	912	30.6%
3/2	A43 south Ahead	U	1:2	N/A	C1:C		1	28	-	306	2019	976	31.4%
4/1	Ahead	U	N/A	N/A	-		-	-	-	438	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	439	Inf	Inf	0.0%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	1:2	N/A	C1:D		1	20	-	624	2058:1908	720+246	64.6 : 64.6%
5/3	Junction 10 s'bound offslip Ahead	U	1:2	N/A	C1:D		1	20	-	253	2058	720	35.1%
6/1	Right	U	1:1	N/A	C1:A		1	21	-	332	2080	763	43.5%
6/2	Right	U	1:1	N/A	C1:A		1	21	-	253	2080	763	33.2%
7/1	Ahead	U	N/A	N/A	-		-	-	-	877	Inf	Inf	0.0%
J2: Cherwell	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**67.7%**
1/2+1/1	A43 Left Ahead	U	2:1	N/A	C2:A		1	34	-	911	2081:1944	1109+550	54.9 : 54.9%
1/3	A43 Ahead	U	2:1	N/A	C2:A		1	34	-	577	2081	1214	47.5%
2/1	A43 Ahead	O	N/A	N/A	-		-	-	-	489	Inf	968	50.5%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	513	Inf	968	53.0%
3/1	Ahead	U	N/A	N/A	-		-	-	-	279	Inf	Inf	0.0%
3/2	Ahead	U	N/A	N/A	-		-	-	-	306	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	527	Inf	Inf	0.0%
5/1	MSA Left	U	2:2	N/A	C2:C		1	15	-	246	1828	487	50.5%

5/2	MSA Left Ahead	U	2:2	N/A	C2:C		1	15	-	281	1965	524	53.6%
6/1	Ahead	U	N/A	N/A	-		-	-	-	637	Inf	Inf	0.0%
6/2	Ahead	U	N/A	N/A	-		-	-	-	734	Inf	Inf	0.0%
7/1	Ahead	U	N/A	N/A	-		-	-	-	585	Inf	Inf	0.0%
8/1+8/2	Ahead Right	U	2:1	N/A	C2:B		1	15	-	513	1919:1919	333+426	67.7 : 67.7%
9/1	Right	U	N/A	N/A	-		-	-	-	96	Inf	Inf	0.0%
10/1	Ahead	U	2:2	N/A	C2:D		1	33	-	288	1980	1122	25.7%
10/2	Ahead	U	2:2	N/A	C2:D		1	33	-	609	2120	1201	50.7%
10/3	Ahead	U	2:2	N/A	C2:D		1	33	-	577	2120	1201	48.0%
11/1	M40 SB onslip Ahead	U	N/A	N/A	-		-	-	-	267	Inf	Inf	0.0%
11/2	M40 SB onslip Ahead	U	N/A	N/A	-		-	-	-	267	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	267	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	267	Inf	Inf	0.0%
J3: Ardley roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.7%**
1/1+1/2	B430 Ahead	O	N/A	N/A	-		-	-	-	178	Inf : Inf	632+498	15.8 : 15.7%
2/1	Overbridge SB Ahead	U	3:2	N/A	C3:C		1	34	-	637	1899	1108	57.5%
2/2	Overbridge SB Ahead	U	3:2	N/A	C3:C		1	34	-	734	2033	1186	61.9%
3/1		U	N/A	N/A	-		-	-	-	755	Inf	Inf	0.0%
4/1	Ahead	U	N/A	N/A	-		-	-	-	690	Inf	Inf	0.0%
4/2	Right Ahead	U	N/A	N/A	-		-	-	-	749	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	305	Inf	Inf	0.0%
6/1+6/2	Right	U	3:2	N/A	C3:D		1	12	-	68	1908:2043	369+104	14.4 : 14.4%
7/1	Ahead Right	U	3:1	N/A	C3:B		1	31	-	495	1922	1025	48.3%
7/2	Right	U	3:1	N/A	C3:B		1	31	-	204	2058	1098	18.6%
8/1	M40 Northbound offslip Left	O	N/A	N/A	-		-	-	-	324	Inf	772	42.0%
8/2	M40 Northbound offslip Ahead	O	N/A	N/A	-		-	-	-	212	Inf	546	38.8%
9/1	Left	U	N/A	N/A	-		-	-	-	755	Inf	Inf	0.0%

9/2	Ahead	U	N/A	N/A	-		-	-	-	489	Inf	Inf	0.0%
9/3	Right Ahead	U	N/A	N/A	-		-	-	-	581	Inf	Inf	0.0%
10/1	Ahead	U	N/A	N/A	-		-	-	-	536	Inf	Inf	0.0%
11/1	Ahead	U	N/A	N/A	-		-	-	-	433	Inf	Inf	0.0%
11/2	Ahead	U	N/A	N/A	-		-	-	-	824	Inf	Inf	0.0%
12/1	Right	U	N/A	N/A	-		-	-	-	710	Inf	Inf	0.0%
12/2	Right	U	N/A	N/A	-		-	-	-	434	Inf	Inf	0.0%
12/3	Right	U	N/A	N/A	-		-	-	-	503	Inf	Inf	0.0%
13/1	Ahead	U	N/A	N/A	-		-	-	-	1014	Inf	Inf	0.0%
13/2	Ahead	U	N/A	N/A	-		-	-	-	262	Inf	Inf	0.0%
14/1	Ardley Bypass Left Ahead	U	3:1	N/A	C3:A		1	18	-	520	1894	600	86.7%
14/2+14/3	Ardley Bypass Ahead	U	3:1	N/A	C3:A		1	18	-	733	2033:2033	638+440	68.0 : 68.0%
15/1		U	N/A	N/A	-		-	-	-	1014	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	262	Inf	Inf	0.0%
16/1	Ahead	U	N/A	N/A	-		-	-	-	520	Inf	Inf	0.0%
16/2	Ahead	U	N/A	N/A	-		-	-	-	733	Inf	Inf	0.0%
17/1	Ahead	U	N/A	N/A	-		-	-	-	1253	Inf	Inf	0.0%
J4: Baynards Green	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**85.3%**
1/2+1/1	A43 North Ahead Left	U	4:1	N/A	C4:B		1	21	-	1157	2068:1932	758+708	79.0 : 78.8%
1/3+1/4	A43 North Ahead	U	4:1	N/A	C4:B		1	21	-	1059	1932:2068	708+758	72.1 : 72.3%
2/1	Ahead	U	4:2	N/A	C4:C		1	28	-	162	1950	943	17.2%
2/2	Right Ahead	U	4:2	N/A	C4:C		1	28	-	599	2080	1005	59.6%
3/1+3/2	B4100 East Ahead Left	U	4:2	N/A	C4:D		1	20	-	943	1886:2019	660+563	77.1 : 77.1%
4/1	M40 Southbound Slip Ahead	U	N/A	N/A	-		-	-	-	551	Inf	Inf	0.0%
4/2	M40 Southbound Slip Ahead	U	N/A	N/A	-		-	-	-	582	Inf	Inf	0.0%
5/1	Left Ahead	U	4:3	N/A	C4:J		1	28	-	559	1979	957	58.4%
5/2	Ahead	U	4:3	N/A	C4:J		1	28	-	648	2058	995	65.1%

5/3	Ahead	U	4:3	N/A	C4:J		1	28	-	471	2058	995	47.4%
6/1	M40 Northbound off slip Ahead Left	U	4:3	N/A	C4:K		1	21	-	433	1906	699	62.0%
6/2+6/3	M40 Northbound off slip Ahead	U	4:3	N/A	C4:K		1	21	-	824	2043:2043	749+694	63.9 : 49.7%
7/1	Ahead	U	4:4	N/A	C4:F		1	41	-	795	1908	1336	59.5%
7/2	Ahead	U	4:4	N/A	C4:F		1	41	-	866	2043	1430	60.6%
7/3	Ahead Right	U	4:4	N/A	C4:F		1	41	-	816	2043	1430	57.1%
8/1		U	4:6	N/A	C4:O		1	42	-	449	1980	1419	31.6%
9/1+9/2	B4100 West Left Ahead	U	4:4	N/A	C4:G		1	7	-	364	1902:2058	152+274	85.3 : 85.3%
10/1		U	N/A	N/A	-		-	-	-	844	Inf	Inf	0.0%
10/2		U	N/A	N/A	-		-	-	-	866	2050	2050	42.2%
10/3		U	N/A	N/A	-		-	-	-	586	2050	2050	28.6%
11/1	Ahead	U	4:1	N/A	C4:A		1	28	-	179	2070	1001	17.9%
11/2	Right Ahead Right2	U	4:1	N/A	C4:A		1	28	-	366	2070	1001	36.6%
12/1	Ahead	U	N/A	N/A	-		-	-	-	551	Inf	Inf	0.0%
12/2	Ahead	U	N/A	N/A	-		-	-	-	582	Inf	Inf	0.0%
13/1	A43 - M40 SB	U	N/A	N/A	-		-	-	-	551	Inf	Inf	0.0%
13/2	A43 - M40 SB	U	N/A	N/A	-		-	-	-	582	Inf	Inf	0.0%
14/1	M40 - A43 NB Ahead	U	N/A	N/A	-		-	-	-	1257	Inf	Inf	0.0%
15/1	Ahead	U	N/A	N/A	-		-	-	-	1257	Inf	Inf	0.0%
16/1		U	4:5	N/A	C4:M		1	42	-	585	1980	1419	41.2%
16/2		U	4:5	N/A	C4:M		1	42	-	291	1980	1419	20.5%
17/1	Ahead	U	N/A	N/A	-		-	-	-	367	Inf	Inf	0.0%
17/2	Ahead	U	N/A	N/A	-		-	-	-	434	Inf	Inf	0.0%
18/1+18/2	New A43 Link Road Left	O	N/A	N/A	-		-	-	-	877	Inf : Inf	946+966	45.7 : 46.0%
19/1	Ahead	U	N/A	N/A	-		-	-	-	355	Inf	Inf	0.0%
19/2	Ahead	U	N/A	N/A	-		-	-	-	548	Inf	Inf	0.0%
20/1	Ahead	U	N/A	N/A	-		-	-	-	903	Inf	Inf	0.0%

21/1	A43 SB Cut-through Ahead	U	4:3	N/A	C4:I		1	21	-	542	1980	726	74.7%
21/2	A43 SB Cut-through Ahead	U	4:3	N/A	C4:I		1	21	-	582	2120	777	74.9%
22/1	Right Ahead	U	N/A	N/A	-		-	-	-	550	Inf	Inf	0.0%
22/2	Right	U	N/A	N/A	-		-	-	-	648	Inf	Inf	0.0%
22/3	Right	U	N/A	N/A	-		-	-	-	471	Inf	Inf	0.0%
J5: Ardley exit crossings	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**44.0%**
1/1	M40 NB Merge xing Ahead	U	5:1	N/A	C5:A		1	103	-	755	1980	1716	44.0%
2/1	Overbridge NB Ahead	U	5:2	N/A	C5:C		1	102	-	489	1980	1699	28.8%
2/2	Overbridge NB Ahead	U	5:2	N/A	C5:C		1	102	-	513	2120	1820	28.2%

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: Option25a Network Model - revised following NH comments	**-**	**-**	**3648**	**0**	**0**	**55.8**	**23.2**	**0.0**	**79.0**	**-**	**-**	**-**	**-**
J1: Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**6.4**	**2.5**	**0.0**	**8.9**	**-**	**-**	**-**	**-**
1/1+1/2	903	903	-	-	-	1.3	0.9	-	2.2	8.9	19.8	0.9	20.7
2/1	911	911	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	577	577	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	279	279	-	-	-	0.6	0.2	-	0.8	10.7	2.3	0.2	2.5
3/2	306	306	-	-	-	0.7	0.2	-	0.9	10.5	2.5	0.2	2.7
4/1	438	438	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	439	439	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	624	624	-	-	-	2.7	0.9	-	3.6	21.0	6.5	0.9	7.4
5/3	253	253	-	-	-	1.0	0.3	-	1.3	18.3	3.1	0.3	3.4
6/1	332	332	-	-	-	0.0	0.0	-	0.0	0.3	0.0	0.0	0.0
6/2	253	253	-	-	-	0.0	0.0	-	0.0	0.3	0.0	0.0	0.0
7/1	877	877	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Cherwell	**-**	**-**	**1002**	**0**	**0**	**9.1**	**4.3**	**0.0**	**13.4**	**-**	**-**	**-**	**-**
1/2+1/1	911	911	-	-	-	1.1	0.6	-	1.7	6.6	3.3	0.6	3.9
1/3	577	577	-	-	-	0.9	0.5	-	1.4	8.6	4.4	0.5	4.8
2/1	489	489	489	0	0	0.0	0.5	-	0.5	3.7	0.0	0.5	0.5
2/2	513	513	513	0	0	0.0	0.6	-	0.6	3.9	0.0	0.6	0.6
3/1	279	279	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	306	306	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	527	527	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	246	246	-	-	-	1.3	0.5	-	1.8	26.1	3.4	0.5	3.9
5/2	281	281	-	-	-	1.5	0.6	-	2.0	26.2	4.0	0.6	4.6
6/1	637	637	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	734	734	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	585	585	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

8/1+8/2	513	513	-	-	-	2.7	1.0	-	3.7	26.0	4.1	1.0	5.1
9/1	96	96	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	288	288	-	-	-	1.3	0.0	-	1.3	16.4	4.8	0.0	4.8
10/2	609	609	-	-	-	0.3	0.0	-	0.3	1.8	0.7	0.0	0.7
10/3	577	577	-	-	-	0.1	0.0	-	0.1	0.7	0.3	0.0	0.3
11/1	267	267	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	267	267	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	267	267	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	267	267	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J3: Ardley roundabout	**-**	**-**	**892**	**0**	**0**	**9.2**	**5.4**	**0.0**	**14.6**	**-**	**-**	**-**	**-**
1/1+1/2	178	178	356	0	0	0.0	0.1	-	0.1	2.9	0.4	0.1	0.5
2/1	637	637	-	-	-	0.7	0.0	-	0.7	4.2	2.2	0.0	2.2
2/2	734	734	-	-	-	0.9	0.0	-	0.9	4.3	3.6	0.0	3.6
3/1	755	755	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	690	690	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	749	749	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	305	305	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1+6/2	68	68	-	-	-	0.3	0.0	-	0.3	18.4	0.7	0.0	0.7
7/1	495	495	-	-	-	0.4	0.5	-	0.8	6.1	0.9	0.5	1.3
7/2	204	204	-	-	-	0.4	0.1	-	0.5	9.3	1.8	0.1	1.9
8/1	324	324	324	0	0	0.0	0.4	-	0.4	4.0	0.0	0.4	0.4
8/2	212	212	212	0	0	0.1	0.3	-	0.4	7.4	1.4	0.3	1.7
9/1	755	755	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	489	489	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/3	581	581	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	536	536	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	433	433	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	824	824	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	710	710	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	434	434	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/3	503	503	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	1014	1014	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

13/2	262	262	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	520	520	-	-	-	2.8	3.0	-	5.8	40.3	8.1	3.0	11.1
14/2+14/3	733	733	-	-	-	3.5	1.1	-	4.6	22.4	6.3	1.1	7.3
15/1	1014	1014	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	262	262	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/1	520	520	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/2	733	733	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/1	1253	1253	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J4: Baynards Green	**-**	**-**	**1754**	**0**	**0**	**30.3**	**10.2**	**0.0**	**40.5**	**-**	**-**	**-**	**-**
1/2+1/1	1157	1157	-	-	-	5.4	1.8	-	7.3	22.7	8.8	1.8	10.7
1/3+1/4	1059	1059	-	-	-	4.8	1.3	-	6.1	20.8	7.8	1.3	9.1
2/1	162	162	-	-	-	0.0	0.0	-	0.0	0.4	0.2	0.0	0.2
2/2	599	599	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1+3/2	943	943	-	-	-	4.4	1.7	-	6.1	23.2	7.5	1.7	9.2
4/1	551	551	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	582	582	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	559	559	-	-	-	0.8	0.0	-	0.8	5.2	2.8	0.0	2.8
5/2	648	648	-	-	-	0.8	0.0	-	0.8	4.3	2.4	0.0	2.4
5/3	471	471	-	-	-	1.0	0.0	-	1.0	7.6	4.4	0.0	4.4
6/1	433	433	-	-	-	1.9	0.8	-	2.7	22.3	5.9	0.8	6.7
6/2+6/3	824	824	-	-	-	3.5	0.7	-	4.1	18.1	6.5	0.7	7.2
7/1	795	795	-	-	-	0.8	0.0	-	0.8	3.8	5.6	0.0	5.6
7/2	866	866	-	-	-	0.7	0.0	-	0.7	2.8	5.5	0.0	5.5
7/3	816	816	-	-	-	1.2	0.0	-	1.2	5.5	6.9	0.0	6.9
8/1	449	449	-	-	-	0.0	0.2	-	0.3	2.1	0.2	0.2	0.4
9/1+9/2	364	364	-	-	-	2.5	2.7	-	5.2	51.4	3.8	2.7	6.4
10/1	844	844	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	866	866	-	-	-	0.0	0.4	-	0.4	1.5	0.0	0.4	0.4
10/3	586	586	-	-	-	0.0	0.2	-	0.2	1.2	0.0	0.2	0.2
11/1	179	179	-	-	-	0.6	0.0	-	0.6	11.9	1.6	0.0	1.6
11/2	366	366	-	-	-	0.8	0.0	-	0.8	8.0	2.2	0.0	2.2
12/1	551	551	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

12/2	582	582	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	551	551	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	582	582	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	1257	1257	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	1257	1257	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/1	585	585	-	-	-	0.4	0.0	-	0.4	2.2	2.3	0.0	2.3
16/2	291	291	-	-	-	0.2	0.0	-	0.2	2.7	2.2	0.0	2.2
17/1	367	367	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/2	434	434	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
18/1+18/2	877	877	1754	0	0	0.0	0.4	-	0.4	1.8	2.0	0.4	2.4
19/1	355	355	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
19/2	548	548	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
20/1	903	903	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
21/1	542	542	-	-	-	0.2	0.0	-	0.2	1.2	0.5	0.0	0.5
21/2	582	582	-	-	-	0.2	0.0	-	0.2	1.2	0.6	0.0	0.6
22/1	550	550	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
22/2	648	648	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
22/3	471	471	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J5: Ardley exit crossings	**-**	**-**	**0**	**0**	**0**	**0.8**	**0.8**	**0.0**	**1.6**	**-**	**-**	**-**	**-**
1/1	755	755	-	-	-	0.4	0.4	-	0.8	3.6	5.2	0.4	5.6
2/1	489	489	-	-	-	0.2	0.2	-	0.4	3.1	3.0	0.2	3.2
2/2	513	513	-	-	-	0.2	0.2	-	0.4	3.0	3.1	0.2	3.3

C1 - Padbury	Stream: 1	PRC for Signalled Lanes (%):	39.4	Total Delay for Signalled Lanes (pcuHr):	2.30	Cycle Time (s): 60
C1 - Padbury	Stream: 2	PRC for Signalled Lanes (%):	39.4	Total Delay for Signalled Lanes (pcuHr):	6.64	Cycle Time (s): 60
C2 - Cherwell	Stream: 1	PRC for Signalled Lanes (%):	33.0	Total Delay for Signalled Lanes (pcuHr):	6.73	Cycle Time (s): 60
C2 - Cherwell	Stream: 2	PRC for Signalled Lanes (%):	67.8	Total Delay for Signalled Lanes (pcuHr):	5.55	Cycle Time (s): 60
C3 - Ardley	Stream: 1	PRC for Signalled Lanes (%):	3.8	Total Delay for Signalled Lanes (pcuHr):	11.75	Cycle Time (s): 60
C3 - Ardley	Stream: 2	PRC for Signalled Lanes (%):	45.4	Total Delay for Signalled Lanes (pcuHr):	1.95	Cycle Time (s): 60
C4 - Baynards Green	Stream: 1	PRC for Signalled Lanes (%):	13.9	Total Delay for Signalled Lanes (pcuHr):	14.81	Cycle Time (s): 60
C4 - Baynards Green	Stream: 2	PRC for Signalled Lanes (%):	16.7	Total Delay for Signalled Lanes (pcuHr):	6.08	Cycle Time (s): 60
C4 - Baynards Green	Stream: 3	PRC for Signalled Lanes (%):	20.2	Total Delay for Signalled Lanes (pcuHr):	9.79	Cycle Time (s): 60
C4 - Baynards Green	Stream: 4	PRC for Signalled Lanes (%):	5.5	Total Delay for Signalled Lanes (pcuHr):	7.94	Cycle Time (s): 60
C4 - Baynards Green	Stream: 5	PRC for Signalled Lanes (%):	118.3	Total Delay for Signalled Lanes (pcuHr):	0.58	Cycle Time (s): 60
C4 - Baynards Green	Stream: 6	PRC for Signalled Lanes (%):	184.4	Total Delay for Signalled Lanes (pcuHr):	0.26	Cycle Time (s): 60
C5 - Ardley exit crossings	Stream: 1	PRC for Signalled Lanes (%):	104.6	Total Delay for Signalled Lanes (pcuHr):	0.75	Cycle Time (s): 120
C5 - Ardley exit crossings	Stream: 2	PRC for Signalled Lanes (%):	212.8	Total Delay for Signalled Lanes (pcuHr):	0.84	Cycle Time (s): 120
		PRC Over All Lanes (%):	3.8	Total Delay Over All Lanes(pcuHr):	79.01	

APPENDIX D

JOURNEY TIME COMPARISON TABLES

Key route journey time comparison for 2031 option 25a vs reference case- morning peak							
From	To	Option 25a average journey (s)	Reference average journey (s)	Difference (s)	Option 25a Total Journey (pcuHr)	Reference Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	100	690	-590	41.37	284.63	-243
M40 south	A43 north of Baynards green	120	184	-64	36.57	56.06	-19
A43 north of Baynards Green	M40 north	178	683	-506	4.34	16.70	-12
M40 north	A43 north of Baynards green	99	101	-3	1.84	1.89	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	166	751	-585			
B430 (or Ardley Bypass)	A43 north of Baynards green	231	233	-2			
M40 south	B430 (or Ardley Bypass)	93	143	-50			
B430 (or Ardley Bypass)	M40 south	216	243	-27			
M40 north	B430 (or Ardley Bypass)	135	219	-85			
B430 (or Ardley Bypass)	M40 north	130	144	-14			
M40 north	MSA	92	116	-24	5.60	7.04	-1
M40 south	MSA	164	129	35	9.62	7.58	2
MSA	M40 south	96	91	4	7.83	7.47	0
MSA	M40 north	115	83	32	4.64	3.34	1
B4100 east	B4100 west	51	664	-614	4.30	56.45	-52
B4100 west	B4100 east	51	58	-8	4.15	4.79	-1
		Net change		**-2498**	**Net change**		**-326**

Key route journey time comparison for 2031 option 25a vs reference case - evening peak							
From	To	Option 25a average journey (s)	Reference average journey (s)	Difference (s)	Option 25a Total Journey (pcuHr)	Reference Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	104	180	-76	25.85	44.70	-19
M40 south	A43 north of Baynards green	135	549	-414	59.75	243.45	-184
A43 north of Baynards Green	M40 north	225	173	52	5.31	4.09	1
M40 north	A43 north of Baynards green	120	481	-362	2.89	11.63	-9
A43 north of Baynards Green	B430 (or Ardley Bypass)	211	236	-25			
B430 (or Ardley Bypass)	A43 north of Baynards green	214	565	-351			
M40 south	B430 (or Ardley Bypass)	89	175	-86			
B430 (or Ardley Bypass)	M40 south	220	238	-18			
M40 north	B430 (or Ardley Bypass)	126	252	-126			
B430 (or Ardley Bypass)	M40 north	120	143	-23			
M40 north	MSA	79	155	-76	5.03	9.85	-5
M40 south	MSA	154	153	0	10.58	10.55	0
MSA	M40 south	88	85	2	6.28	6.11	0
MSA	M40 north	118	79	39	6.44	4.32	2
B4100 east	B4100 west	44	518	-474	4.52	53.49	-49
B4100 west	B4100 east	47	93	-46	3.18	6.32	-3
		Net change		**-1982**	**Net change**		**-265**

Key route journey time comparison for 2031 option 25a vs 2031 option 18 - morning peak							
From	To	Option 25a average journey (s)	Option 18 average journey (s)	Difference (s)	Option 25a Total Journey (pcuHr)	Option 18 Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	100	99	2	41.37	40.67	1
M40 south	A43 north of Baynards green	120	224	-105	36.57	68.44	-32
A43 north of Baynards Green	M40 north	178	210	-33	4.34	5.13	-1
M40 north	A43 north of Baynards green	99	107	-8	1.84	2.00	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	166	242	-76	34.39	50.08	-16
B430 (or Ardley Bypass)	A43 north of Baynards green	231	219	12	19.36	18.40	1
M40 south	B430 (or Ardley Bypass)	93	85	8	11.23	10.31	1
B430 (or Ardley Bypass)	M40 south	216	99	118	13.94	6.35	8
M40 north	B430 (or Ardley Bypass)	135	206	-71	17.11	26.14	-9
B430 (or Ardley Bypass)	M40 north	130	131	0	11.84	11.87	0
M40 north	MSA	92	98	-6	5.60	5.94	0
M40 south	MSA	164	171	-7	9.62	10.00	0
MSA	M40 south	96	141	-46	7.83	11.59	-4
MSA	M40 north	115	126	-10	4.64	5.06	0
B4100 east	B4100 west	51	73	-22	4.30	6.21	-2
B4100 west	B4100 east	51	75	-24	4.15	6.14	-2
		Net change		-269	Net change		-56

Key route journey time comparison for 2031 option 25a vs 2031 option 18 - evening peak							
From	To	Option 25a average journey (s)	Option 18 average journey (s)	Difference (s)	Option 25a Total Journey (pcuHr)	Option 18 Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	104	102	2	25.85	25.33	1
M40 south	A43 north of Baynards green	135	250	-116	59.75	110.99	-51
A43 north of Baynards Green	M40 north	225	202	23	5.31	4.76	1
M40 north	A43 north of Baynards green	120	121	-2	2.89	2.93	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	211	235	-24	20.24	22.54	-2
B430 (or Ardley Bypass)	A43 north of Baynards green	214	256	-42	35.86	42.86	-7
M40 south	B430 (or Ardley Bypass)	89	83	6	7.15	6.68	0
B430 (or Ardley Bypass)	M40 south	220	103	117	24.47	11.42	13
M40 north	B430 (or Ardley Bypass)	126	210	-84	11.41	19.05	-8
B430 (or Ardley Bypass)	M40 north	120	154	-33	13.07	16.68	-4
M40 north	MSA	79	110	-31	5.03	7.00	-2
M40 south	MSA	154	176	-23	10.58	12.14	-2
MSA	M40 south	88	130	-43	6.28	9.32	-3
MSA	M40 north	118	109	10	6.44	5.92	1
B4100 east	B4100 west	44	79	-35	4.52	8.17	-4
B4100 west	B4100 east	47	66	-19	3.18	4.47	-1
		Net change		-294	Net change		-68

Key route journey time comparison for 2031 option 25a vs 2031 option 19 - morning peak							
From	To	Option 25 average journey (s)	Option 19 average journey (s)	Difference (s)	Option 25 Total Journey (pcuHr)	Option 19 Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	100	99	2	41.37	40.63	1
M40 south	A43 north of Baynards green	120	229	-109	36.57	69.94	-33
A43 north of Baynards Green	M40 north	178	163	15	4.34	3.98	0
M40 north	A43 north of Baynards green	99	97	2	1.84	1.81	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	166	221	-55	34.39	45.67	-11
B430 (or Ardley Bypass)	A43 north of Baynards green	231	238	-7	19.36	19.95	-1
M40 south	B430 (or Ardley Bypass)	93	89	3	11.23	10.83	0
B430 (or Ardley Bypass)	M40 south	216	99	117	13.94	6.37	8
M40 north	B430 (or Ardley Bypass)	135	191	-57	17.11	24.32	-7
B430 (or Ardley Bypass)	M40 north	130	157	-27	11.84	14.24	-2
M40 north	MSA	92	93	-1	5.60	5.63	0
M40 south	MSA	164	166	-2	9.62	9.72	0
MSA	M40 south	96	141	-45	7.83	11.54	-4
MSA	M40 north	115	104	11	4.64	4.19	0
B4100 east	B4100 west	51	73	-22	4.30	6.21	-2
B4100 west	B4100 east	51	75	-24	4.15	6.14	-2
		Net change		**-198**	**Net change**		**-53**

Key route journey time comparison for 2031 option 25a vs 2031 option 19 - evening peak							
From	To	Option 25a average journey (s)	Option 19 average journey (s)	Difference (s)	Option 25a Total Journey (pcuHr)	Option 19 Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	104	102	2	25.85	25.38	0
M40 south	A43 north of Baynards green	135	238	-103	59.75	105.58	-46
A43 north of Baynards Green	M40 north	225	187	38	5.31	4.41	1
M40 north	A43 north of Baynards green	120	122	-2	2.89	2.94	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	211	250	-38	20.24	23.92	-4
B430 (or Ardley Bypass)	A43 north of Baynards green	214	260	-46	35.86	43.57	-8
M40 south	B430 (or Ardley Bypass)	89	81	8	7.15	6.54	1
B430 (or Ardley Bypass)	M40 south	220	114	105	24.47	12.73	12
M40 north	B430 (or Ardley Bypass)	126	222	-96	11.41	20.06	-9
B430 (or Ardley Bypass)	M40 north	120	178	-58	13.07	19.35	-6
M40 north	MSA	79	111	-32	5.03	7.05	-2
M40 south	MSA	154	163	-10	10.58	11.26	-1
MSA	M40 south	88	132	-44	6.28	9.42	-3
MSA	M40 north	118	85	33	6.44	4.63	2
B4100 east	B4100 west	44	79	-35	4.52	8.17	-4
B4100 west	B4100 east	47	66	-19	3.18	4.47	-1
		Net change		**-297**	**Net change**		**-67**

Key route journey time comparison for 2031 option 25a vs reference case - off-peak							
From	To	Option 25a average journey (s)	Reference average journey (s)	Difference (s)	Option 25a Total Journey (pcuHr)	Reference Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	102	139	-37	8.77	11.97	-3
M40 south	A43 north of Baynards green	117	154	-37	11.40	14.99	-4
A43 north of Baynards Green	M40 north	173	132	42	1.06	0.80	0
M40 north	A43 north of Baynards green	89	85	4	0.50	0.47	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	162	194	-32			
B430 (or Ardley Bypass)	A43 north of Baynards green	192	210	-18			
M40 south	B430 (or Ardley Bypass)	87	133	-46			
B430 (or Ardley Bypass)	M40 south	176	225	-49			
M40 north	B430 (or Ardley Bypass)	120	175	-55			
B430 (or Ardley Bypass)	M40 north	106	141	-35			
M40 north	MSA	74	79	-5	1.19	1.26	0
M40 south	MSA	126	115	11	2.10	1.91	0
MSA	M40 south	87	80	7	1.73	1.60	0
MSA	M40 north	111	72	38	1.35	0.88	0
B4100 east	B4100 west	49	36	14	1.21	0.88	0
B4100 west	B4100 east	45	34	11	0.88	0.67	0
		Net change		-188	Net change		-5

Key route journey time comparison for 2031 option 25a vs reference case - inter-peak							
From	To	Option 25a average journey (s)	Reference average journey (s)	Difference (s)	Option 25a Total Journey (pcuHr)	Reference Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	100	179	-79	29.53	52.71	-23
M40 south	A43 north of Baynards green	125	189	-64	41.77	62.98	-21
A43 north of Baynards Green	M40 north	170	174	-4	3.63	3.71	0
M40 north	A43 north of Baynards green	96	111	-15	1.84	2.13	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	159	238	-79			
B430 (or Ardley Bypass)	A43 north of Baynards green	218	236	-18			
M40 south	B430 (or Ardley Bypass)	89	143	-54			
B430 (or Ardley Bypass)	M40 south	223	241	-18			
M40 north	B430 (or Ardley Bypass)	124	198	-74			
B430 (or Ardley Bypass)	M40 north	140	142	-2			
M40 north	MSA	82	97	-15	4.53	5.38	-1
M40 south	MSA	145	132	13	8.22	7.49	1
MSA	M40 south	93	103	-10	6.36	7.04	-1
MSA	M40 north	113	96	17	4.78	4.06	1
B4100 east	B4100 west	41	489	-449	3.41	41.03	-38
B4100 west	B4100 east	63	50	13	4.23	3.35	1
		Net change		-836	Net change		-82

Key route journey time comparison for 2031 option 25a vs 2031 option 18 - off-peak							
From	To	Option 25a average journey (s)	Option 18 average journey (s)	Difference (s)	Option 25a Total Journey (pcuHr)	Option 18 Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	102	89	13	8.77	7.64	1
M40 south	A43 north of Baynards green	117	201	-84	11.40	19.53	-8
A43 north of Baynards Green	M40 north	173	155	18	1.06	0.95	0
M40 north	A43 north of Baynards green	89	96	-7	0.50	0.53	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	162	187	-25	6.39	7.37	-1
B430 (or Ardley Bypass)	A43 north of Baynards green	192	216	-24	6.29	7.06	-1
M40 south	B430 (or Ardley Bypass)	87	68	19	2.30	1.80	0
B430 (or Ardley Bypass)	M40 south	176	90	86	4.00	2.04	2
M40 north	B430 (or Ardley Bypass)	120	150	-30	3.39	4.24	-1
B430 (or Ardley Bypass)	M40 north	106	120	-14	2.74	3.11	0
M40 north	MSA	74	61	13	1.19	0.98	0
M40 south	MSA	126	151	-25	2.10	2.52	0
MSA	M40 south	87	113	-27	1.73	2.26	-1
MSA	M40 north	111	99	11	1.35	1.21	0
B4100 east	B4100 west	49	56	-7	1.21	1.38	0
B4100 west	B4100 east	45	48	-3	0.88	0.93	0
		Net change		-84	Net change		-8

Key route journey time comparison for 2031 option 25a vs 2031 option 18 - inter-peak							
From	To	Option 25a average journey (s)	Option 18 average journey (s)	Difference (s)	Option 25a Total Journey (pcuHr)	Option 18 Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	100	97	3	29.53	28.62	1
M40 south	A43 north of Baynards green	125	230	-105	41.77	76.70	-35
A43 north of Baynards Green	M40 north	170	195	-25	3.63	4.16	-1
M40 north	A43 north of Baynards green	96	107	-11	1.84	2.05	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	159	218	-59	21.37	29.36	-8
B430 (or Ardley Bypass)	A43 north of Baynards green	218	258	-39	24.45	28.83	-4
M40 south	B430 (or Ardley Bypass)	89	76	13	8.01	6.80	1
B430 (or Ardley Bypass)	M40 south	223	100	123	17.48	7.86	10
M40 north	B430 (or Ardley Bypass)	124	194	-70	12.02	18.83	-7
B430 (or Ardley Bypass)	M40 north	140	149	-9	12.44	13.22	-1
M40 north	MSA	82	80	2	4.53	4.44	0
M40 south	MSA	145	164	-19	8.22	9.31	-1
MSA	M40 south	93	124	-31	6.36	8.48	-2
MSA	M40 north	113	104	10	4.78	4.38	0
B4100 east	B4100 west	41	66	-25	3.41	5.52	-2
B4100 west	B4100 east	63	64	-1	4.23	4.27	0
		Net change		-244	Net change		-49

Key route journey time comparison for 2031 option 25a vs 2031 option 19 - off-peak							
From	To	Option 25a average journey (s)	Option 19 average journey (s)	Difference (s)	Option 25a Total Journey (pcuHr)	Option 19 Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	102	89	13	8.77	7.63	1
M40 south	A43 north of Baynards green	117	201	-84	11.40	19.56	-8
A43 north of Baynards Green	M40 north	173	143	30	1.06	0.87	0
M40 north	A43 north of Baynards green	89	96	-7	0.50	0.53	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	162	222	-60	6.39	8.77	-2
B430 (or Ardley Bypass)	A43 north of Baynards green	192	219	-27	6.29	7.18	-1
M40 south	B430 (or Ardley Bypass)	87	69	18	2.30	1.83	0
B430 (or Ardley Bypass)	M40 south	176	102	73	4.00	2.33	2
M40 north	B430 (or Ardley Bypass)	120	179	-59	3.39	5.07	-2
B430 (or Ardley Bypass)	M40 north	106	148	-42	2.74	3.82	-1
M40 north	MSA	74	60	14	1.19	0.96	0
M40 south	MSA	126	144	-18	2.10	2.40	0
MSA	M40 south	87	118	-32	1.73	2.37	-1
MSA	M40 north	111	74	37	1.35	0.90	0
B4100 east	B4100 west	49	56	-7	1.21	1.38	0
B4100 west	B4100 east	45	48	-3	0.88	0.93	0
		Net change		-153	Net change		-11

Key route journey time comparison for 2031 option 25a vs 2031 option 19 - inter-peak							
From	To	Option 25a average journey (s)	Option 19 average journey (s)	Difference (s)	Option 25a Total Journey (pcuHr)	Option 19 Total Journey (pcuHr)	Difference (pcuHr)
A43 north of Baynards Green	M40 south	100	97	3	29.53	28.62	1
M40 south	A43 north of Baynards green	125	226	-101	41.77	75.37	-34
A43 north of Baynards Green	M40 north	170	155	15	3.63	3.32	0
M40 north	A43 north of Baynards green	96	112	-15	1.84	2.14	0
A43 north of Baynards Green	B430 (or Ardley Bypass)	159	216	-57	21.37	29.07	-8
B430 (or Ardley Bypass)	A43 north of Baynards green	218	227	-8	24.45	25.39	-1
M40 south	B430 (or Ardley Bypass)	89	82	7	8.01	7.40	1
B430 (or Ardley Bypass)	M40 south	223	101	123	17.48	7.87	10
M40 north	B430 (or Ardley Bypass)	124	203	-79	12.02	19.69	-8
B430 (or Ardley Bypass)	M40 north	140	143	-4	12.44	12.75	0
M40 north	MSA	82	91	-9	4.53	5.01	0
M40 south	MSA	145	165	-20	8.22	9.36	-1
MSA	M40 south	93	119	-25	6.36	8.10	-2
MSA	M40 north	113	85	28	4.78	3.59	1
B4100 east	B4100 west	41	66	-25	3.41	5.52	-2
B4100 west	B4100 east	63	64	-1	4.23	4.27	0
		Net change		-169	Net change		-43

APPENDIX 22

TN10: M40 JUNCTION 10 HIGHWAY IMPROVEMENT

OXFORDSHIRE RAILFREIGHT INTERCHANGE LIMITED

TECHNICAL NOTE 10: M40 JUNCTION 10 HIGHWAY IMPROVEMENTS

ADC Infrastructure Limited
City Buildings
34-36 Carrington Street
Nottingham
NG1 7FG

tel. 0115 941 4817
www.ADCinfrastructure.com

project number: ADC1794				report reference: ADC1794-RP-U
version	date	author	reviewer(s)	comments
1	24/02/2023	[redacted]		internal draft
2	08/03/2023			issued to TWG

CONTENTS PAGE

1.0 INTRODUCTION 3

2.0 HIGHWAY AUTHORITY FEEDBACK ON M40 JUNCTION 10 OPTION 25A 4

National Highways 4
Oxfordshire County Council 5

3.0 REVISED BAYNARD'S GREEN LAYOUT 7

4.0 PHASING THE WORKS AT M40 JUNCTION 10 8

Introduction 8
First phase of the proposed development 8
Ardley Roundabout 10
Cherwell Roundabout 11
Padbury roundabout 12
Baynard's Green roundabout 13
Junction modelling results 14
Conclusions 14

5.0 M40 JUNCTION 10 HIGHWAY IMPROVEMENTS – ANALYSIS 15

Conflict assessment 15
M40 Junction 10 highway improvements - junction performance 16

6.0 SUMMARY AND CONCLUSIONS 18

DRAWINGS

OxSRFI-BWB-GEN-XX-SK-CH-SK050-S1 P04	A43/B4100 Baynard's Green General Arrangement
OxSRFI-BWB-GEN-XX-SK-CH-SK042-S1 P03	M40 Junction 10 Overall General Arrangement
OxSRFI-BWB-GEN-XX-SK-CH-SK060-S1 P01	M40 J10 SB merge interim improvement GA

APPENDICES

Appendix A	Option 25a Baynards Green layout drawing
Appendix B	National Highway comments
Appendix C	OCC comments
Appendix D	2028 traffic flow derivation
Appendix E	2028 reference case LinSig model results
Appendix F	2028 Phase 1 with development LinSig model results
Appendix G	M40 Junction 10 Option 26 LinSig model results

1.0 INTRODUCTION

1.1 ADC Infrastructure Ltd and BWB Consulting Ltd are appointed by Oxfordshire Railfreight Ltd (the Applicant) to assess and design the transport and infrastructure requirements of a Nationally Significant Infrastructure Project (NSIP), that being a proposed Strategic Rail Freight Interchange in Oxfordshire, to be known as Oxfordshire Strategic Rail Freight Interchange (OxSRFI).

1.2 Throughout the period June 2021 to February 2023, in consultation with the Transport Working Group (TWG), ADC Infrastructure and BWB Consulting have undertaken option assessment work to consider and identify an improvement scheme at M40 Junction 10. In January 2022, National Highways and OCC confirmed that Options 18 and 19 that had been developed by ADC and BWB were the preferred options to be taken forward.

1.3 As part of the further assessment work required for Options 18 and 19, National Highways requested that analysis was undertaken to see whether the M40 northbound to A43 northbound free-flow link road could be reasonably achieved. Technical Note 9[1] (TN9) concluded that Option 25 would provide the free-flow link and deliver the high-quality access to the SRN that the Proposed Development requires, providing future resilience at M40 Junction 10 within a smaller footprint than either Options 18 or 19.

1.4 During discussions with the TWG, the Option 25 proposals were positively received, though there were concerns raised regarding the potential complexity of providing a new traffic signal controlled gyratory so close to the Baynard's green roundabout. In their comments on TN9 and the Option 25 proposals (via email on 14 June 2022), National Highways expressed concerns that the Baynard's Green and B4100 junction arrangements were too complex, with too many lanes and signals over a short distance between the junctions leading to road safety concerns. OCC agreed with National Highways position.

1.5 ADC and BWB considered options to address National Highways concerns at Baynard's Green, whilst still delivering the overall benefits associated with Option 25. That work concluded that a five-arm gyratory at Baynard's Green was the optimum solution. The revised proposals were presented in the TN9 Addendum[2] report and the revised layout was referred to as Option 25a.

1.6 National Highways and OCC have provided comments on the TN9 Addendum report and Option 25a. The comments include suggested changes to the Option 25a layout at Baynard's Green to further improve the operation and safety of the junction proposals.

1.7 This TN10 therefore addresses the comments raised and presents the proposed M40 Junction 10 highway improvements which will be tested in the Bicester Transport Model (BTM) and in microsimulation using an agreed VISSIM model. This TN10 also presents the proposed phasing strategy for the implementation of the M40 Junction 10 highway works.

[1] Technical Note 9 – M40 Junction 10 Option 25, report reference ADC1794-RP-T -V3, 8 April 2022.
[2] Technical Note 9 Addendum – Technical Note 9 Addendum: M40 Junction 10 Option 25a, report reference ADC1794-RP-T1 -V2, 3 January 2023.

2.0 HIGHWAY AUTHORITY FEEDBACK ON M40 JUNCTION 10 OPTION 25A

National Highways

2.1 National Highways provided their feedback on Option 25a Baynard's Green arrangement via email on 2 February 2023, and the comments were discussed during the TWG meeting held on the same day. A copy of **drawing OxSRFI-BWB-GEN-XX-SK-CH-SK050-S1 P03** showing Option 25a is provided at **Appendix A** for ease of reference. National Highways' comments are provided at **Appendix B**, and items 5 to 9 that relate specifically to the Option 25a proposal are summarised in the table below, which also provides the Applicant Team response.

Item	Summarised National Highways comments	Applicant Team response
5	There is a weaving connector between arms J4:22 and J4:7 – this is an unrealistic movement given the adjacent lane is permitted to circulate too and the length between the arms is relatively short – especially considering drivers peeling off left (to the B4100 west) are unlikely to move out of this lane until the last opportunity as this is the most direct line to take.	ADC/BWB agree with the point raised. As suggested by National Highways, the proposed layout has been amended to extend the four-lane section back from the southwest circulating carriageway to the new link road entry to allow a more efficient spreading of flows which will encourage better lane discipline and therefore safety. As suggested by National Highways, the new link road approach has been re-aligned further east to maximise the stacking space and also to help improve safety by reducing the risk of see-through from the give-way to the circulating signals. To further improve lane discipline and visibility to signal heads, a splitter island is proposed between lanes 1 and 2.
6	There is a mismatch between the lining on the drawing and the connectors in the LinSig model between the B4100 east approach and the south circulating (arms J4:3 to J4:17).	Agreed and amended in the M40 Junction 10 highway improvements LinSig model.
7	The model allows the left turn from arm J4:5 onto the M40 SB on slip (arm J4:4) but this is not accommodated in the layout geometry. Please ensure consistency between the model and layout. Note that if choosing to route via the new link road then a TRO will be required to ban the left turn from the circulating onto the slip as part of the DCO.	Agreed. The LinSig model has been amended to match the geometry, such that traffic from the B4100 east to the M40 southbound will be routed along the new link road and through Cherwell roundabout. The requirement for a TRO is noted and this will be taken forward into the TRO measures to be included in the DCO.
8	In principle National Highways supports the revised pedestrian/cycle routing layout however notes the difficulty in coordinating the crossings on the B4100 exits.	In terms of the B4100 west exit, ADC and BWB agree that, whilst demand for the crossing is not expected be high, the optimal time for the crossing here will be just after the platoon from the B4100 east has cleared, with appropriate MOVA detection to ensure this change happens as efficiently as possible. This will be demonstrated through the use of PC MOVA in the VISSIM modelling. In terms of the B4100 east exit, ADC and BWB agree that, whilst demand for the crossing is not expected be high, the crossing would be run just after the left-turn platoon from the A43 southbound has cleared and again using suitable MOVA detection to

		optimise this. This will also be demonstrated in the VISSIM model. Further, as suggested by National Highways, the proposed layout has been amended to provide an extension to the short offside lane by moving the split point on the circulating carriageway to the start of the radius for the right-hand curve around the gyratory.
9	National Highways have some unease at the layout shown for the start and end points of the proposed new cycleways as they do not allow smooth, safe and attractive transitions from on-road to off-road facilities.	This will be considered within the WCHAR assessment and review process, and the Applicant would work with OCC and to optimally locate and detail the start and end points of the cycle facilities in terms of both safety and efficiency.

2.2 National Highways also provide general comments on the TN9 Addendum report (items 1 to 4, **Appendix B**). Though National Highways do not dispute the conclusion that nearly all routes see a journey time improvement, point 3 queries the methodology used for the journey time summary table at paragraph 33. NH state that "*a better alternative would be to use a weighted average*". The detailed tables provided at Appendix D of the TN9 Addendum show a comparison of average journey time per pcu in seconds, and also a comparison of total journey in pcuHr. This second metric is the aggregate time taken by traffic travelling on each route and therefore takes account of traffic volumes. Notwithstanding the above, the point is noted, and further analysis of changes to journey times will be undertaken using the VISSIM models.

2.3 Comments 1, 2 and 4 are more general comments on the reporting and as such are not specifically revisited within this report, though they are noted.

2.4 National Highways also provide general comments on the LinSig modelling (item 10 to 16). The LinSig model has been used as a testbed for the evolving M40 Junction 10 proposals, sufficient to enable the proposed solution to be developed with confidence. The embedded highway works at M40 Junction 10 will now be tested in the BTM and also in microsimulation using VISSIM with PC MOVA.

2.5 The LinSig comments were discussed in the TWG meeting of 2 February 2023 and National Highways acknowledged that addressing the comments would not materially change the LinSig results and therefore the conclusions drawn are valid. Therefore, no further changes to the LinSig model have been made, beyond those required to reflect the physical changes to the Baynard's Green roundabout, and as described in the above table.

Oxfordshire County Council

2.6 OCC also provided their feedback on Option 25a Baynard's Green arrangement on 2 February 2023, and the comments were discussed during the TWG meeting held on the same day. The comments are provided at **Appendix C**, and summarised in the table below, which also provides the Applicant Team response.

Summarised OCC comments	Applicant Team response
Signals – Are approach speeds <65mph? (4.1 of CD116)	The approach speeds at Baynard's Green will be reviewed. However, it is noted that in this regard, the proposal to provide signal control is not materially different to the approved but now withdrawn Growth Deal Scheme at the junction. Once the existing speeds on the A43 approach have been reviewed, the speed limit could be amended as part of the works, if required to meet the standards.
Straight-through A43 lanes look as though they might not achieve necessary entry deflection safety requirements or most of the other requirements stated in 6.10.1 of CD116. (4.1 NOTE 4 states that the geometric	

requirements are the same for signalised as for standard roundabout designs).	The objective at this stage has been to develop the proposals sufficiently to agree the principle of the embedded highway works. Whilst we note that CD 116 figure 2.7a for a through-about clearly does not provide entry path curvature, we do agree that some form of curvature is beneficial, and we will review this with National Highways including whether or not any departures from standard are required. The embedded highway works will be subject to a stage 1 road safety audit (RSA). Concurrently, the proposals will be modelled in the BTM and in VISSIM to demonstrate that they perform as expected and mitigate the impacts of the proposed development.
The remaining comments provided by OCC are associated with the road safety considerations of the M40 Junction 10 scheme development. These include consideration of road safety throughout the design process, the conflict assessments provided for options up to no. 25 and road safety auditing.	Section 5 of this Technical Note provides an updated conflict assessment. Technical Note 7 sets out the design process and this confirms that a stage 1 RSA will be undertaken. The embedded highway works proposals have been developed methodically, and through consultation with the TWG. In total 26 options have been considered, with road safety an underlying consideration at each stage in the process, with checks on visibility and geometrical compliance made at each stage to enable the options to be correctly sifted and ensuring that the preferred scheme proposals could be safely delivered. Whilst junction performance has been a key consideration throughout, the Technical Notes 5 and 9 also detail the considerations given to geometrical compliance, and therefore safety. It is also noted that there are inherent safety benefits to reaching an optimal solution that reduces congestion. The prime example of how the design and consultation process has been successful is demonstrated in how the solution at Baynard's Green has been reached, with the feedback on the original two-junction proposal correctly pointing out that the arrangement would likely be too complex and could cause road safety issues. These comments have been accepted and the proposals altered to arrive at an improved solution in terms of safety and performance.

3.0 REVISED BAYNARD'S GREEN LAYOUT

3.1 The amendments to the proposed Baynard's Green junction arrangement discussed in the table above are shown on BWB Consulting **Drawing OxSRFI-BWB-GEN-XX-SK-CH-SK050-S1 P04** at the drawing section of this report, and an extract is shown at **Figure 1** below.

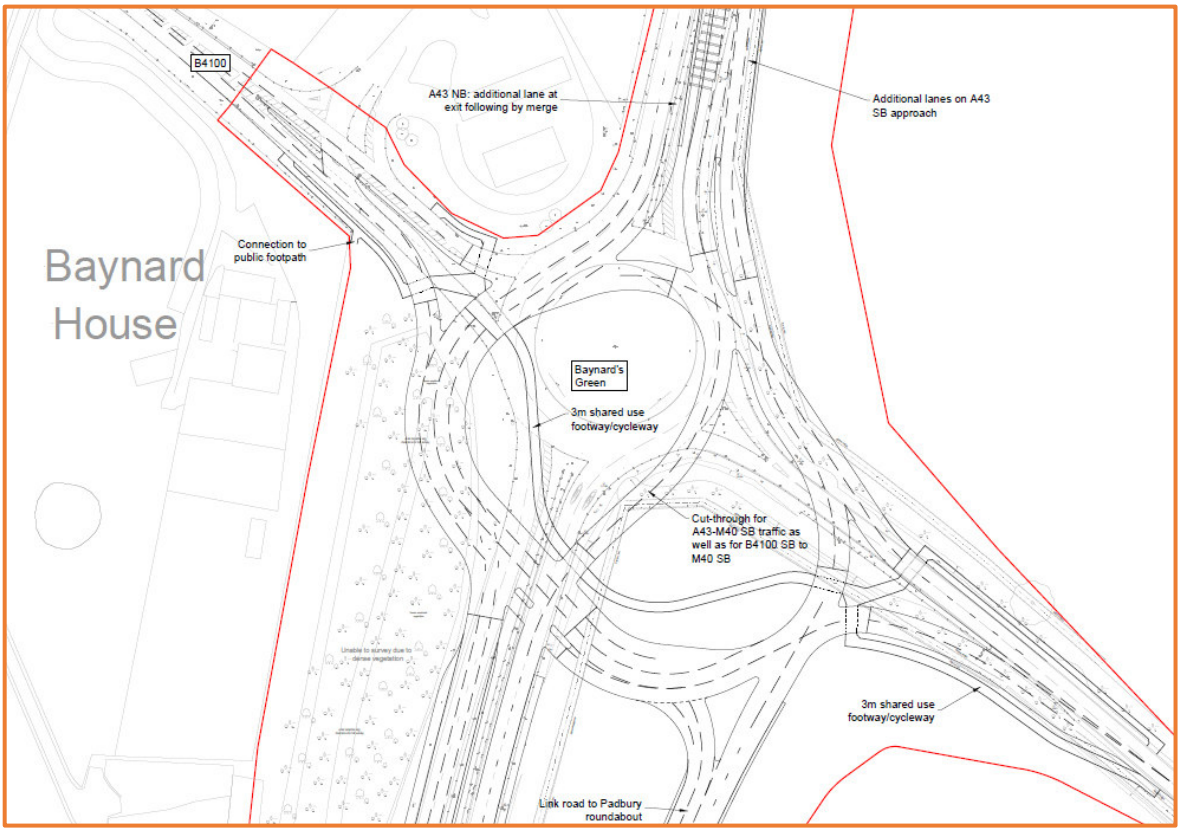


Figure 1: extract of Drawing OxSRFI-BWB-GEN-XX-SK-CH-SK050-S1 P04

3.2 The amendments to the layout are summarised as follows:

- the four-lane section has been extended back from the southwest circulating carriageway to the new link road entry to improve lane discipline and to guide B4100 east to west traffic into the correct lane at the outset.
- the new link road approach has been moved further east to increase stacking space and remove see-through concerns.
- splitter islands are provided between lanes 1 and 2 on the southern circulatory to accommodate additional signal heads, improve safety and deter users from turning left.
- at the B4100 east exit crossing, an extension to the short offside lane is provided.

3.3 Having actioned the comments made on the Option 25a proposals at Baynard's Green, the principle of the proposals is established. The approach speeds at Baynard's Green will be reviewed and the entry path curvature for the cut-through be reviewed with National Highways to determine whether or not any departures from standard are required. A WCHAR review and Stage 1 RSA will be undertaken in due course.

3.4 The above-described amendments to the Baynard's Green arrangement have been included within an updated LinSig model for the proposals. The results of the LinSig model are discussed later in this report.

4.0 PHASING THE WORKS AT M40 JUNCTION 10

Introduction

4.1 As discussed in TN11[3], a phased approach to the delivery of the M40 J10 highway improvements has been considered and it is proposed that the works be delivered in two phases:

Phase 1 would deliver improvements to the Ardley, Cherwell, and Baynard's Green roundabouts prior to first occupation on site.

Phase 2 would deliver the full M40 Junction 10 highway improvements, including the two new free-flow links between the M40 and the A43. The Phase 2 works would be required prior to the occupation of more than 2 million sqft[4] of development at OxSRFI.

4.2 The agreed scenarios to the assessed as part of the Transport Assessment for the Proposed Development include a 2028 opening year scenario which includes 2 million sqft[4] of development and the Phase 1 highway works. This scenario will be tested in the BTM and using the M40 J10 VISSIM micro-simulation model. However, in advance of that work, the M40 Junction 10 Phase 1 highway improvements proposals have been tested in LinSig.

4.3 The following sections discuss the calculation of suitable traffic flows, the design decisions taken at each location and presents the preferred first phase layout.

First phase of the proposed development

Proposed Development traffic generation

4.4 When complete, the OxSRFI will accommodate 12 freight trains per day (775m long) and include container storage and HGV parking. It will include up to 6.5 million sqft (603,850 sqm) of B8 warehousing with ancillary office space, and an allowance for a further 2.17 million sqft (201,283 sqm) of mezzanine floor space. Using the agreed trip rates and accounting for the effects of the Travel Plan, the vehicle trip generation profile of the Proposed Development is shown in the table below.

Period	Lights			Heavies			Total vehicles		
	arrive	depart	2-way	arrive	depart	2-way	arrive	depart	2-way
AM peak hour	667	72	739	172	159	331	840	231	1070
PM peak hour	220	767	987	157	143	300	377	910	1288
Daily	5861	5,766	11,627	2,459	2,461	4,920	8,319	8,227	16,547

4.5 The embedded highway works have been designed to accommodate the traffic due to the development when fully built out, which is expected to take six years from the start of construction following the approval of the Development Consent Order.

Phase 1 traffic generation

4.6 At this stage it is not possible to state with certainty the likely floor area of the first phase of the development as the demand for units on the site would be led by the market. Therefore, to ensure a robust analysis and provide the Applicant with a degree of flexibility, a first phase of

[3] Technical Note 11 – Technical Note 11: Embedded Highway Works phasing, report reference ADC1794-RP-AF - V2, March 2023.

[4] See paragraph 4.6.

development up to 2 million sqft (185,800sqm) of B8 development with an additional 1/3 mezzanine floor space (61,967sqm) has been considered. The Rail Terminal operating at up to four trains per day has also been assumed.

4.7 This would give the following vehicle trip generation profile for the first phase of the development. The effect of the Travel Plan is not included within this profile, to give a robust assessment of the Phase 1 highway works.

Period	Lights			Heavies			Total vehicles		
	arrive	depart	2-way	arrive	depart	2-way	arrive	depart	2-way
AM peak hour	278	30	308	53	50	102	331	80	410
PM peak hour	91	320	411	49	44	93	140	364	504
Daily	2,468	2,434	4,902	764	761	1,524	3,232	3,195	6,426

Phase 1 traffic flows at M40 Junction 10

4.8 As discussed in TN11, the proposed first phase of the embedded highway works would include the Principal Access roundabout, the Ardley Bypass, and the proposed works to the Baynard's Green, Cherwell, and Ardley roundabouts at the M40 Junction 10 complex. These first phase works would be in place at first occupation on site.

4.9 The ability of the Phase 1 embedded highway works at M40 Junction 10 to accommodate the traffic generated by the first phase of the Proposed Development (see paragraph 4.6) will be tested using the BTM, and also using the VISSIM microsimulation model. However, to give confidence in the suitability of the M40 Junction 10 phasing strategy, and also to identify any potential issues or opportunities to improvement the proposals, the Option 25a LinSig model was amended to represent the Phase 1 highway works.

4.10 The agreed opening year for assessment is 2028. To inform the Phase 1 assessment (and in advance of the BTM traffic flows), morning and evening peak hour traffic flow sets have been calculated for a '2028 reference case' scenario and a '2028 with Phase 1 development' scenario.

4.11 Aecom, on behalf of National Highways, developed a VISSIM model development to undertake traffic impact analyses of a set of proposed interventions at M40 Junction 10. The VISSIM modelling was based on 2031 traffic flow scenarios that had been developed from a 2016 base year. Technical Note 6[5] 'M40 Junction 10 Options Report – Traffic Flows Derivation' was prepared by ADC Infrastructure and details how the Aecom 2031 flow sets were adjusted to give '2031 reference case' and '2031 with development' traffic flow scenarios suitable for use in the M40 Junction 10 option testing work.

4.12 A morning and evening peak hour '2028 Reference Case' flow sets for use in the initial Phase 1 assessment work have been created by prorating the 2016 to 2031 growth used on the Aecom VISSIM datasets. The matrices showing the calculation of the 2028 Reference Case flows are shown in **Appendix D**.

4.13 The distributions for lights vehicles and HGVs described in TN6 have been used to assign the peak hour development traffic shown in the table at paragraph 4.7 to the M40 Junction 10 complex, and the resulting Phase 1 development traffic assignment has been added to the respective morning and evening peak hour '2028 reference case' matrices to give the '2028 with

[5] Technical Note 6: M40 J10 Options Report – Traffic Flow Derivation, report reference ADC1794-RP-N -V2, 11 June 2021

Phase 1 development' traffic flows to be modelled in the phasing assessment. The distribution, assignment and resulting 2028 with development traffic flow matrices are also provided at **Appendix D**.

Ardley Roundabout

4.14 Under the Option 25a embedded highway works scheme, the Ardley Roundabout would be enlarged to the south. The existing M40 northbound merge slip road would be removed and a new M40 northbound merge would be constructed to the north of the roundabout. The M40 northbound diverge would be realigned to improve the approach road curvature, connecting to Ardley roundabout at a priority controlled node. The proposed Ardley Bypass arm would operate under traffic signal control, connecting to the southern side of the Ardley roundabout, where there would be three entry lanes and three circulating lanes, and the A43 southbound would also connect via a traffic signal controlled node. The existing B430 approach would be provided as a priority controlled node, with two entry lanes as existing.

4.15 Provision of the northbound M40-A43 free-flow links would remove circa. 900 pcus in the morning peak hour and circa. 1,400 pcus in the evening peak hour from Ardley Roundabout. However, under the Phase 1 proposals, the free-flow links would not yet be constructed and therefore the Ardley Roundabout would be required to handle significantly higher traffic flows, even without the full development traffic.

4.16 To improve performance of the Phase 1 arrangement, an amendment to the Ardley Roundabout proposals has been designed. This amendment would provide a cut-through link for right-turning traffic from the A43 southbound to the M40 northbound, with a flared right-turn lane on the A43 southbound approach. This cut-through would remove a significant volume of circulating traffic at the M40 northbound approach, allowing more green time for the M40 entry phase. To further improve performance during Phase 1, the M40 northbound offslip would be traffic signal controlled.

4.17 The amended proposals at Ardley roundabout are shown at **Drawing OxSRFI-BWB-GEN-XX-SK-CH-SK042-S1 P03** at the drawings section of this report. An extract is shown on **Figure 2** below.

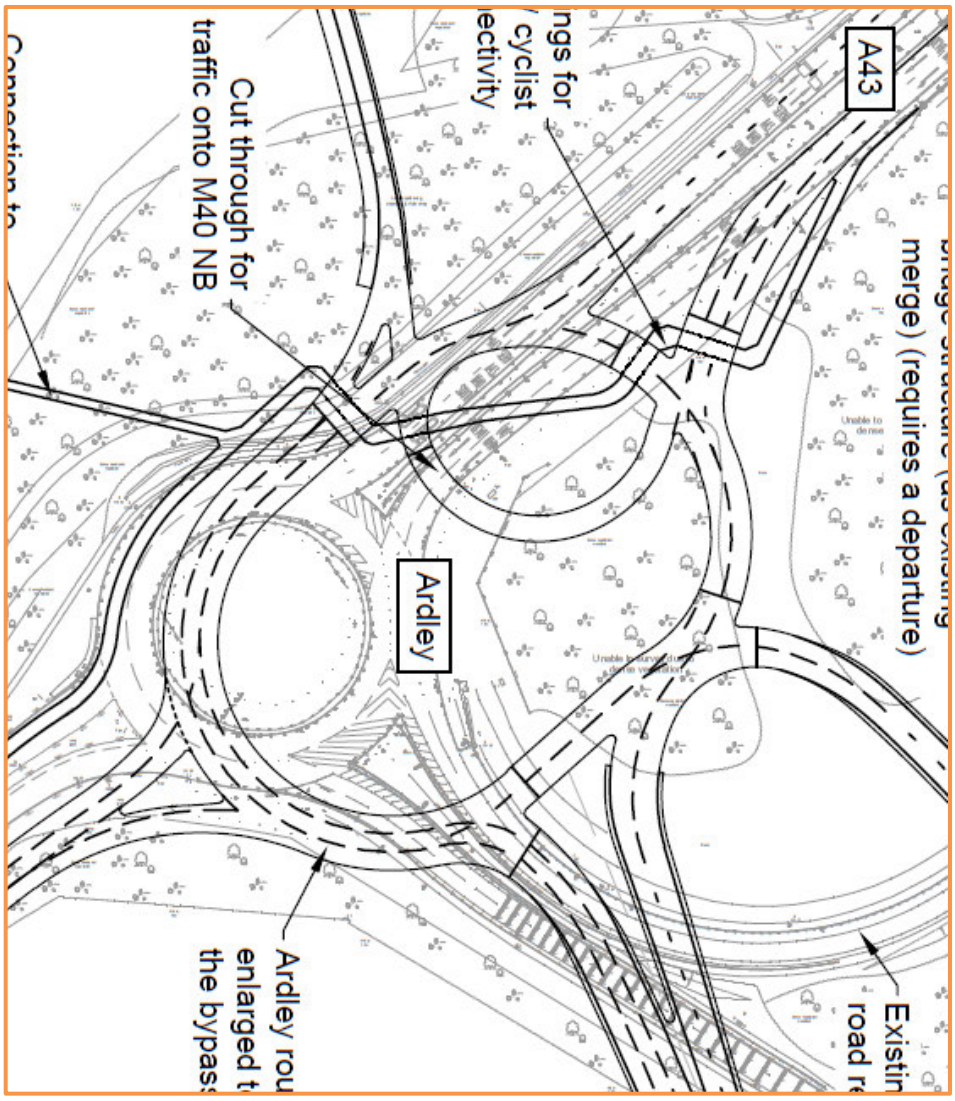


Figure 2: Ardley Roundabout proposed layout

Cherwell Roundabout

4.18 Under the Option 25a embedded highway works scheme, both lanes on the A43 northbound approach to the Cherwell Roundabout would be subject to priority control. The nearside lane would be an 'ahead' lane towards the B4100 and the offside lane would be a right-turn lane towards the Cherwell Valley Motorway Service Area (MSA) and the M40 southbound on-slip. The circulating carriageway at the Cherwell Valley MSA approach would be amended to facilitate two lanes exiting onto the M40 southbound on-slip and two lanes exiting on the bridge over the M40 towards the Ardley roundabout. The existing M40 southbound merge from the Cherwell Roundabout is retained and extended so that it is a separate slip road, with a merge downstream of the free-flow merge.

4.19 As for Ardley Roundabout, the provision of the northbound and southbound M40-A43 free-flow links would remove significant traffic volumes from Cherwell Roundabout (circa. 2,750 two-way pcus in the morning peak hour and circa. 2,650 two-way pcus in the evening peak hour). However, under the Phase 1 proposals, the free-flow links would not yet be constructed and therefore the Cherwell Roundabout would be required to handle significantly higher traffic flows.

4.20 To improve performance of the Cherwell Roundabout proposals during Phase 1, an amendment to the Option 25a layout has been designed. Under the amended proposals, the northbound A43 approach would remain as existing, with the nearside lane being a free-flow lane to the A43 north and the offside lane being priority controlled for traffic to the north and also right-turning traffic to the MSA and M40 southbound. The northbound circulating carriageway would be widened to provide a full right-turn lane and two ahead lanes to prevent queueing right-turning vehicles from blocking the northbound exit.

4.21 To further improve performance during Phase 1, the entry lane to the MSA would be extended such that it would not be blocked by traffic queueing on the southbound circulatory. The two-lane section on the M40 southbound exit would be lengthened by 40m to improve performance of the merge and reduce instances of queueing, as shown at **Drawing OxSRFI-BWB-GEN-XX-SK-CH-SK060-S1 P01** at the drawings section of this report.

4.22 The amended proposals at Cherwell Roundabout are shown at **Drawing OxSRFI-BWB-GEN-XX-SK-CH-SK042-S1 P03** at the drawings section of the report. An extract is shown on **Figure 3** below.

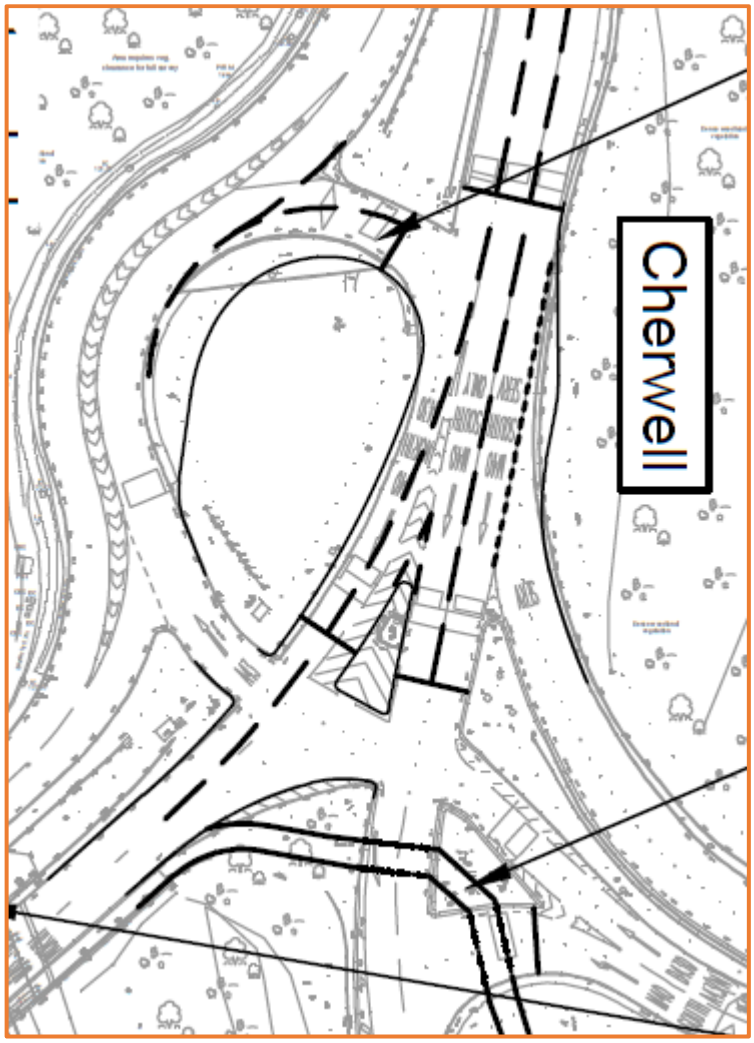


Figure 3: Cherwell roundabout proposed layout

Padbury roundabout

4.23 Padbury roundabout would be as per the committed OCC Housing Growth Deal scheme.

Baynard's Green roundabout

4.24 The reference case modelling of the Baynard's Green roundabout shows that it would be significantly over capacity in the future assessment scenarios. Hence, to improve traffic conditions and accommodate the development traffic the full Baynard's Green proposals would be implemented in Phase 1, but without the new link road connection. To accommodate all required movements at the roundabout during Phase 1, a temporary left-turn link to the A43 southbound exit towards Padbury roundabout would be implemented. Once the new-link road is open, this temporary left-turn facility would be removed.

4.25 A general arrangement for the interim Phase 1 proposals at Baynard's Green Roundabout proposals will be prepared in due course. However, **Drawing OxSRFI-BWB-GEN-XX-SK-CH-SK042-S1 P03** shows the temporary left-turn link onto the A43 southbound exit. An extract is shown on **Figure 4** below for convenience.

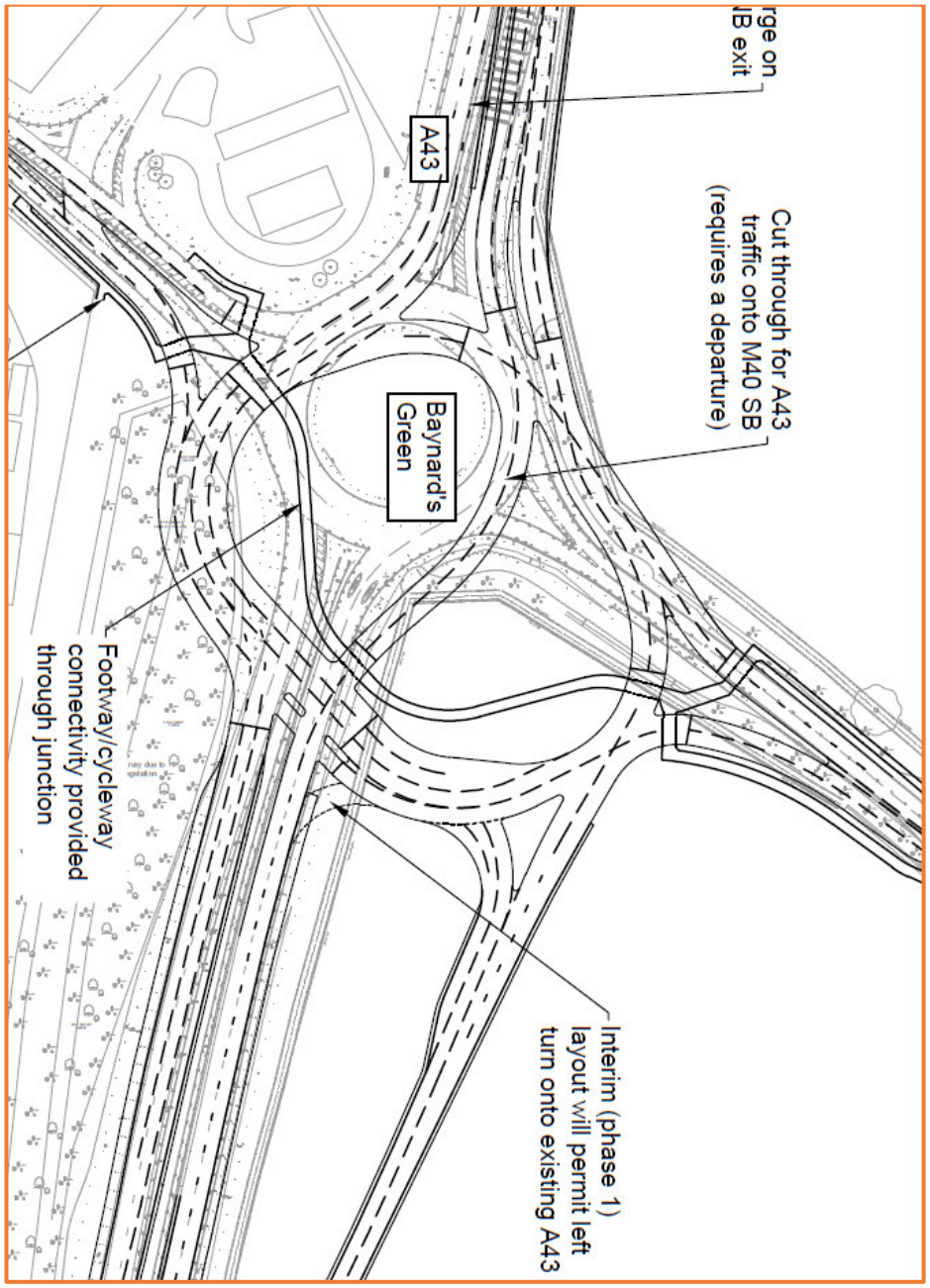


Figure 4: Baynard's Green roundabout proposal showing interim (Phase 1) left turn onto existing A43

Junction modelling results

4.26 The LinSig model results for the '2028 reference case' and the '2028 with Phase 1 development' in place are provided in **Appendix E and F**, respectively.

4.27 The table below provides a comparison between the forecast capacity at the future baseline (Reference Case) M40 Junction 10 (with committed Housing Growth Deal improvements at Padbury only, no OxSRFI development), with the forecast capacity at the junctions under the first phase of the embedded highway works with the first phase of the OxSRFI development in place in the 2028 opening year.

M40 Junction 10 performance in 2028				
Junction	Future baseline layout (Reference Case)		Phase 1 mitigation	
	AM Peak	PM Peak	AM Peak	PM Peak
Baynard's Green	141% (RFC)	146% (RFC)	-10.2%	0.8%
Padbury	-4.5%	-6.6%	-7.2%	2.3%
Cherwell	-13.7%	-6.8%	-6.7%	-3.5%
Ardley	83% (RFC)	93% (RFC)	3.4%	-2.6%

4.28 As shown in the table above are summarised as follows:

- Baynard's Green would operate over capacity in the '2028 with Phase 1 development' morning peak hour with Phase 1 in place, though the performance would be materially improved when compared to the existing junction performance in the '2028 reference case'. The Phase 1 scheme would work acceptably in the evening peak hour, and also significantly better than the existing junction performance in the '2028 reference case'.
- In the '2028 with Phase 1 development' scenario the growth deal scheme at Padbury Roundabout would experience slightly more congestion in the morning peak hour, though there would be no severe increase in queueing or delay. In the evening peak our, the growth deal scheme would operate within capacity in the '2028 with Phase 1 development' scenario.
- In the '2028 with Phase 1 development' scenario the performance of the Cherwell Roundabout would be improved when compared to the existing layout in both the morning and evening peak hours.
- The proposed Phase 1 Ardley Roundabout scheme would operate acceptably in the '2028 with Phase 1 development' morning peak hour. Whilst the junction would operate above 90% of its capacity in the evening peak hour, the Phase 1 scheme would provide a nil-detriment improvement when compared to the existing junction performance in the '2028 reference case'.

Conclusions

4.29 The summary results presented above show that the Phase 1 M40 Junction 10 highway proposals can accommodate background traffic growth up to 2028 and the proposed first phase of OxSRFI development traffic, which has been assessed as 2million sqft of warehousing with an additional 1/3 allowance for mezzanine floor space with the Rail Terminal operating at up to 4 trains per day.

4.30 The proposed amendments to the Ardley and Cherwell Roundabouts necessary to accommodate the Phase 1 development traffic will be carried over to the full M40 Junction 10 highway works (also referred to as Option 26). The Phase 1 proposals will be tested in the BTM and VISSIM model.

5.0 M40 JUNCTION 10 HIGHWAY IMPROVEMENTS – ANALYSIS

Conflict assessment

5.1 An assessment of the number of conflict points associated with Option 26 has also been undertaken. The three methods adopted by National Highways in their review of 18, 19, and 25 have been used:

1. Journeys through the junction complex, including for the number of traffic lanes that would be in conflict at each node point on a specific route.
2. Per junction, number of lanes in conflict:
   - e.g. three entry lanes and two circulatory lanes: 3 + 2 = 5
3. Per junction, multiplying conflicting lanes:
   - e.g. three entry lanes and two circulatory lanes: 3 x 2 = 6.

5.2 The results are presented below at **Figures 5 and 6** for each of the three methods.

		Number of conflict points			
From	To	Option 18	Option 19	Option 25	Option 26
A43 north of Baynards Green	M40 south	5	5	6	6
M40 south	A43 north of Baynards green	18	17	6	6
A43 north of Baynards Green	M40 north	19	12	18	12
M40 north	A43 north of Baynards green	7	7	11	11
A43 north of Baynards Green	B430 (or Ardley Bypass)	18	18	14	12
B430 (or Ardley Bypass)	A43 north of Baynards green	16	15	18	17
M40 north	B430 (or Ardley Bypass)	16	14	11	10
B430 (or Ardley Bypass)	M40 south	6	6	11	11
M40 south	B430 (or Ardley Bypass)	1	1	2	2
B430 (or Ardley Bypass)	M40 north	7	9	5	5
M40 north	MSA	6	6	5	5
M40 south	MSA	13	12	11	12
MSA	M40 south	6	6	2	2
MSA	M40 north	10	3	10	9
B4100 east	B4100 west	7	7	10	9
B4100 west	B4100 east	7	7	8	7

	Option 18	Option 19	Option 25	Option 26
Totals	162	145	148	136

Figure 5: method 1, conflict assessment based on journeys through the M40 J10 junction complex

Junction	Node	Number of Lanes in conflict			
		Opt 18	Opt 19	Opt 25	Opt 26
Padbury Rbt	M40 SB Offslip A43 SB	8	8	7	7
Cherwell Rbt	A43 SB	4	4	5	4
	Services	5	5	6	6
	A43 NB	4	4	3	2
Ardley Rbt	A43 SB	4	4	4	4
	M40 NB offslip	-	-	4	4
	Ardley Bypass	6	5	6	5
	Cut-through	-	-	-	4
	B430	7	6	5	5
New Bypass Rbt	Ardley Bypass N	5	5	-	-
	M40 NB Offslip	5	5	-	-
	Ardley Bypass S	6	6	-	-
Baynard's Green	A43 SB	6	6	6	6
	B4100 WB	6	6	6	4
	New link road	-	-	-	4
	Cut-through	-	-	-	6
	A43 NB	7	7	7	7
	B4100 EB	5	5	5	5
New A43/B4100 junction	A43 NB	-	-	5	-
	B4100 WB	-	-	5	-
	B4100 EB	-	-	5	-
Total		78	76	79	73

Example:
Three entry lanes and 2 circulating lanes
= 3 + 2 = 5

Junction	Node	Product of conflicting lanes			
		Opt 18	Opt 19	Opt 25	Opt 26
Padbury Rbt	M40 SB Offslip A43 SB	15	15	12	12
Cherwell Rbt	A43 SB	3	3	6	3
	Services	6	6	8	8
	A43 NB	3	3	2	1
Ardley Rbt	A43 SB	4	4	4	6
	M40 NB offslip	-	-	4	4
	Ardley Bypass	8	4	9	6
	Cut-through	-	-	-	4
	B430	10	8	6	6
New Bypass Rbt	Ardley Bypass N	6	6	-	-
	M40 NB Offslip	6	6	-	-
	Ardley Bypass S	9	9	-	-
Baynard's Green	A43 SB	8	8	8	8
	B4100 WB	9	9	8	4
	New link road	-	-	-	4
	Cut-through	-	-	-	8
	A43 NB	12	12	12	12
	B4100 EB	6	6	6	6
New A43/B4100 junction	A43 NB	-	-	6	-
	B4100 WB	-	-	6	-
	B4100 EB	-	-	4	-
Total		105	99	101	92

Example:
Three entry lanes and 2 circulating lanes
= 3 x 2 = 6

Figure 6: methods 2 and 3, conflict assessment per junction basis

5.3 The results presented in **Figures 5 and 6** show that Option 26 would have fewer conflicts when compared to Options 18, 19 and 25 when assessed using all three methodologies. This is largely because Option 26 has one less junction than the other options.

M40 Junction 10 highway improvements - junction performance

5.4 The LinSig results for Option 26 of the M40 Junction 10 complex are provided in **Appendix G**.

5.5 The table below provides a comparison between the forecast capacity at the future baseline (Reference Case) M40 Junction 10 (with committed Housing Growth Deal improvements at Padbury only, no OxSRFI development), with the forecast capacity at the junctions under Option 26 with the full OxSRFI development in place in the 2031 assessment year.

M40 Junction 10 Option 26 performance (PRC unless otherwise stated)				
Junction	Future baseline layout		Option 26	
	AM Peak	PM Peak	AM Peak	PM Peak
Baynard's Green	147% (RFC)	160% (RFC)	3.8%	4.2%
Padbury	10.2%	-7.2%	27.0%	30.7%
Cherwell	-8.1%	-4.4%	9.5%	12.0%
Ardley	85% (RFC)	98% (RFC)	10.8%	9.8%

5.6 As shown in the table above, notwithstanding the Housing Growth Deal improvement that is committed at Padbury roundabout, the future baseline (without OxSRFI) arrangements at Baynard's Green, Padbury, Cherwell and Ardley junctions would be over design capacity in 2031 in one or both peak hour periods. These junctions would therefore require significant improvement to facilitate background growth to 2031 and to accommodate the proposed OxSRFI development.

5.7 The summary results presented above show that the proposed M40 Junction 10 highway works can accommodate background traffic growth up to 2031 and the OxSRFI development traffic. The proposed highway works would provide increased headroom at all four junctions, but particularly at Padbury roundabout and Cherwell roundabout due to the removal of A43 to M40 south traffic (and vice versa) from these junctions.

5.8 The embedded highway works at M40 Junction 10 will now be tested in the BTM and also in VISSIM with PC MOVA. It is noted that the journey times assessment has not been re-run for this report as the results have not materially changed from Option 25a, and these will now be assessed in VISSIM.

6.0 SUMMARY AND CONCLUSIONS

6.1 Throughout the period June 2021 to February 2022, in consultation with the TWG, ADC Infrastructure and BWB Consulting have undertaken option assessment work to consider and identify an improvement scheme at M40 Junction 10. This resulted in preferred Option 25.

6.2 In their comments on TN9 and the Option 25 proposals (via email on 14 June 2022), National Highways expressed concerns that the Baynard's Green and B4100 junction arrangements were too complex leading to road safety concerns. OCC agreed with National Highways position. ADC and BWB considered options to address the safety concerns and achieve an arrangement that would provide a connection for the new link road and deliver the required capacity, concluding that a five-arm gyratory at Baynard's Green was the optimum solution. The revised proposals were presented in TN9 Addendum report, and the revised layout was Option 25a.

6.3 National Highways and OCC have provided comments on the TN9 Addendum report on 2 February 2023. The comments include suggested changes to the Option 25a layout at Baynard's Green to improve the operation and safety of the junction proposals.

6.4 The comments made on the Option 25a proposals at Baynard's Green have been considered and the proposed changes to the junction layout have been incorporated into the revised arrangement presented in this report, which would improve the safe operations of the junction.

6.5 Phase 1 of the M40 Junction 10 proposals have been tested using the LinSig model and the results show that the Phase 1 highway works can accommodate background traffic growth up to 2028 and the proposed first phase of OxSRFI development traffic, which has been assessed as 2million sqft of warehousing with an additional 1/3 allowance for mezzanine floor space with the Rail Terminal operating at up to 4 trains per day.

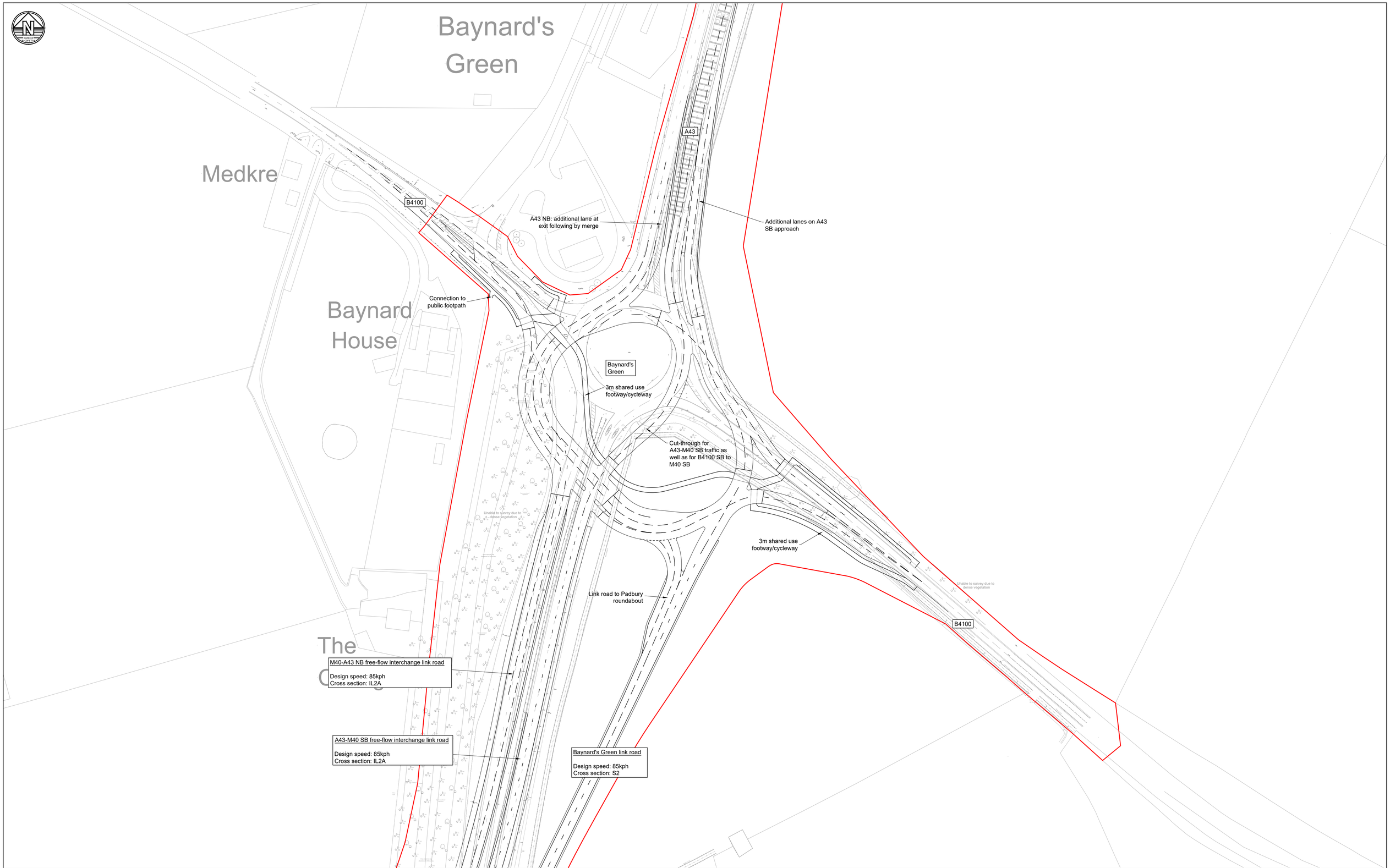
6.6 The Phase 1 testing resulted in proposed amendments to the Ardley and Cherwell Roundabouts necessary to accommodate the Phase 1 development traffic. These have been carried over to the full M40 Junction 10 highway works, referenced in this report as Option 26.

6.7 The conflict assessment has been updated for Option 26, showing that it would have fewer conflicts when compared to the previously considered options.

6.8 The LinSig model has been updated to reflect the Option 26 proposals and the results show that Option 26 can accommodate background traffic growth up to 2031 and the OxSRFI development traffic. Option 26 would provide increased headroom at all four junctions, but particularly at Padbury roundabout and Cherwell roundabout due to the removal of A43 to M40 south traffic (and vice versa) from these junctions.

6.9 The embedded highway works will be tested in the BTM, with the Option 26 proposals at M40 Junction 10 also tested in microsimulation using VISSIM with PC MOVA. Stage 1 RSA's and WCHAR Review will also be undertaken in due course.

DRAWINGS



Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in metres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

© Copyright BWB Consulting Ltd

Legend

Draft Order Limits

ISSUES & REVISIONS

Rev	Date	Details of issue / revision	Drw	Rev
P01	02.09.22	Preliminary Issue	SRH	SRH
P02	07.09.22	Presentation amended	SRH	SRH
P03	19.12.22	Updated to option 26 layout	SRH	SRH
P04	10.02.23	Amended following NH review	SRH	SRH

BWB
A CAF GROUP COMPANY
Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client
OXFORDSHIRE RAILFREIGHT LTD.

Project Title
OxSRFI
OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title
A43 / B4100 BAYNARDS GREEN GENERAL ARRANGEMENT

Drawn:	S. Hilditch		Reviewed:	S. Hilditch		
BWB Ref:	NTH2479	Date:	02.09.22	Scale@A1:	1:1,000	

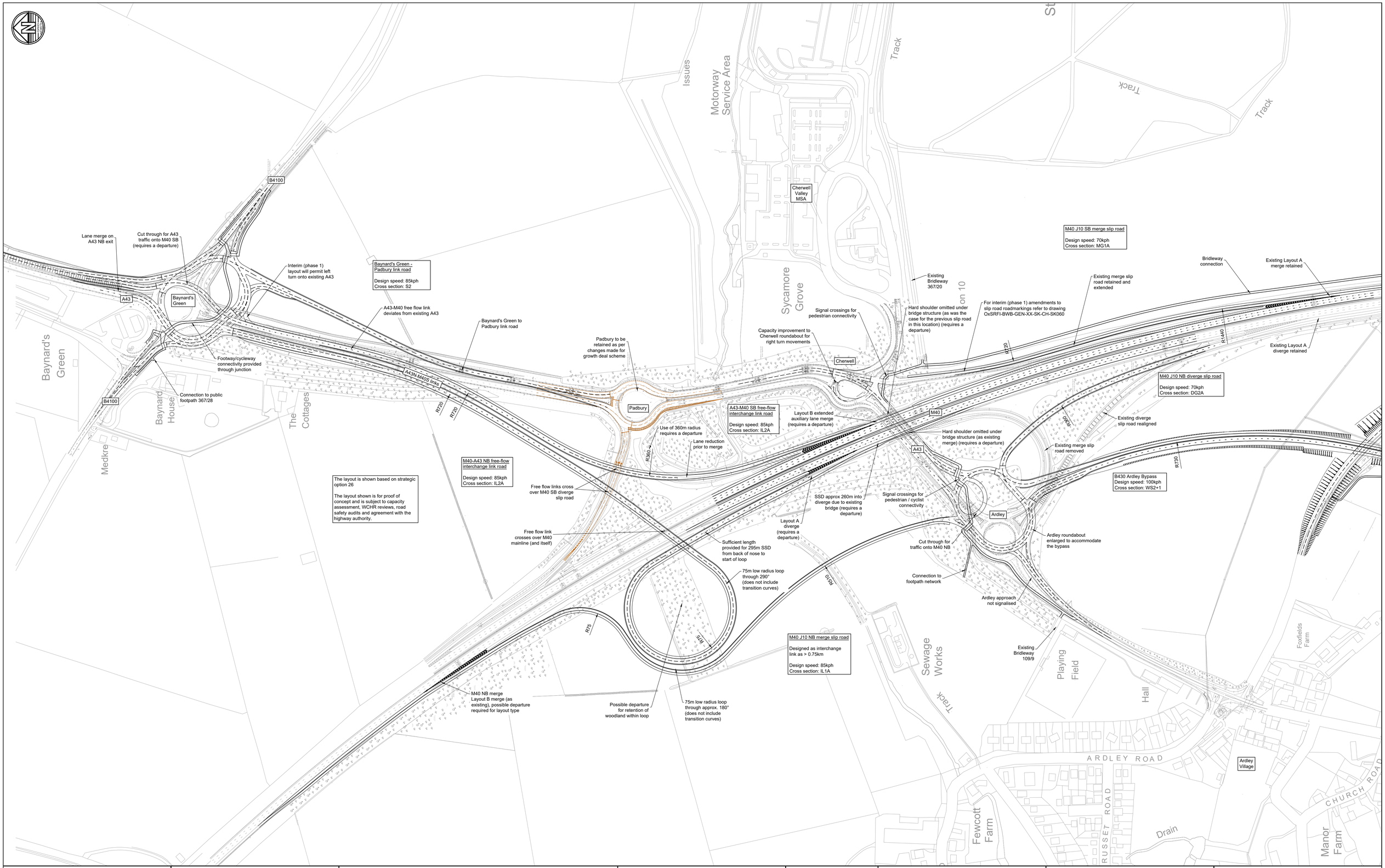
Drawing Status
PRELIMINARY

Project - Originator - Zone - Level - Type - Role - Number
OxSRFI-BWB-GEN-XX-SK-CH-SK050

Status: **S1**

Rev: **P04**

Y:\NTH\NTH2479_Oxfordshire RFI\02. Project Delivery\01. WIP\Sketches\OxSRFI-BWB-GEN-XX-SK-CH-SK050_Baynards Green GA.dwg



NOTES

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in metres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

© Copyright BWB Consulting Ltd

LEGEND

Growth Deal Scheme Layout

ISSUES & REVISIONS

Rev	Date	Details of issue / revision	Drw	Rev
P01	30.03.22	Preliminary Issue	SRH	SRH
P02	19.12.22	Scheme updated to Option 26	SRH	SRH
P03	01.03.23	Minor amendments	SRH	SRH

BWB
A CAF GROUP COMPANY
Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client
OXFORDSHIRE RAILFREIGHT LTD.

Project Title
OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title
M40 JUNCTION 10 OVERALL GENERAL ARRANGEMENT

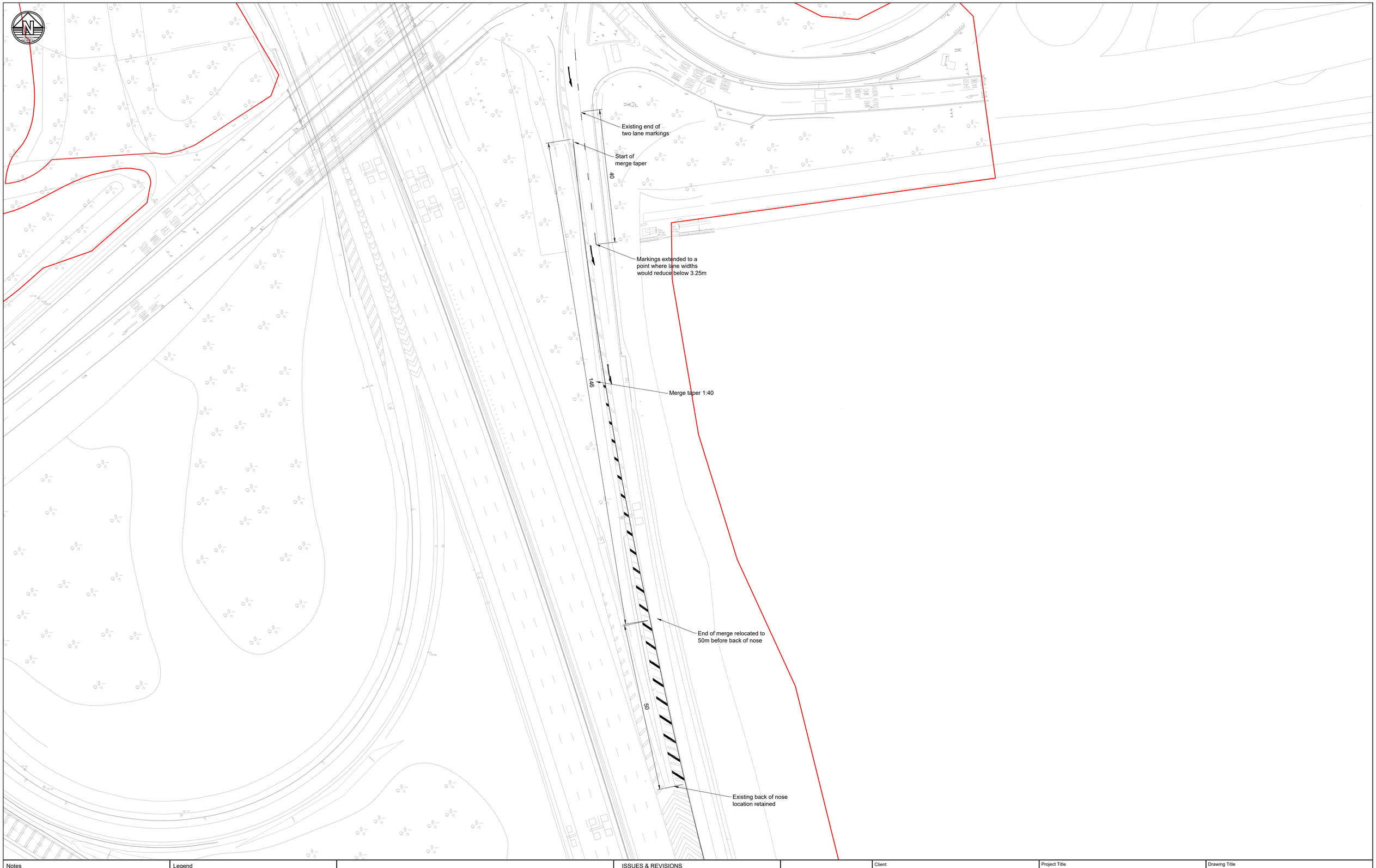
Drawn:	M. Valibhai	Reviewed:	S. Hilditch	
BWB Ref:	NTH2479	Date:	30.03.22	Scale@A1: 1:2500

Drawing Status
PRELIMINARY

Project - Originator - Zone - Level - Type - Role - Number
OxSRFI-BWB-GEN-XX-SK-CH-SK042

Status: **S1** Rev: **P03**

Y:\NTH\NTH2479_Oxfordshire RFI\02. Project Delivery\01. WIP\Sketches\OxSRFI-BWB-GEN-XX-SK-CH-SK042_M40 Junction 10 Overall General Arrangement.dwg



Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in metres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

© Copyright BWB Consulting Ltd

Legend

ISSUES & REVISIONS

Rev	Date	Details of issue / revision	Drw	Rev
P01	02.02.23	Preliminary Issue	SRH	SRH

BWB
A CAF GROUP COMPANY
Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client
OXFORDSHIRE RAILFREIGHT LTD.

Project Title
OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title
M40 JUNCTION 10 SOUTHBOUND MERGE INTERIM IMPROVEMENT GENERAL ARRANGEMENT

Drawn:	S. Hilditch	Reviewed:	S. Hilditch
BWB Ref:	NTH2479	Date:	02.02.23

Scale@A1: 1:500

Drawing Status
PRELIMINARY

Project - Originator - Zone - Level - Type - Role - Number
OxSRFI-BWB-GEN-XX-SK-CH-SK060

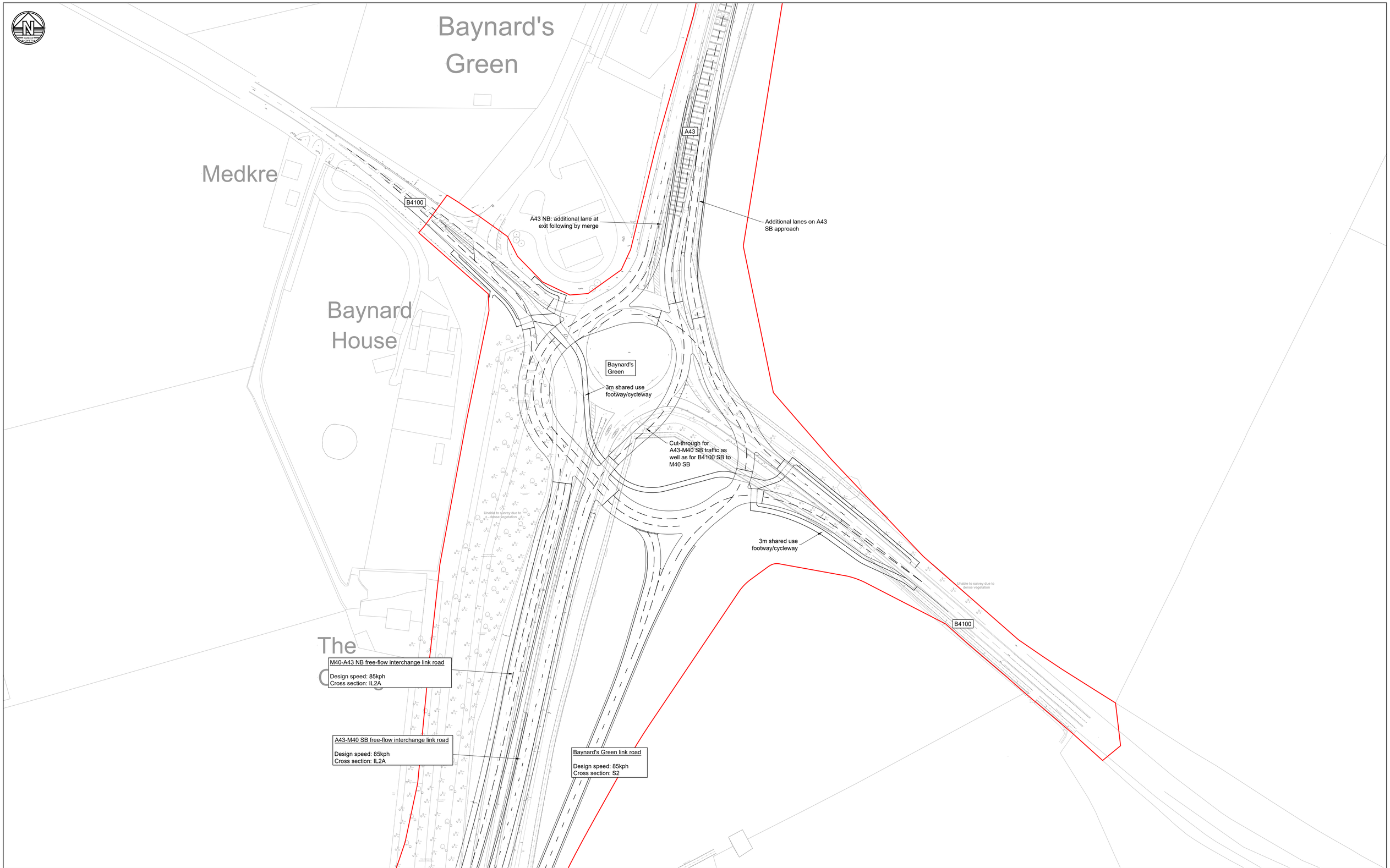
Status: **S1**

Rev: **P01**

Y:\NTH\NTH2479_Oxfordshire RFI\02. Project Delivery\01. WIP\Sketches\OxSRFI-BWB-GEN-XX-SK-CH-SK060_M40 J10 SB merge GA.dwg

APPENDIX A

OPTION 25A BAYNARD'S GREEN LAYOUT DRAWING



Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in metres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

© Copyright BWB Consulting Ltd

Legend

Draft Order Limits

ISSUES & REVISIONS

Rev	Date	Details of issue / revision	Drw	Rev
P01	02.09.22	Preliminary Issue	SRH	SRH
P02	07.09.22	Presentation amended	SRH	SRH
P03	19.12.22	Updated to option 26 layout	SRH	SRH

BWB
A CAF GROUP COMPANY
Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client
OXFORDSHIRE RAILFREIGHT LTD.

Project Title
OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title
A43 / B4100 BAYNARDS GREEN GENERAL ARRANGEMENT

Drawn:	S. Hilditch		Reviewed:	S. Hilditch		
BWB Ref:	NTH2479	Date:	02.09.22	Scale@A1:	1:1,000	

Drawing Status
PRELIMINARY

Project - Originator - Zone - Level - Type - Role - Number
OxSRFI-BWB-GEN-XX-SK-CH-SK050

Status: **S1**

Rev: **P03**

Y:\NTH\NTH2479_Oxfordshire RFI\02. Project Delivery\01. WIP\Sketches\OxSRFI-BWB-GEN-XX-SK-CH-SK050_Baynards Green GA.dwg

APPENDIX B

NATIONAL HIGHWAYS COMMENTS

Mark Higgins

From: [redacted]
Sent: 02 February 2023 16:32
To: [redacted]
Subject: RE: 230103 OxSRFI - Technical Note 9 Addendum

Hi All,

Please see below [redacted] comments on the TN9 Addendum as briefly discussed on the TWG call this morning.

TN9 Addendum

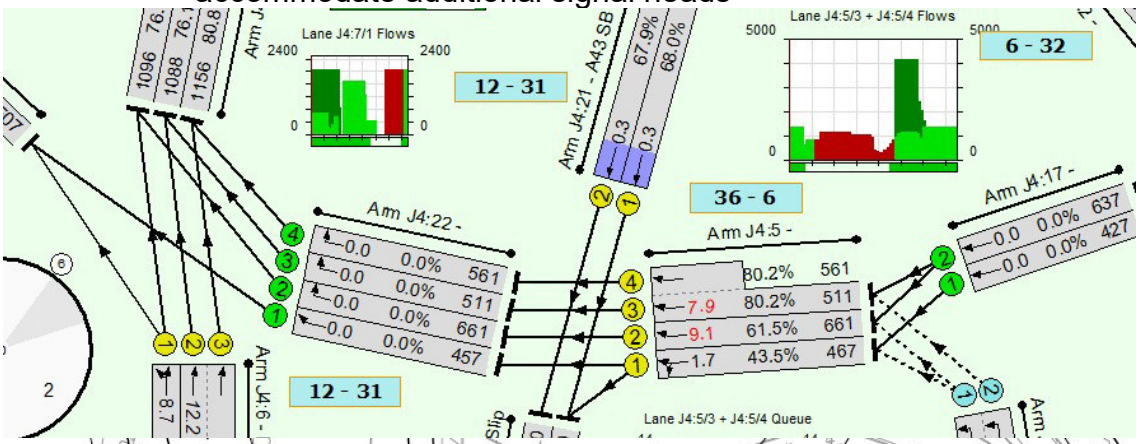
1. Para 23 – reference to old iteration of layout including toucan on new link road arm, contradicts layout shown in Figure 2
2. Para 32 – reasoning is given for not including the total journey time comparisons with the reference case due to changes in overall flow volumes. While MR agrees with the technical argument these figures are still very positive and it might be worthwhile emphasising that the forecast total travel times are lower even with the volume increases.
3. Para 33 – summing average journey times could be misleading as it makes no allowance for the volume of flow on each route and hence could falsely present a positive (or negative) impression. In this case because nearly all routes see an improvement it likely does not distort the conclusions however the calculations are still mathematically incorrect. A better alternative would be to use a weighted average.
    a. MR also notes the data in these tables is nominally s/PCU not just s (although this breaks down a bit when it's a sum of averages with different flow volumes)
4. Summary and conclusions – could be trimmed down to avoid repetition.

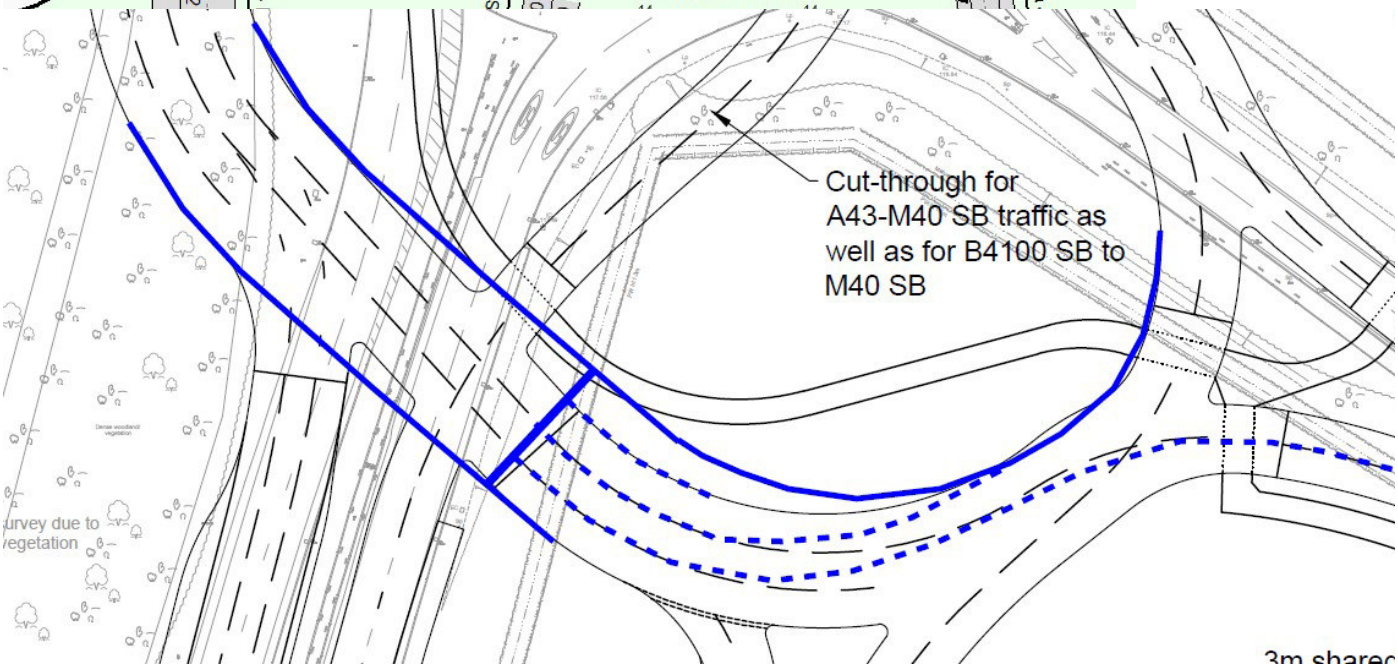
Updated Baynards Green Option 25a – layout drawing and Linsig model

5. There is a weaving connector between arms J4:22 and J4:7 – this is an unrealistic movement given the adjacent lane is permitted to circulate too and the length between the arms is relatively short – especially considering drivers peeling off left (to the B4100 west) are unlikely to move out of this lane until the last opportunity as this is the most direct line to take.
    a. Considering what the flow assignment would be like without this connector, not surprisingly, this causes issues with the nearside lane on arm J4:5 which in turn would block across the give way from the new link
    b. MR has considered various other permutations and they consistently all show concerns over the level of queuing filling up the short stacking space on arm J4:5
    c. Overall the best solution MR identified was to extend the 4 lanes back from the southwest circ to allow a spreading of flows; while this offers an improved situation concerns over stacking space remain – this is shown in the screen clips below
    d. These queues build up during the red period with traffic form the give way – this will likely result in some excess queuing on its own – and are then further extended by the platoon from the B4100 joining on the back of them as they are clearing
    e. MR has considered whether NH can control the stacking and queue interaction with the upstream signals (holding back the start of arm J4:3); however this just allows more traffic out of the give way and doesn't help reduce the queue much
    f. Consideration should be given to re-aligning the link road approach further east to maximise this short stacking space – MR notes this would also help reduce the risk

of see-through from the give way to the circ signals which might be difficult given the close proximity of the two in the current layout

g. MR also notes that widening arm J4:5 to 4 lanes might cause issues with signal visibility – consider introducing a splitter island between lanes 1 and 2 to accommodate additional signal heads





6. There is a mismatch between the lining on the drawing and the connectors in the Linsig model between the B4100 east approach and the south circ (arms J4:3 to J4:17) – this should be addressed in conjunction with the previous point
7. The model allows the left turn from arm J4:5 onto the M40 SB on slip (arm J4:4) but this is not accommodated in the layout geometry. This only carries a small flow which could be routed down the new link and through Cherwell Roundabout if needed. Please ensure consistency between the model and layout. Note that if choosing to route via the new link road then a TRO will be required to ban the left turn from the circ onto the slip as part of the DCO.
8. In principle MR supports the revised ped/cycle routing layout however notes the difficulty in coordinating the crossings on the B4100 exits.
    a. In both cases there will be demand for these exits from all upstream stages resulting in no obvious natural gap in traffic to synchronise the crossings to.
    b. In the case of the B4100 west exit there is a dedicated lane for the exit and constrained geometry to control speeds, the optimal time for the crossing here will be just after the platoon from the B4100 east / link road has cleared but may stop some left turners coming off the M40. With appropriate MOVA detection to ensure this change happens as efficiently as possible and the geometry controlling speeds this should be reasonable.

c. The B4100 east exit is more challenging though as the geometry here allows for much greater speeds and there are large platoons both from the A43 north and B4100 west. Added to this, the offside lane is relatively short, having a split just upstream between the exit and circulating movements which could affect safe stacking space and driver expectations (circulating driver wanting to maintain speed for green signal while exiting driver is braking for the crossing). The optimal solution here will be to time the crossing just after the left turn platoon has cleared and again suitable MOVA detection will be required to optimise this, to achieve this though an extension to the short offside lane should be considered by moving the split point on the circ to the start of the radius for the right hand curve around the gyratory.
    - (Note: MR did consider closing off the nearside circ lane instead, allowing only a single lane from the A43 north to travel to the new link road however this would cause capacity issues in the AM peak)

9. MR has some unease at the layout shown for the start and end points of the proposed new cycleways as they do not allow smooth, safe and attractive transitions from on-road to off-road facilities, however as these are on OCCs network MR is happy to defer to them to define the appropriate design standards / layouts for these. This could also be argued to be a detailed design point and not critical at this stage.

General Linsig comments

Linsig model has not been checked extensively but a few general points have been provided. Note these are not critical as we note the Linsig model is not the main assessment tool and VISSIM will be used.

10. If queues appear to be genuinely unrepresentative then an explanatory note would be preferable to the use of de-sliver thresholds.
11. Give way parameters for partially signalised roundabouts do not reflect likely performance – for example they allow traffic to still enter even when the circ lanes are running at full sat flow. For more details on this see MR's 2010 JCT symposium paper available here.
12. Some coordination could be improved – for example downstream circs starting before the platoon has arrived (though this is necessary in cases where traffic will be stored on the circ) or being held on green 1-2 seconds after the main platoon has cleared
13. Start displacements of 0 can be used where there will be no traffic regularly stored on a circ stopline – for example circ stopline at Padbury. This can be used to further optimise the signals and achieve some platoon compression.
14. Circ Sat flows need careful consideration; while LTN 1/09 does suggests the use of 1900 PCU/hr this is only guidance. Sat flows on circs that are lower than upstream entries will result in queues being formed even during a coordinated green (as the inflow exceeds the capacity) and this should be avoided as far as possible by setting circ sat flows slightly above upstream entry sat flows unless:
    a. The circ geometry clearly has a determining impact on the throughput and instead the entry sat flow should be reduced to match or be just below the circ value
    b. The roundabout operation critically depends on the clearance of queues stored on the circs which is in turn determined by the circ sat-flow; this is likely to be rare as the variance in this clearance time will likely be small for typical saturation flow values and short circ queues
15. For larger roundabouts, consider using low values of platoon dispersion rather than 0, particularly for longer links
16. For long links between junctions in some cases allowance has been made for weaving movements though there are inconsistencies in where this has been applied; where this has been applied it has been through the use of additional connectors however an alternative to consider is the use of a single link of multiple lanes between junctions – this reduces visual clutter and the number of connectors needed but does have limitations, for example being fed by flared lanes.

We hope this is helpful. Should you have any queries it would be worth directing these to Mark Roxburgh for comment, copying me in.

Thanks
[redacted]

[redacted]

[redacted]

From: [redacted]
Sent: 03 January 2023 16:43
To: [redacted]
Subject: 230103 OxSRFI - Technical Note 9 Addendum

All,

Happy New Year

Please find attached our Technical Note 9 Addendum report for your consideration. The report details the work undertaken to address the comments raised with regards to the Option 25 Baynard's Green proposals, presenting the revised layout as Option 25a.

The assessment work includes a revised reference case LinSig model which takes account of the changes to the Housing Growth Deal schemes, as confirmed by Joy at OCC. The LinSig modelling of Option 25a also incorporates the modelling amendments suggested by Aecom in their review of TN9. The LinSig models and Baynard's Green GA drawing are attached individually for convenience.

Best wishes

[redacted]

[redacted]

ADC Infrastructure Limited
4th Floor, City Buildings, 34-36 Carrington Street, Nottingham NG1 7FG
[redacted]
www.ADCinfrastructure.com

This email has been scanned for spam and viruses. Click here to report this email as spam.

APPENDIX C

OCC COMMENTS

OCC comments on OxSRFI TN9 and TN9 Addendum
2 Feb 2023

Comments on layout

- Signals - Are approach speeds <65mph? (4.1 of CD116)
- Straight-through A43 lanes look as though they might not achieve necessary entry deflection safety requirements or most of the other requirements stated in 6.10.1 of CD116. (4.1 NOTE 4 states that the geometric requirements are the same for signalised as for standard roundabout designs)

Comments on the document

1. "Safety" is only mentioned twice (and by NH, not OCC or the Developer). Previous "Conflict Points" consideration not mentioned.
2. Developer to provide clear statement that the process has followed safety in design principles to design-out/minimise risk.
3. Developer to clearly state/demonstrate that NH comment "The proposed arrangement around Baynard's Green looks complex and consider that this should be simplified. Option 25 includes too many lanes and signals at this junction and this can cause safety issues and confusion for the drivers." has been addressed.
4. Has the NH commented again yet, or are we commenting first?
5. Developer to clearly state/demonstrate that OCC comment "…the Baynard's Green arrangement looks very complicated, with a real risk of local traffic from Bicester to Banbury accidentally heading south on the M40. Cycle facilities would be vital to help cyclists negotiate such an arrangement". has been addressed.
6. Who is the HA, OO, and Principal Designer here? When is an RSA1 planned?
7. Updated Diagram below, is this more readily understandable than the wordy doc?

Start	Sift 1	Sift 2	Sift 3	Sift 4 Para 1.7 Conflict Points (Road Safety)	Sift 5	Sift 6
Para 1.7 Conflict Points (Road Safety)	Option 11					
	Option 13					
	Option 18	Option 18	Sub-Options 20, 21, 22, 23, 24	Sub-Options 22, 23, 24	Preferred Option 25*	Preferred Option 25a**
	Option 19	Option 19				
	Option 3c					

* A conclusive Para 1.7 Conflict Points (Road Safety) comment is required against the Preferred Option 25.
** The Developer confirms that NH and OCC Comments are addressed

Comments on TN9 (from David Rawson)

1. The key conclusions don't make sense on the one item "safety" I'm looking at:

1.13 It is concluded that:

- Providing a northbound M40 to A43 free-flow link is feasible within the scale of the OxSRFI improvements to M40 Junction 10.
- Providing a northbound M40 to A43 free-flow link enables the previously proposed Ardley East junction and proposed new south facing slip roads to be removed from the scheme, with reduced potential for environmental impacts.
- A new option, Option 25, is developed, that overall performs better than previous options with regards to headroom, journey times, has a similar new of conflict points, and would offer buildability advantages.

1.14 Therefore, it is proposed that Option 25 it taken forward as the preferred option instead of Options 18 and 19.

2. I've been following the Safety thread, but it seems to get dropped as a concern, whereas it should be the No. 1 concern.

I can see Safety considered in assessment of Options 20, 21, and 22, but suddenly no more consideration from 3.6 onwards:

3.6 This change of strategy for the overall M40 Junction 10 and Ardley Bypass solution was undertaken to see what further options could be developed, with the following objectives:

- maximise the benefits of the northbound and southbound M40-A43 free-flow links;
- minimise the environmental impact of the Ardley Bypass and M40 Junction 10 complex;
- minimise the construction of redundant infrastructure;
- minimise the overall land-take requirements; and minimise the impact on scale and construction cost when compared to Options 18/19.

3. Has Safety been overlooked? Needs confirmation that the previous Options' issues are designed-out, and none new have arrived.

Option 25 – preferred option

3.9 Option 25 builds on the benefits identified with Option 23 and meets the above objectives. The strategic layout of Option 25, including the site access roundabout and the Ardley Bypass, is shown on BWB Consulting drawing **OxSRFI-BWB-GEN-ZZ-SK-CH-SK031** and an extract is shown at **Figure 7**.

3.10 The key elements of the Option 25 arrangement shown at **Figure 7** have been designed to achieve the identified objectives as follows:

- The scheme eliminates the requirement for the Ardley East roundabout and the new south facing M40 slip roads.
- The Ardley Bypass would therefore be at or below the existing levels, passing under Ardley Road, eliminating the complex engineering works required to achieve the 3D layout and thereby minimising environmental impacts on Ardley village.
- The northbound and southbound M40-A43 free-flow links significantly reduce traffic flows through the M40 Junction 10 complex and materially improve journey times on the SRN.
- The required number of new structures over the M40 is the same as Options 18 and 19, therefore minimising the impact on scheme cost.
- The number of new junctions required remains the same as Options 18 and 19, therefore minimising the impact on scheme cost.
- The Cherwell roundabout can, with minor improvements, accommodate the OxSRFI traffic due to the removal of northbound and southbound traffic between the M40 and the A43.
- No changes to the Padbury roundabout are envisaged as the capacity is increased by the committed OCC Housing Growth deal improvement scheme.
- The overall scheme footprint is minimised, and Option 25 would mean that significant infrastructure is not built that could become redundant if the northbound free-flow link were built in the future.

We understand the layout is to be the subject of further discussion at TWG and reserve the right to comment further, recognising of course that it will be for NH to approve the design.

J White
2 Feb 2023

APPENDIX D

2028 TRAFFIC FLOW DERIVATION

2031 reference case flows - AM Peak

	PCUs											
	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	446	112	1485		88	70	9	77	476		2763
2	350	0	11	10		175	306	0	2	14		868
3	78	4	0	295		145	3	1	8	48		582
4	1098	8	211	40			63	1	8	57		1486
5												0
6	67	250	219			13	20	6	42	255		872
7	72	296	1	110		1	1	0	2	9		492
8	12	2	2	3		19	1	0	189	26		254
9	30	4	4	7		45	4	17	0	10		121
10	183	19	22	51		254	34	50	151	0		764
11												0
Total	1890	1029	582	2001	0	740	502	84	479	895	0	8202

VISSIM growth 2016-2031	1.27
Average yearly growth	0.018
12 year growth	0.216

2016 reference case flows

	PCUs											
	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	350	88	1166		69	55	7	60	374		2169
2	275	0	9	8		137	240	0	2	11		682
3	61	3	0	232		114	2	1	6	38		457
4	862	6	166	31		0	49	1	6	45		1166
5												0
6	53	196	172	0		10	16	5	33	200		685
7	57	232	1	86		1	1	0	2	7		387
8	9	2	2	2		15	1	0	148	20		199
9	24	3	3	5		35	3	13	0	8		94
10	144	15	17	40		199	27	39	119	0		600
11												0
Total	1485	807	458	1570	0	580	394	66	376	703	0	6439

2028 reference case flows

	PCUs											
	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	426	107	1418		84	67	9	73	455		2639
2	334	0	11	10		167	292	0	2	13		829
3	74	4	0	282		139	2	1	7	46		555
4	1048	7	202	38		0	60	1	7	55		1418
5												0
6	64	238	209	0		12	19	6	40	243		831
7	69	282	1	105		1	1	0	2	9		470
8	11	2	2	2		18	1	0	180	24		240
9	29	4	4	6		43	4	16	0	10		116
10	175	18	21	49		242	33	47	145	0		730
11												0
Total	1804	981	557	1910	0	706	479	80	456	855	0	7828

2031 reference case flows - PM Peak

	PCUs											
	1	2	3	4	5	6	7	8	9	10	11	Total
1	2	467	81	894		85	45	10	20	193		1797
2	637	0	25	10		186	372	1	1	17		1249
3	119	4	0	258		196	6	1	1	15		600
4	1597	10	248	67			50	3	7	66		2048
5												0
6	87	207	229			18	24	12	24	222		823
7	37	244	1	35		0	3	0	1	10		331
8	14	0	1	1		7	0	0	50	127		200
9	53	1	2	3		29	1	20	0	88		197
10	328	8	17	17		178	9	113	136	0		806
11												0
Total	2874	941	604	1285	0	699	510	160	240	738	0	8051

VISSIM growth 2016-2031	1.30
Average yearly growth	0.020
12 year growth	0.240

2016 reference case flows

	PCUs											
	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	358	62	686		65	35	8	15	148		1377
2	489	0	19	8		143	285	1	1	13		959
3	91	3	0	198		150	5	1	1	12		461
4	1225	8	190	51		0	38	2	5	51		1570
5												0
6	67	159	176	0		14	18	9	18	170		631
7	28	187	1	27		0	2	0	1	8		254
8	11	0	1	1		5	0	0	38	97		153
9	41	1	2	2		22	1	15	0	68		152
10	252	6	13	13		137	7	87	104	0		619
11												0
Total	2204	722	464	986	0	536	391	123	183	567	0	6176

2028 reference case flows

	PCUs											
	1	2	3	4	5	6	7	8	9	10	11	Total
1	0	444	77	851		81	43	10	19	184		1709
2	606	0	24	10		177	353	1	1	16		1188
3	113	4	0	246		186	6	1	1	15		572
4	1519	10	236	63		0	47	2	6	63		1946
5												0
6	83	197	218	0		17	22	11	22	211		781
7	35	232	1	33		0	2	0	1	10		314
8	14	0	1	1		6	0	0	47	120		189
9	51	1	2	2		27	1	19	0	84		187
10	312	7	16	16		170	9	108	129	0		767
11												0
Total	2733	895	575	1222	0	664	483	152	226	703	0	7653

Phase 1 Traffic Generation									
	Lights			HGVs			Total		
	Arrive	Depart	Two-way	Arrive	Depart	Two-way	Arrive	Depart	Two-way
AM	278	30	308	53	50	102	331	80	410
PM	91	320	411	49	44	93	140	364	504
Daily	2,468	2,434	4,902	764	761	1,524	3,232	3,195	6,426

Lights

Dev	1	2	3	4	5	6	7	8	9	10	11	Total
1											17.6%	
2											0.0%	
3											0.0%	
4											23.3%	
5												
6											15.6%	
7											0.0%	
8											0.0%	
9											0.0%	
10											43.5%	
11	17.6%	0.0%	0.0%	23.3%		15.6%	0.0%	0.0%	0.0%	43.5%		100%
Total											100%	

HGVs

	1	2	3	4	5	6	7	8	9	10	11	Total
1											32.1%	
2											0.0%	
3											0.0%	
4											49.5%	
5												
6											18.1%	
7											0.0%	
8											0.0%	
9											0.0%	
10											0.3%	
11	32.1%	0.0%	0.0%	49.5%		18.1%	0.0%	0.0%	0.0%	0.3%		100%
Total											100%	

Trip Distribution Pattern

AM Peak

Lights

	1	2	3	4	5	6	7	8	9	10	11	Total
1											49	
2											0	
3											0	
4											65	
5												
6											43	
7											0	
8											0	
9											0	
10											121	
11	5	0	0	7		5	0	0	0	13	0	30
Total											278	

HGVs

	1	2	3	4	5	6	7	8	9	10	11	Total
1											17	
2											0	
3											0	
4											26	
5												
6											10	
7											0	
8											0	
9											0	
10											0	
11	16	0	0	25	0	9	0	0	0	0	0	50
Total											53	

PCU

	1	2	3	4	5	6	7	8	9	10	11	Total
1											88	
2											0	
3											0	
4											125	
5											0	
6											66	
7											0	
8											0	
9											0	
10											121	
11	42	0	0	65		26	0	0	0	13	0	146
Total											400	

PM Peak

Lights

	1	2	3	4	5	6	7	8	9	10	11	Total
1											16	
2											0	
3											0	
4											21	
5												
6											14	
7											0	
8											0	
9											0	
10											40	
11	56	0	0	75		50	0	0	0	139	0	320
Total											91	

HGVs

	1	2	3	4	5	6	7	8	9	10	11	Total
1											16	
2											0	
3											0	
4											24	
5												
6											9	
7											0	
8											0	
9											0	
10											0	
11	14	0	0	22		8	0	0	0	0	0	44
Total											49	

PCU

	1	2	3	4	5	6	7	8	9	10	11	Total
1											53	
2											0	
3											0	
4											76	
5											0	
6											35	
7											0	
8											0	
9											0	
10											40	
11	88	0	0	126	0	68	0	0	0	139	0	421
Total											204	

Development traffic assignment

2028 Phase 1 flows - AM Peak

PCUs									
	1	2	3	4	6	7	8	10	Total
1	0	426	107	1418	84	67	82	543	2727
2	334	0	11	10	167	292	2	13	829
3	74	4	0	282	139	2	8	46	555
4	1048	7	202	0	0	60	8	180	1505
6	64	238	209	0	0	19	46	309	885
7	69	282	1	105	1	0	2	9	469
8	40	6	6	8	61	5	0	34	160
10	217	18	21	114	268	33	192	0	863
Total	1846	981	557	1937	720	478	340	1134	7993

2028 Phase 1 flows - PM Peak

PCUs									
	1	2	3	4	6	7	8	10	Total
1	0	444	77	851	81	43	29	237	1762
2	606	0	24	10	177	353	2	16	1188
3	113	4	0	246	186	6	2	15	572
4	1519	10	236	0	0	47	8	139	1959
6	83	197	218	0	0	22	33	246	799
7	35	232	1	33	0	0	1	10	312
8	65	1	3	3	33	1	0	204	310
10	400	7	16	142	238	9	237	0	1049
Total	2821	895	575	1285	715	481	312	867	7951

APPENDIX E

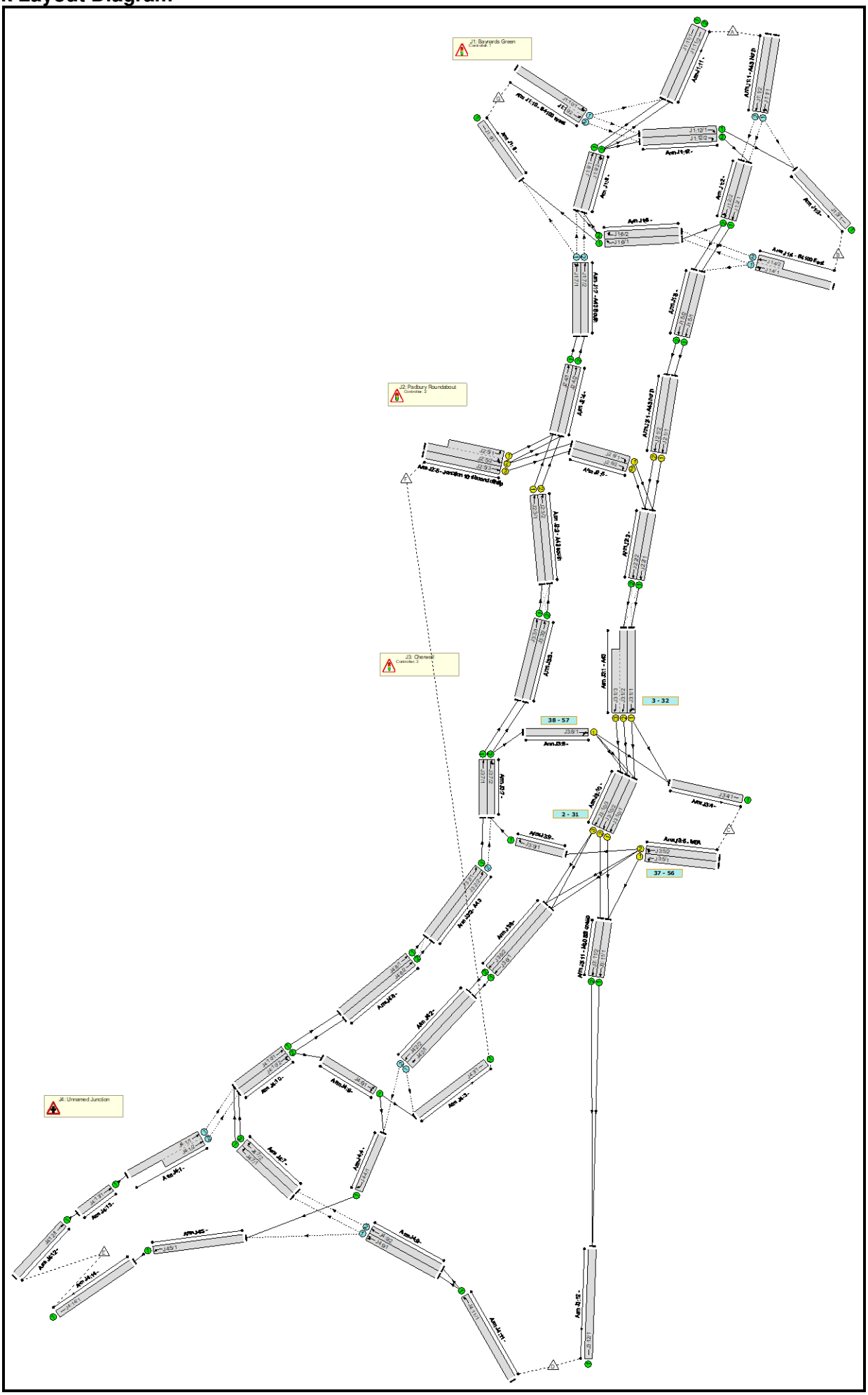
2028 REFERENCE CASE LINSIG MODEL RESULTS

Full Input Data And Results

User and Project Details

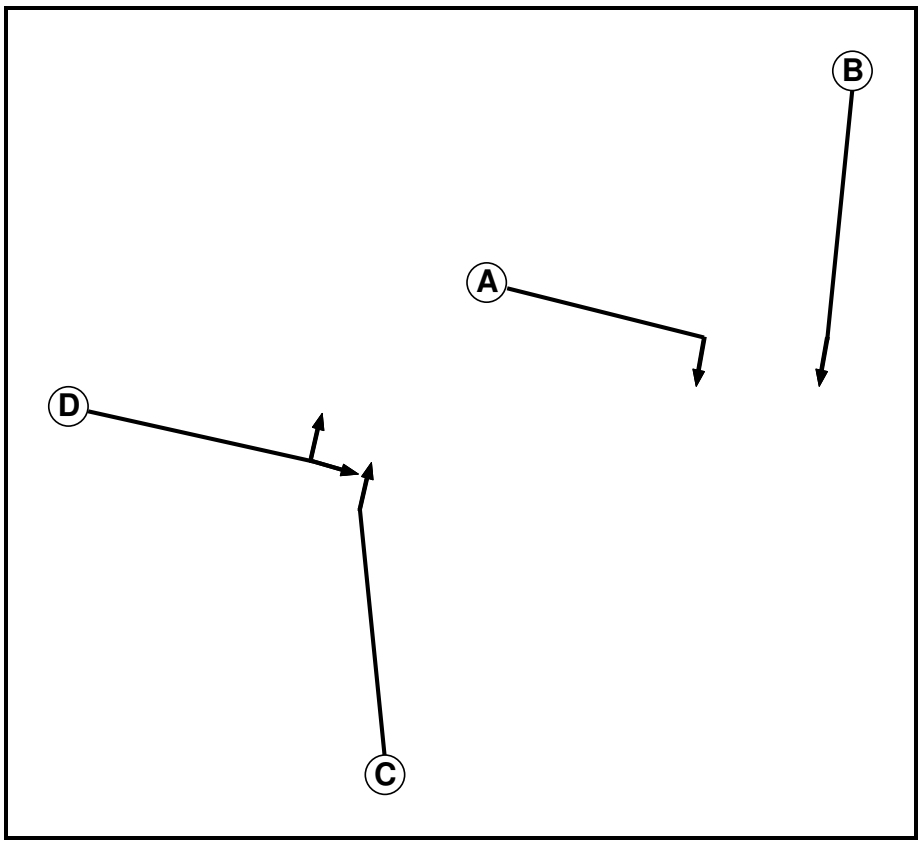
Project:	**Oxfordshire SRFI**
Title:	**2028 Reference Case Network Model**
Location:	
Additional detail:	Entry and exit links configured to be consistent with do something cases for comparison. Baynards Green reverts to exitsing.
File name:	230125 M40 J10 - 2028 reference case.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



C2

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

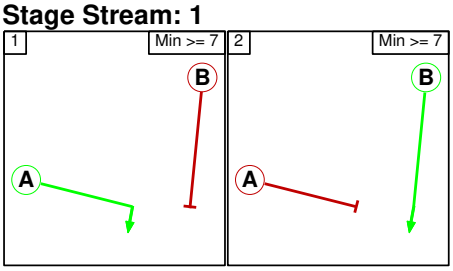
		Starting Phase			
		A	B	C	D
Terminating Phase	A		6	-	-
	B	6		-	-
	C	-	-		6
	D	-	-	6	

Phases in Stage

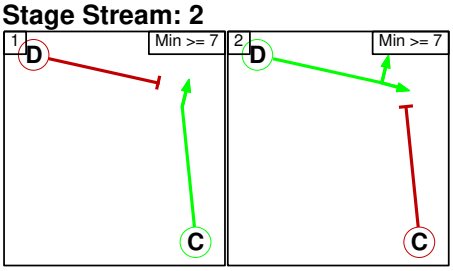
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

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

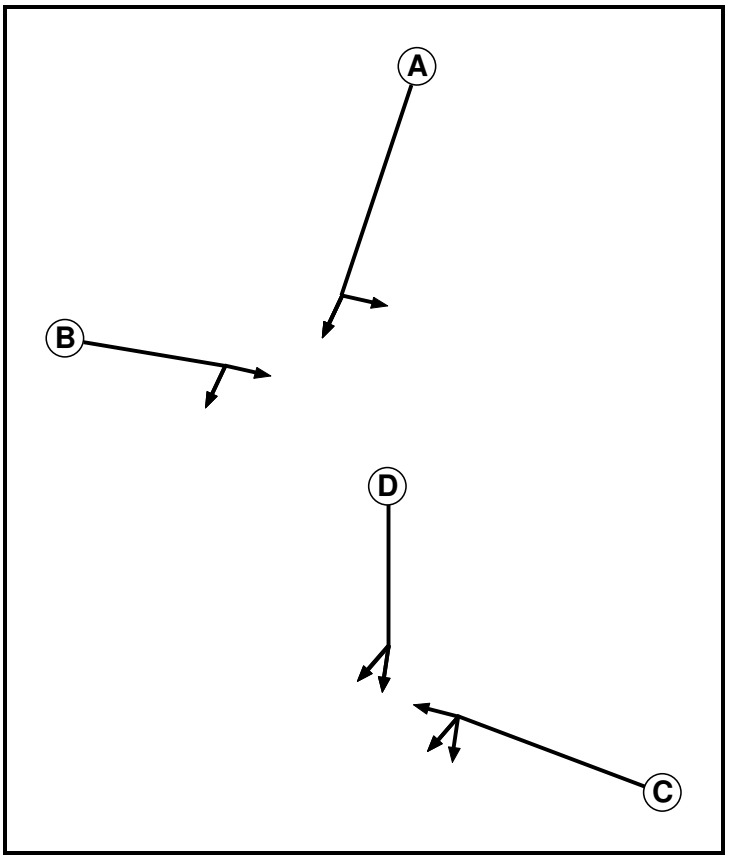
		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

		To Stage	
		1	2
From Stage	1		6
	2	6	

C3

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

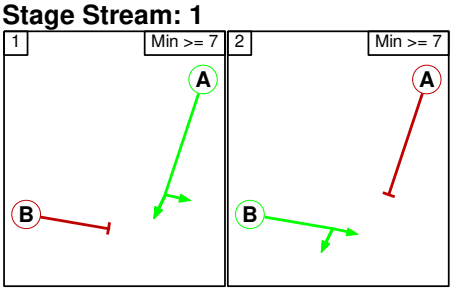
		Starting Phase			
		A	B	C	D
Terminating Phase	A		6	-	-
	B	6		-	-
	C	-	-		6
	D	-	-	6	

Phases in Stage

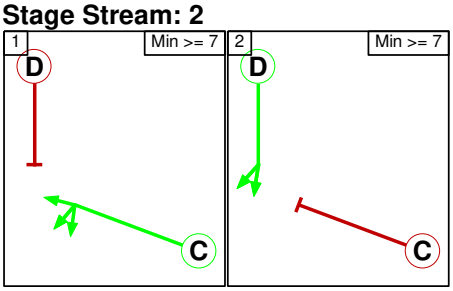
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

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	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

		To Stage	
		1	2
From Stage	1		6
	2	6	

Give-Way Lane Input Data

Junction: J1: Baynards Green											
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)**
J1:1/1 (A43 North)	J1:2/1 (Ahead)	1233	0	J1:12/1	0.30	All	-	-	-	-	-
				J1:12/2	0.30	All					
	J1:3/1 (Left)	1233	0	J1:12/1	0.30	All					
J1:1/2 (A43 North)	J1:2/2 (Ahead)	1233	0	J1:12/1	0.30	All	-	-	-	-	-
				J1:12/2	0.30	All					
J1:4/1 (B4100 East)	J1:5/1 (Left)	729	0	J1:2/1	0.24	All	-	-	-	-	-
	J1:6/1 (Ahead)	729	0	J1:2/1	0.24	All					
				J1:2/2	0.24	All					
J1:4/2 (B4100 East)	J1:6/2 (Ahead)	729	0	J1:2/1	0.24	All	-	-	-	-	-
				J1:2/2	0.24	All					
J1:7/1 (A43 South)	J1:8/1 (Ahead)	1268	0	J1:6/1	0.31	All	-	-	-	-	-
				J1:6/2	0.31	All					
	J1:9/1 (Ahead)	1268	0	J1:6/1	0.31	All					
J1:7/2 (A43 South)	J1:8/2 (Ahead)	1268	0	J1:6/1	0.31	All	-	-	-	-	-
				J1:6/2	0.31	All					
J1:10/1 (B4100 West)	J1:11/1 (Left)	882	0	J1:8/1	0.25	All	-	-	-	-	-
	J1:12/1 (Ahead)	883	0	J1:8/1	0.25	All					
				J1:8/2	0.25	All					
J1:10/2 (B4100 West)	J1:12/2 (Ahead)	883	0	J1:8/1	0.25	All	-	-	-	-	-
				J1:8/2	0.25	All					

Junction: J2: Padbury Roundabout
There are no Opposed Lanes in this Junction

Junction: J3: Cherwell											
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)**
J3:2/2 (A43)	J3:7/2 (Ahead)	1030	0	J3:9/1	0.48	All	-	-	-	-	-

Junction: J4: Unnamed Junction											
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)**
J4:1/1	J4:10/1 (Ahead)	1057	0	J4:7/1	0.28	All	-	-	-	-	-
J4:1/2	J4:10/2 (Ahead)	1057	0	J4:7/1	0.28	All	-	-	-	-	-
				J4:7/2	0.28	All					
J4:2/1	J4:3/1 (U-Turn)	1205	0	J4:6/1	0.31	All	-	-	-	-	-
J4:2/2	J4:4/1 (Ahead)	1205	0	J4:6/1	0.31	All	-	-	-	-	-
J4:9/1	J4:5/1 (Ahead)	1215	0	J4:4/1	0.32	All	-	-	-	-	-
	J4:7/1 (Ahead)	1215	0	J4:4/1	0.32	All					
J4:9/2	J4:7/2 (Ahead)	1215	0	J4:4/1	0.32	All	-	-	-	-	-

Lane Input Data

Junction: J1: Baynards Green												
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)**
J1:1/1 (A43 North)	O		2	3	60.0	Inf	-	-	-	-	-	-
J1:1/2 (A43 North)	O		2	3	60.0	Inf	-	-	-	-	-	-
J1:2/1	U		2	3	10.1	Inf	-	-	-	-	-	-
J1:2/2	U		2	3	10.1	Inf	-	-	-	-	-	-
J1:3/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:4/1 (B4100 East)	O		2	3	60.0	Inf	-	-	-	-	-	-
J1:4/2 (B4100 East)	O		2	3	5.0	Inf	-	-	-	-	-	-
J1:5/1	U		2	3	17.4	User	2000	-	-	-	-	-
J1:5/2	U		2	3	17.4	Inf	-	-	-	-	-	-
J1:6/1	U		2	3	7.0	Inf	-	-	-	-	-	-
J1:6/2	U		2	3	7.0	Inf	-	-	-	-	-	-
J1:7/1 (A43 South)	O		2	3	104.3	Inf	-	-	-	-	-	-
J1:7/2 (A43 South)	O		2	3	104.3	Inf	-	-	-	-	-	-
J1:8/1	U		2	3	8.2	Inf	-	-	-	-	-	-
J1:8/2	U		2	3	8.2	Inf	-	-	-	-	-	-
J1:9/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:10/1 (B4100 West)	O		2	3	60.0	Inf	-	-	-	-	-	-
J1:10/2 (B4100 West)	O		2	3	3.5	Inf	-	-	-	-	-	-
J1:11/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:11/2	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:12/1	U		2	3	7.8	Inf	-	-	-	-	-	-
J1:12/2	U		2	3	7.8	Inf	-	-	-	-	-	-

Junction: J2: Padbury Roundabout												
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)**
J2:1/1 (A43 north)	U	B	2	3	95.7	Geom	-	3.65	0.00	Y	Arm J2:2 Ahead	50.00
J2:1/2 (A43 north)	U	B	2	3	95.7	Geom	-	3.65	0.00	N	Arm J2:2 Ahead	50.00
J2:2/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:2/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:3/1 (A43 south)	U	C	2	3	52.2	Geom	-	3.65	0.00	Y	Arm J2:4 Ahead	30.00
J2:3/2 (A43 south)	U	C	2	3	52.2	Geom	-	3.65	0.00	N	Arm J2:4 Ahead	30.00
J2:4/1	U		2	3	13.0	Inf	-	-	-	-	-	-
J2:4/2	U		2	3	13.0	Inf	-	-	-	-	-	-
J2:5/1 (Junction 10 s'bound offslip)	U	D	2	3	10.8	Geom	-	3.65	0.00	Y	Arm J2:4 Left	40.00
J2:5/2 (Junction 10 s'bound offslip)	U	D	2	3	95.7	Geom	-	3.65	0.00	N	Arm J2:4 Left	50.00
											Arm J2:6 Ahead	50.00
J2:5/3 (Junction 10 s'bound offslip)	U	D	2	3	95.7	Geom	-	3.65	0.00	N	Arm J2:6 Ahead	50.00
J2:6/1	U	A	2	3	8.7	Geom	-	3.65	0.00	Y	Arm J2:2 Right	Inf
J2:6/2	U	A	2	3	8.7	Geom	-	3.65	0.00	N	Arm J2:2 Right	Inf

Junction: J3: Cherwell												
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)**
J3:1/1 (A43)	U	A	2	3	52.2	Geom	-	3.65	0.00	Y	Arm J3:4 Left	Inf
											Arm J3:10 Ahead	Inf
J3:1/2 (A43)	U	A	2	3	52.2	Geom	-	3.65	0.00	Y	Arm J3:10 Ahead	Inf
J3:1/3 (A43)	U	A	2	3	12.2	Geom	-	3.65	0.00	Y	Arm J3:10 Ahead	Inf
J3:2/1 (A43)	U		2	3	41.7	Inf	-	-	-	-	-	-
J3:2/2 (A43)	O		2	3	41.7	Inf	-	-	-	-	-	-
J3:3/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J3:3/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J3:4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J3:5/1 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm J3:11 Left	30.00
J3:5/2 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	N	Arm J3:6 Left	40.00
											Arm J3:9 Ahead	Inf
J3:6/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J3:6/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J3:7/1	U		2	3	7.0	Inf	-	-	-	-	-	-
J3:7/2	U		2	3	7.0	Inf	-	-	-	-	-	-
J3:8/1	U	B	2	3	5.2	User	1850	-	-	-	-	-
J3:9/1	U		2	3	7.8	Inf	-	-	-	-	-	-
J3:10/1	U	D	2	3	8.7	Geom	-	3.65	0.00	Y	Arm J3:11 Ahead	Inf
J3:10/2	U	D	2	3	8.7	Geom	-	3.65	0.00	N	Arm J3:11 Ahead	Inf
J3:10/3	U	D	2	3	8.7	Geom	-	3.65	0.00	N	Arm J3:6 Ahead	Inf
J3:11/1 (M40 SB onslip)	U		2	3	130.4	Inf	-	-	-	-	-	-
J3:11/2 (M40 SB onslip)	U		2	3	130.4	Inf	-	-	-	-	-	-
J3:12/1	U		2	3	173.9	Inf	-	-	-	-	-	-

Junction: J4: Unnamed Junction												
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)**
J4:1/1	O		2	3	165.2	Inf	-	-	-	-	-	-
J4:1/2	O		2	3	8.7	Inf	-	-	-	-	-	-
J4:2/1	O		2	3	41.7	Inf	-	-	-	-	-	-
J4:2/2	O		2	3	41.7	Inf	-	-	-	-	-	-
J4:3/1	U		2	3	173.9	Inf	-	-	-	-	-	-
J4:4/1	U		2	3	9.6	Inf	-	-	-	-	-	-
J4:5/1	U		2	3	173.9	Inf	-	-	-	-	-	-
J4:6/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J4:7/1	U		2	3	7.8	Inf	-	-	-	-	-	-
J4:7/2	U		2	3	7.8	Inf	-	-	-	-	-	-
J4:8/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J4:8/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J4:9/1	O		2	3	173.9	Inf	-	-	-	-	-	-
J4:9/2	O		2	3	173.9	Inf	-	-	-	-	-	-
J4:10/1	U		2	3	8.7	Inf	-	-	-	-	-	-
J4:10/2	U		2	3	8.7	Inf	-	-	-	-	-	-
J4:11/1	U		2	3	104.3	Inf	-	-	-	-	-	-
J4:12/1	U		2	3	8.7	Inf	-	-	-	-	-	-
J4:13/1	U		2	3	87.0	Inf	-	-	-	-	-	-
J4:14/1	U		2	3	87.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2028 ref case - AM'	08:00	09:00	01:00	
2: '2028 ref case - PM'	17:00	18:00	01:00	

Scenario 1: '2028 reference case - AM Peak' (FG1: '2028 ref case - AM', Plan 1: '2031 Reference Case - AM Peak')

Traffic Flows, Desired

Desired Flow :

		Destination							
		A	B	C	D	E	F	G	Tot.
Origin	A	0	426	107	1418	537	84	67	2639
	B	334	0	11	10	15	167	292	829
	C	74	4	0	282	54	139	2	555
	D	1048	7	202	38	63	0	60	1418
	E	215	24	27	57	0	303	38	664
	F	64	238	209	0	289	12	19	831
	G	69	282	1	105	11	1	0	469
	Tot.	1804	981	557	1910	969	706	478	7405

Traffic Lane Flows

Lane	Scenario 1: 2028 reference case - AM Peak
Junction: J1: Baynards Green	
J1:1/1	1324
J1:1/2	1315
J1:2/1	1016
J1:2/2	1315
J1:3/1	981
J1:4/1 (with short)	829(In) 495(Out)
J1:4/2 (short)	334
J1:5/1	1219
J1:5/2	1248
J1:6/1	359
J1:6/2	334
J1:7/1	856
J1:7/2	937
J1:8/1	904
J1:8/2	1104
J1:9/1	478
J1:10/1 (with short)	469(In) 351(Out)
J1:10/2 (short)	118
J1:11/1	973
J1:11/2	831
J1:12/1	555
J1:12/2	118
Junction: J2: Padbury Roundabout	
J2:1/1	1219
J2:1/2	1248
J2:2/1	1368
J2:2/2	1609
J2:3/1	773
J2:3/2	699
J2:4/1	856
J2:4/2	937
J2:5/1 (short)	83
J2:5/2 (with short)	470(In) 387(Out)
J2:5/3	361
J2:6/1	149
J2:6/2	361
Junction: J3: Cherwell	
J3:1/1	1170

J3:1/2 (with short)	1807(In) 691(Out)
J3:1/3 (short)	1116
J3:2/1	1200
J3:2/2	516
J3:3/1	1200
J3:3/2	272
J3:4/1	557
J3:5/1	282
J3:5/2	273
J3:6/1	403
J3:6/2	906
J3:7/1	1200
J3:7/2	596
J3:8/1	324
J3:9/1	80
J3:10/1	863
J3:10/2	765
J3:10/3	1116
J3:11/1	1145
J3:11/2	765
J3:12/1	1910
Junction: J4: Unnamed Junction	
J4:1/1 (with short)	664(In) 277(Out)
J4:1/2 (short)	387
J4:2/1	403
J4:2/2	906
J4:3/1	706
J4:4/1	906
J4:5/1	969
J4:6/1	303
J4:7/1	748
J4:7/2	607
J4:8/1	1025
J4:8/2	691
J4:9/1	811
J4:9/2	607
J4:10/1	1025
J4:10/2	994
J4:11/1	1418
J4:12/1	664
J4:13/1	664
J4:14/1	969

Lane Saturation Flows

Junction: J1: Baynards Green								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (A43 North Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:1/2 (A43 North Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:2/1	Infinite Saturation Flow						Inf	Inf
J1:2/2	Infinite Saturation Flow						Inf	Inf
J1:3/1	Infinite Saturation Flow						Inf	Inf
J1:4/1 (B4100 East Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:4/2 (B4100 East Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:5/1	This lane uses a directly entered Saturation Flow						2000	2000
J1:5/2	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:6/2	Infinite Saturation Flow						Inf	Inf
J1:7/1 (A43 South Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:7/2 (A43 South Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:8/1	Infinite Saturation Flow						Inf	Inf
J1:8/2	Infinite Saturation Flow						Inf	Inf
J1:9/1	Infinite Saturation Flow						Inf	Inf
J1:10/1 (B4100 West Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:10/2 (B4100 West Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:11/1	Infinite Saturation Flow						Inf	Inf
J1:11/2	Infinite Saturation Flow						Inf	Inf
J1:12/1	Infinite Saturation Flow						Inf	Inf
J1:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J2: Padbury Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (A43 north)	3.65	0.00	Y	Arm J2:2 Ahead	50.00	100.0 %	1922	1922
J2:1/2 (A43 north)	3.65	0.00	N	Arm J2:2 Ahead	50.00	100.0 %	2058	2058
J2:2/1	Infinite Saturation Flow						Inf	Inf
J2:2/2	Infinite Saturation Flow						Inf	Inf
J2:3/1 (A43 south)	3.65	0.00	Y	Arm J2:4 Ahead	30.00	100.0 %	1886	1886
J2:3/2 (A43 south)	3.65	0.00	N	Arm J2:4 Ahead	30.00	100.0 %	2019	2019
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm J2:4 Left	40.00	100.0 %	1908	1908
J2:5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J2:4 Left	50.00	61.5 %	2058	2058
				Arm J2:6 Ahead	50.00	38.5 %		
J2:5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J2:6 Ahead	50.00	100.0 %	2058	2058
J2:6/1	3.65	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1980	1980
J2:6/2	3.65	0.00	N	Arm J2:2 Right	Inf	100.0 %	2120	2120

Junction: J3: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1 (A43)	3.65	0.00	Y	Arm J3:4 Left	Inf	28.0 %	1980	1980
				Arm J3:10 Ahead	Inf	72.0 %		
J3:1/2 (A43)	3.65	0.00	Y	Arm J3:10 Ahead	Inf	100.0 %	1980	1980
J3:1/3 (A43)	3.65	0.00	Y	Arm J3:10 Ahead	Inf	100.0 %	1980	1980
J3:2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:3/1	Infinite Saturation Flow						Inf	Inf
J3:3/2	Infinite Saturation Flow						Inf	Inf
J3:4/1	Infinite Saturation Flow						Inf	Inf
J3:5/1 (MSA)	3.50	0.00	Y	Arm J3:11 Left	30.00	100.0 %	1871	1871
J3:5/2 (MSA)	3.50	0.00	N	Arm J3:6 Left	40.00	70.7 %	2051	2051
				Arm J3:9 Ahead	Inf	29.3 %		
J3:6/1	Infinite Saturation Flow						Inf	Inf
J3:6/2	Infinite Saturation Flow						Inf	Inf
J3:7/1	Infinite Saturation Flow						Inf	Inf
J3:7/2	Infinite Saturation Flow						Inf	Inf
J3:8/1	This lane uses a directly entered Saturation Flow						1850	1850
J3:9/1	Infinite Saturation Flow						Inf	Inf
J3:10/1	3.65	0.00	Y	Arm J3:11 Ahead	Inf	100.0 %	1980	1980
J3:10/2	3.65	0.00	N	Arm J3:11 Ahead	Inf	100.0 %	2120	2120
J3:10/3	3.65	0.00	N	Arm J3:6 Ahead	Inf	100.0 %	2120	2120
J3:11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf

Junction: J4: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J4:1/1	Infinite Saturation Flow						Inf	Inf
J4:1/2	Infinite Saturation Flow						Inf	Inf
J4:2/1	Infinite Saturation Flow						Inf	Inf
J4:2/2	Infinite Saturation Flow						Inf	Inf
J4:3/1	Infinite Saturation Flow						Inf	Inf
J4:4/1	Infinite Saturation Flow						Inf	Inf
J4:5/1	Infinite Saturation Flow						Inf	Inf
J4:6/1	Infinite Saturation Flow						Inf	Inf
J4:7/1	Infinite Saturation Flow						Inf	Inf
J4:7/2	Infinite Saturation Flow						Inf	Inf
J4:8/1	Infinite Saturation Flow						Inf	Inf
J4:8/2	Infinite Saturation Flow						Inf	Inf
J4:9/1	Infinite Saturation Flow						Inf	Inf
J4:9/2	Infinite Saturation Flow						Inf	Inf
J4:10/1	Infinite Saturation Flow						Inf	Inf
J4:10/2	Infinite Saturation Flow						Inf	Inf
J4:11/1	Infinite Saturation Flow						Inf	Inf
J4:12/1	Infinite Saturation Flow						Inf	Inf
J4:13/1	Infinite Saturation Flow						Inf	Inf
J4:14/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2028 reference case - PM Peak' (FG2: '2028 ref case - PM', Plan 1: '2031 Reference Case - AM Peak')

Traffic Flows, Desired

Desired Flow :

		Destination							
		A	B	C	D	E	F	G	Tot.
Origin	A	0	444	77	851	213	81	43	1709
	B	606	0	24	10	18	177	353	1188
	C	113	4	0	246	17	186	6	572
	D	1519	10	236	63	71	0	47	1946
	E	377	8	19	19	0	203	10	636
	F	83	197	218	0	244	17	22	781
	G	35	232	1	33	11	0	0	312
	Tot.	2733	895	575	1222	574	664	481	7144

Traffic Lane Flows

Lane	Scenario 2: 2028 reference case - PM Peak
Junction: J1: Baynards Green	
J1:1/1	854
J1:1/2	855
J1:2/1	455
J1:2/2	855
J1:3/1	895
J1:4/1 (with short)	1188(In) 582(Out)
J1:4/2 (short)	606
J1:5/1	684
J1:5/2	812
J1:6/1	396
J1:6/2	606
J1:7/1	1196
J1:7/2	1200
J1:8/1	1414
J1:8/2	1503
J1:9/1	481
J1:10/1 (with short)	312(In) 267(Out)
J1:10/2 (short)	45
J1:11/1	1449
J1:11/2	1284
J1:12/1	451
J1:12/2	45
Junction: J2: Padbury Roundabout	
J2:1/1	684
J2:1/2	812
J2:2/1	813
J2:2/2	1162
J2:3/1	1127
J2:3/2	967
J2:4/1	1196
J2:4/2	1200
J2:5/1 (short)	69
J2:5/2 (with short)	431(In) 362(Out)
J2:5/3	350
J2:6/1	129
J2:6/2	350
Junction: J3: Cherwell	
J3:1/1	732

J3:1/2 (with short)	1243(In) 482(Out)
J3:1/3 (short)	761
J3:2/1	1751
J3:2/2	557
J3:3/1	1751
J3:3/2	343
J3:4/1	575
J3:5/1	246
J3:5/2	326
J3:6/1	461
J3:6/2	503
J3:7/1	1751
J3:7/2	680
J3:8/1	337
J3:9/1	123
J3:10/1	420
J3:10/2	556
J3:10/3	761
J3:11/1	666
J3:11/2	556
J3:12/1	1222
Junction: J4: Unnamed Junction	
J4:1/1 (with short)	636(In) 395(Out)
J4:1/2 (short)	241
J4:2/1	461
J4:2/2	503
J4:3/1	664
J4:4/1	503
J4:5/1	574
J4:6/1	203
J4:7/1	913
J4:7/2	962
J4:8/1	1308
J4:8/2	1000
J4:9/1	984
J4:9/2	962
J4:10/1	1308
J4:10/2	1203
J4:11/1	1946
J4:12/1	636
J4:13/1	636
J4:14/1	574

Lane Saturation Flows

Junction: J1: Baynards Green								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (A43 North Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:1/2 (A43 North Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:2/1	Infinite Saturation Flow						Inf	Inf
J1:2/2	Infinite Saturation Flow						Inf	Inf
J1:3/1	Infinite Saturation Flow						Inf	Inf
J1:4/1 (B4100 East Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:4/2 (B4100 East Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:5/1	This lane uses a directly entered Saturation Flow						2000	2000
J1:5/2	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:6/2	Infinite Saturation Flow						Inf	Inf
J1:7/1 (A43 South Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:7/2 (A43 South Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:8/1	Infinite Saturation Flow						Inf	Inf
J1:8/2	Infinite Saturation Flow						Inf	Inf
J1:9/1	Infinite Saturation Flow						Inf	Inf
J1:10/1 (B4100 West Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:10/2 (B4100 West Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:11/1	Infinite Saturation Flow						Inf	Inf
J1:11/2	Infinite Saturation Flow						Inf	Inf
J1:12/1	Infinite Saturation Flow						Inf	Inf
J1:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J2: Padbury Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (A43 north)	3.65	0.00	Y	Arm J2:2 Ahead	50.00	100.0 %	1922	1922
J2:1/2 (A43 north)	3.65	0.00	N	Arm J2:2 Ahead	50.00	100.0 %	2058	2058
J2:2/1	Infinite Saturation Flow						Inf	Inf
J2:2/2	Infinite Saturation Flow						Inf	Inf
J2:3/1 (A43 south)	3.65	0.00	Y	Arm J2:4 Ahead	30.00	100.0 %	1886	1886
J2:3/2 (A43 south)	3.65	0.00	N	Arm J2:4 Ahead	30.00	100.0 %	2019	2019
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm J2:4 Left	40.00	100.0 %	1908	1908
J2:5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J2:4 Left	50.00	64.4 %	2058	2058
				Arm J2:6 Ahead	50.00	35.6 %		
J2:5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J2:6 Ahead	50.00	100.0 %	2058	2058
J2:6/1	3.65	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1980	1980
J2:6/2	3.65	0.00	N	Arm J2:2 Right	Inf	100.0 %	2120	2120

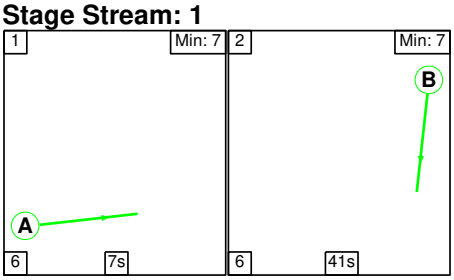
Junction: J3: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1 (A43)	3.65	0.00	Y	Arm J3:4 Left	Inf	43.7 %	1980	1980
				Arm J3:10 Ahead	Inf	56.3 %		
J3:1/2 (A43)	3.65	0.00	Y	Arm J3:10 Ahead	Inf	100.0 %	1980	1980
J3:1/3 (A43)	3.65	0.00	Y	Arm J3:10 Ahead	Inf	100.0 %	1980	1980
J3:2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:3/1	Infinite Saturation Flow						Inf	Inf
J3:3/2	Infinite Saturation Flow						Inf	Inf
J3:4/1	Infinite Saturation Flow						Inf	Inf
J3:5/1 (MSA)	3.50	0.00	Y	Arm J3:11 Left	30.00	100.0 %	1871	1871
J3:5/2 (MSA)	3.50	0.00	N	Arm J3:6 Left	40.00	62.3 %	2057	2057
				Arm J3:9 Ahead	Inf	37.7 %		
J3:6/1	Infinite Saturation Flow						Inf	Inf
J3:6/2	Infinite Saturation Flow						Inf	Inf
J3:7/1	Infinite Saturation Flow						Inf	Inf
J3:7/2	Infinite Saturation Flow						Inf	Inf
J3:8/1	This lane uses a directly entered Saturation Flow						1850	1850
J3:9/1	Infinite Saturation Flow						Inf	Inf
J3:10/1	3.65	0.00	Y	Arm J3:11 Ahead	Inf	100.0 %	1980	1980
J3:10/2	3.65	0.00	N	Arm J3:11 Ahead	Inf	100.0 %	2120	2120
J3:10/3	3.65	0.00	N	Arm J3:6 Ahead	Inf	100.0 %	2120	2120
J3:11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf

Junction: J4: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J4:1/1	Infinite Saturation Flow						Inf	Inf
J4:1/2	Infinite Saturation Flow						Inf	Inf
J4:2/1	Infinite Saturation Flow						Inf	Inf
J4:2/2	Infinite Saturation Flow						Inf	Inf
J4:3/1	Infinite Saturation Flow						Inf	Inf
J4:4/1	Infinite Saturation Flow						Inf	Inf
J4:5/1	Infinite Saturation Flow						Inf	Inf
J4:6/1	Infinite Saturation Flow						Inf	Inf
J4:7/1	Infinite Saturation Flow						Inf	Inf
J4:7/2	Infinite Saturation Flow						Inf	Inf
J4:8/1	Infinite Saturation Flow						Inf	Inf
J4:8/2	Infinite Saturation Flow						Inf	Inf
J4:9/1	Infinite Saturation Flow						Inf	Inf
J4:9/2	Infinite Saturation Flow						Inf	Inf
J4:10/1	Infinite Saturation Flow						Inf	Inf
J4:10/2	Infinite Saturation Flow						Inf	Inf
J4:11/1	Infinite Saturation Flow						Inf	Inf
J4:12/1	Infinite Saturation Flow						Inf	Inf
J4:13/1	Infinite Saturation Flow						Inf	Inf
J4:14/1	Infinite Saturation Flow						Inf	Inf

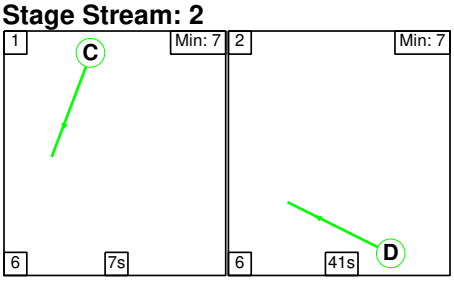
Scenario 1: '2028 reference case - AM Peak' (FG1: '2028 ref case - AM', Plan 1: '2031 Reference Case - AM Peak')
C1

Stage Sequence Diagram

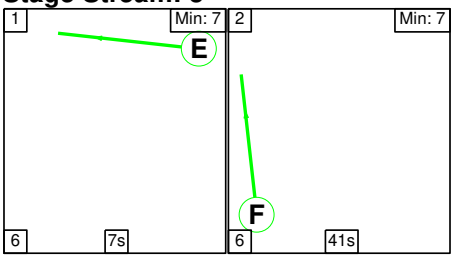
Stage Stream: 1



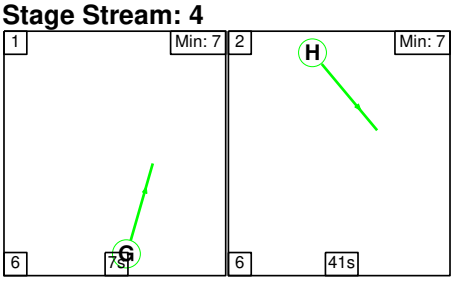
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	7	41
Change Point	55	8

Stage Stream: 2

Stage	1	2
Duration	7	41
Change Point	55	8

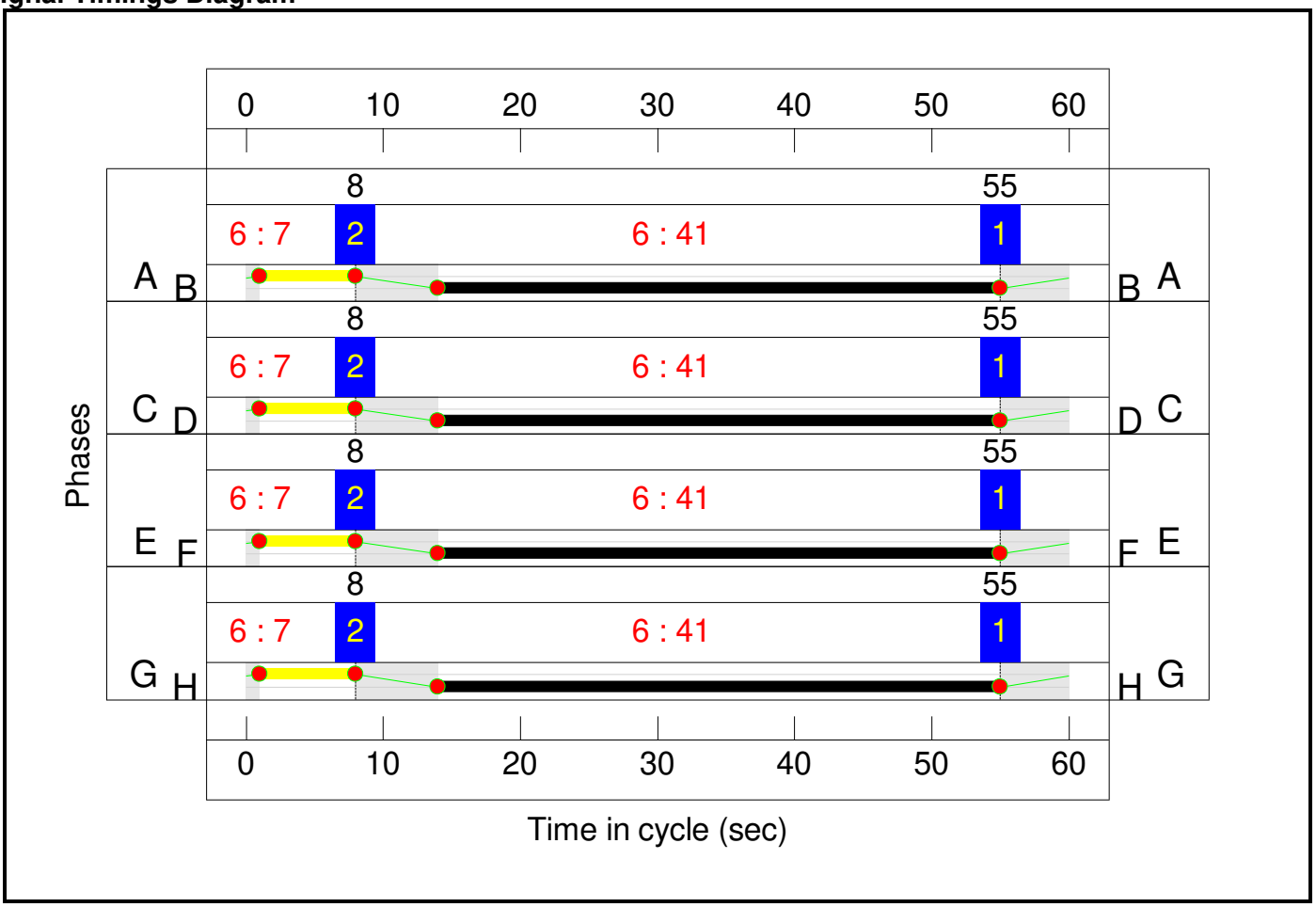
Stage Stream: 3

Stage	1	2
Duration	7	41
Change Point	55	8

Stage Stream: 4

Stage	1	2
Duration	7	41
Change Point	55	8

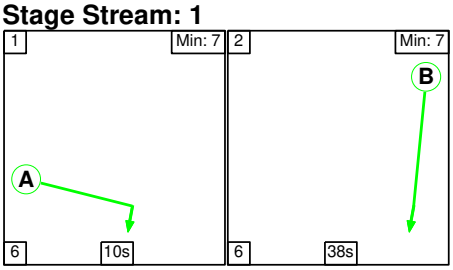
Signal Timings Diagram



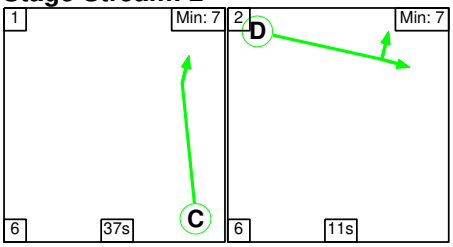
C2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

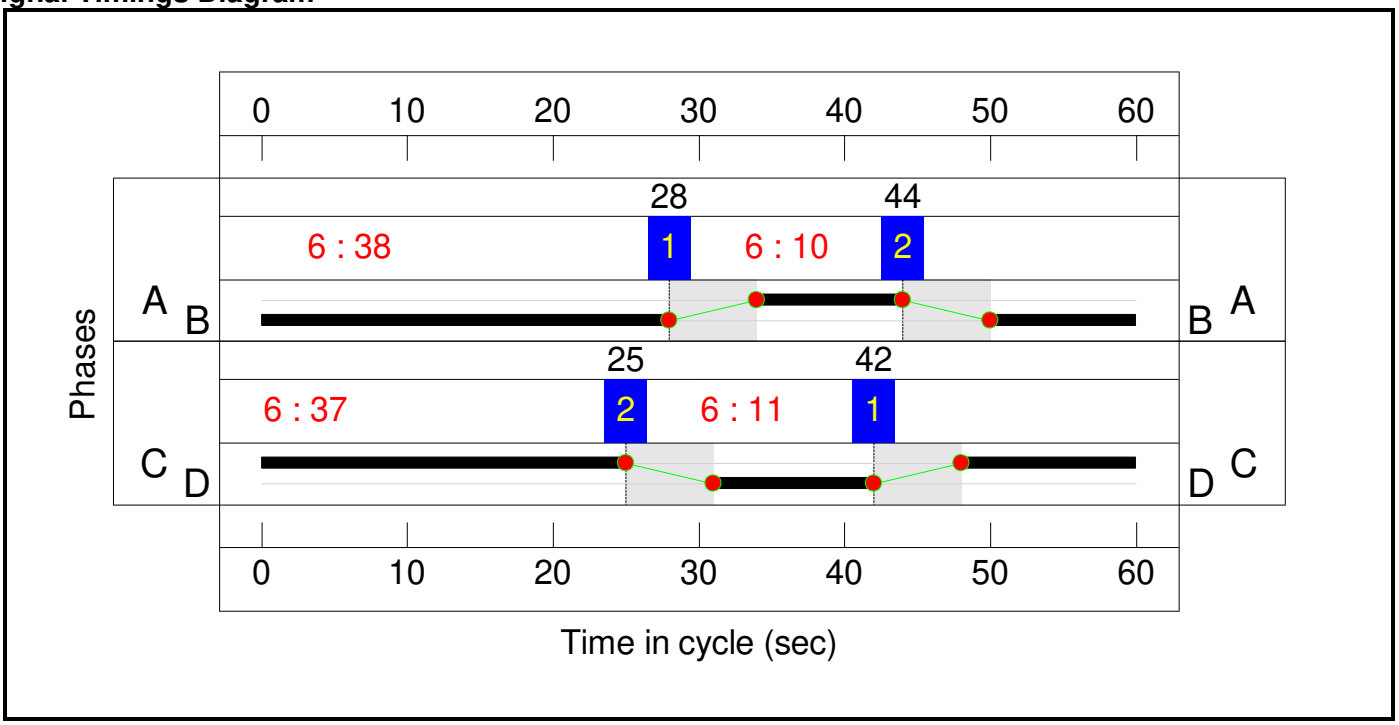
Stage Stream: 1

Stage	1	2
Duration	10	38
Change Point	28	44

Stage Stream: 2

Stage	1	2
Duration	37	11
Change Point	42	25

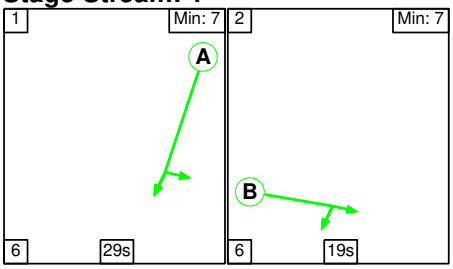
Signal Timings Diagram



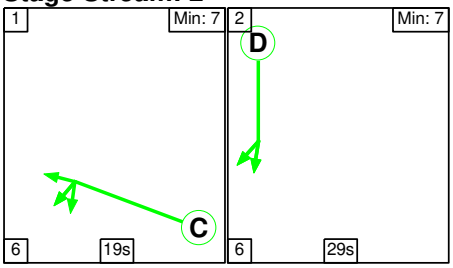
C3

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

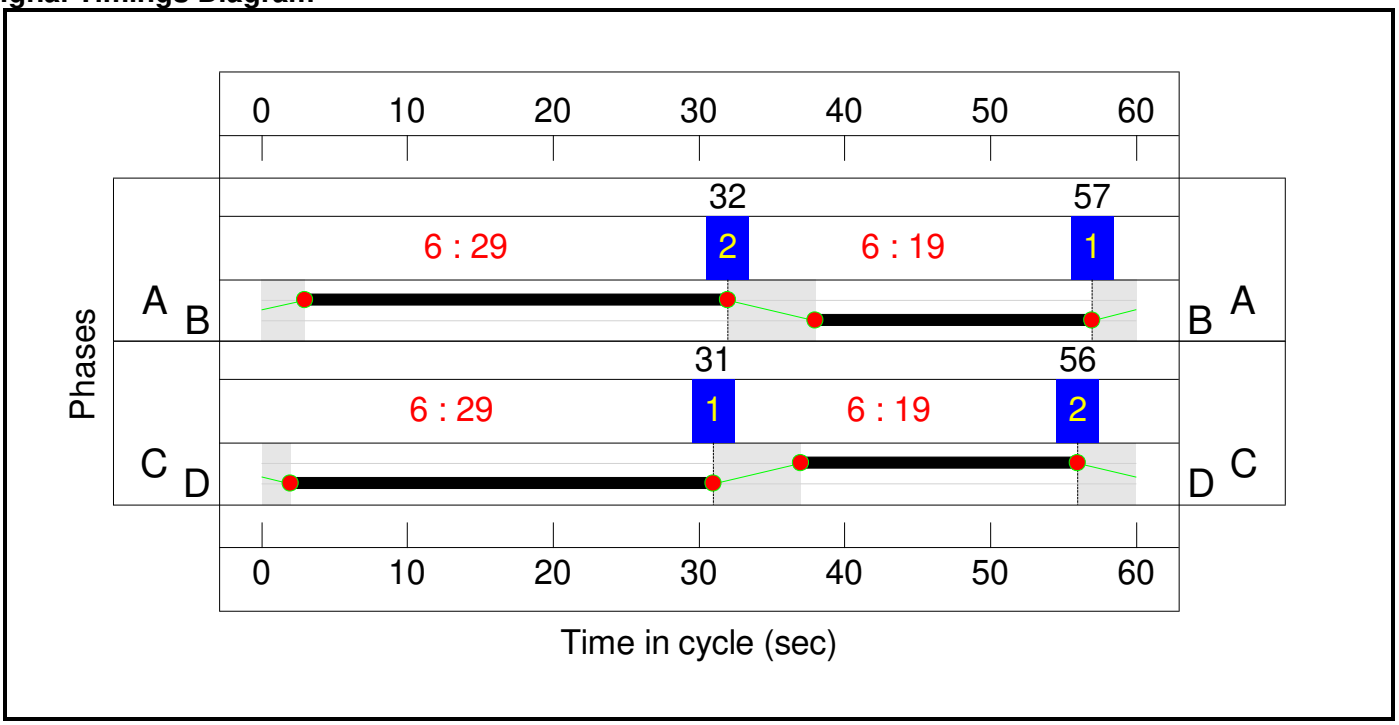
Stage Stream: 1

Stage	1	2
Duration	29	19
Change Point	57	32

Stage Stream: 2

Stage	1	2
Duration	19	29
Change Point	31	56

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: 2028 Reference Case Network Model	-	-	**N/A**	-	-		-	-	-	-	-	-	**141.2%**
J1: Baynards Green	-	-	**N/A**	-	-		-	-	-	-	-	-	**141.2%**
1/1	A43 North Ahead Left	O	N/A	N/A	-		-	-	-	1324	Inf	1042	127.0%
1/2	A43 North Ahead	O	N/A	N/A	-		-	-	-	1315	Inf	1031	127.5%
4/1+4/2	B4100 East Left Ahead	O	N/A	N/A	-		-	-	-	829	Inf : Inf	351+284	141.2 : 117.8%
5/1	Ahead	U	N/A	N/A	-		-	-	-	1219	2000	2000	48.4%
7/1	A43 South Ahead Ahead2	O	N/A	N/A	-		-	-	-	856	Inf	1129	75.8%
7/2	A43 South Ahead	O	N/A	N/A	-		-	-	-	937	Inf	1100	85.2%
10/1+10/2	B4100 West Left Ahead	O	N/A	N/A	-		-	-	-	469	Inf : Inf	438+147	80.2 : 80.2%
J2: Padbury Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**94.0%**
1/1	A43 north Ahead	U	2:1	N/A	C2:B		1	38	-	1219	1922	1249	77.5%
1/2	A43 north Ahead	U	2:1	N/A	C2:B		1	38	-	1248	2058	1338	73.2%
3/1	A43 south Ahead	U	2:2	N/A	C2:C		1	37	-	773	1886	1194	64.7%
3/2	A43 south Ahead	U	2:2	N/A	C2:C		1	37	-	699	2019	1279	54.7%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	2:2	N/A	C2:D		1	11	-	470	2058:1908	412+88	94.0 : 94.0%
5/3	Junction 10 s'bound offslip Ahead	U	2:2	N/A	C2:D		1	11	-	361	2058	412	87.7%
6/1	Right	U	2:1	N/A	C2:A		1	10	-	149	1980	363	41.0%
6/2	Right	U	2:1	N/A	C2:A		1	10	-	361	2120	389	92.9%
J3: Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**102.3%**
1/1	A43 Left Ahead	U	3:1	N/A	C3:A		1	29	-	1170	1980	990	98.2%

1/2+1/3	A43 Ahead	U	3:1	N/A	C3:A		1	29	-	1807	1980:1980	553+892	100.5 : 102.3%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	516	Inf	992	52.0%
5/1	MSA Left	U	3:2	N/A	C3:C		1	19	-	282	1871	624	45.2%
5/2	MSA Left Ahead	U	3:2	N/A	C3:C		1	19	-	273	2051	684	39.9%
8/1	Ahead Right	U	3:1	N/A	C3:B		1	19	-	324	1850	617	52.5%
10/1	Ahead	U	3:2	N/A	C3:D		1	29	-	863	1980	990	69.8%
10/2	Ahead	U	3:2	N/A	C3:D		1	29	-	765	2120	1060	55.6%
10/3	Ahead	U	3:2	N/A	C3:D		1	29	-	1116	2120	1060	82.0%
J4: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**83.3%**
1/1+1/2	Ahead	O	N/A	N/A	-		-	-	-	664	Inf : Inf	485+678	57.1 : 57.1%
2/1	U-Turn	O	N/A	N/A	-		-	-	-	403	Inf	1111	27.7%
2/2	Ahead	O	N/A	N/A	-		-	-	-	906	Inf	1111	67.9%
9/1	Ahead Ahead2	O	N/A	N/A	-		-	-	-	811	Inf	974	83.3%
9/2	Ahead	O	N/A	N/A	-		-	-	-	607	Inf	974	62.3%

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: 2028 Reference Case Network Model	**-**	**-**	**10396**	**0**	**0**	**61.1**	**451.6**	**0.0**	**512.8**	**-**	**-**	**-**	**-**
J1: Baynards Green	**-**	**-**	**6073**	**0**	**0**	**32.6**	**393.7**	**0.0**	**426.3**	**-**	**-**	**-**	**-**
1/1	1324	1042	1042	0	0	11.9	143.2	-	155.1	421.7	66.2	143.2	209.4
1/2	1315	1031	1031	0	0	11.9	144.2	-	156.1	427.3	65.8	144.2	210.0
4/1+4/2	829	634	1268	0	0	8.2	99.5	-	107.7	467.7	22.5	99.5	122.1
5/1	969	969	-	-	-	0.0	0.5	-	0.5	1.7	0.0	0.5	0.5
7/1	856	856	856	0	0	0.3	1.5	-	1.9	7.8	10.1	1.5	11.7
7/2	937	937	937	0	0	0.3	2.8	-	3.1	11.9	9.8	2.8	12.6
10/1+10/2	469	469	938	0	0	0.0	2.0	-	2.0	15.3	3.3	2.0	5.3
J2: Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**12.4**	**13.4**	**0.0**	**25.8**	**-**	**-**	**-**	**-**
1/1	969	969	-	-	-	2.0	1.7	-	3.7	13.9	10.9	1.7	12.6
1/2	979	979	-	-	-	1.9	1.4	-	3.3	12.0	10.9	1.4	12.2
3/1	773	773	-	-	-	1.3	0.9	-	2.2	10.5	7.4	0.9	8.4
3/2	699	699	-	-	-	1.1	0.6	-	1.7	8.8	5.9	0.6	6.5
5/2+5/1	470	470	-	-	-	3.0	5.7	-	8.7	66.6	6.3	5.7	12.0
5/3	361	361	-	-	-	2.3	3.2	-	5.5	54.9	5.8	3.2	9.0
6/1	149	149	-	-	-	0.2	0.0	-	0.2	5.7	0.3	0.0	0.3
6/2	361	361	-	-	-	0.4	0.0	-	0.4	4.1	1.2	0.0	1.2
J3: Cherwell	**-**	**-**	**516**	**0**	**0**	**15.5**	**39.3**	**0.0**	**54.8**	**-**	**-**	**-**	**-**
1/1	972	972	-	-	-	2.9	11.7	-	14.7	54.3	16.0	11.7	27.7
1/2+1/3	1468	1384	-	-	-	6.4	25.8	-	32.1	78.8	27.0	25.8	52.7
2/2	516	516	516	0	0	0.0	0.5	-	0.5	3.8	0.0	0.5	0.5
5/1	282	282	-	-	-	1.2	0.4	-	1.6	21.0	3.7	0.4	4.1
5/2	273	273	-	-	-	1.2	0.3	-	1.5	19.8	3.5	0.3	3.8
8/1	324	324	-	-	-	1.5	0.6	-	2.0	22.3	4.3	0.6	4.9
10/1	691	691	-	-	-	0.9	0.0	-	0.9	4.8	2.0	0.0	2.0

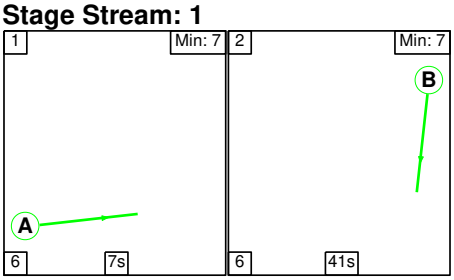
10/2	589	589	-	-	-	0.8	0.0	-	0.8	5.2	2.3	0.0	2.3
10/3	869	869	-	-	-	0.6	0.0	-	0.6	2.3	1.2	0.0	1.2
J4: Unnamed Junction	**-**	**-**	**3808**	**0**	**0**	**0.7**	**5.1**	**0.0**	**5.8**	**-**	**-**	**-**	**-**
1/1+1/2	664	664	1328	0	0	0.0	0.7	-	0.7	3.6	0.0	0.7	0.7
2/1	308	308	308	0	0	0.0	0.2	-	0.2	2.2	0.0	0.2	0.2
2/2	754	754	754	0	0	0.7	1.0	-	1.7	8.3	10.4	1.0	11.5
9/1	811	811	811	0	0	0.0	2.4	-	2.4	10.7	0.0	2.4	2.4
9/2	607	607	607	0	0	0.0	0.8	-	0.8	4.9	0.0	0.8	0.8

C1	Stream: 1	PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	60
C1	Stream: 2	PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	60
C1	Stream: 3	PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	60
C1	Stream: 4	PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	60
C2	Stream: 1	PRC for Signalled Lanes (%):	-3.2	Total Delay for Signalled Lanes (pcuHr):	7.63	Cycle Time (s):	60
C2	Stream: 2	PRC for Signalled Lanes (%):	-4.5	Total Delay for Signalled Lanes (pcuHr):	18.17	Cycle Time (s):	60
C3	Stream: 1	PRC for Signalled Lanes (%):	-13.7	Total Delay for Signalled Lanes (pcuHr):	48.80	Cycle Time (s):	60
C3	Stream: 2	PRC for Signalled Lanes (%):	9.8	Total Delay for Signalled Lanes (pcuHr):	5.47	Cycle Time (s):	60
		PRC Over All Lanes (%):	-56.9	Total Delay Over All Lanes(pcuHr):	512.75		

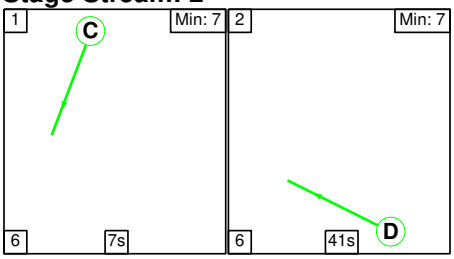
Scenario 2: '2028 reference case - PM Peak' (FG2: '2028 ref case - PM', Plan 1: '2031 Reference Case - AM Peak')
C1

Stage Sequence Diagram

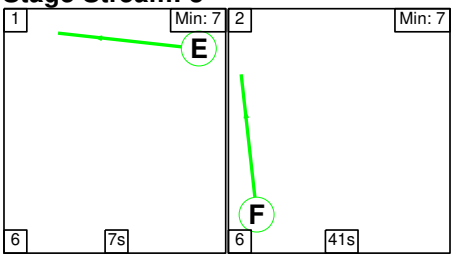
Stage Stream: 1



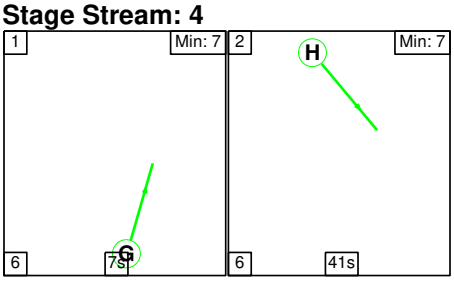
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	7	41
Change Point	58	11

Stage Stream: 2

Stage	1	2
Duration	7	41
Change Point	58	11

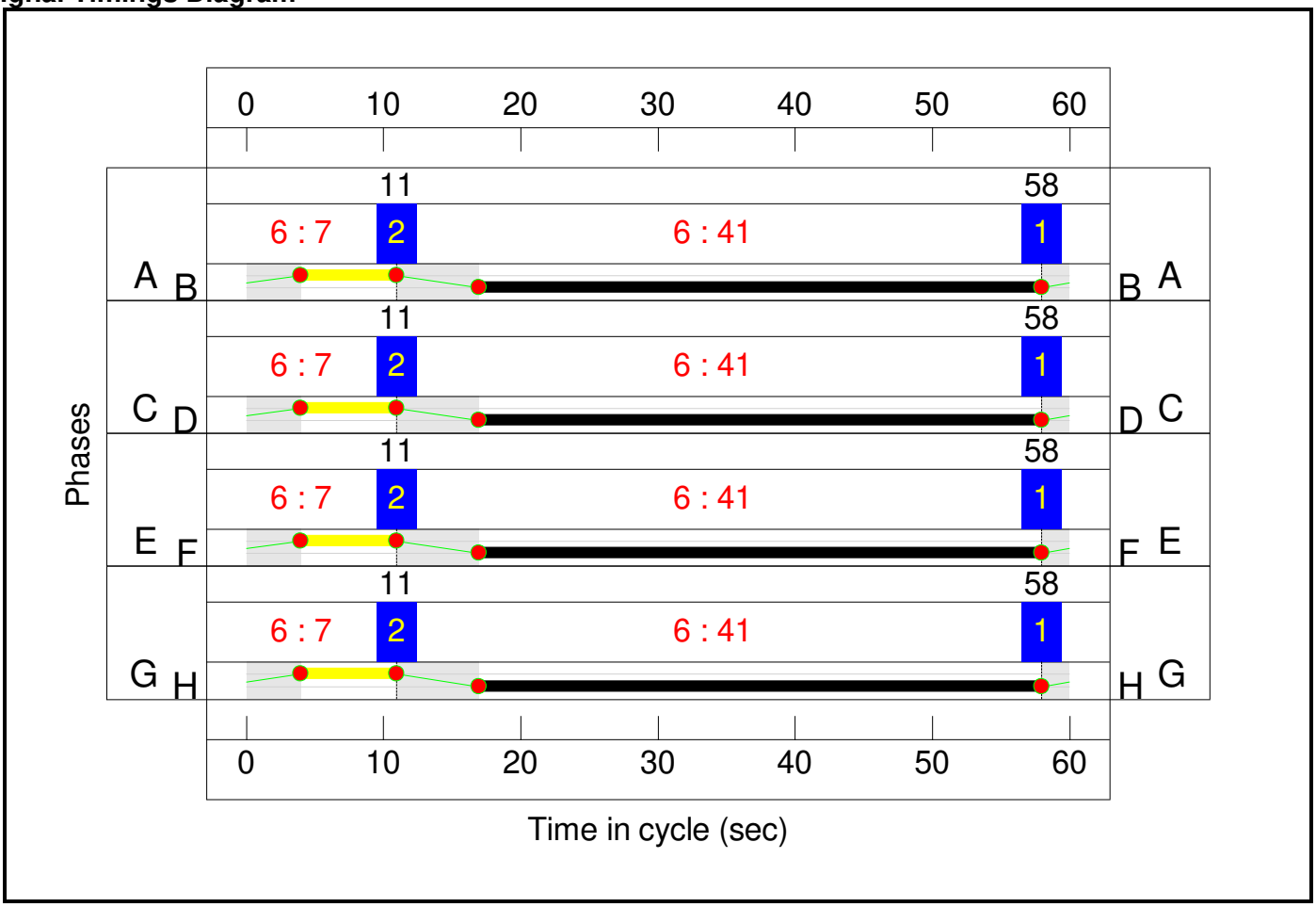
Stage Stream: 3

Stage	1	2
Duration	7	41
Change Point	58	11

Stage Stream: 4

Stage	1	2
Duration	7	41
Change Point	58	11

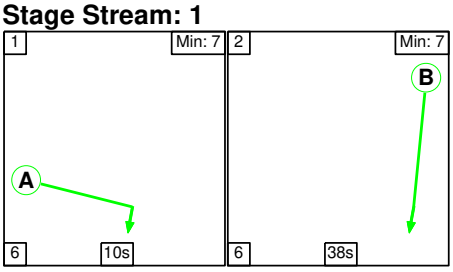
Signal Timings Diagram



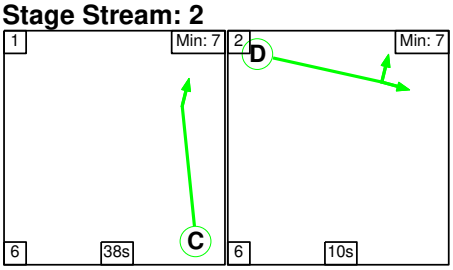
C2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

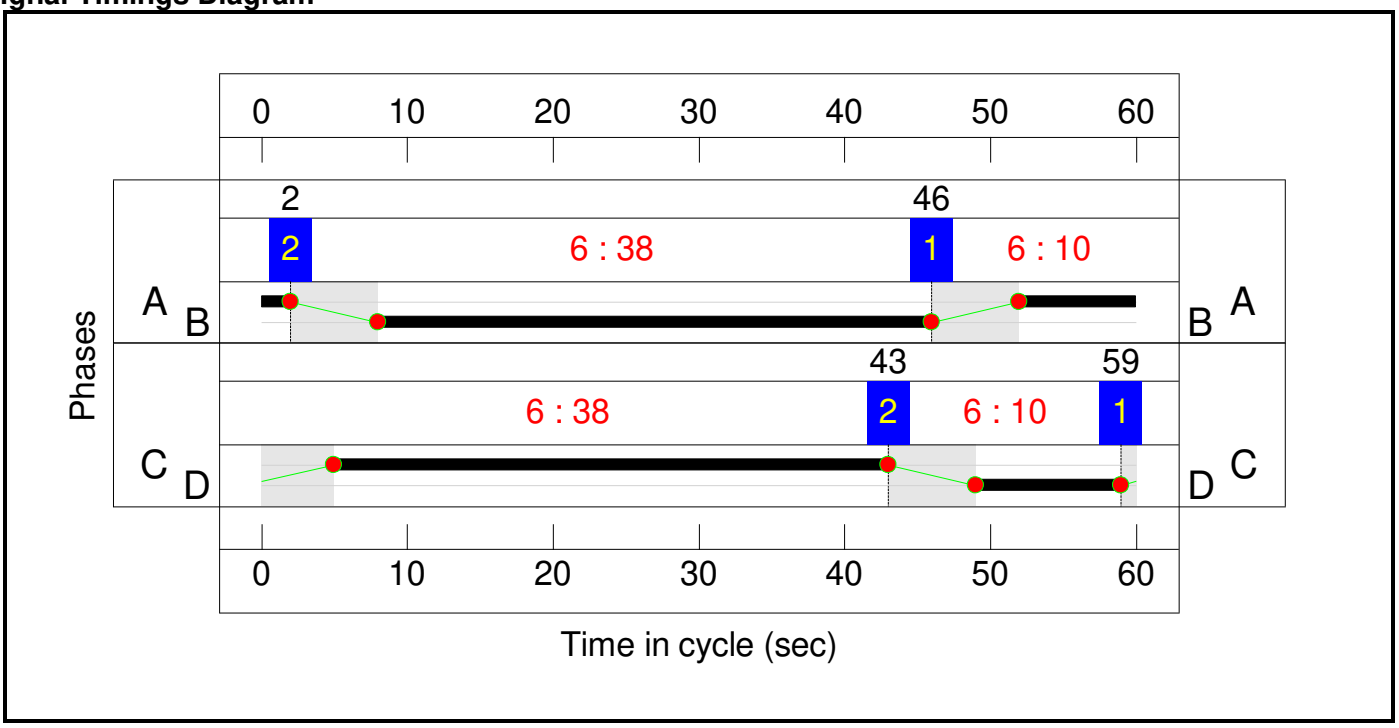
Stage Stream: 1

Stage	1	2
Duration	10	38
Change Point	46	2

Stage Stream: 2

Stage	1	2
Duration	38	10
Change Point	59	43

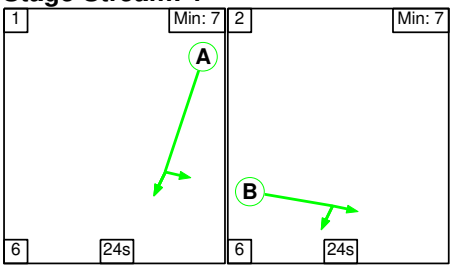
Signal Timings Diagram



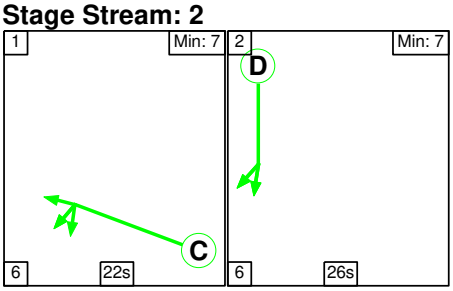
C3

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

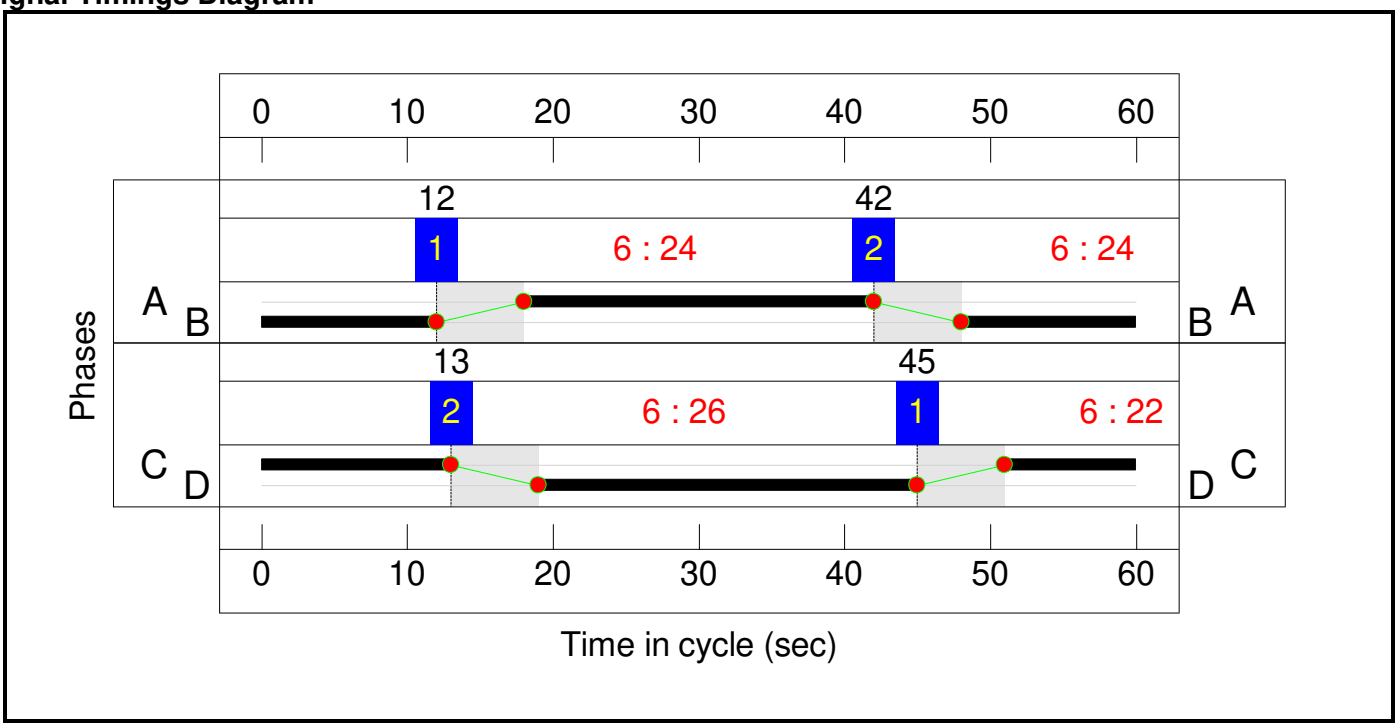
Stage Stream: 1

Stage	1	2
Duration	24	24
Change Point	12	42

Stage Stream: 2

Stage	1	2
Duration	22	26
Change Point	45	13

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: 2028 Reference Case Network Model	-	-	**N/A**	-	-		-	-	-	-	-	-	**146.2%**
J1: Baynards Green	-	-	**N/A**	-	-		-	-	-	-	-	-	**146.2%**
1/1	A43 North Ahead Left	O	N/A	N/A	-		-	-	-	854	Inf	1097	77.8%
1/2	A43 North Ahead	O	N/A	N/A	-		-	-	-	855	Inf	1084	78.9%
4/1+4/2	B4100 East Left Ahead	O	N/A	N/A	-		-	-	-	1188	Inf : Inf	477+415	122.1 : 146.2%
5/1	Ahead	U	N/A	N/A	-		-	-	-	684	2000	2000	32.1%
7/1	A43 South Ahead Ahead2	O	N/A	N/A	-		-	-	-	1196	Inf	1045	114.5%
7/2	A43 South Ahead	O	N/A	N/A	-		-	-	-	1200	Inf	1036	115.8%
10/1+10/2	B4100 West Left Ahead	O	N/A	N/A	-		-	-	-	312	Inf : Inf	298+50	89.5 : 89.5%
J2: Padbury Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**95.9%**
1/1	A43 north Ahead	U	2:1	N/A	C2:B		1	38	-	684	1922	1249	51.4%
1/2	A43 north Ahead	U	2:1	N/A	C2:B		1	38	-	812	2058	1338	60.7%
3/1	A43 south Ahead	U	2:2	N/A	C2:C		1	38	-	1127	1886	1226	91.9%
3/2	A43 south Ahead	U	2:2	N/A	C2:C		1	38	-	967	2019	1312	73.7%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	2:2	N/A	C2:D		1	10	-	431	2058:1908	377+72	95.9 : 95.9%
5/3	Junction 10 s'bound offslip Ahead	U	2:2	N/A	C2:D		1	10	-	350	2058	377	92.8%
6/1	Right	U	2:1	N/A	C2:A		1	10	-	129	1980	363	35.5%
6/2	Right	U	2:1	N/A	C2:A		1	10	-	350	2120	389	90.1%
J3: Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**96.2%**
1/1	A43 Left Ahead	U	3:1	N/A	C3:A		1	24	-	732	1980	825	88.1%

1/2+1/3	A43 Ahead	U	3:1	N/A	C3:A		1	24	-	1243	1980:1980	500+790	96.2 : 91.9%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	557	Inf	971	57.4%
5/1	MSA Left	U	3:2	N/A	C3:C		1	22	-	246	1871	717	34.3%
5/2	MSA Left Ahead	U	3:2	N/A	C3:C		1	22	-	326	2057	789	41.3%
8/1	Ahead Right	U	3:1	N/A	C3:B		1	24	-	337	1850	771	43.7%
10/1	Ahead	U	3:2	N/A	C3:D		1	26	-	420	1980	891	47.0%
10/2	Ahead	U	3:2	N/A	C3:D		1	26	-	556	2120	954	58.2%
10/3	Ahead	U	3:2	N/A	C3:D		1	26	-	761	2120	954	76.1%
J4: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**93.3%**
1/1+1/2	Ahead	O	N/A	N/A	-		-	-	-	636	Inf : Inf	801+532	49.3 : 45.3%
2/1	U-Turn	O	N/A	N/A	-		-	-	-	461	Inf	1142	37.6%
2/2	Ahead	O	N/A	N/A	-		-	-	-	503	Inf	1142	43.8%
9/1	Ahead Ahead2	O	N/A	N/A	-		-	-	-	984	Inf	1055	93.3%
9/2	Ahead	O	N/A	N/A	-		-	-	-	962	Inf	1055	91.2%

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: 2028 Reference Case Network Model	**-**	**-**	**10901**	**0**	**0**	**48.4**	**365.0**	**0.0**	**413.4**	**-**	**-**	**-**	**-**
J1: Baynards Green	**-**	**-**	**6197**	**0**	**0**	**25.4**	**322.4**	**0.0**	**347.9**	**-**	**-**	**-**	**-**
1/1	854	854	854	0	0	0.0	1.7	-	1.7	7.3	0.0	1.7	1.7
1/2	855	855	855	0	0	0.0	1.8	-	1.8	7.7	0.0	1.8	1.8
4/1+4/2	1188	891	1783	0	0	12.4	150.3	-	162.7	493.1	33.7	150.3	184.0
5/1	643	643	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2
7/1	1196	1045	1045	0	0	6.5	79.5	-	86.0	258.8	48.0	79.5	127.5
7/2	1200	1036	1036	0	0	6.5	85.3	-	91.8	275.4	49.7	85.3	135.0
10/1+10/2	312	312	624	0	0	0.0	3.6	-	3.6	41.1	0.0	3.6	3.6
J2: Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**12.4**	**19.4**	**0.0**	**31.8**	**-**	**-**	**-**	**-**
1/1	643	643	-	-	-	1.0	0.5	-	1.5	8.5	5.5	0.5	6.1
1/2	812	812	-	-	-	1.4	0.8	-	2.1	9.5	7.7	0.8	8.4
3/1	1127	1127	-	-	-	2.7	5.2	-	7.9	25.2	16.8	5.2	22.0
3/2	967	967	-	-	-	1.7	1.4	-	3.1	11.7	11.3	1.4	12.7
5/2+5/1	431	431	-	-	-	2.8	6.8	-	9.6	80.4	5.9	6.8	12.7
5/3	350	350	-	-	-	2.3	4.8	-	7.1	73.0	5.7	4.8	10.5
6/1	129	129	-	-	-	0.1	0.0	-	0.1	3.7	0.2	0.0	0.2
6/2	350	350	-	-	-	0.3	0.0	-	0.3	3.0	0.6	0.0	0.6
J3: Cherwell	**-**	**-**	**557**	**0**	**0**	**9.9**	**11.4**	**0.0**	**21.3**	**-**	**-**	**-**	**-**
1/1	727	727	-	-	-	2.4	3.5	-	5.9	29.1	11.1	3.5	14.6
1/2+1/3	1207	1207	-	-	-	3.8	6.3	-	10.1	30.0	20.0	6.3	26.3
2/2	557	557	557	0	0	0.0	0.7	-	0.7	4.3	0.0	0.7	0.7
5/1	246	246	-	-	-	0.9	0.3	-	1.2	17.0	2.9	0.3	3.1
5/2	326	326	-	-	-	1.2	0.4	-	1.6	17.4	3.9	0.4	4.2
8/1	337	337	-	-	-	1.1	0.4	-	1.5	16.0	3.9	0.4	4.3
10/1	419	419	-	-	-	0.0	0.0	-	0.0	0.4	0.1	0.0	0.1

10/2	555	555	-	-	-	0.4	0.0	-	0.4	2.7	1.8	0.0	1.8
10/3	726	726	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J4: Unnamed Junction	**-**	**-**	**4147**	**0**	**0**	**0.6**	**11.8**	**0.0**	**12.4**	**-**	**-**	**-**	**-**
1/1+1/2	636	636	1272	0	0	0.0	0.5	-	0.5	2.6	0.0	0.5	0.5
2/1	429	429	429	0	0	0.0	0.3	-	0.3	2.5	0.0	0.3	0.3
2/2	500	500	500	0	0	0.1	0.4	-	0.5	3.8	6.2	0.4	6.6
9/1	984	984	984	0	0	0.3	5.9	-	6.2	22.6	10.1	5.9	16.0
9/2	962	962	962	0	0	0.2	4.7	-	4.9	18.3	9.1	4.7	13.8

C1	Stream: 1	PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	60
C1	Stream: 2	PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	60
C1	Stream: 3	PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	60
C1	Stream: 4	PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s):	60
C2	Stream: 1	PRC for Signalled Lanes (%):	-0.1	Total Delay for Signalled Lanes (pcuHr):	4.08	Cycle Time (s):	60
C2	Stream: 2	PRC for Signalled Lanes (%):	-6.6	Total Delay for Signalled Lanes (pcuHr):	27.74	Cycle Time (s):	60
C3	Stream: 1	PRC for Signalled Lanes (%):	-6.8	Total Delay for Signalled Lanes (pcuHr):	17.44	Cycle Time (s):	60
C3	Stream: 2	PRC for Signalled Lanes (%):	18.3	Total Delay for Signalled Lanes (pcuHr):	3.21	Cycle Time (s):	60
		PRC Over All Lanes (%):	-62.4	Total Delay Over All Lanes(pcuHr):	413.39		

APPENDIX F

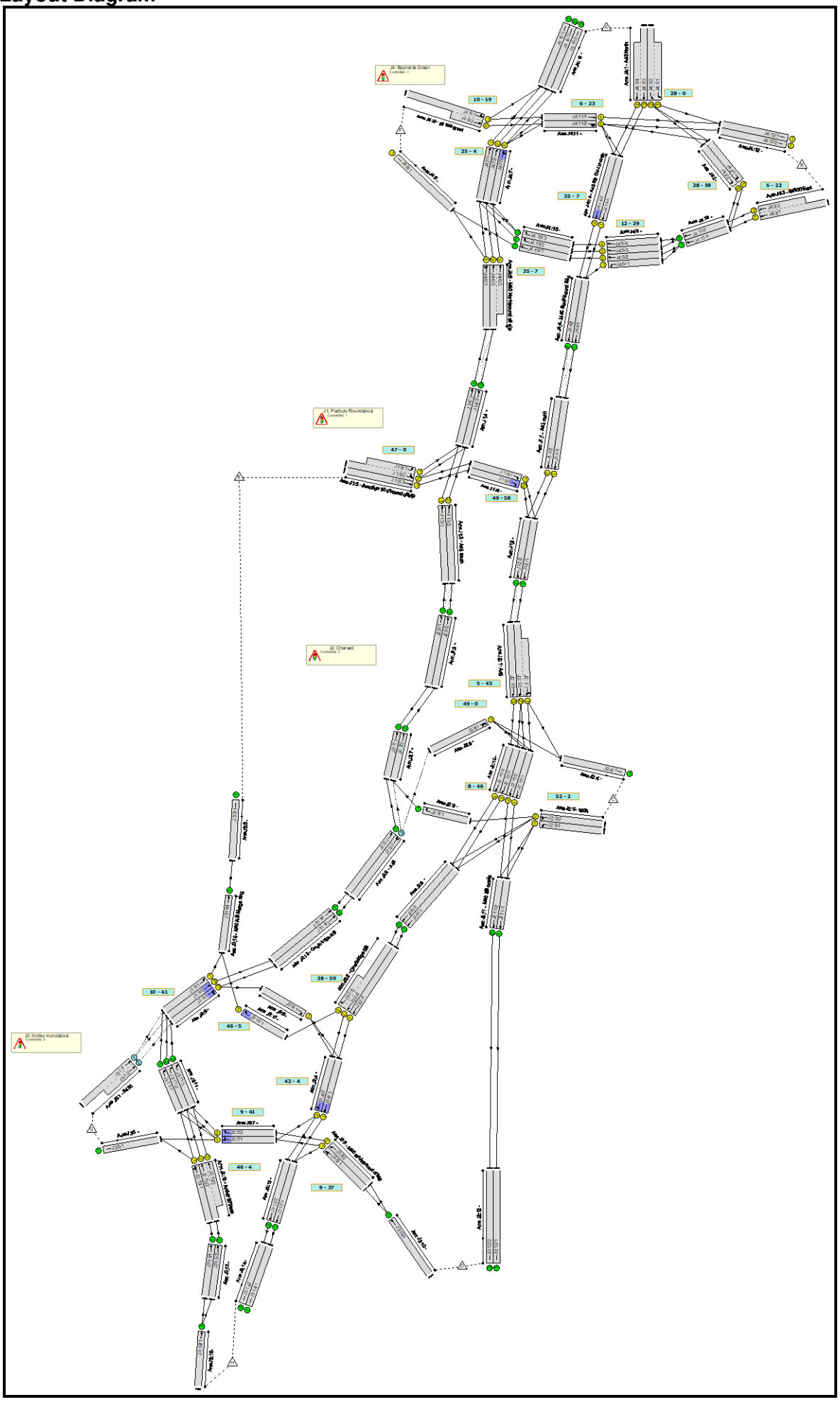
2028 PHASE 1 WITH DEVELOPMENT LINSIG MODEL RESULTS

Full Input Data And Results

User and Project Details

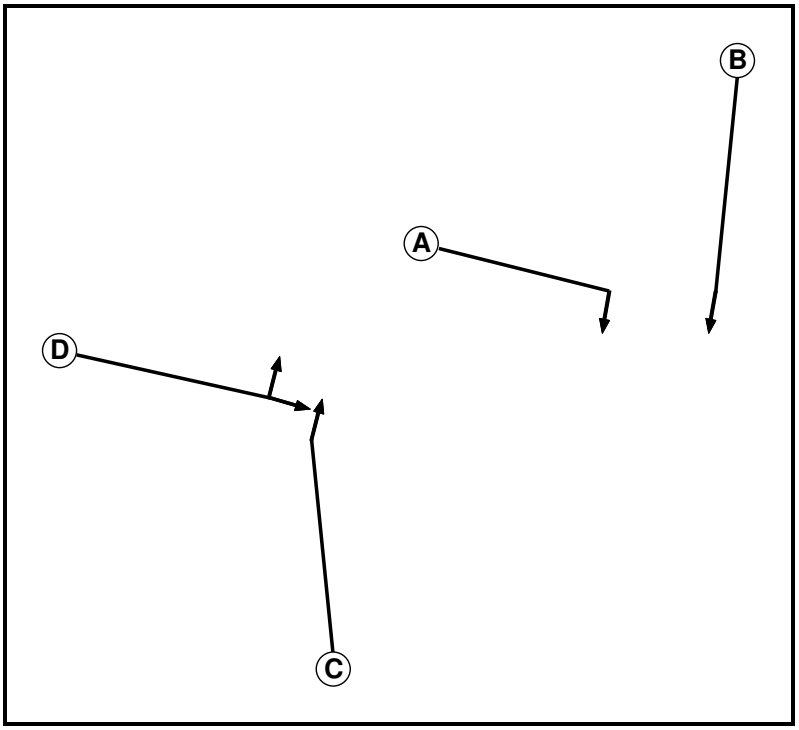
Project:	**Oxfordshire SRFI**
Title:	**Phase 1 highway works network model**
Location:	M40 Junction 10, Oxfordshire
Additional detail:	
File name:	230207 M40 J10 - Phase 1 highway works.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



C1 - Padbury

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

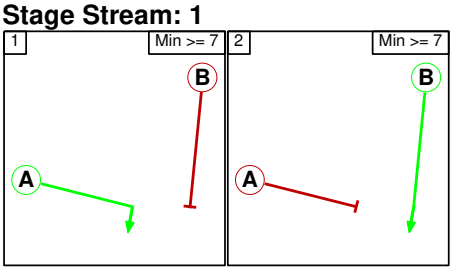
		Starting Phase			
		A	B	C	D
Terminating Phase	A		6	-	-
	B	6		-	-
	C	-	-		6
	D	-	-	6	

Phases in Stage

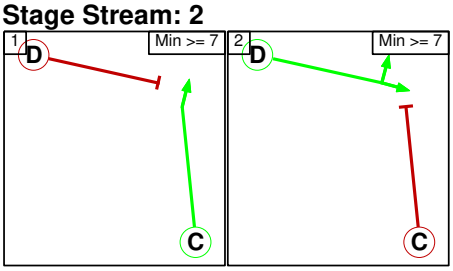
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Prohibited Stage Change

Stage Stream: 1

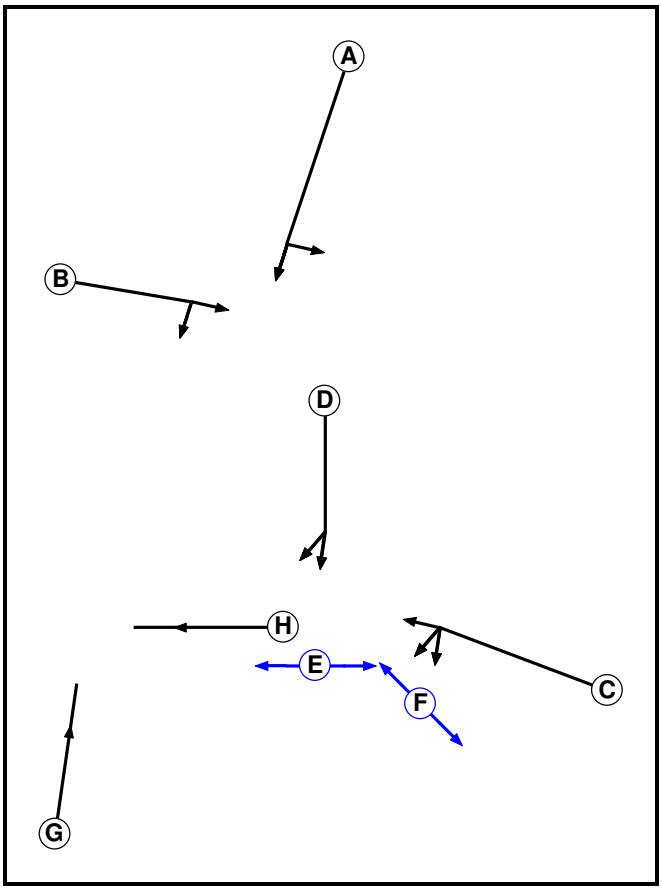
	To Stage		
From Stage		1	2
	1		6
	2	6	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		6
	2	6	

C2 - Cherwell

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
E	Pedestrian	2		6	6
F	Pedestrian	2		6	6
G	Traffic	3		7	7
H	Traffic	3		7	7

Phase Intergreens Matrix

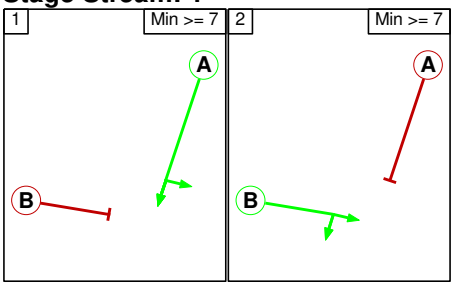
		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A		6	-	-	-	-	-	-
	B	5		-	-	-	-	-	-
	C	-	-		6	-	5	-	-
	D	-	-	6		7	-	-	-
	E	-	-	-	6		-	-	-
	F	-	-	6	-	-		-	-
	G	-	-	-	-	-	-		6
	H	-	-	-	-	-	-	5	

Phases in Stage

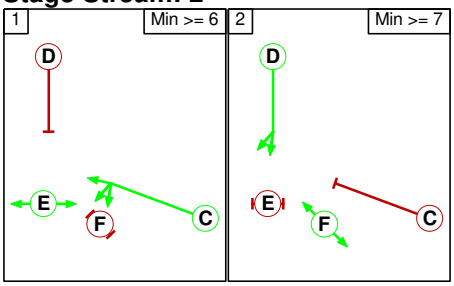
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C E
2	2	D F
3	1	G
3	2	H

Stage Diagram

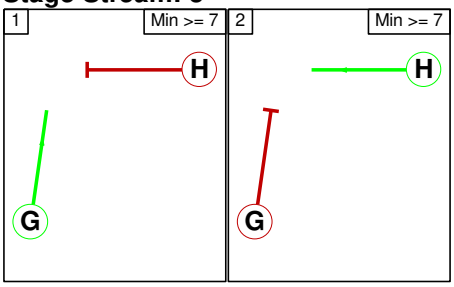
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Prohibited Stage Change

Stage Stream: 1

From Stage \ To Stage	1	2
1		6
2	5	

Stage Stream: 2

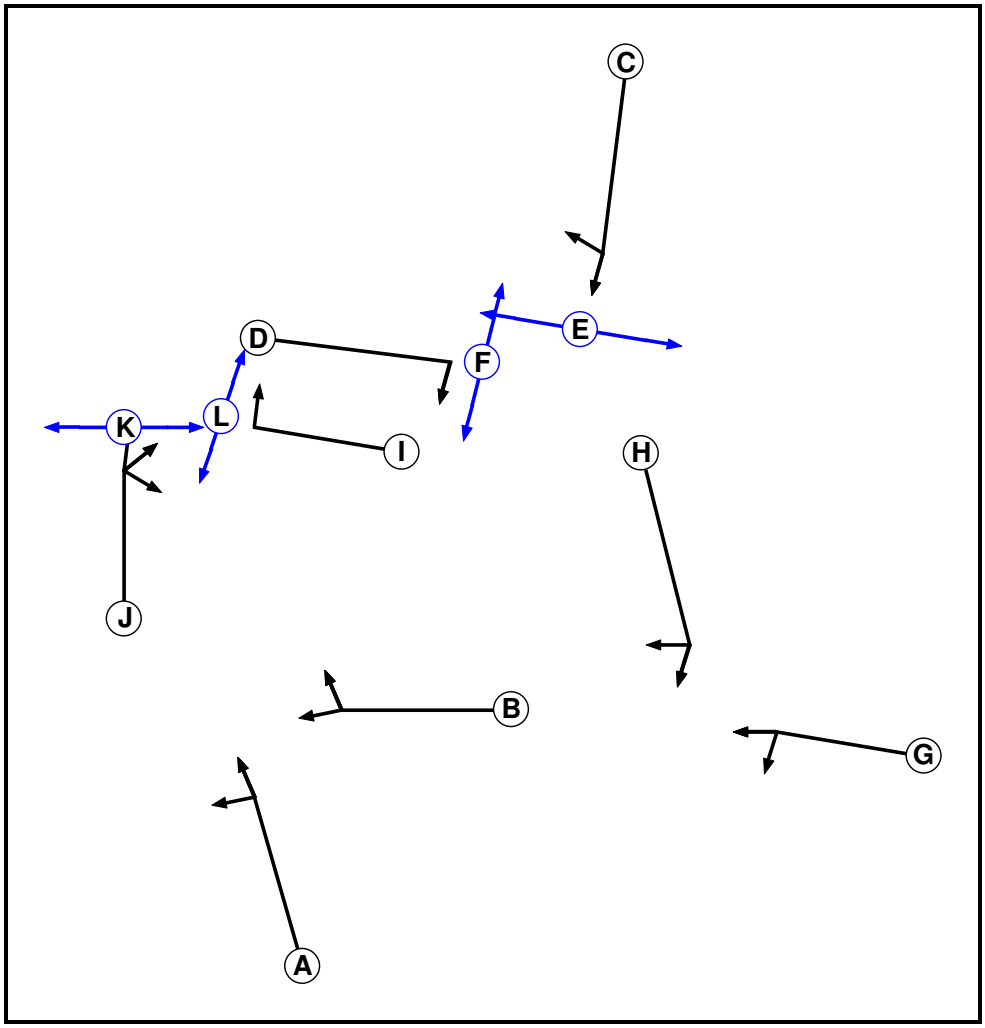
From Stage \ To Stage	1	2
1		6
2	7	

Stage Stream: 3

From Stage \ To Stage	1	2
1		6
2	5	

C3 - Ardley

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	4
E	Pedestrian	2		6	6
F	Pedestrian	2		5	5
G	Traffic	3		7	7
H	Traffic	3		7	7
I	Traffic	4		7	4
J	Traffic	4		7	7
K	Pedestrian	4		7	7
L	Pedestrian	4		5	5

Phase Intergreens Matrix

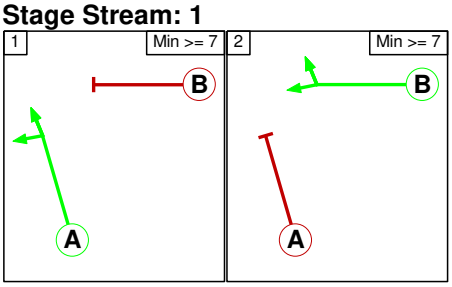
		Starting Phase											
		A	B	C	D	E	F	G	H	I	J	K	L
Terminating Phase	A		5	-	-	-	-	-	-	-	-	-	-
	B	5		-	-	-	-	-	-	-	-	-	-
	C	-	-		5	5	-	-	-	-	-	-	-
	D	-	-	5		-	5	-	-	-	-	-	-
	E	-	-	8	-		-	-	-	-	-	-	-
	F	-	-	-	5	-		-	-	-	-	-	-
	G	-	-	-	-	-	-		5	-	-	-	-
	H	-	-	-	-	-	-	5		-	-	-	-
	I	-	-	-	-	-	-	-	-		5	-	5
	J	-	-	-	-	-	-	-	-	5		5	-
	K	-	-	-	-	-	-	-	-	-	8		-
	L	-	-	-	-	-	-	-	-	5	-	-	

Phases in Stage

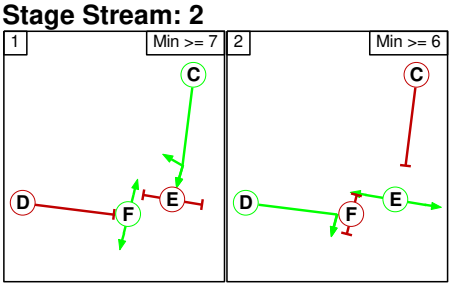
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C F
2	2	D E
3	1	G
3	2	H
4	1	I K
4	2	J L

Stage Diagram

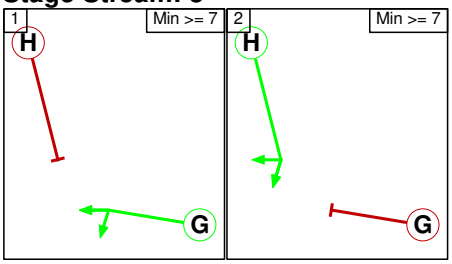
Stage Stream: 1



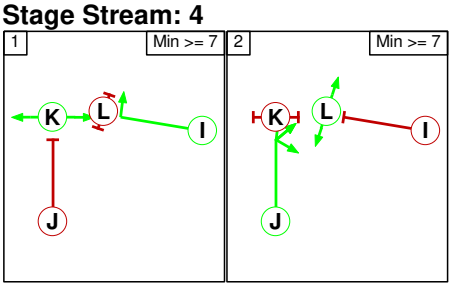
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Stream: 2

Term. Stage	Start Stage	Phase	Type	Value	Cont value
2	1	D	Losing	3	3

Stage Stream: 4

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	I	Losing	3	3

Prohibited Stage Change

Stage Stream: 1

From Stage	To Stage 1	To Stage 2
1		5
2	5	

Stage Stream: 2

From Stage	To Stage 1	To Stage 2
1		5
2	8	

Stage Stream: 3

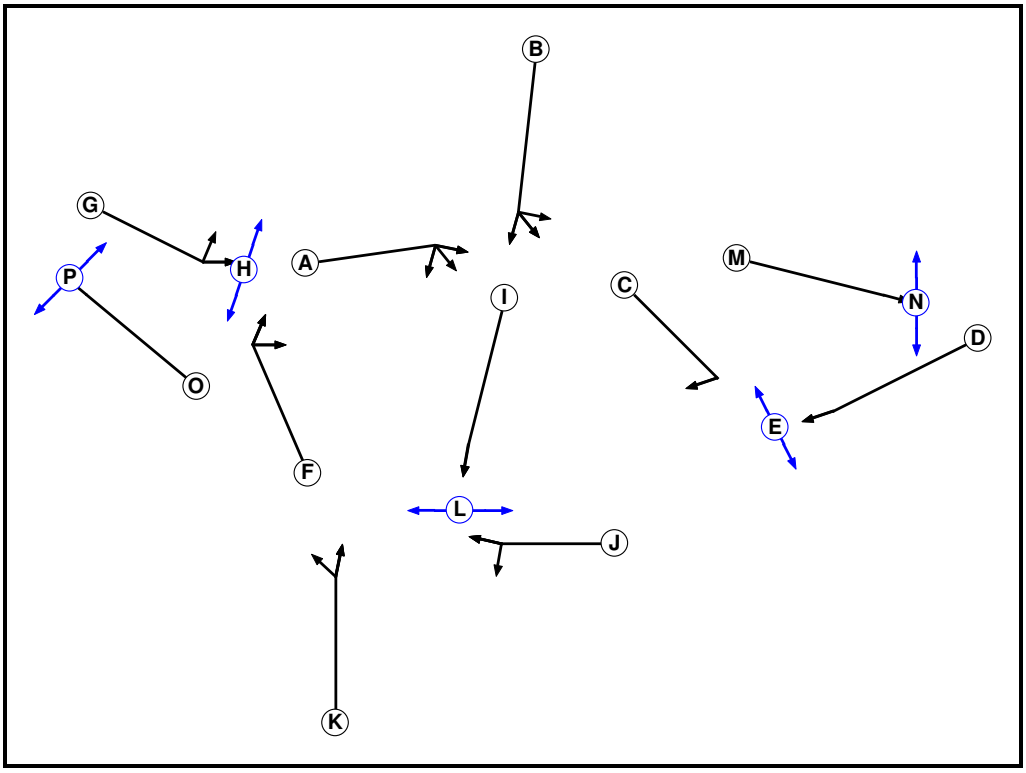
From Stage	To Stage 1	To Stage 2
1		5
2	5	

Stage Stream: 4

From Stage	To Stage 1	To Stage 2
1		8
2	5	

C4 - Baynards Green

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
E	Pedestrian	2		6	6
F	Traffic	4		7	7
G	Traffic	4		7	7
H	Pedestrian	4		6	6
I	Traffic	3		7	7
J	Traffic	3		7	7
K	Traffic	3		7	7
L	Pedestrian	3		6	6
M	Traffic	5		7	7
N	Pedestrian	5		6	6
O	Traffic	6		7	7
P	Pedestrian	6		6	6

Phase Intergreens Matrix

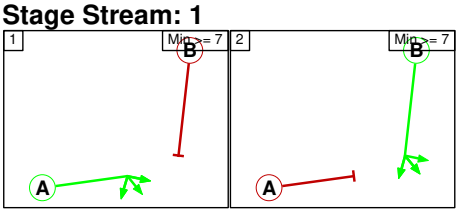
Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
A		5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B	6		-	-	-	-	-	-	-	-	-	-	-	-	-	-
C	-	-		5	-	-	-	-	-	-	-	-	-	-	-	-
D	-	-	6		6	-	-	-	-	-	-	-	-	-	-	-
E	-	-	-	6		-	-	-	-	-	-	-	-	-	-	-
F	-	-	-	-	-		5	-	-	-	-	-	-	-	-	-
G	-	-	-	-	-	6		6	-	-	-	-	-	-	-	-
H	-	-	-	-	-	-	6		-	-	-	-	-	-	-	-
I	-	-	-	-	-	-	-	-		5	-	5	-	-	-	-
J	-	-	-	-	-	-	-	-	5		6	-	-	-	-	-
K	-	-	-	-	-	-	-	-	-	5		-	-	-	-	-
L	-	-	-	-	-	-	-	-	6	-	-		-	-	-	-
M	-	-	-	-	-	-	-	-	-	-	-	-		6	-	-
N	-	-	-	-	-	-	-	-	-	-	-	-	6		-	-
O	-	-	-	-	-	-	-	-	-	-	-	-	-	-		6
P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	

Phases in Stage

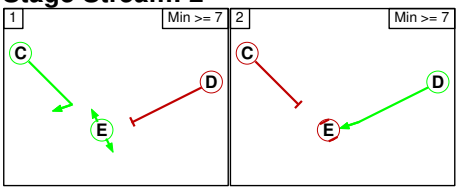
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C E
2	2	D
3	1	J L
3	2	I K
4	1	F H
4	2	G
5	1	M
5	2	N
6	1	O
6	2	P

Stage Diagram

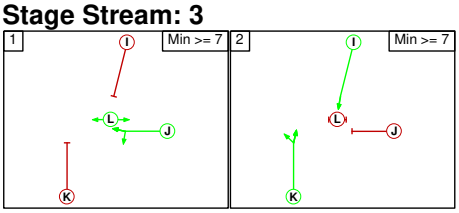
Stage Stream: 1



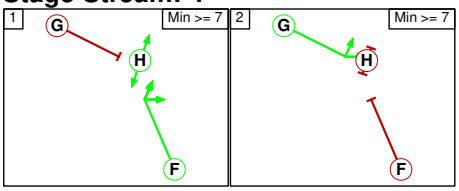
Stage Stream: 2



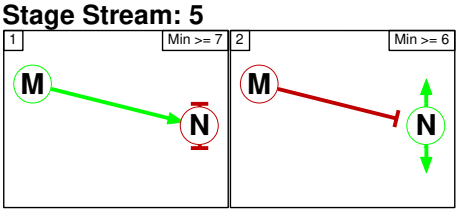
Stage Stream: 3



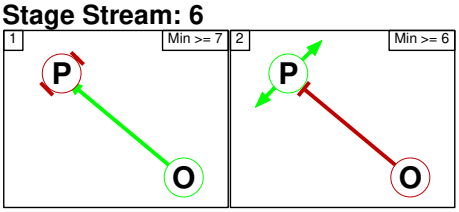
Stage Stream: 4



Stage Stream: 5



Stage Stream: 6



Prohibited Stage Change

Stage Stream: 1

	To Stage		
		1	2
From Stage	1		5
	2	6	

Stage Stream: 2

	To Stage		
		1	2
From Stage	1		6
	2	6	

Stage Stream: 3

	To Stage		
		1	2
From Stage	1		6
	2	5	

Stage Stream: 4

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 5

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 6

		To Stage	
		1	2
From Stage	1		6
	2	6	

Give-Way Lane Input Data

Junction: J1: Padbury Roundabout
There are no Opposed Lanes in this Junction

Junction: J2: Cherwell											
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)
J2:2/2 (A43)	J2:7/2 (Ahead)	1268	0	J2:9/1	0.51	All	-	-	-	-	-
	J2:8/1 (Ahead)	1268	0	J2:9/1	0.51	All					

Junction: J3: Ardley roundabout											
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)
J3:1/1 (B430)	J3:9/1 (Ahead)	1000	0	J3:11/1	0.33	All	-	-	-	-	-
				J3:11/2	0.33	All					
	J3:9/2 (Ahead)	1000	0	J3:11/1	0.33	All					
				J3:11/2	0.33	All					
J3:1/2 (B430)	J3:9/3 (Ahead)	1057	0	J3:11/1	0.28	All	-	-	-	-	-
				J3:11/3	0.28	All					

Junction: J4: Baynards Green
There are no Opposed Lanes in this Junction

Lane Input Data

Junction: J1: Padbury Roundabout												
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)**
J1:1/1 (A43 north)	U	B	2	3	95.7	Geom	-	3.65	0.00	Y	Arm J1:2 Ahead	50.00
J1:1/2 (A43 north)	U	B	2	3	95.7	Geom	-	3.65	0.00	N	Arm J1:2 Ahead	50.00
J1:2/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J1:2/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J1:3/1 (A43 south)	U	C	2	3	52.2	Geom	-	3.65	0.00	Y	Arm J1:4 Ahead	30.00
J1:3/2 (A43 south)	U	C	2	3	52.2	Geom	-	3.65	0.00	N	Arm J1:4 Ahead	30.00
J1:4/1	U		2	3	13.0	Inf	-	-	-	-	-	-
J1:4/2	U		2	3	13.0	Inf	-	-	-	-	-	-
J1:5/1 (Junction 10 s'bound offslip)	U	D	2	3	10.8	Geom	-	3.65	0.00	Y	Arm J1:4 Left	40.00
J1:5/2 (Junction 10 s'bound offslip)	U	D	2	3	113.0	Geom	-	3.65	0.00	N	Arm J1:4 Left	50.00
											Arm J1:6 Ahead	50.00
J1:5/3 (Junction 10 s'bound offslip)	U	D	2	3	113.0	Geom	-	3.65	0.00	N	Arm J1:6 Ahead	50.00
J1:6/1	U	A	2	3	8.7	User	2080	-	-	-	-	-
J1:6/2	U	A	2	3	8.7	User	2080	-	-	-	-	-

Junction: J2: Cherwell

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)
J2:1/1 (A43)	U	A	2	3	13.9	Geom	-	3.65	0.00	Y	Arm J2:4 Left	80.00
											Arm J2:10 Ahead	80.00
J2:1/2 (A43)	U	A	2	3	52.2	Geom	-	3.65	0.00	N	Arm J2:10 Ahead	80.00
J2:1/3 (A43)	U	A	2	3	52.2	Geom	-	3.65	0.00	N	Arm J2:10 Ahead	80.00
J2:2/1 (A43)	U		2	3	30.4	Inf	-	-	-	-	-	-
J2:2/2 (A43)	O		2	3	30.4	Inf	-	-	-	-	-	-
J2:3/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:3/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:5/1 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm J2:11 Left	20.00
J2:5/2 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm J2:6 Left	Inf
											Arm J2:9 Ahead	Inf
J2:6/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:6/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:7/1	U		2	3	9.6	Inf	-	-	-	-	-	-
J2:7/2	U		2	3	9.6	Inf	-	-	-	-	-	-
J2:8/1	U	B	2	3	11.3	Geom	-	4.00	0.00	Y	Arm J2:4 Ahead	30.00
											Arm J2:10 Right	Inf
J2:9/1	U		2	3	7.8	Inf	-	-	-	-	-	-
J2:10/1	U	D	0	3	8.7	Geom	-	3.65	0.00	Y	Arm J2:11 Ahead	Inf
J2:10/2	U	D	0	3	8.7	Geom	-	3.65	0.00	N	Arm J2:11 Ahead	Inf
J2:10/3	U	D	0	3	8.7	Geom	-	3.65	0.00	N	Arm J2:6 Ahead	Inf
J2:10/4	U	D	0	3	8.7	Geom	-	3.65	0.00	N	Arm J2:6 Ahead	Inf
J2:11/1 (M40 SB onslip)	U		2	3	130.4	Inf	-	-	-	-	-	-
J2:11/2 (M40 SB onslip)	U		2	3	130.4	Inf	-	-	-	-	-	-
J2:12/1	U		2	3	173.9	Inf	-	-	-	-	-	-
J2:12/2	U		2	3	173.9	Inf	-	-	-	-	-	-

Junction: J3: Ardley roundabout												
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)**
J3:1/1 (B430)	O		2	3	60.0	Inf	-	-	-	-	-	-
J3:1/2 (B430)	O		2	3	8.7	Inf	-	-	-	-	-	-
J3:2/1 (Overbridge SB)	U	C	2	3	27.0	Geom	-	3.65	0.00	Y	Arm J3:4 Ahead	40.00
J3:2/2 (Overbridge SB)	U	C	2	3	27.0	Geom	-	3.65	0.00	Y	Arm J3:4 Ahead	40.00
J3:2/3 (Overbridge SB)	U	C	2	3	7.8	Geom	-	3.65	0.00	N	Arm J3:17 Right	40.00
J3:3/1	U		2	3	165.2	Inf	-	-	-	-	-	-
J3:4/1	U	H	2	3	10.4	Geom	-	3.65	0.00	N	Arm J3:12 Ahead	Inf
J3:4/2	U	H	2	3	10.4	Geom	-	3.65	0.00	N	Arm J3:7 Right	Inf
											Arm J3:12 Ahead	Inf
J3:5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J3:6/1	U	D	2	3	9.6	Geom	-	3.65	0.00	Y	Arm J3:4 Right	40.00
J3:7/1	U	B	2	3	10.4	Geom	-	3.65	0.00	N	Arm J3:5 Ahead	Inf
											Arm J3:11 Right	50.00
J3:7/2	U	B	2	3	10.4	Geom	-	3.65	0.00	N	Arm J3:11 Right	50.00
J3:8/1 (M40 Northbound offslip)	U	G	2	3	173.9	Geom	-	4.00	0.00	Y	Arm J3:7 Ahead	40.00
											Arm J3:12 Left	35.00
J3:8/2 (M40 Northbound offslip)	U	G	2	3	173.9	Geom	-	4.00	0.00	N	Arm J3:7 Ahead	35.00
J3:9/1	U	J	2	3	13.6	Geom	-	3.65	0.00	Y	Arm J3:18 Left	Inf
J3:9/2	U	J	2	3	13.6	Geom	-	3.65	0.00	N	Arm J3:19 Ahead	Inf
J3:9/3	U	J	2	3	13.6	Geom	-	3.65	0.00	N	Arm J3:6 Right	Inf
											Arm J3:19 Ahead	Inf
J3:10/1	U		2	3	104.3	Inf	-	-	-	-	-	-

J3:11/1	U		2	3	13.9	Inf	-	-	-	-	-	-
J3:11/2	U		2	3	13.9	Inf	-	-	-	-	-	-
J3:11/3	U		2	3	13.9	Inf	-	-	-	-	-	-
J3:12/1	U		2	3	87.0	Inf	-	-	-	-	-	-
J3:12/2	U		2	3	87.0	Inf	-	-	-	-	-	-
J3:13/1 (Ardley Bypass)	U	A	2	3	104.3	Geom	-	3.65	0.00	Y	Arm J3:5 Left Arm J3:11 Ahead	Inf 35.00
J3:13/2 (Ardley Bypass)	U	A	2	3	104.3	Geom	-	3.65	0.00	N	Arm J3:11 Ahead	35.00
J3:13/3 (Ardley Bypass)	U	A	2	3	10.4	Geom	-	3.65	0.00	N	Arm J3:11 Ahead	35.00
J3:14/1	U		2	3	113.0	Inf	-	-	-	-	-	-
J3:14/2	U		2	3	113.0	Inf	-	-	-	-	-	-
J3:15/1	U		2	3	87.0	Inf	-	-	-	-	-	-
J3:15/2	U		2	3	87.0	Inf	-	-	-	-	-	-
J3:16/1	U		2	3	8.7	Inf	-	-	-	-	-	-
J3:17/1	U	I	0	3	16.5	Geom	-	4.50	0.00	Y	Arm J3:18 Right	30.00
J3:18/1 (M40 NB Merge xing)	U		2	3	9.6	Inf	-	-	-	-	-	-
J3:19/1 (Overbridge NB)	U		2	3	13.9	Inf	-	-	-	-	-	-
J3:19/2 (Overbridge NB)	U		2	3	13.9	Inf	-	-	-	-	-	-

Junction: J4: Baynards Green												
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)**
J4:1/1 (A43 North)	U	B	2	3	20.9	Geom	-	3.65	0.00	Y	Arm J4:12 Left	60.00
J4:1/2 (A43 North)	U	B	2	3	60.0	Geom	-	3.65	0.00	N	Arm J4:2 Ahead	60.00
J4:1/3 (A43 North)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm J4:14 Ahead	60.00
J4:1/4 (A43 North)	U	B	2	3	18.3	Geom	-	3.65	0.00	N	Arm J4:14 Ahead	60.00
J4:2/1	U	C	2	3	15.7	User	1950	-	-	-	-	-
J4:2/2	U	C	2	3	15.7	User	2080	-	-	-	-	-
J4:3/1 (B4100 East)	U	D	2	3	60.0	Geom	-	3.65	0.00	Y	Arm J4:13 Ahead	30.00
J4:3/2 (B4100 East)	U	D	2	3	10.4	Geom	-	3.65	0.00	N	Arm J4:13 Ahead	30.00
J4:4/1 (M40 Southbound Slip)	U		2	3	17.4	Inf	-	-	-	-	-	-
J4:4/2 (M40 Southbound Slip)	U		2	3	17.4	Inf	-	-	-	-	-	-
J4:5/1	U	J	2	3	7.0	Geom	-	3.65	0.00	Y	Arm J4:4 Left	20.00
J4:5/2	U	J	2	3	7.0	Geom	-	3.65	0.00	Y	Arm J4:15 Ahead	50.00
J4:5/3	U	J	2	3	7.0	Geom	-	3.65	0.00	N	Arm J4:15 Ahead	50.00
J4:5/4	U	J	2	3	7.0	Geom	-	3.65	0.00	N	Arm J4:15 Ahead	50.00
J4:6/1 (M40 Northbound off slip)	U	K	2	3	104.3	Geom	-	3.65	0.00	Y	Arm J4:7 Ahead	40.00
											Arm J4:8 Left	30.00
J4:6/2 (M40 Northbound off slip)	U	K	2	3	104.3	Geom	-	3.65	0.00	N	Arm J4:7 Ahead	40.00
J4:6/3 (M40 Northbound off slip)	U	K	2	3	13.9	Geom	-	3.65	0.00	N	Arm J4:7 Ahead	40.00
J4:7/1	U	F	2	3	15.7	Geom	-	3.65	0.00	Y	Arm J4:10 Ahead	40.00
J4:7/2	U	F	2	3	15.7	User	2050	-	-	-	-	-

J4:7/3	U	F	2	3	15.7	User	2050	-	-	-	-	-
J4:8/1	U	O	2	3	17.4	Geom	-	3.65	0.00	Y		
J4:9/1 (B4100 West)	U	G	2	3	60.0	Geom	-	3.50	0.00	Y	Arm J4:10 Left	30.00
											Arm J4:11 Ahead	65.00
J4:9/2 (B4100 West)	U	G	2	3	7.0	Geom	-	3.50	0.00	N	Arm J4:11 Ahead	65.00
J4:10/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J4:10/2	U		2	3	60.0	User	2050	-	-	-	-	-
J4:10/3	U		2	3	60.0	User	2050	-	-	-	-	-
J4:11/1	U	A	2	3	11.3	User	2070	-	-	-	-	-
J4:11/2	U	A	2	3	11.3	User	2070	-	-	-	-	-
J4:12/1	U	M	2	3	20.0	Geom	-	3.65	0.00	Y		
J4:12/2	U	M	2	3	20.0	Geom	-	3.65	0.00	Y		
J4:13/1	U		2	3	9.6	Inf	-	-	-	-	-	-
J4:13/2	U		2	3	9.6	Inf	-	-	-	-	-	-
J4:14/1 (A43 SB Cut-through)	U	I	0	3	18.3	Geom	-	3.65	0.00	Y	Arm J4:4 Ahead	Inf
J4:14/2 (A43 SB Cut-through)	U	I	0	3	18.3	Geom	-	3.65	0.00	N	Arm J4:4 Ahead	Inf
J4:15/1	U		2	3	4.7	Inf	-	-	-	-	-	-
J4:15/2	U		2	3	4.7	Inf	-	-	-	-	-	-
J4:15/3	U		2	3	4.7	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2028 2m sqft - AM'	08:00	09:00	01:00	
2: '2028 2m sqft - PM'	17:00	18:00	01:00	

Scenario 1: '2028 2m sqft - AM Peak' (FG1: '2028 2m sqft - AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination								
		A	B	C	D	E	F	G	H	Tot.
Origin	A	0	426	107	1418	84	67	82	543	2727
	B	334	0	11	10	167	292	2	13	829
	C	74	4	0	282	139	2	8	46	555
	D	1048	7	202	0	0	60	8	180	1505
	E	64	238	209	0	0	19	46	309	885
	F	69	282	1	105	1	0	2	9	469
	G	40	6	6	8	61	5	0	34	160
	H	217	18	21	114	268	33	192	0	863
	Tot.	1846	981	557	1937	720	478	340	1134	7993

Traffic Lane Flows

Lane	Scenario 1: 2028 2m sqft - AM Peak
Junction: J1: Padbury Roundabout	
J1:1/1	1231
J1:1/2	1324
J1:2/1	1483
J1:2/2	1636
J1:3/1	747
J1:3/2	767
J1:4/1	1009
J1:4/2	826
J1:5/1 (short)	262
J1:5/2 (with short)	573(In) 311(Out)
J1:5/3	312
J1:6/1	252
J1:6/2	312
Junction: J2: Cherwell	
J2:1/1 (short)	1052
J2:1/2 (with short)	1906(In) 854(Out)
J2:1/3	1213
J2:2/1	910
J2:2/2	875
J2:3/1	910
J2:3/2	604
J2:4/1	557
J2:5/1	282
J2:5/2	273
J2:6/1	64
J2:6/2	1387
J2:7/1	910
J2:7/2	604
J2:8/1	351
J2:9/1	80
J2:10/1	783
J2:10/2	872
J2:10/3	45
J2:10/4	1213
J2:11/1	924
J2:11/2	1013
J2:12/1	924
J2:12/2	1013
Junction: J3: Ardley roundabout	

J3:1/1 (with short)	160(In) 112(Out)
J3:1/2 (short)	48
J3:2/1	515
J3:2/2 (with short)	936(In) 545(Out)
J3:2/3 (short)	391
J3:3/1	720
J3:4/1	531
J3:4/2	563
J3:5/1	340
J3:6/1	34
J3:7/1	741
J3:7/2	724
J3:8/1	781
J3:8/2	724
J3:9/1	329
J3:9/2	910
J3:9/3	909
J3:10/1	1505
J3:11/1	268
J3:11/2	859
J3:11/3	861
J3:12/1	711
J3:12/2	423
J3:13/1	460
J3:13/2 (with short)	403(In) 266(Out)
J3:13/3 (short)	137
J3:14/1	711
J3:14/2	423
J3:15/1	460
J3:15/2	403
J3:16/1	863
J3:17/1	391
J3:18/1	720
J3:19/1	910
J3:19/2	875
Junction: J4: Baynards Green	
J4:1/1 (short)	426
J4:1/2 (with short)	743(In) 317(Out)
J4:1/3 (with short)	1984(In) 959(Out)
J4:1/4 (short)	1025

J4:2/1	317
J4:2/2	0
J4:3/1 (with short)	829(In) 495(Out)
J4:3/2 (short)	334
J4:4/1	1473
J4:4/2	1082
J4:5/1	453
J4:5/2	359
J4:5/3	140
J4:5/4	194
J4:6/1	661
J4:6/2 (with short)	1174(In) 717(Out)
J4:6/3 (short)	457
J4:7/1	682
J4:7/2	717
J4:7/3	651
J4:8/1	478
J4:9/1 (with short)	469(In) 225(Out)
J4:9/2 (short)	244
J4:10/1	751
J4:10/2	717
J4:10/3	378
J4:11/1	289
J4:11/2	384
J4:12/1	715
J4:12/2	266
J4:13/1	812
J4:13/2	334
J4:14/1	1020
J4:14/2	1082
J4:15/1	359
J4:15/2	140
J4:15/3	194

Lane Saturation Flows

Junction: J1: Padbury Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (A43 north)	3.65	0.00	Y	Arm J1:2 Ahead	50.00	100.0 %	1922	1922
J1:1/2 (A43 north)	3.65	0.00	N	Arm J1:2 Ahead	50.00	100.0 %	2058	2058
J1:2/1	Infinite Saturation Flow						Inf	Inf
J1:2/2	Infinite Saturation Flow						Inf	Inf
J1:3/1 (A43 south)	3.65	0.00	Y	Arm J1:4 Ahead	30.00	100.0 %	1886	1886
J1:3/2 (A43 south)	3.65	0.00	N	Arm J1:4 Ahead	30.00	100.0 %	2019	2019
J1:4/1	Infinite Saturation Flow						Inf	Inf
J1:4/2	Infinite Saturation Flow						Inf	Inf
J1:5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm J1:4 Left	40.00	100.0 %	1908	1908
J1:5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:4 Left Arm J1:6 Ahead	50.00 50.00	19.0 % 81.0 %	2058	2058
J1:5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:6 Ahead	50.00	100.0 %	2058	2058
J1:6/1	This lane uses a directly entered Saturation Flow						2080	2080
J1:6/2	This lane uses a directly entered Saturation Flow						2080	2080

Junction: J2: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (A43)	3.65	0.00	Y	Arm J2:4 Left	80.00	31.2 %	1944	1944
				Arm J2:10 Ahead	80.00	68.8 %		
J2:1/2 (A43)	3.65	0.00	N	Arm J2:10 Ahead	80.00	100.0 %	2081	2081
J2:1/3 (A43)	3.65	0.00	N	Arm J2:10 Ahead	80.00	100.0 %	2081	2081
J2:2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:3/1	Infinite Saturation Flow						Inf	Inf
J2:3/2	Infinite Saturation Flow						Inf	Inf
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:5/1 (MSA)	3.50	0.00	Y	Arm J2:11 Left	20.00	100.0 %	1828	1828
J2:5/2 (MSA)	3.50	0.00	Y	Arm J2:6 Left	Inf	70.7 %	1965	1965
				Arm J2:9 Ahead	Inf	29.3 %		
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:6/2	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:7/2	Infinite Saturation Flow						Inf	Inf
J2:8/1	4.00	0.00	Y	Arm J2:4 Ahead	30.00	65.2 %	1951	1951
				Arm J2:10 Right	Inf	34.8 %		
J2:9/1	Infinite Saturation Flow						Inf	Inf
J2:10/1	3.65	0.00	Y	Arm J2:11 Ahead	Inf	100.0 %	1980	1980
J2:10/2	3.65	0.00	N	Arm J2:11 Ahead	Inf	100.0 %	2120	2120
J2:10/3	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:10/4	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:12/1	Infinite Saturation Flow						Inf	Inf
J2:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J3: Ardley roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1 (B430 Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:1/2 (B430 Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:2/1 (Overbridge SB)	3.65	0.00	Y	Arm J3:4 Ahead	40.00	100.0 %	1908	1908
J3:2/2 (Overbridge SB)	3.65	0.00	Y	Arm J3:4 Ahead	40.00	100.0 %	1908	1908
J3:2/3 (Overbridge SB)	3.65	0.00	N	Arm J3:17 Right	40.00	100.0 %	2043	2043
J3:3/1	Infinite Saturation Flow						Inf	Inf
J3:4/1	3.65	0.00	N	Arm J3:12 Ahead	Inf	100.0 %	2120	2120
J3:4/2	3.65	0.00	N	Arm J3:7 Right	Inf	24.9 %	2120	2120
				Arm J3:12 Ahead	Inf	75.1 %		
J3:5/1	Infinite Saturation Flow						Inf	Inf
J3:6/1	3.65	0.00	Y	Arm J3:4 Right	40.00	100.0 %	1908	1908
J3:7/1	3.65	0.00	N	Arm J3:5 Ahead	Inf	20.0 %	2070	2070
				Arm J3:11 Right	50.00	80.0 %		
J3:7/2	3.65	0.00	N	Arm J3:11 Right	50.00	100.0 %	2058	2058
J3:8/1 (M40 Northbound offslip)	4.00	0.00	Y	Arm J3:7 Ahead	40.00	77.0 %	1940	1940
				Arm J3:12 Left	35.00	23.0 %		
J3:8/2 (M40 Northbound offslip)	4.00	0.00	N	Arm J3:7 Ahead	35.00	100.0 %	2066	2066
J3:9/1	3.65	0.00	Y	Arm J3:18 Left	Inf	100.0 %	1980	1980
J3:9/2	3.65	0.00	N	Arm J3:19 Ahead	Inf	100.0 %	2120	2120
J3:9/3	3.65	0.00	N	Arm J3:6 Right	Inf	3.7 %	2120	2120
				Arm J3:19 Ahead	Inf	96.3 %		
J3:10/1	Infinite Saturation Flow						Inf	Inf
J3:11/1	Infinite Saturation Flow						Inf	Inf
J3:11/2	Infinite Saturation Flow						Inf	Inf
J3:11/3	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf
J3:12/2	Infinite Saturation Flow						Inf	Inf
J3:13/1 (Ardley Bypass)	3.65	0.00	Y	Arm J3:5 Left	Inf	41.7 %	1932	1932
				Arm J3:11 Ahead	35.00	58.3 %		
J3:13/2 (Ardley Bypass)	3.65	0.00	N	Arm J3:11 Ahead	35.00	100.0 %	2033	2033
J3:13/3 (Ardley Bypass)	3.65	0.00	N	Arm J3:11 Ahead	35.00	100.0 %	2033	2033
J3:14/1	Infinite Saturation Flow						Inf	Inf
J3:14/2	Infinite Saturation Flow						Inf	Inf
J3:15/1	Infinite Saturation Flow						Inf	Inf
J3:15/2	Infinite Saturation Flow						Inf	Inf

J3:16/1	Infinite Saturation Flow						Inf	Inf
J3:17/1	4.50	0.00	Y	Arm J3:18 Right	30.00	100.0 %	1967	1967
J3:18/1 (M40 NB Merge xing Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:19/1 (Overbridge NB Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:19/2 (Overbridge NB Lane 2)	Infinite Saturation Flow						Inf	Inf

Junction: J4: Baynards Green								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J4:1/1 (A43 North)	3.65	0.00	Y	Arm J4:12 Left	60.00	100.0 %	1932	1932
J4:1/2 (A43 North)	3.65	0.00	N	Arm J4:2 Ahead	60.00	100.0 %	2068	2068
J4:1/3 (A43 North)	3.65	0.00	Y	Arm J4:14 Ahead	60.00	100.0 %	1932	1932
J4:1/4 (A43 North)	3.65	0.00	N	Arm J4:14 Ahead	60.00	100.0 %	2068	2068
J4:2/1	This lane uses a directly entered Saturation Flow						1950	1950
J4:2/2	This lane uses a directly entered Saturation Flow						2080	2080
J4:3/1 (B4100 East)	3.65	0.00	Y	Arm J4:13 Ahead	30.00	100.0 %	1886	1886
J4:3/2 (B4100 East)	3.65	0.00	N	Arm J4:13 Ahead	30.00	100.0 %	2019	2019
J4:4/1 (M40 Southbound Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:4/2 (M40 Southbound Slip Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:5/1	3.65	0.00	Y	Arm J4:4 Left	20.00	100.0 %	1842	1842
J4:5/2	3.65	0.00	Y	Arm J4:15 Ahead	50.00	100.0 %	1922	1922
J4:5/3	3.65	0.00	N	Arm J4:15 Ahead	50.00	100.0 %	2058	2058
J4:5/4	3.65	0.00	N	Arm J4:15 Ahead	50.00	100.0 %	2058	2058
J4:6/1 (M40 Northbound off slip)	3.65	0.00	Y	Arm J4:7 Ahead	40.00	82.0 %	1904	1904
				Arm J4:8 Left	30.00	18.0 %		
J4:6/2 (M40 Northbound off slip)	3.65	0.00	N	Arm J4:7 Ahead	40.00	100.0 %	2043	2043
J4:6/3 (M40 Northbound off slip)	3.65	0.00	N	Arm J4:7 Ahead	40.00	100.0 %	2043	2043
J4:7/1	3.65	0.00	Y	Arm J4:10 Ahead	40.00	100.0 %	1908	1908
J4:7/2	This lane uses a directly entered Saturation Flow						2050	2050
J4:7/3	This lane uses a directly entered Saturation Flow						2050	2050
J4:8/1	3.65	0.00	Y				1980	1980
J4:9/1 (B4100 West)	3.50	0.00	Y	Arm J4:10 Left	30.00	30.7 %	1905	1905
				Arm J4:11 Ahead	65.00	69.3 %		
J4:9/2 (B4100 West)	3.50	0.00	N	Arm J4:11 Ahead	65.00	100.0 %	2058	2058
J4:10/1	Infinite Saturation Flow						Inf	Inf
J4:10/2	This lane uses a directly entered Saturation Flow						2050	2050
J4:10/3	This lane uses a directly entered Saturation Flow						2050	2050
J4:11/1	This lane uses a directly entered Saturation Flow						2070	2070
J4:11/2	This lane uses a directly entered Saturation Flow						2070	2070
J4:12/1	3.65	0.00	Y				1980	1980
J4:12/2	3.65	0.00	Y				1980	1980
J4:13/1	Infinite Saturation Flow						Inf	Inf

J4:13/2	Infinite Saturation Flow						Inf	Inf
J4:14/1 (A43 SB Cut-through)	3.65	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1980	1980
J4:14/2 (A43 SB Cut-through)	3.65	0.00	N	Arm J4:4 Ahead	Inf	100.0 %	2120	2120
J4:15/1	Infinite Saturation Flow						Inf	Inf
J4:15/2	Infinite Saturation Flow						Inf	Inf
J4:15/3	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2028 2m sqft - PM Peak' (FG2: '2028 2m sqft - PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination								
		A	B	C	D	E	F	G	H	Tot.
Origin	A	0	444	77	851	81	43	29	237	1762
	B	606	0	24	10	177	353	2	16	1188
	C	113	4	0	246	186	6	2	15	572
	D	1519	10	236	0	0	47	8	139	1959
	E	83	197	218	0	0	22	33	246	799
	F	35	232	1	33	0	0	1	10	312
	G	65	1	3	3	33	1	0	204	310
	H	400	7	16	142	238	9	237	0	1049
	Tot.	2821	895	575	1285	715	481	312	867	7951

Traffic Lane Flows

Lane	Scenario 2: 2028 2m sqft - PM Peak
Junction: J1: Padbury Roundabout	
J1:1/1	683
J1:1/2	866
J1:2/1	939
J1:2/2	1107
J1:3/1	1051
J1:3/2	1131
J1:4/1	1277
J1:4/2	1207
J1:5/1 (short)	226
J1:5/2 (with short)	558(In) 332(Out)
J1:5/3	241
J1:6/1	256
J1:6/2	241
Junction: J2: Cherwell	
J2:1/1 (short)	773
J2:1/2 (with short)	1366(In) 593(Out)
J2:1/3	680
J2:2/1	1336
J2:2/2	1123
J2:3/1	1336
J2:3/2	846
J2:4/1	575
J2:5/1	246
J2:5/2	326
J2:6/1	156
J2:6/2	879
J2:7/1	1336
J2:7/2	846
J2:8/1	400
J2:9/1	123
J2:10/1	476
J2:10/2	563
J2:10/3	152
J2:10/4	680
J2:11/1	599
J2:11/2	686
J2:12/1	599
J2:12/2	686
Junction: J3: Ardley roundabout	

J3:1/1 (with short)	310(In) 99(Out)
J3:1/2 (short)	211
J3:2/1	342
J3:2/2 (with short)	693(In) 249(Out)
J3:2/3 (short)	444
J3:3/1	715
J3:4/1	444
J3:4/2	351
J3:5/1	312
J3:6/1	204
J3:7/1	961
J3:7/2	926
J3:8/1	1033
J3:8/2	926
J3:9/1	271
J3:9/2	1336
J3:9/3	1327
J3:10/1	1959
J3:11/1	238
J3:11/2	1270
J3:11/3	1116
J3:12/1	583
J3:12/2	284
J3:13/1	475
J3:13/2 (with short)	574(In) 384(Out)
J3:13/3 (short)	190
J3:14/1	583
J3:14/2	284
J3:15/1	475
J3:15/2	574
J3:16/1	1049
J3:17/1	444
J3:18/1	715
J3:19/1	1336
J3:19/2	1123
Junction: J4: Baynards Green	
J4:1/1 (short)	444
J4:1/2 (with short)	487(In) 43(Out)
J4:1/3 (with short)	1275(In) 615(Out)
J4:1/4 (short)	660

J4:2/1	43
J4:2/2	0
J4:3/1 (with short)	1188(In) 582(Out)
J4:3/2 (short)	606
J4:4/1	860
J4:4/2	689
J4:5/1	229
J4:5/2	396
J4:5/3	267
J4:5/4	339
J4:6/1	846
J4:6/2 (with short)	1638(In) 741(Out)
J4:6/3 (short)	897
J4:7/1	1028
J4:7/2	900
J4:7/3	1077
J4:8/1	481
J4:9/1 (with short)	312(In) 150(Out)
J4:9/2 (short)	162
J4:10/1	1063
J4:10/2	900
J4:10/3	858
J4:11/1	213
J4:11/2	283
J4:12/1	657
J4:12/2	238
J4:13/1	625
J4:13/2	606
J4:14/1	631
J4:14/2	689
J4:15/1	396
J4:15/2	267
J4:15/3	339

Lane Saturation Flows

Junction: J1: Padbury Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (A43 north)	3.65	0.00	Y	Arm J1:2 Ahead	50.00	100.0 %	1922	1922
J1:1/2 (A43 north)	3.65	0.00	N	Arm J1:2 Ahead	50.00	100.0 %	2058	2058
J1:2/1	Infinite Saturation Flow						Inf	Inf
J1:2/2	Infinite Saturation Flow						Inf	Inf
J1:3/1 (A43 south)	3.65	0.00	Y	Arm J1:4 Ahead	30.00	100.0 %	1886	1886
J1:3/2 (A43 south)	3.65	0.00	N	Arm J1:4 Ahead	30.00	100.0 %	2019	2019
J1:4/1	Infinite Saturation Flow						Inf	Inf
J1:4/2	Infinite Saturation Flow						Inf	Inf
J1:5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm J1:4 Left	40.00	100.0 %	1908	1908
J1:5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:4 Left Arm J1:6 Ahead	50.00 50.00	22.9 % 77.1 %	2058	2058
J1:5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:6 Ahead	50.00	100.0 %	2058	2058
J1:6/1	This lane uses a directly entered Saturation Flow						2080	2080
J1:6/2	This lane uses a directly entered Saturation Flow						2080	2080

Junction: J2: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (A43)	3.65	0.00	Y	Arm J2:4 Left	80.00	41.4 %	1944	1944
				Arm J2:10 Ahead	80.00	58.6 %		
J2:1/2 (A43)	3.65	0.00	N	Arm J2:10 Ahead	80.00	100.0 %	2081	2081
J2:1/3 (A43)	3.65	0.00	N	Arm J2:10 Ahead	80.00	100.0 %	2081	2081
J2:2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:3/1	Infinite Saturation Flow						Inf	Inf
J2:3/2	Infinite Saturation Flow						Inf	Inf
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:5/1 (MSA)	3.50	0.00	Y	Arm J2:11 Left	20.00	100.0 %	1828	1828
J2:5/2 (MSA)	3.50	0.00	Y	Arm J2:6 Left	Inf	62.3 %	1965	1965
				Arm J2:9 Ahead	Inf	37.7 %		
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:6/2	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:7/2	Infinite Saturation Flow						Inf	Inf
J2:8/1	4.00	0.00	Y	Arm J2:4 Ahead	30.00	63.7 %	1953	1953
				Arm J2:10 Right	Inf	36.3 %		
J2:9/1	Infinite Saturation Flow						Inf	Inf
J2:10/1	3.65	0.00	Y	Arm J2:11 Ahead	Inf	100.0 %	1980	1980
J2:10/2	3.65	0.00	N	Arm J2:11 Ahead	Inf	100.0 %	2120	2120
J2:10/3	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:10/4	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:12/1	Infinite Saturation Flow						Inf	Inf
J2:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J3: Ardley roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1 (B430 Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:1/2 (B430 Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:2/1 (Overbridge SB)	3.65	0.00	Y	Arm J3:4 Ahead	40.00	100.0 %	1908	1908
J3:2/2 (Overbridge SB)	3.65	0.00	Y	Arm J3:4 Ahead	40.00	100.0 %	1908	1908
J3:2/3 (Overbridge SB)	3.65	0.00	N	Arm J3:17 Right	40.00	100.0 %	2043	2043
J3:3/1	Infinite Saturation Flow						Inf	Inf
J3:4/1	3.65	0.00	N	Arm J3:12 Ahead	Inf	100.0 %	2120	2120
J3:4/2	3.65	0.00	N	Arm J3:7 Right	Inf	19.1 %	2120	2120
				Arm J3:12 Ahead	Inf	80.9 %		
J3:5/1	Infinite Saturation Flow						Inf	Inf
J3:6/1	3.65	0.00	Y	Arm J3:4 Right	40.00	100.0 %	1908	1908
J3:7/1	3.65	0.00	N	Arm J3:5 Ahead	Inf	7.8 %	2063	2063
				Arm J3:11 Right	50.00	92.2 %		
J3:7/2	3.65	0.00	N	Arm J3:11 Right	50.00	100.0 %	2058	2058
J3:8/1 (M40 Northbound offslip)	4.00	0.00	Y	Arm J3:7 Ahead	40.00	86.5 %	1941	1941
				Arm J3:12 Left	35.00	13.5 %		
J3:8/2 (M40 Northbound offslip)	4.00	0.00	N	Arm J3:7 Ahead	35.00	100.0 %	2066	2066
J3:9/1	3.65	0.00	Y	Arm J3:18 Left	Inf	100.0 %	1980	1980
J3:9/2	3.65	0.00	N	Arm J3:19 Ahead	Inf	100.0 %	2120	2120
J3:9/3	3.65	0.00	N	Arm J3:6 Right	Inf	15.4 %	2120	2120
				Arm J3:19 Ahead	Inf	84.6 %		
J3:10/1	Infinite Saturation Flow						Inf	Inf
J3:11/1	Infinite Saturation Flow						Inf	Inf
J3:11/2	Infinite Saturation Flow						Inf	Inf
J3:11/3	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf
J3:12/2	Infinite Saturation Flow						Inf	Inf
J3:13/1 (Ardley Bypass)	3.65	0.00	Y	Arm J3:5 Left	Inf	49.9 %	1938	1938
				Arm J3:11 Ahead	35.00	50.1 %		
J3:13/2 (Ardley Bypass)	3.65	0.00	N	Arm J3:11 Ahead	35.00	100.0 %	2033	2033
J3:13/3 (Ardley Bypass)	3.65	0.00	N	Arm J3:11 Ahead	35.00	100.0 %	2033	2033
J3:14/1	Infinite Saturation Flow						Inf	Inf
J3:14/2	Infinite Saturation Flow						Inf	Inf
J3:15/1	Infinite Saturation Flow						Inf	Inf
J3:15/2	Infinite Saturation Flow						Inf	Inf

J3:16/1	Infinite Saturation Flow						Inf	Inf
J3:17/1	4.50	0.00	Y	Arm J3:18 Right	30.00	100.0 %	1967	1967
J3:18/1 (M40 NB Merge xing Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:19/1 (Overbridge NB Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:19/2 (Overbridge NB Lane 2)	Infinite Saturation Flow						Inf	Inf

Junction: J4: Baynards Green								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J4:1/1 (A43 North)	3.65	0.00	Y	Arm J4:12 Left	60.00	100.0 %	1932	1932
J4:1/2 (A43 North)	3.65	0.00	N	Arm J4:2 Ahead	60.00	100.0 %	2068	2068
J4:1/3 (A43 North)	3.65	0.00	Y	Arm J4:14 Ahead	60.00	100.0 %	1932	1932
J4:1/4 (A43 North)	3.65	0.00	N	Arm J4:14 Ahead	60.00	100.0 %	2068	2068
J4:2/1	This lane uses a directly entered Saturation Flow						1950	1950
J4:2/2	This lane uses a directly entered Saturation Flow						2080	2080
J4:3/1 (B4100 East)	3.65	0.00	Y	Arm J4:13 Ahead	30.00	100.0 %	1886	1886
J4:3/2 (B4100 East)	3.65	0.00	N	Arm J4:13 Ahead	30.00	100.0 %	2019	2019
J4:4/1 (M40 Southbound Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:4/2 (M40 Southbound Slip Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:5/1	3.65	0.00	Y	Arm J4:4 Left	20.00	100.0 %	1842	1842
J4:5/2	3.65	0.00	Y	Arm J4:15 Ahead	50.00	100.0 %	1922	1922
J4:5/3	3.65	0.00	N	Arm J4:15 Ahead	50.00	100.0 %	2058	2058
J4:5/4	3.65	0.00	N	Arm J4:15 Ahead	50.00	100.0 %	2058	2058
J4:6/1 (M40 Northbound off slip)	3.65	0.00	Y	Arm J4:7 Ahead	40.00	90.0 %	1906	1906
				Arm J4:8 Left	30.00	10.0 %		
J4:6/2 (M40 Northbound off slip)	3.65	0.00	N	Arm J4:7 Ahead	40.00	100.0 %	2043	2043
J4:6/3 (M40 Northbound off slip)	3.65	0.00	N	Arm J4:7 Ahead	40.00	100.0 %	2043	2043
J4:7/1	3.65	0.00	Y	Arm J4:10 Ahead	40.00	100.0 %	1908	1908
J4:7/2	This lane uses a directly entered Saturation Flow						2050	2050
J4:7/3	This lane uses a directly entered Saturation Flow						2050	2050
J4:8/1	3.65	0.00	Y				1980	1980
J4:9/1 (B4100 West)	3.50	0.00	Y	Arm J4:10 Left	30.00	23.3 %	1909	1909
				Arm J4:11 Ahead	65.00	76.7 %		
J4:9/2 (B4100 West)	3.50	0.00	N	Arm J4:11 Ahead	65.00	100.0 %	2058	2058
J4:10/1	Infinite Saturation Flow						Inf	Inf
J4:10/2	This lane uses a directly entered Saturation Flow						2050	2050
J4:10/3	This lane uses a directly entered Saturation Flow						2050	2050
J4:11/1	This lane uses a directly entered Saturation Flow						2070	2070
J4:11/2	This lane uses a directly entered Saturation Flow						2070	2070
J4:12/1	3.65	0.00	Y				1980	1980
J4:12/2	3.65	0.00	Y				1980	1980
J4:13/1	Infinite Saturation Flow						Inf	Inf

J4:13/2	Infinite Saturation Flow						Inf	Inf
J4:14/1 (A43 SB Cut-through)	3.65	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1980	1980
J4:14/2 (A43 SB Cut-through)	3.65	0.00	N	Arm J4:4 Ahead	Inf	100.0 %	2120	2120
J4:15/1	Infinite Saturation Flow						Inf	Inf
J4:15/2	Infinite Saturation Flow						Inf	Inf
J4:15/3	Infinite Saturation Flow						Inf	Inf

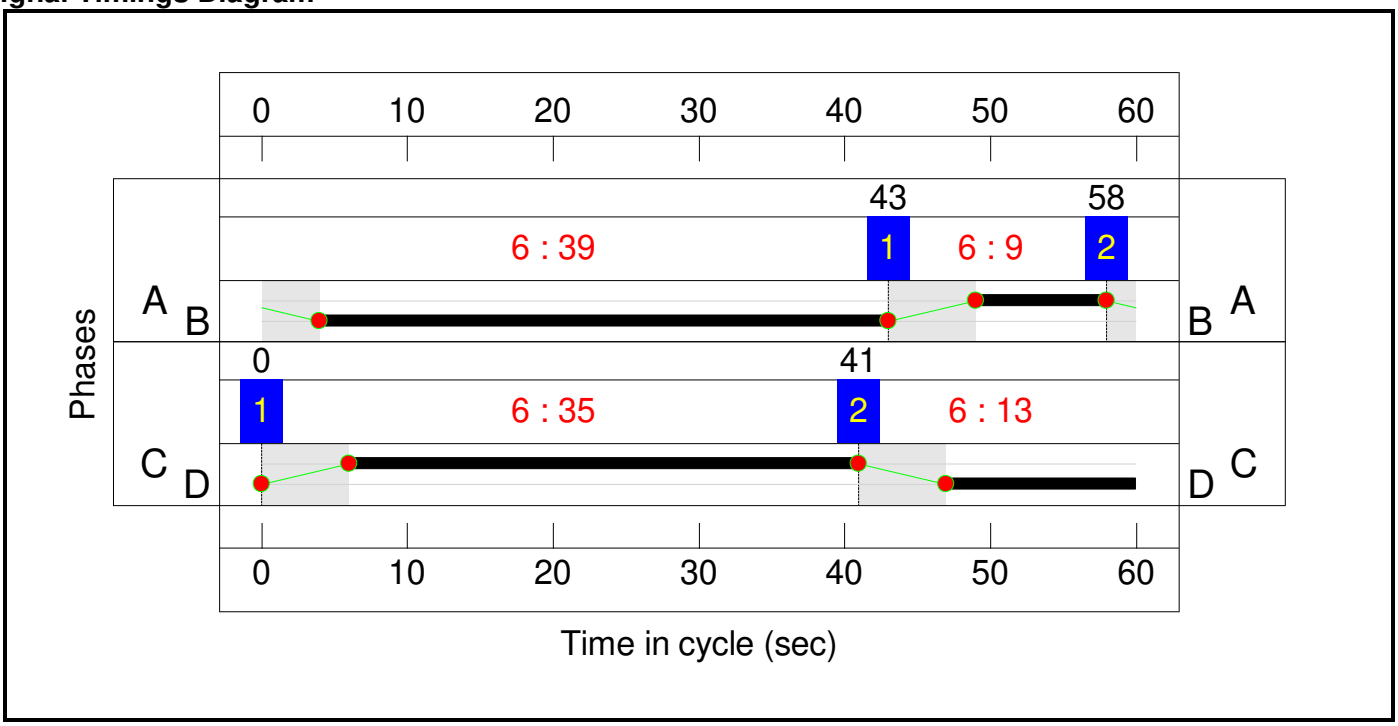
Scenario 1: '2028 2m sqft - AM Peak' (FG1: '2028 2m sqft - AM', Plan 1: 'Network Control Plan 1')
C1 - Padbury
Stage Timings
Stage Stream: 1

Stage	1	2
Duration	9	39
Change Point	43	58

Stage Stream: 2

Stage	1	2
Duration	35	13
Change Point	0	41

Signal Timings Diagram



C2 - Cherwell
Stage Timings
Stage Stream: 1

Stage	1	2
Duration	38	11
Change Point	0	43

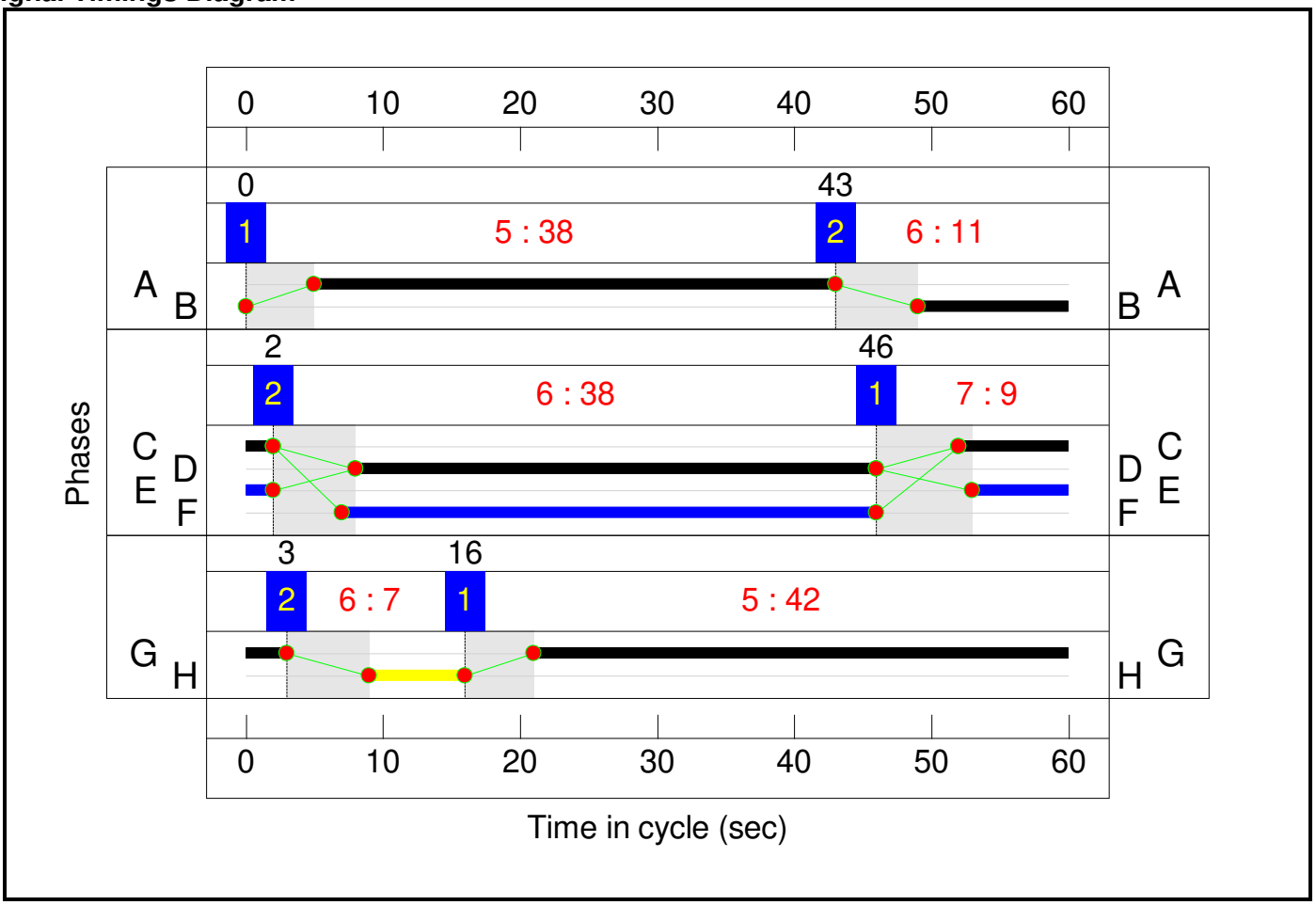
Stage Stream: 2

Stage	1	2
Duration	9	38
Change Point	46	2

Stage Stream: 3

Stage	1	2
Duration	42	7
Change Point	16	3

Signal Timings Diagram



C3 - Ardley

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	18	32
Change Point	41	4

Stage Stream: 2

Stage	1	2
Duration	21	26
Change Point	30	59

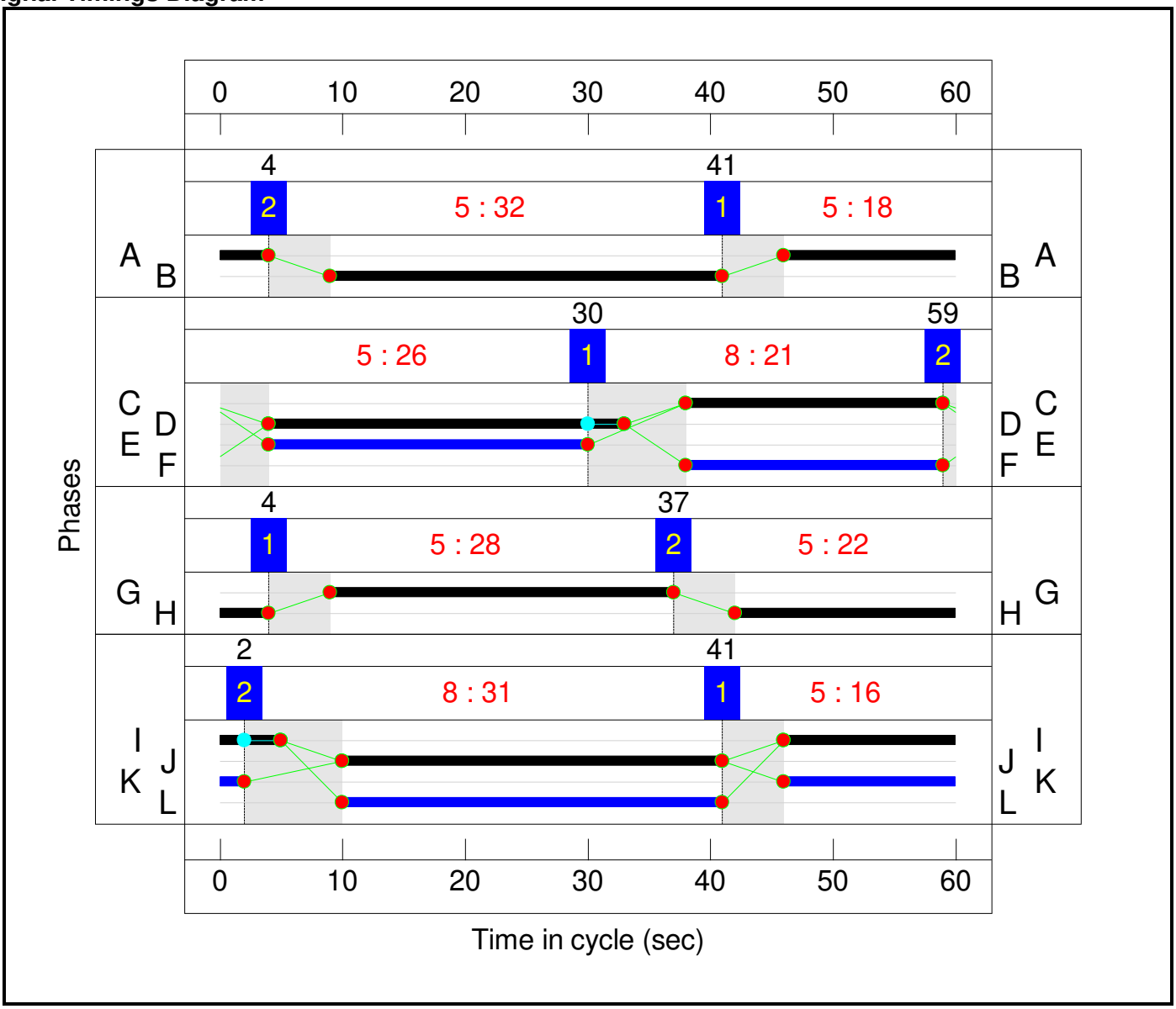
Stage Stream: 3

Stage	1	2
Duration	28	22
Change Point	4	37

Stage Stream: 4

Stage	1	2
Duration	16	31
Change Point	41	2

Signal Timings Diagram



C4 - Baynards Green

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	17	32
Change Point	0	23

Stage Stream: 2

Stage	1	2
Duration	31	17
Change Point	22	59

Stage Stream: 3

Stage	1	2
Duration	17	32
Change Point	7	29

Stage Stream: 4

Stage	1	2
Duration	39	9
Change Point	19	4

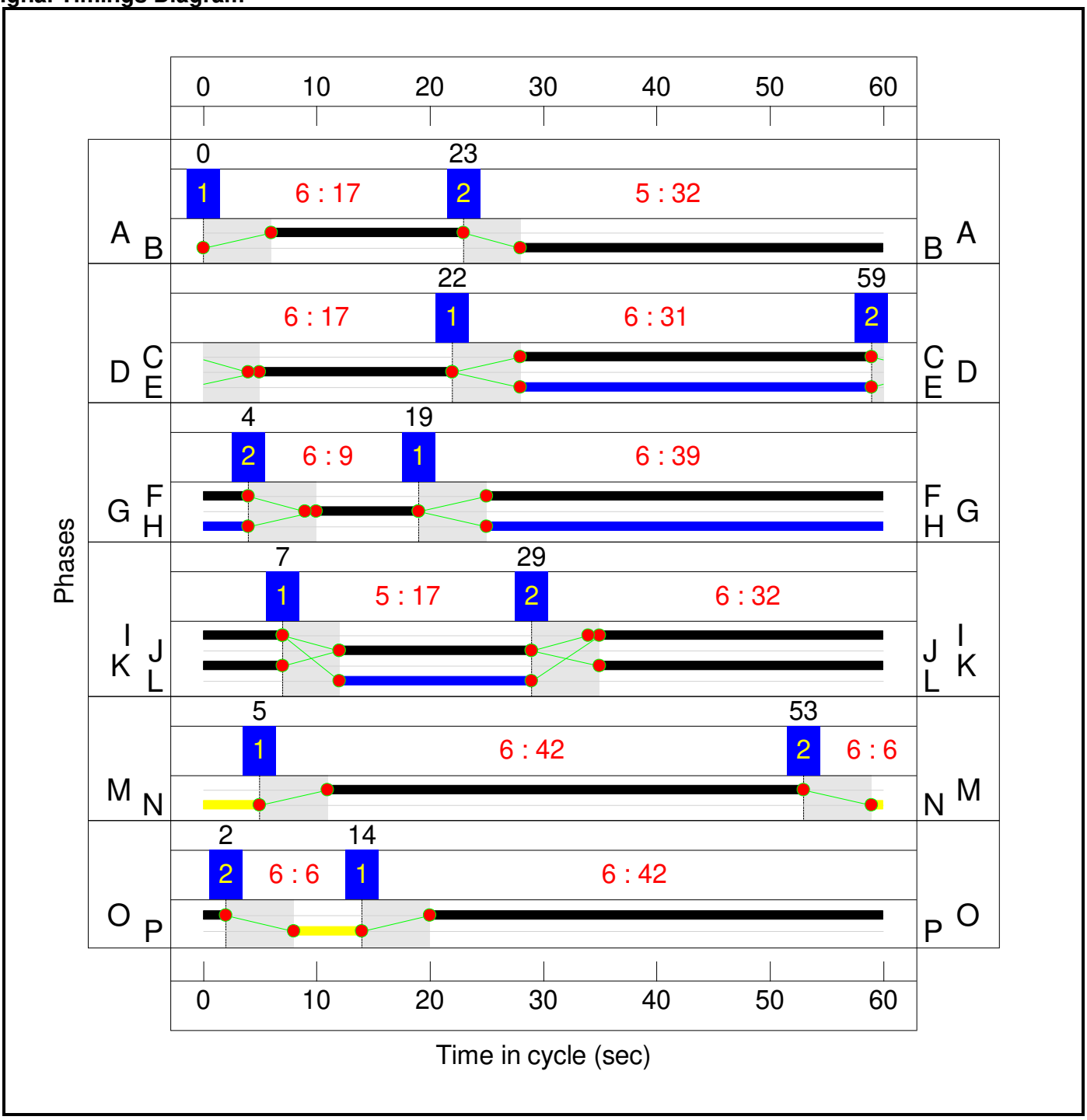
Stage Stream: 5

Stage	1	2
Duration	42	6
Change Point	5	53

Stage Stream: 6

Stage	1	2
Duration	42	6
Change Point	14	2

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: Phase 1 highway works network model	-	-	**N/A**	-	-		-	-	-	-	-	-	**99.2%**
J1: Padbury Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**96.5%**
1/1	A43 north Ahead	U	1:1	N/A	C1:B		1	39	-	1231	1922	1281	96.1%
1/2	A43 north Ahead	U	1:1	N/A	C1:B		1	39	-	1324	2058	1372	96.5%
3/1	A43 south Ahead	U	1:2	N/A	C1:C		1	35	-	747	1886	1132	66.0%
3/2	A43 south Ahead	U	1:2	N/A	C1:C		1	35	-	767	2019	1211	63.3%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	1:2	N/A	C1:D		1	13	-	573	2058:1908	480+445	64.8 : 58.8%
5/3	Junction 10 s'bound offslip Ahead	U	1:2	N/A	C1:D		1	13	-	312	2058	480	65.0%
6/1	Right	U	1:1	N/A	C1:A		1	9	-	252	2080	347	72.7%
6/2	Right	U	1:1	N/A	C1:A		1	9	-	312	2080	347	90.0%
J2: Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**96.0%**
1/2+1/1	A43 Left Ahead	U	2:1	N/A	C2:A		1	38	-	1906	2081:1944	889+1095	96.0 : 96.0%
1/3	A43 Ahead	U	2:1	N/A	C2:A		1	38	-	1213	2081	1353	89.7%
2/2	A43 Ahead Ahead2	O	N/A	N/A	-		-	-	-	875	Inf	1227	71.3%
5/1	MSA Left	U	2:2	N/A	C2:C		1	10	-	282	1828	335	84.1%
5/2	MSA Left Ahead	U	2:2	N/A	C2:C		1	10	-	273	1965	360	75.8%
8/1	Ahead Right	U	2:1	N/A	C2:B		1	11	-	351	1951	390	90.0%
10/1	Ahead	U	2:2	N/A	C2:D		1	38	-	783	1980	1353	57.9%
10/2	Ahead	U	2:2	N/A	C2:D		1	38	-	872	2120	1449	60.2%
10/3	Ahead	U	2:2	N/A	C2:D		1	38	-	45	2120	1449	3.1%
10/4	Ahead	U	2:2	N/A	C2:D		1	38	-	1213	2120	1449	83.7%
J3: Ardley roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**87.1%**

1/1+1/2	B430 Ahead	O	N/A	N/A	-		-	-	-	160	Inf : Inf	632+271	17.7 : 17.7%
2/1	Overbridge SB Ahead	U	3:2	N/A	C3:C		1	21	-	515	1908	700	73.6%
2/2+2/3	Overbridge SB Ahead Right	U	3:2	N/A	C3:C		1	21	-	936	1908:2043	626+449	87.1 : 87.1%
4/1	Ahead	U	3:3	N/A	C3:H		1	22	-	531	2120	813	65.3%
4/2	Right Ahead	U	3:3	N/A	C3:H		1	22	-	563	2120	813	69.3%
6/1	Right	U	3:2	N/A	C3:D		1	29	-	34	1908	954	3.6%
7/1	Ahead Right	U	3:1	N/A	C3:B		1	32	-	741	2070	1139	65.1%
7/2	Right	U	3:1	N/A	C3:B		1	32	-	724	2058	1132	64.0%
8/1	M40 Northbound offslip Ahead Left	U	3:3	N/A	C3:G		1	28	-	781	1940	938	83.3%
8/2	M40 Northbound offslip Ahead	U	3:3	N/A	C3:G		1	28	-	724	2066	999	72.5%
9/1	Left	U	3:4	N/A	C3:J		1	31	-	329	1980	1056	31.2%
9/2	Ahead	U	3:4	N/A	C3:J		1	31	-	910	2120	1131	80.5%
9/3	Right Ahead	U	3:4	N/A	C3:J		1	31	-	909	2120	1131	80.4%
13/1	Ardley Bypass Left Ahead	U	3:1	N/A	C3:A		1	18	-	460	1932	612	75.2%
13/2+13/3	Ardley Bypass Ahead	U	3:1	N/A	C3:A		1	18	-	403	2033:2033	640+329	41.6 : 41.6%
17/1	Right	U	3:4	N/A	C3:I		1	19	-	391	1967	721	54.2%
J4: Baynards Green	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**99.2%**
1/2+1/1	A43 North Ahead Left	U	4:1	N/A	C4:B		1	32	-	743	2068:1932	848+1063	37.4 : 40.1%
1/3+1/4	A43 North Ahead	U	4:1	N/A	C4:B		1	32	-	1984	1932:2068	967+1033	99.2 : 99.2%
2/1	Right	U	4:2	N/A	C4:C		1	31	-	317	1950	1040	30.5%
2/2	Right	U	4:2	N/A	C4:C		1	31	-	0	2080	1109	0.0%
3/1+3/2	B4100 East Ahead	U	4:2	N/A	C4:D		1	17	-	829	1886:2019	566+382	87.5 : 87.5%
5/1	Left	U	4:3	N/A	C4:J		1	17	-	453	1842	553	82.0%
5/2	Ahead	U	4:3	N/A	C4:J		1	17	-	359	1922	577	62.3%
5/3	Ahead	U	4:3	N/A	C4:J		1	17	-	140	2058	617	22.7%

5/4	Ahead	U	4:3	N/A	C4:J		1	17	-	194	2058	617	31.4%
6/1	M40 Northbound off slip Ahead Left	U	4:3	N/A	C4:K		1	32	-	661	1904	1047	63.1%
6/2+6/3	M40 Northbound off slip Ahead	U	4:3	N/A	C4:K		1	32	-	1174	2043:2043	1024+653	70.0 : 70.0%
7/1	Ahead	U	4:4	N/A	C4:F		1	39	-	682	1908	1272	53.6%
7/2	Ahead	U	4:4	N/A	C4:F		1	39	-	717	2050	1367	52.5%
7/3	Ahead Right	U	4:4	N/A	C4:F		1	39	-	651	2050	1367	47.6%
8/1		U	4:6	N/A	C4:O		1	42	-	478	1980	1419	33.7%
9/1+9/2	B4100 West Left Ahead	U	4:4	N/A	C4:G		1	9	-	469	1905:2058	318+343	70.9 : 71.1%
10/2		U	N/A	N/A	-		-	-	-	717	2050	2050	35.0%
10/3		U	N/A	N/A	-		-	-	-	378	2050	2050	18.4%
11/1	Ahead	U	4:1	N/A	C4:A		1	17	-	289	2070	621	46.5%
11/2	Right Ahead Right2	U	4:1	N/A	C4:A		1	17	-	384	2070	621	61.8%
12/1		U	4:5	N/A	C4:M		1	42	-	715	1980	1419	50.4%
12/2		U	4:5	N/A	C4:M		1	42	-	266	1980	1419	18.7%
14/1	A43 SB Cut-through Ahead	U	4:3	N/A	C4:I		1	32	-	1020	1980	1155	88.3%
14/2	A43 SB Cut-through Ahead	U	4:3	N/A	C4:I		1	32	-	1082	2120	1237	87.5%

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: Phase 1 highway works network model	**-**	**-**	**1195**	**0**	**0**	**76.2**	**73.2**	**0.0**	**149.3**	**-**	**-**	**-**	**-**
J1: Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**16.3**	**22.4**	**0.0**	**38.7**	**-**	**-**	**-**	**-**
1/1	1231	1231	-	-	-	2.8	9.0	-	11.8	34.4	19.9	9.0	28.9
1/2	1324	1324	-	-	-	2.5	9.8	-	12.3	33.4	21.8	9.8	31.6
3/1	747	747	-	-	-	2.2	1.0	-	3.2	15.4	11.9	1.0	12.8
3/2	767	767	-	-	-	2.6	0.9	-	3.4	16.1	12.4	0.9	13.3
5/2+5/1	573	573	-	-	-	3.3	0.8	-	4.1	25.7	4.7	0.8	5.5
5/3	312	312	-	-	-	1.8	0.9	-	2.7	31.4	4.7	0.9	5.6
6/1	252	252	-	-	-	0.5	0.0	-	0.5	7.7	0.7	0.0	0.7
6/2	312	312	-	-	-	0.7	0.0	-	0.7	7.8	0.8	0.0	0.8
J2: Cherwell	**-**	**-**	**875**	**0**	**0**	**15.5**	**19.0**	**0.0**	**34.5**	**-**	**-**	**-**	**-**
1/2+1/1	1906	1906	-	-	-	6.5	9.7	-	16.2	30.6	35.6	9.7	45.4
1/3	1213	1213	-	-	-	2.6	4.1	-	6.7	19.9	15.7	4.1	19.8
2/2	875	875	875	0	0	0.7	1.2	-	2.0	8.1	9.7	1.2	10.9
5/1	282	282	-	-	-	1.9	2.4	-	4.3	54.7	4.5	2.4	6.9
5/2	273	273	-	-	-	1.8	1.5	-	3.3	43.2	4.2	1.5	5.8
8/1	351	351	-	-	-	1.8	0.0	-	1.8	18.4	5.6	0.0	5.6
10/1	783	783	-	-	-	0.1	0.0	-	0.1	0.7	1.0	0.0	1.0
10/2	872	872	-	-	-	0.2	0.0	-	0.2	0.6	1.1	0.0	1.1
10/3	45	45	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/4	1213	1213	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J3: Ardley roundabout	**-**	**-**	**320**	**0**	**0**	**20.5**	**5.7**	**0.0**	**26.2**	**-**	**-**	**-**	**-**
1/1+1/2	160	160	320	0	0	0.0	0.1	-	0.1	2.7	0.2	0.1	0.3
2/1	515	515	-	-	-	1.7	0.0	-	1.7	12.0	7.8	0.0	7.8
2/2+2/3	936	936	-	-	-	3.2	0.0	-	3.2	12.4	8.0	0.0	8.0
4/1	531	531	-	-	-	0.1	0.0	-	0.1	0.6	0.3	0.0	0.3

4/2	563	563	-	-	-	0.1	0.0	-	0.1	0.7	0.3	0.0	0.3
6/1	34	34	-	-	-	0.0	0.0	-	0.0	4.9	0.1	0.0	0.1
7/1	741	741	-	-	-	0.7	0.0	-	0.7	3.3	2.5	0.0	2.5
7/2	724	724	-	-	-	0.1	0.0	-	0.1	0.5	0.2	0.0	0.2
8/1	781	781	-	-	-	2.9	2.4	-	5.3	24.6	11.1	2.4	13.5
8/2	724	724	-	-	-	2.5	1.3	-	3.8	18.8	9.5	1.3	10.8
9/1	329	329	-	-	-	1.0	0.0	-	1.0	10.7	5.1	0.0	5.1
9/2	910	910	-	-	-	2.4	0.0	-	2.4	9.7	7.5	0.0	7.5
9/3	909	909	-	-	-	1.6	0.0	-	1.6	6.2	4.8	0.0	4.8
13/1	460	460	-	-	-	2.3	1.5	-	3.8	30.0	6.8	1.5	8.3
13/2+13/3	403	403	-	-	-	1.8	0.4	-	2.1	18.9	3.5	0.4	3.8
17/1	391	391	-	-	-	0.1	0.0	-	0.1	0.5	0.2	0.0	0.2
J4: Baynards Green	**-**	**-**	**0**	**0**	**0**	**23.8**	**26.1**	**0.0**	**49.9**	**-**	**-**	**-**	**-**
1/2+1/1	743	743	-	-	-	1.6	0.3	-	1.9	9.1	4.0	0.3	4.3
1/3+1/4	1984	1984	-	-	-	6.6	18.6	-	25.3	45.9	15.1	18.6	33.7
2/1	317	317	-	-	-	0.3	0.0	-	0.3	3.7	2.8	0.0	2.8
2/2	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1+3/2	829	829	-	-	-	4.4	3.3	-	7.7	33.4	7.7	3.3	11.0
5/1	453	453	-	-	-	2.0	0.0	-	2.0	16.1	7.2	0.0	7.2
5/2	359	359	-	-	-	0.5	0.0	-	0.5	4.6	2.4	0.0	2.4
5/3	140	140	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/4	194	194	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	661	661	-	-	-	0.4	0.9	-	1.3	7.0	2.2	0.9	3.1
6/2+6/3	1174	1174	-	-	-	1.2	1.2	-	2.4	7.4	22.4	1.2	23.6
7/1	682	682	-	-	-	0.6	0.0	-	0.6	3.2	3.5	0.0	3.5
7/2	717	717	-	-	-	0.6	0.0	-	0.6	3.0	1.9	0.0	1.9
7/3	651	651	-	-	-	0.5	0.0	-	0.5	2.6	3.6	0.0	3.6
8/1	478	478	-	-	-	0.1	0.3	-	0.3	2.5	0.4	0.3	0.6
9/1+9/2	469	469	-	-	-	3.1	1.2	-	4.3	32.9	3.8	1.2	5.0
10/2	717	717	-	-	-	0.0	0.3	-	0.3	1.3	0.0	0.3	0.3
10/3	378	378	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1

11/1	289	289	-	-	-	0.6	0.0	-	0.6	7.9	2.2	0.0	2.2
11/2	384	384	-	-	-	0.7	0.0	-	0.7	6.4	2.3	0.0	2.3
12/1	715	715	-	-	-	0.3	0.0	-	0.3	1.7	4.0	0.0	4.0
12/2	266	266	-	-	-	0.0	0.0	-	0.0	0.1	2.3	0.0	2.3
14/1	1020	1020	-	-	-	0.1	0.0	-	0.1	0.4	1.0	0.0	1.0
14/2	1082	1082	-	-	-	0.1	0.0	-	0.1	0.4	1.0	0.0	1.0

C1 - Padbury	Stream: 1	PRC for Signalled Lanes (%):	-7.2	Total Delay for Signalled Lanes (pcuHr):	25.26	Cycle Time (s): 60
C1 - Padbury	Stream: 2	PRC for Signalled Lanes (%):	36.3	Total Delay for Signalled Lanes (pcuHr):	13.44	Cycle Time (s): 60
C2 - Cherwell	Stream: 1	PRC for Signalled Lanes (%):	-6.7	Total Delay for Signalled Lanes (pcuHr):	24.72	Cycle Time (s): 60
C2 - Cherwell	Stream: 2	PRC for Signalled Lanes (%):	7.0	Total Delay for Signalled Lanes (pcuHr):	7.85	Cycle Time (s): 60
C2 - Cherwell	Stream: 3	PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s): 60
C3 - Ardley	Stream: 1	PRC for Signalled Lanes (%):	19.7	Total Delay for Signalled Lanes (pcuHr):	6.74	Cycle Time (s): 60
C3 - Ardley	Stream: 2	PRC for Signalled Lanes (%):	3.4	Total Delay for Signalled Lanes (pcuHr):	4.99	Cycle Time (s): 60
C3 - Ardley	Stream: 3	PRC for Signalled Lanes (%):	8.1	Total Delay for Signalled Lanes (pcuHr):	9.31	Cycle Time (s): 60
C3 - Ardley	Stream: 4	PRC for Signalled Lanes (%):	11.8	Total Delay for Signalled Lanes (pcuHr):	5.03	Cycle Time (s): 60
C4 - Baynards Green	Stream: 1	PRC for Signalled Lanes (%):	-10.2	Total Delay for Signalled Lanes (pcuHr):	28.47	Cycle Time (s): 60
C4 - Baynards Green	Stream: 2	PRC for Signalled Lanes (%):	2.9	Total Delay for Signalled Lanes (pcuHr):	8.02	Cycle Time (s): 60
C4 - Baynards Green	Stream: 3	PRC for Signalled Lanes (%):	1.9	Total Delay for Signalled Lanes (pcuHr):	6.39	Cycle Time (s): 60
C4 - Baynards Green	Stream: 4	PRC for Signalled Lanes (%):	26.5	Total Delay for Signalled Lanes (pcuHr):	5.96	Cycle Time (s): 60
C4 - Baynards Green	Stream: 5	PRC for Signalled Lanes (%):	78.6	Total Delay for Signalled Lanes (pcuHr):	0.34	Cycle Time (s): 60
C4 - Baynards Green	Stream: 6	PRC for Signalled Lanes (%):	167.2	Total Delay for Signalled Lanes (pcuHr):	0.33	Cycle Time (s): 60
		PRC Over All Lanes (%):	-10.2	Total Delay Over All Lanes(pcuHr):	149.31	

Scenario 2: '2028 2m sqft - PM Peak' (FG2: '2028 2m sqft - PM', Plan 1: 'Network Control Plan 1')
C1 - Padbury

Stage Timings

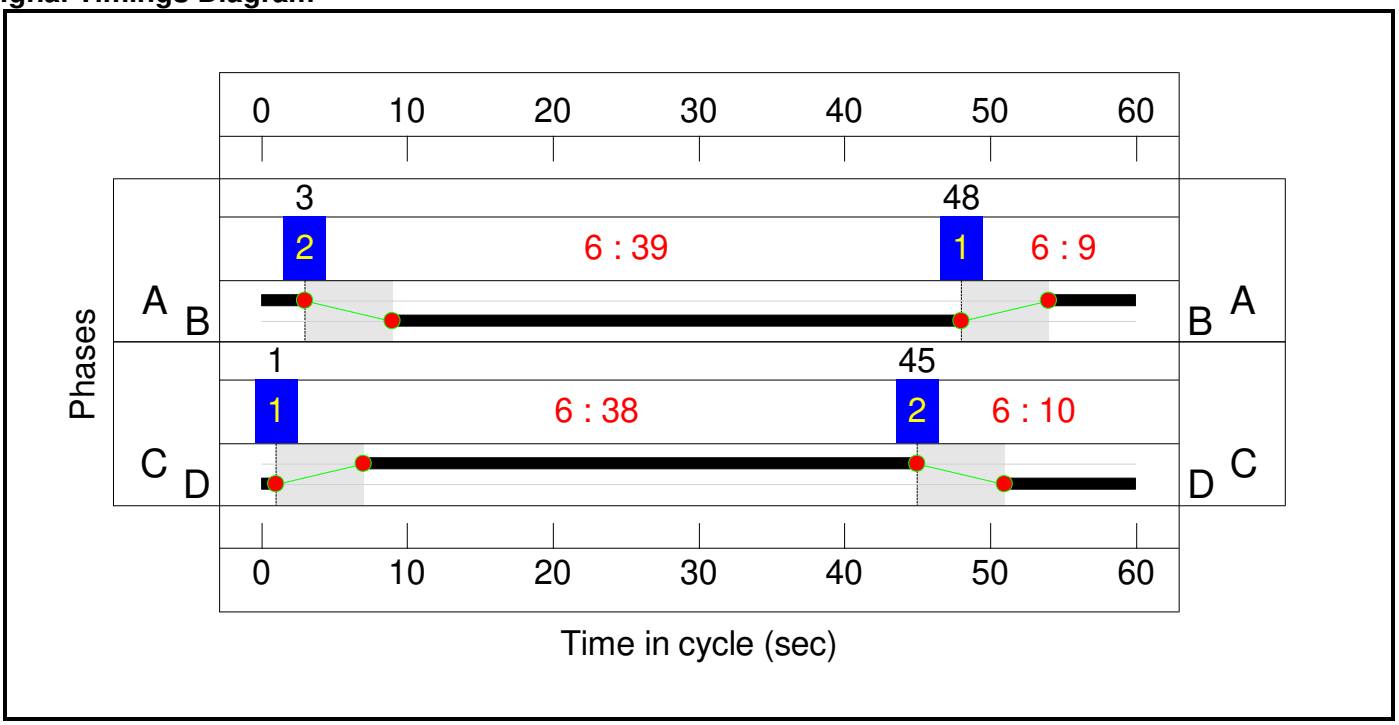
Stage Stream: 1

Stage	1	2
Duration	9	39
Change Point	48	3

Stage Stream: 2

Stage	1	2
Duration	38	10
Change Point	1	45

Signal Timings Diagram



C2 - Cherwell

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	26	23
Change Point	59	30

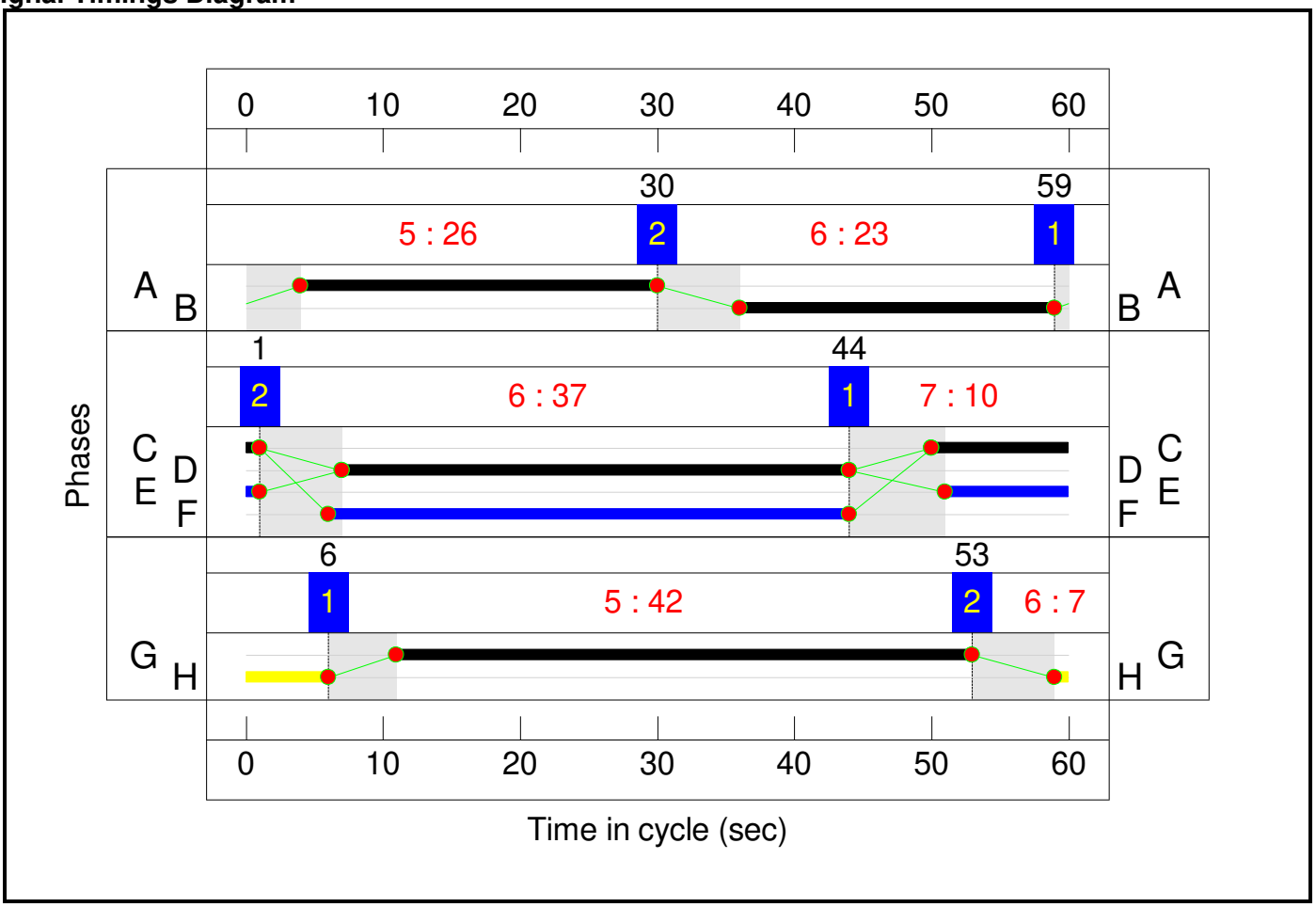
Stage Stream: 2

Stage	1	2
Duration	10	37
Change Point	44	1

Stage Stream: 3

Stage	1	2
Duration	42	7
Change Point	6	53

Signal Timings Diagram



C3 - Ardley

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	24	56
Change Point	83	22

Stage Stream: 2

Stage	1	2
Duration	25	52
Change Point	70	13

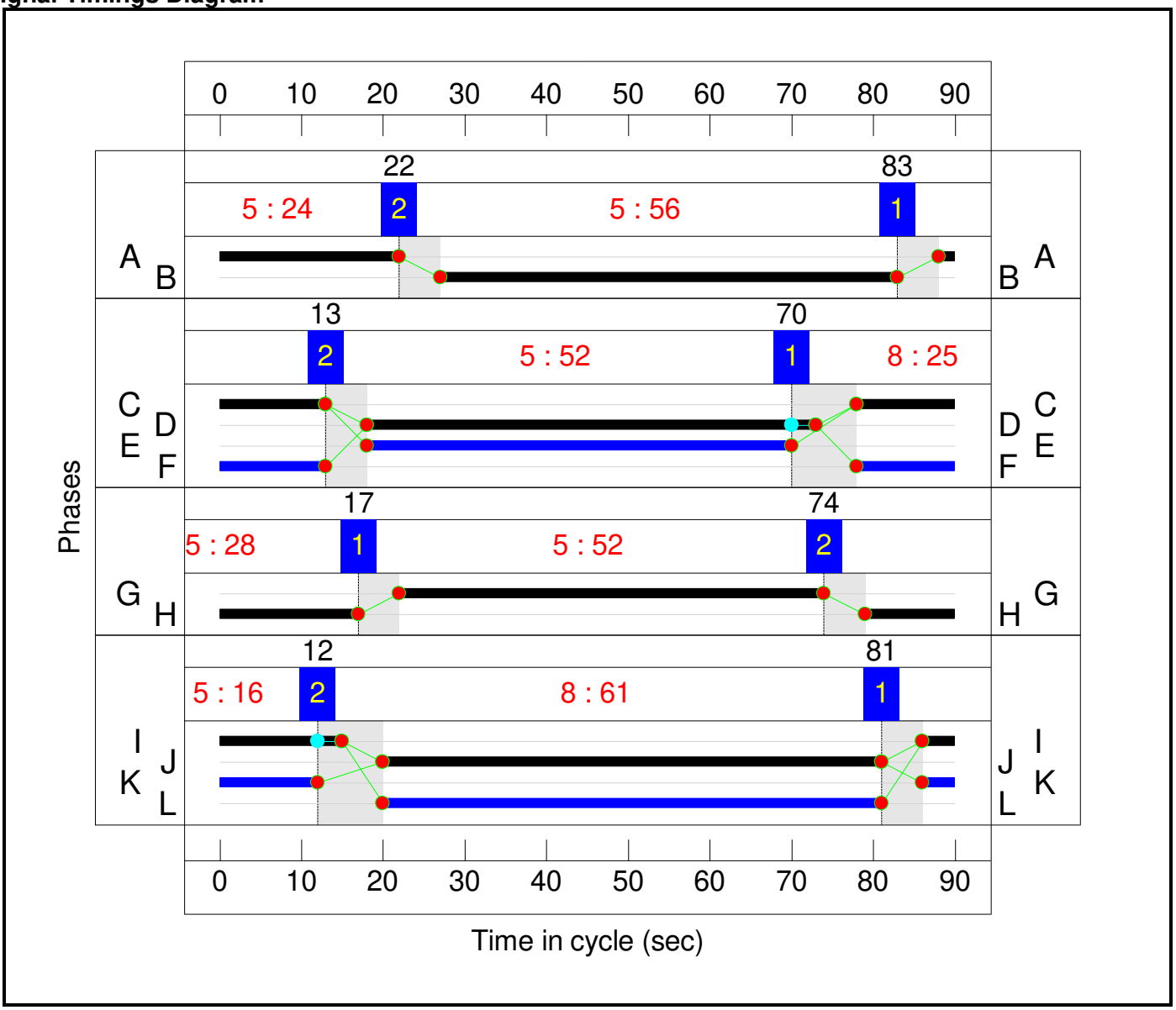
Stage Stream: 3

Stage	1	2
Duration	52	28
Change Point	17	74

Stage Stream: 4

Stage	1	2
Duration	16	61
Change Point	81	12

Signal Timings Diagram



C4 - Baynards Green

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	24	25
Change Point	37	7

Stage Stream: 2

Stage	1	2
Duration	26	22
Change Point	4	36

Stage Stream: 3

Stage	1	2
Duration	17	32
Change Point	44	6

Stage Stream: 4

Stage	1	2
Duration	41	7
Change Point	3	50

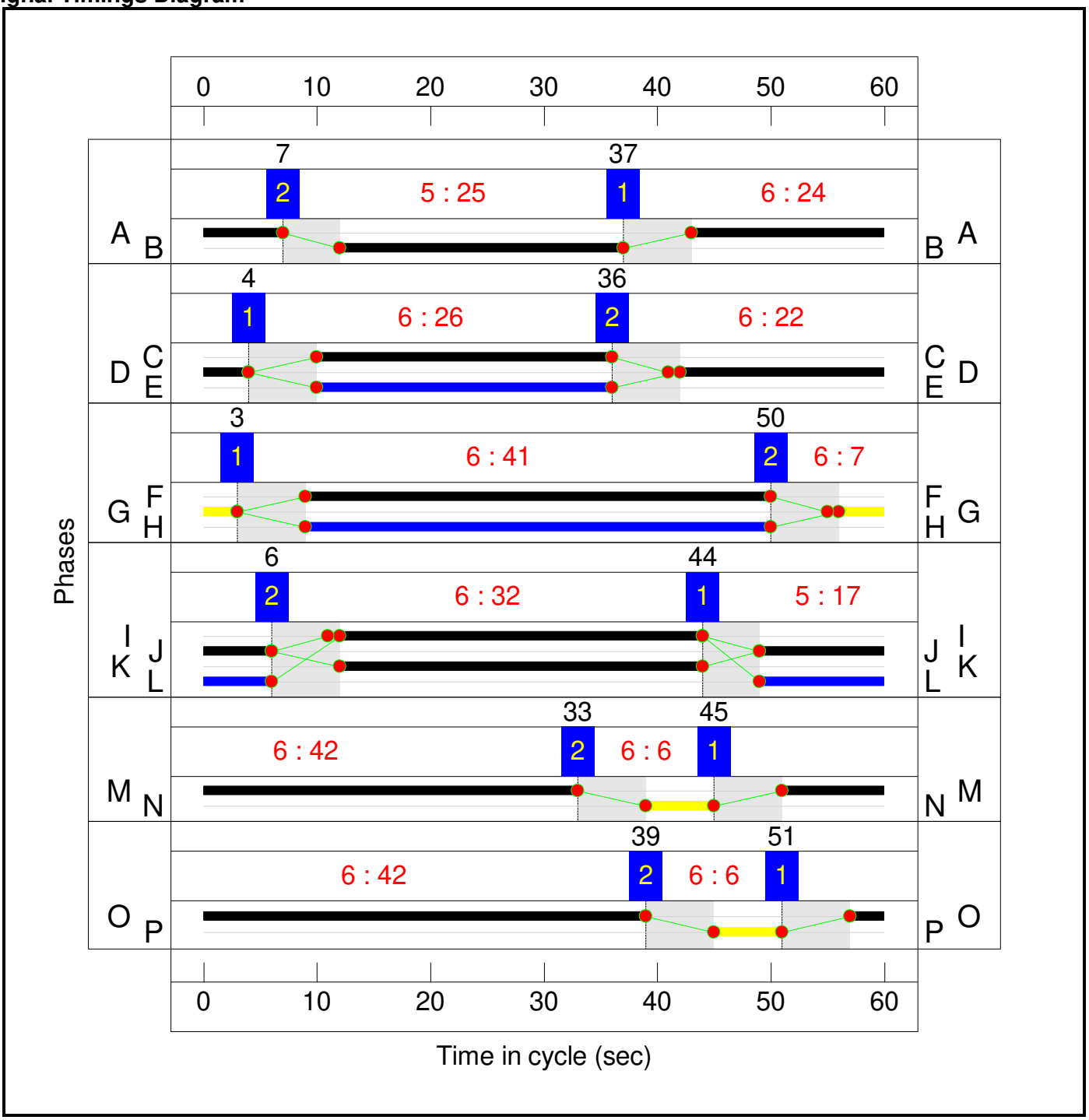
Stage Stream: 5

Stage	1	2
Duration	42	6
Change Point	45	33

Stage Stream: 6

Stage	1	2
Duration	42	6
Change Point	51	39

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: Phase 1 highway works network model	-	-	**N/A**	-	-		-	-	-	-	-	-	**93.2%**
J1: Padbury Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**88.0%**
1/1	A43 north Ahead	U	1:1	N/A	C1:B		1	39	-	683	1922	1281	53.3%
1/2	A43 north Ahead	U	1:1	N/A	C1:B		1	39	-	866	2058	1372	63.1%
3/1	A43 south Ahead	U	1:2	N/A	C1:C		1	38	-	1051	1886	1226	85.7%
3/2	A43 south Ahead	U	1:2	N/A	C1:C		1	38	-	1131	2019	1312	86.2%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	1:2	N/A	C1:D		1	10	-	558	2058:1908	377+348	88.0 : 64.9%
5/3	Junction 10 s'bound offslip Ahead	U	1:2	N/A	C1:D		1	10	-	241	2058	377	63.9%
6/1	Right	U	1:1	N/A	C1:A		1	9	-	256	2080	347	73.8%
6/2	Right	U	1:1	N/A	C1:A		1	9	-	241	2080	347	69.5%
J2: Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**93.2%**
1/2+1/1	A43 Left Ahead	U	2:1	N/A	C2:A		1	26	-	1366	2081:1944	671+875	88.4 : 88.4%
1/3	A43 Ahead	U	2:1	N/A	C2:A		1	26	-	680	2081	936	72.6%
2/2	A43 Ahead Ahead2	O	N/A	N/A	-		-	-	-	1123	Inf	1205	93.2%
5/1	MSA Left	U	2:2	N/A	C2:C		1	11	-	246	1828	366	67.3%
5/2	MSA Left Ahead	U	2:2	N/A	C2:C		1	11	-	326	1965	393	83.0%
8/1	Ahead Right	U	2:1	N/A	C2:B		1	23	-	400	1953	781	51.2%
10/1	Ahead	U	2:2	N/A	C2:D		1	37	-	476	1980	1320	36.1%
10/2	Ahead	U	2:2	N/A	C2:D		1	37	-	563	2120	1413	39.8%
10/3	Ahead	U	2:2	N/A	C2:D		1	37	-	152	2120	1413	10.8%
10/4	Ahead	U	2:2	N/A	C2:D		1	37	-	680	2120	1413	48.1%
J3: Ardley roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**92.3%**

1/1+1/2	B430 Ahead	O	N/A	N/A	-		-	-	-	310	Inf : Inf	318+678	31.1 : 31.1%
2/1	Overbridge SB Ahead	U	3:2	N/A	C3:C		1	25	-	342	1908	551	62.0%
2/2+2/3	Overbridge SB Ahead Right	U	3:2	N/A	C3:C		1	25	-	693	1908:2043	281+500	88.7 : 88.7%
4/1	Ahead	U	3:3	N/A	C3:H		1	28	-	444	2120	683	65.0%
4/2	Right Ahead	U	3:3	N/A	C3:H		1	28	-	351	2120	683	51.4%
6/1	Right	U	3:2	N/A	C3:D		1	55	-	204	1908	1187	17.2%
7/1	Ahead Right	U	3:1	N/A	C3:B		1	56	-	961	2063	1307	73.6%
7/2	Right	U	3:1	N/A	C3:B		1	56	-	926	2058	1303	71.0%
8/1	M40 Northbound offslip Ahead Left	U	3:3	N/A	C3:G		1	52	-	1033	1941	1143	90.4%
8/2	M40 Northbound offslip Ahead	U	3:3	N/A	C3:G		1	52	-	926	2066	1217	76.1%
9/1	Left	U	3:4	N/A	C3:J		1	61	-	271	1980	1364	19.9%
9/2	Ahead	U	3:4	N/A	C3:J		1	61	-	1336	2120	1460	91.5%
9/3	Right Ahead	U	3:4	N/A	C3:J		1	61	-	1327	2120	1460	90.9%
13/1	Ardley Bypass Left Ahead	U	3:1	N/A	C3:A		1	24	-	475	1938	538	88.2%
13/2+13/3	Ardley Bypass Ahead	U	3:1	N/A	C3:A		1	24	-	574	2033:2033	517+256	74.3 : 74.3%
17/1	Right	U	3:4	N/A	C3:I		1	19	-	444	1967	481	92.3%
J4: Baynards Green	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**89.3%**
1/2+1/1	A43 North Ahead Left	U	4:1	N/A	C4:B		1	25	-	487	2068:1932	81+837	53.0 : 53.0%
1/3+1/4	A43 North Ahead	U	4:1	N/A	C4:B		1	25	-	1275	1932:2068	837+896	73.5 : 73.6%
2/1	Right	U	4:2	N/A	C4:C		1	26	-	43	1950	878	4.9%
2/2	Right	U	4:2	N/A	C4:C		1	26	-	0	2080	936	0.0%
3/1+3/2	B4100 East Ahead	U	4:2	N/A	C4:D		1	22	-	1188	1886:2019	675+703	86.2 : 86.2%
5/1	Left	U	4:3	N/A	C4:J		1	17	-	229	1842	553	41.4%
5/2	Ahead	U	4:3	N/A	C4:J		1	17	-	396	1922	577	68.7%
5/3	Ahead	U	4:3	N/A	C4:J		1	17	-	267	2058	617	43.2%

5/4	Ahead	U	4:3	N/A	C4:J		1	17	-	339	2058	617	54.9%
6/1	M40 Northbound off slip Ahead Left	U	4:3	N/A	C4:K		1	32	-	846	1906	1048	80.7%
6/2+6/3	M40 Northbound off slip Ahead	U	4:3	N/A	C4:K		1	32	-	1638	2043:2043	830+1005	89.3 : 89.3%
7/1	Ahead	U	4:4	N/A	C4:F		1	41	-	1028	1908	1336	77.0%
7/2	Ahead	U	4:4	N/A	C4:F		1	41	-	900	2050	1435	62.7%
7/3	Ahead Right	U	4:4	N/A	C4:F		1	41	-	1077	2050	1435	75.1%
8/1		U	4:6	N/A	C4:O		1	42	-	481	1980	1419	33.9%
9/1+9/2	B4100 West Left Ahead	U	4:4	N/A	C4:G		1	7	-	312	1909:2058	255+274	58.9 : 59.0%
10/2		U	N/A	N/A	-		-	-	-	900	2050	2050	43.9%
10/3		U	N/A	N/A	-		-	-	-	858	2050	2050	41.9%
11/1	Ahead	U	4:1	N/A	C4:A		1	24	-	213	2070	862	24.7%
11/2	Right Ahead Right2	U	4:1	N/A	C4:A		1	24	-	283	2070	862	32.8%
12/1		U	4:5	N/A	C4:M		1	42	-	657	1980	1419	46.3%
12/2		U	4:5	N/A	C4:M		1	42	-	238	1980	1419	16.8%
14/1	A43 SB Cut-through Ahead	U	4:3	N/A	C4:I		1	32	-	631	1980	1155	54.6%
14/2	A43 SB Cut-through Ahead	U	4:3	N/A	C4:I		1	32	-	689	2120	1237	55.7%

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: Phase 1 highway works network model	**-**	**-**	**1743**	**0**	**0**	**93.3**	**47.8**	**0.0**	**141.1**	**-**	**-**	**-**	**-**
J1: Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**15.8**	**9.9**	**0.0**	**25.7**	**-**	**-**	**-**	**-**
1/1	683	683	-	-	-	2.7	0.6	-	3.3	17.2	10.1	0.6	10.7
1/2	866	866	-	-	-	2.6	0.9	-	3.5	14.6	11.1	0.9	12.0
3/1	1051	1051	-	-	-	2.3	2.9	-	5.2	17.8	13.8	2.9	16.7
3/2	1131	1131	-	-	-	2.5	3.0	-	5.5	17.6	15.2	3.0	18.2
5/2+5/1	558	558	-	-	-	3.6	1.6	-	5.3	33.9	5.3	1.6	7.0
5/3	241	241	-	-	-	1.5	0.9	-	2.4	35.7	3.7	0.9	4.6
6/1	256	256	-	-	-	0.3	0.0	-	0.3	4.9	0.6	0.0	0.6
6/2	241	241	-	-	-	0.2	0.0	-	0.2	2.3	0.2	0.0	0.2
J2: Cherwell	**-**	**-**	**1123**	**0**	**0**	**15.8**	**14.2**	**0.0**	**30.0**	**-**	**-**	**-**	**-**
1/2+1/1	1366	1366	-	-	-	6.8	3.6	-	10.5	27.5	25.2	3.6	28.8
1/3	680	680	-	-	-	3.4	1.3	-	4.7	24.9	9.4	1.3	10.7
2/2	1123	1123	1123	0	0	0.1	6.0	-	6.1	19.6	7.8	6.0	13.8
5/1	246	246	-	-	-	1.5	1.0	-	2.5	37.0	3.8	1.0	4.8
5/2	326	326	-	-	-	2.1	2.3	-	4.4	48.2	5.2	2.3	7.4
8/1	400	400	-	-	-	1.5	0.0	-	1.5	13.1	5.0	0.0	5.0
10/1	476	476	-	-	-	0.1	0.0	-	0.1	0.4	0.2	0.0	0.2
10/2	563	563	-	-	-	0.3	0.0	-	0.3	1.9	2.4	0.0	2.4
10/3	152	152	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/4	680	680	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J3: Ardley roundabout	**-**	**-**	**620**	**0**	**0**	**33.5**	**11.0**	**0.0**	**44.5**	**-**	**-**	**-**	**-**
1/1+1/2	310	310	620	0	0	0.0	0.2	-	0.3	3.1	0.5	0.2	0.7
2/1	342	342	-	-	-	2.6	0.0	-	2.6	27.7	7.3	0.0	7.3
2/2+2/3	693	693	-	-	-	5.5	0.0	-	5.5	28.5	11.6	0.0	11.6
4/1	444	444	-	-	-	1.1	0.0	-	1.1	8.8	3.1	0.0	3.1

4/2	351	351	-	-	-	1.1	0.0	-	1.1	11.0	3.1	0.0	3.1
6/1	204	204	-	-	-	0.3	0.0	-	0.3	4.4	0.8	0.0	0.8
7/1	961	961	-	-	-	0.5	0.0	-	0.5	2.0	5.4	0.0	5.4
7/2	926	926	-	-	-	0.0	0.0	-	0.0	0.0	0.1	0.0	0.1
8/1	1033	1033	-	-	-	4.7	4.4	-	9.0	31.4	22.7	4.4	27.0
8/2	926	926	-	-	-	3.5	1.6	-	5.1	19.9	17.2	1.6	18.8
9/1	271	271	-	-	-	0.5	0.0	-	0.5	6.4	6.2	0.0	6.2
9/2	1336	1336	-	-	-	2.4	0.0	-	2.4	6.6	13.1	0.0	13.1
9/3	1327	1327	-	-	-	2.1	0.0	-	2.1	5.7	9.3	0.0	9.3
13/1	475	475	-	-	-	4.1	3.4	-	7.5	56.8	11.3	3.4	14.7
13/2+13/3	574	574	-	-	-	4.5	1.4	-	5.9	36.9	8.5	1.4	10.0
17/1	444	444	-	-	-	0.6	0.0	-	0.6	4.6	0.7	0.0	0.7
J4: Baynards Green	**-**	**-**	**0**	**0**	**0**	**28.2**	**12.7**	**0.0**	**41.0**	**-**	**-**	**-**	**-**
1/2+1/1	487	487	-	-	-	1.7	0.6	-	2.2	16.4	5.4	0.6	6.0
1/3+1/4	1275	1275	-	-	-	5.0	1.4	-	6.4	18.0	9.0	1.4	10.4
2/1	43	43	-	-	-	0.1	0.0	-	0.1	4.4	0.1	0.0	0.1
2/2	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1+3/2	1188	1188	-	-	-	5.4	3.0	-	8.4	25.6	8.8	3.0	11.8
5/1	229	229	-	-	-	0.2	0.0	-	0.2	3.3	0.5	0.0	0.5
5/2	396	396	-	-	-	0.6	0.0	-	0.6	5.5	2.8	0.0	2.8
5/3	267	267	-	-	-	0.2	0.0	-	0.2	3.3	0.6	0.0	0.6
5/4	339	339	-	-	-	0.3	0.0	-	0.3	3.4	0.8	0.0	0.8
6/1	846	846	-	-	-	3.9	2.0	-	6.0	25.5	11.8	2.0	13.9
6/2+6/3	1638	1638	-	-	-	6.6	4.0	-	10.6	23.4	20.8	4.0	24.8
7/1	1028	1028	-	-	-	0.6	0.0	-	0.6	2.2	4.4	0.0	4.4
7/2	900	900	-	-	-	0.3	0.0	-	0.3	1.2	2.6	0.0	2.6
7/3	1077	1077	-	-	-	0.4	0.0	-	0.4	1.5	3.0	0.0	3.0
8/1	481	481	-	-	-	0.1	0.3	-	0.4	2.7	0.4	0.3	0.7
9/1+9/2	312	312	-	-	-	2.1	0.7	-	2.8	32.7	2.5	0.7	3.2
10/2	900	900	-	-	-	0.0	0.4	-	0.4	1.6	0.0	0.4	0.4
10/3	858	858	-	-	-	0.0	0.4	-	0.4	1.5	0.0	0.4	0.4

11/1	213	213	-	-	-	0.1	0.0	-	0.1	1.0	1.3	0.0	1.3
11/2	283	283	-	-	-	0.1	0.0	-	0.1	1.5	1.6	0.0	1.6
12/1	657	657	-	-	-	0.4	0.0	-	0.4	2.0	2.9	0.0	2.9
12/2	238	238	-	-	-	0.0	0.0	-	0.0	0.0	1.7	0.0	1.7
14/1	631	631	-	-	-	0.0	0.0	-	0.0	0.0	0.1	0.0	0.1
14/2	689	689	-	-	-	0.0	0.0	-	0.0	0.0	0.1	0.0	0.1

C1 - Padbury	Stream: 1	PRC for Signalled Lanes (%):	21.9	Total Delay for Signalled Lanes (pcuHr):	7.27	Cycle Time (s): 60
C1 - Padbury	Stream: 2	PRC for Signalled Lanes (%):	2.3	Total Delay for Signalled Lanes (pcuHr):	18.40	Cycle Time (s): 60
C2 - Cherwell	Stream: 1	PRC for Signalled Lanes (%):	1.8	Total Delay for Signalled Lanes (pcuHr):	16.62	Cycle Time (s): 60
C2 - Cherwell	Stream: 2	PRC for Signalled Lanes (%):	8.5	Total Delay for Signalled Lanes (pcuHr):	7.25	Cycle Time (s): 60
C2 - Cherwell	Stream: 3	PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s): 60
C3 - Ardley	Stream: 1	PRC for Signalled Lanes (%):	2.0	Total Delay for Signalled Lanes (pcuHr):	13.92	Cycle Time (s): 90
C3 - Ardley	Stream: 2	PRC for Signalled Lanes (%):	1.4	Total Delay for Signalled Lanes (pcuHr):	8.37	Cycle Time (s): 90
C3 - Ardley	Stream: 3	PRC for Signalled Lanes (%):	-0.4	Total Delay for Signalled Lanes (pcuHr):	16.30	Cycle Time (s): 90
C3 - Ardley	Stream: 4	PRC for Signalled Lanes (%):	-2.6	Total Delay for Signalled Lanes (pcuHr):	5.62	Cycle Time (s): 90
C4 - Baynards Green	Stream: 1	PRC for Signalled Lanes (%):	22.2	Total Delay for Signalled Lanes (pcuHr):	8.79	Cycle Time (s): 60
C4 - Baynards Green	Stream: 2	PRC for Signalled Lanes (%):	4.4	Total Delay for Signalled Lanes (pcuHr):	8.50	Cycle Time (s): 60
C4 - Baynards Green	Stream: 3	PRC for Signalled Lanes (%):	0.8	Total Delay for Signalled Lanes (pcuHr):	18.00	Cycle Time (s): 60
C4 - Baynards Green	Stream: 4	PRC for Signalled Lanes (%):	16.9	Total Delay for Signalled Lanes (pcuHr):	4.22	Cycle Time (s): 60
C4 - Baynards Green	Stream: 5	PRC for Signalled Lanes (%):	94.4	Total Delay for Signalled Lanes (pcuHr):	0.37	Cycle Time (s): 60
C4 - Baynards Green	Stream: 6	PRC for Signalled Lanes (%):	165.5	Total Delay for Signalled Lanes (pcuHr):	0.35	Cycle Time (s): 60
		PRC Over All Lanes (%):	-3.5	Total Delay Over All Lanes(pcuHr):	141.09	

APPENDIX G

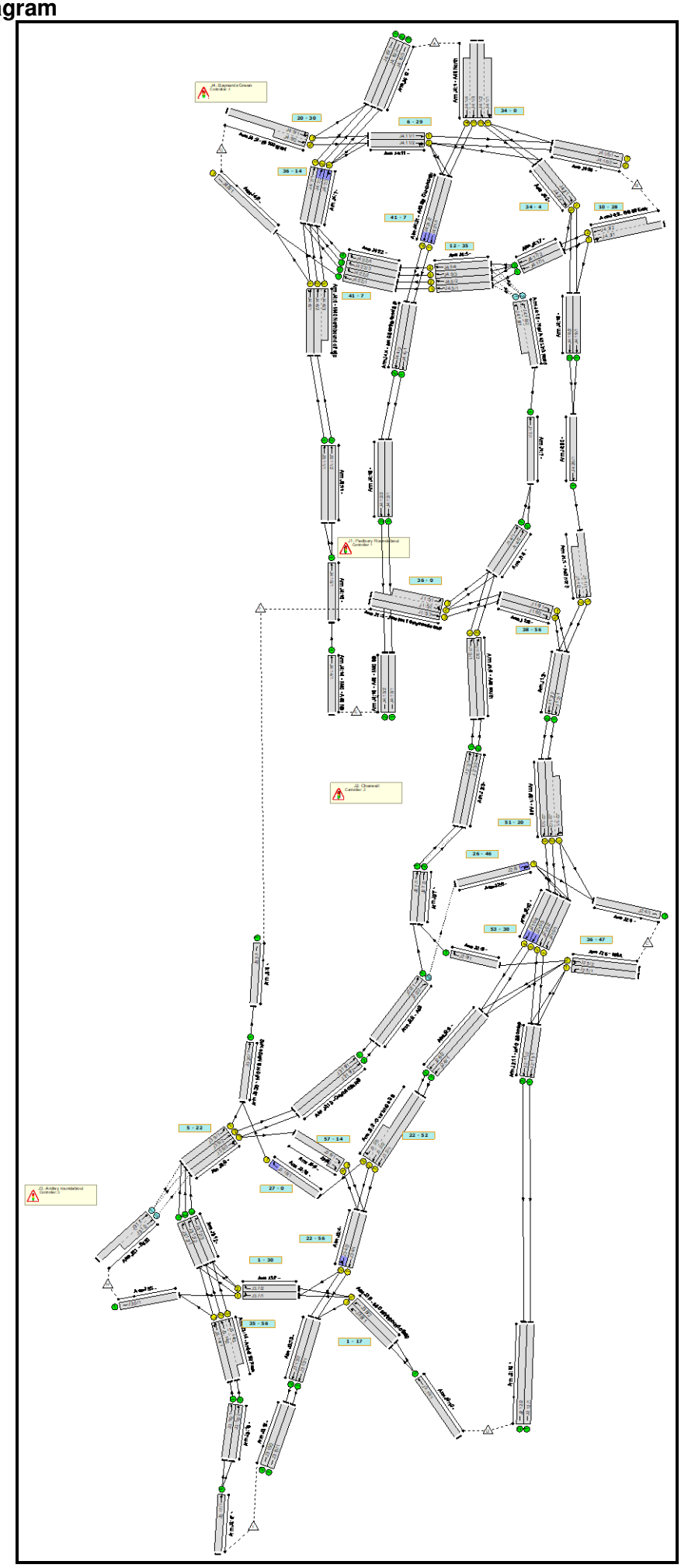
M40 JUNCTION 10 OPTION 26 LINSIG MODEL RESULTS

Full Input Data And Results

User and Project Details

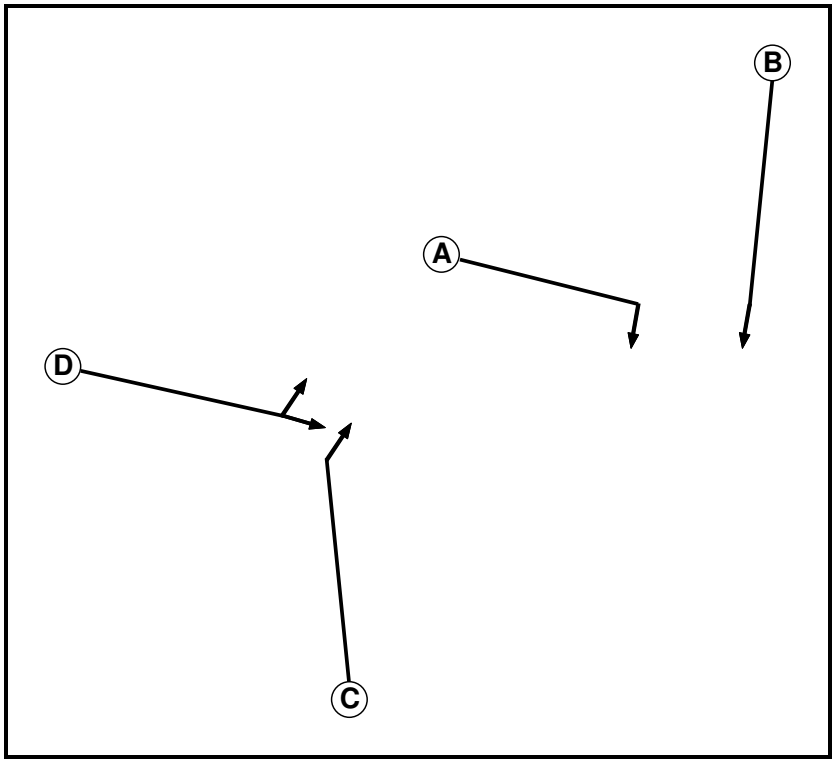
Project:	**Oxfordshire SRFI**
Title:	**M40 Junction 10 Option 26 Network Model**
Location:	M40 Junction 10, Oxfordshire
Additional detail:	
File name:	230202 M40 J10 - Option 26.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



C1 - Padbury

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

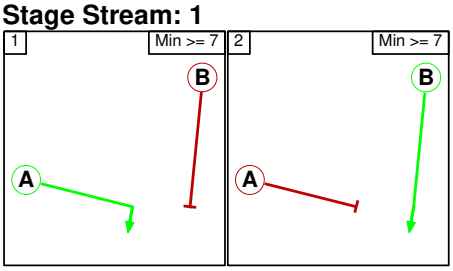
Terminating Phase	Starting Phase				
		A	B	C	D
A			6	-	-
B		6		-	-
C		-	-		6
D		-	-	6	

Phases in Stage

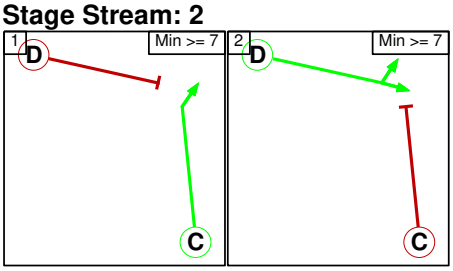
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

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

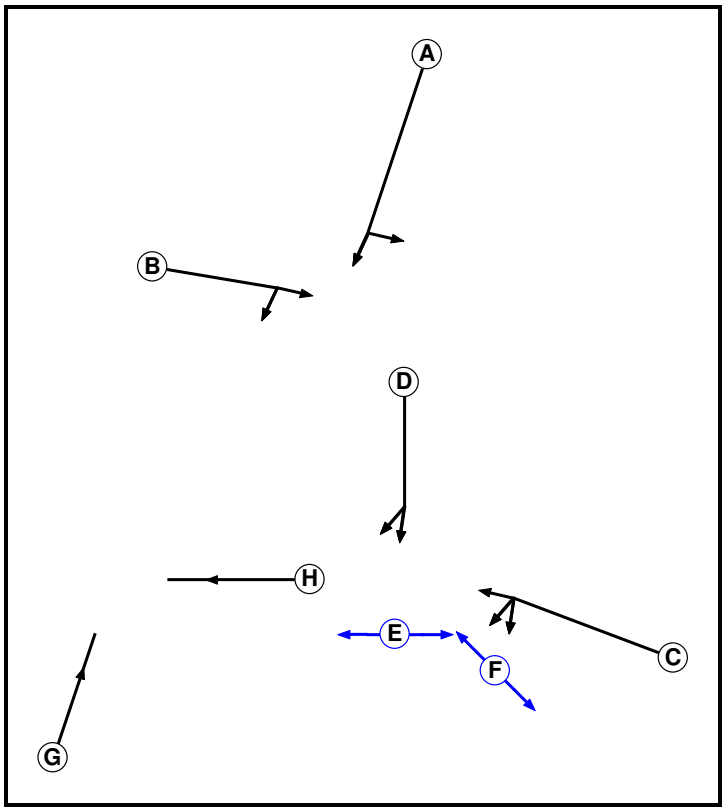
		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

		To Stage	
		1	2
From Stage	1		6
	2	6	

C2 - Cherwell

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
E	Pedestrian	2		6	6
F	Pedestrian	2		6	6
G	Traffic	3		7	7
H	Traffic	3		7	7

Phase Intergreens Matrix

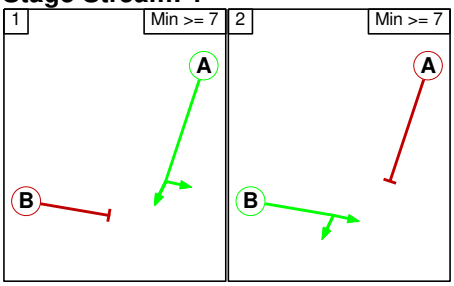
Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H
A		6	-	-	-	-	-	-
B	5		-	-	-	-	-	-
C	-	-		6	-	5	-	-
D	-	-	6		7	-	-	-
E	-	-	-	6		-	-	-
F	-	-	6	-	-		-	-
G	-	-	-	-	-	-		6
H	-	-	-	-	-	-	5	

Phases in Stage

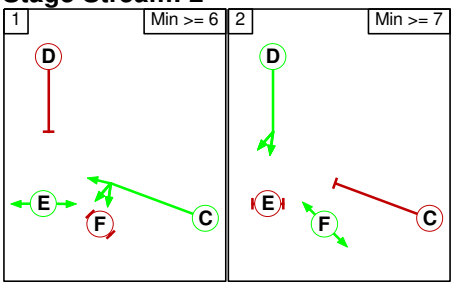
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C E
2	2	D F
3	1	G
3	2	H

Stage Diagram

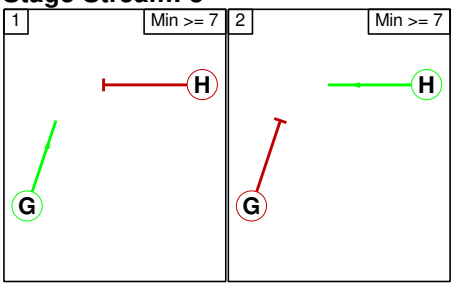
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



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					

Stage Stream: 3

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	5	

Stage Stream: 2

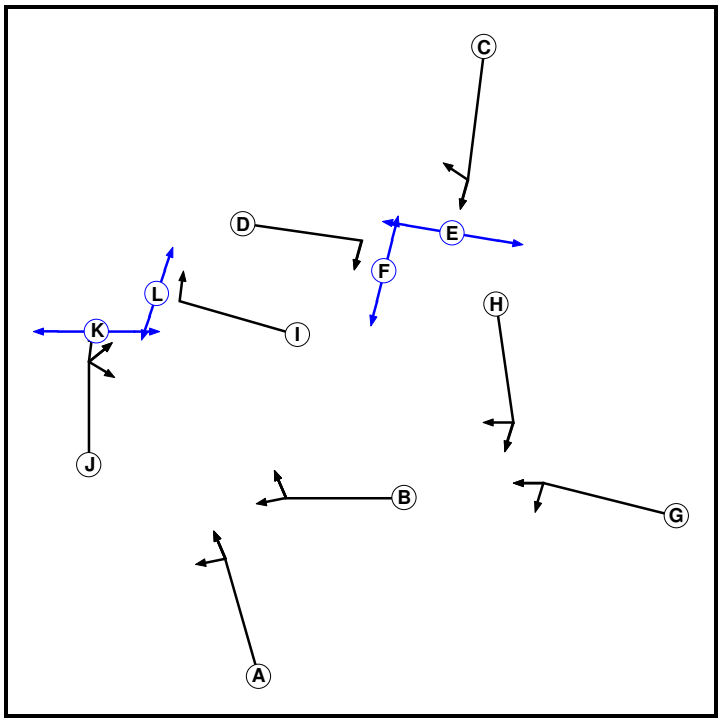
	To Stage		
		1	2
From Stage	1		6
	2	7	

Stage Stream: 3

	To Stage		
		1	2
From Stage	1		6
	2	5	

C3 - Ardley

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
E	Pedestrian	2		6	6
F	Pedestrian	2		5	5
G	Traffic	3		7	7
H	Traffic	3		7	7
I	Traffic	4		7	4
J	Traffic	4		7	7
K	Pedestrian	4		7	7
L	Pedestrian	4		5	5

Phase Intergreens Matrix

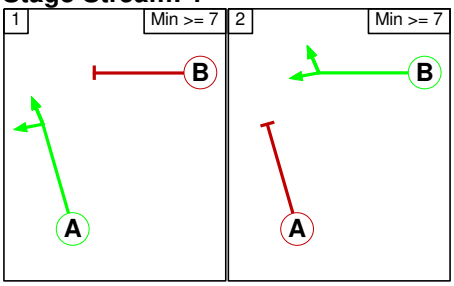
Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H	I	J	K	L
A		5	-	-	-	-	-	-	-	-	-	-
B	5		-	-	-	-	-	-	-	-	-	-
C	-	-		5	5	-	-	-	-	-	-	-
D	-	-	5		-	5	-	-	-	-	-	-
E	-	-	8	-		-	-	-	-	-	-	-
F	-	-	-	5	-		-	-	-	-	-	-
G	-	-	-	-	-	-		5	-	-	-	-
H	-	-	-	-	-	-	5		-	-	-	-
I	-	-	-	-	-	-	-	-		5	-	5
J	-	-	-	-	-	-	-	-	5		5	-
K	-	-	-	-	-	-	-	-	-	8		-
L	-	-	-	-	-	-	-	-	5	-	-	

Phases in Stage

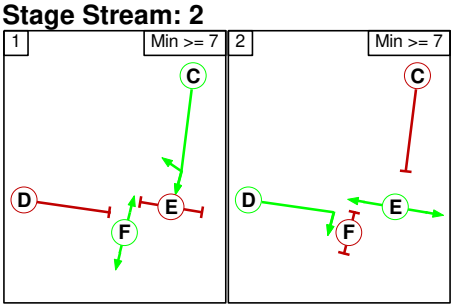
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C F
2	2	D E
3	1	G
3	2	H
4	1	I K
4	2	J L

Stage Diagram

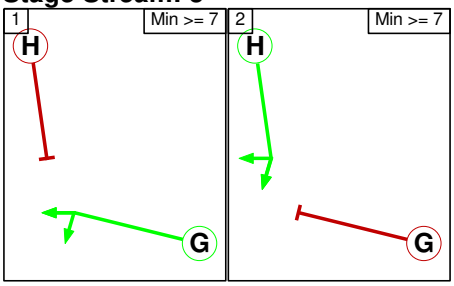
Stage Stream: 1



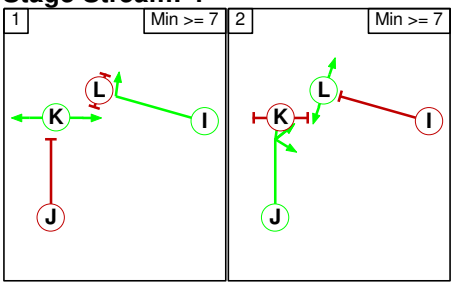
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



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					

Stage Stream: 3

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

Stage Stream: 4

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	I	Losing	3	3

Prohibited Stage Change

Stage Stream: 1

		To Stage	
		1	2
From Stage	1		5
	2	5	

Stage Stream: 2

		To Stage	
		1	2
From Stage	1		5
	2	8	

Stage Stream: 3

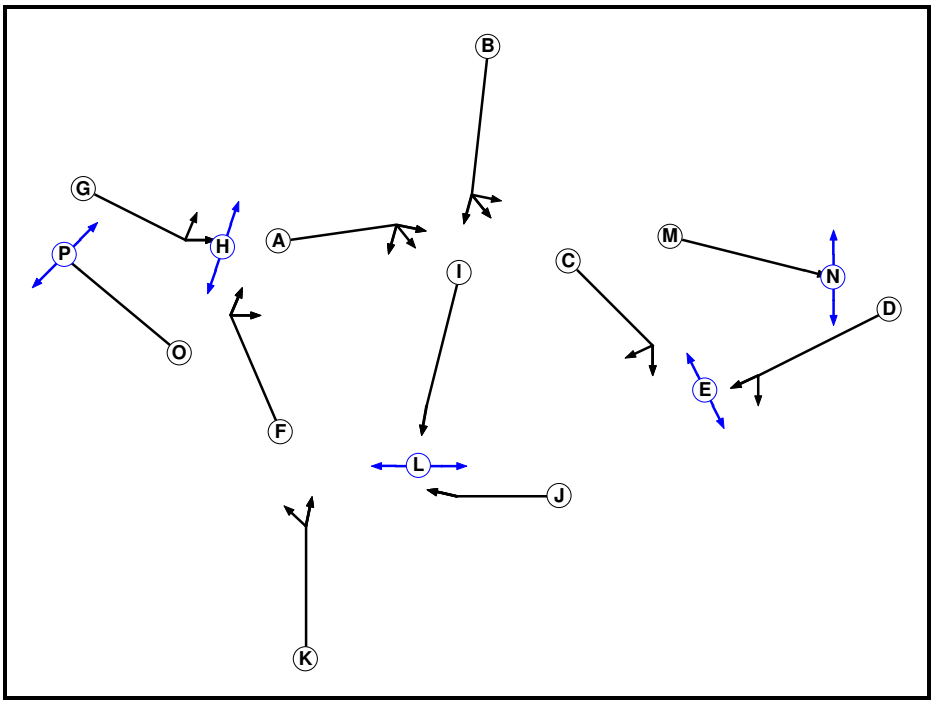
From Stage	To Stage 1	To Stage 2
1		5
2	5	

Stage Stream: 4

From Stage	To Stage 1	To Stage 2
1		8
2	5	

C4 - Baynards Green

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
E	Pedestrian	2		6	6
F	Traffic	4		7	7
G	Traffic	4		7	7
H	Pedestrian	4		6	6
I	Traffic	3		7	7
J	Traffic	3		7	7
K	Traffic	3		7	7
L	Pedestrian	3		6	6
M	Traffic	5		7	7
N	Pedestrian	5		6	6
O	Traffic	6		7	7
P	Pedestrian	6		6	6

Phase Intergreens Matrix

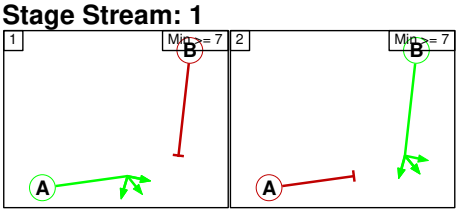
Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
A		5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B	6		-	-	-	-	-	-	-	-	-	-	-	-	-	-
C	-	-		5	-	-	-	-	-	-	-	-	-	-	-	-
D	-	-	6		6	-	-	-	-	-	-	-	-	-	-	-
E	-	-	-	6		-	-	-	-	-	-	-	-	-	-	-
F	-	-	-	-	-		5	-	-	-	-	-	-	-	-	-
G	-	-	-	-	-	6		6	-	-	-	-	-	-	-	-
H	-	-	-	-	-	-	6		-	-	-	-	-	-	-	-
I	-	-	-	-	-	-	-	-		5	-	5	-	-	-	-
J	-	-	-	-	-	-	-	-	5		6	-	-	-	-	-
K	-	-	-	-	-	-	-	-	-	5		-	-	-	-	-
L	-	-	-	-	-	-	-	-	6	-	-		-	-	-	-
M	-	-	-	-	-	-	-	-	-	-	-	-		6	-	-
N	-	-	-	-	-	-	-	-	-	-	-	-	6		-	-
O	-	-	-	-	-	-	-	-	-	-	-	-	-	-		6
P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	

Phases in Stage

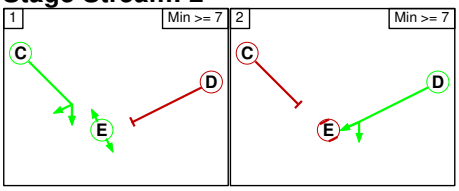
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C E
2	2	D
3	1	J L
3	2	I K
4	1	F H
4	2	G
5	1	M
5	2	N
6	1	O
6	2	P

Stage Diagram

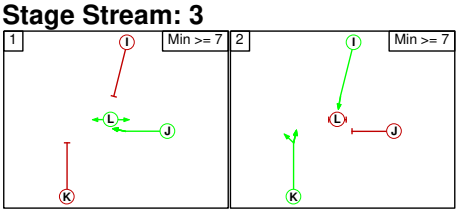
Stage Stream: 1



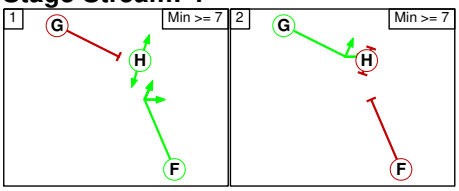
Stage Stream: 2



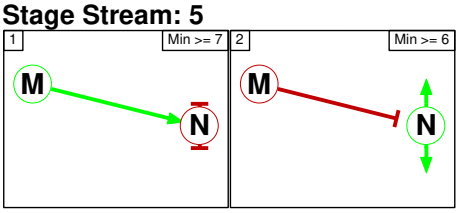
Stage Stream: 3



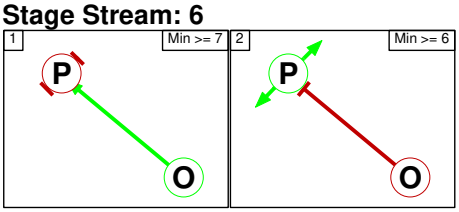
Stage Stream: 4



Stage Stream: 5



Stage Stream: 6



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					

Stage Stream: 3

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

Stage Stream: 4

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

Stage Stream: 5

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

Stage Stream: 6

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		5
	2	6	

Stage Stream: 2

	To Stage		
		1	2
From Stage	1		6
	2	6	

Stage Stream: 3

	To Stage		
		1	2
From Stage	1		6
	2	5	

Stage Stream: 4

	To Stage		
		1	2
From Stage	1		6
	2	6	

Stage Stream: 5

	To Stage		
		1	2
From Stage	1		6
	2	6	

Stage Stream: 6

	To Stage		
		1	2
From Stage	1		6
	2	6	

Give-Way Lane Input Data

Junction: J1: Padbury Roundabout
There are no Opposed Lanes in this Junction

Junction: J2: Cherwell											
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)
J2:2/2 (A43)	J2:8/1 (Ahead)	1268	0	J2:9/1	0.51	All	-	-	-	-	-

Junction: J3: Ardley roundabout											
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)
J3:1/1 (B430)	J3:9/1 (Ahead)	1000	0	J3:12/1	0.33	All	-	-	-	-	-
				J3:12/2	0.33	All					
	J3:9/2 (Ahead)	1000	0	J3:12/1	0.33	All					
				J3:12/2	0.33	All					
J3:1/2 (B430)	J3:9/3 (Ahead)	1057	0	J3:12/1	0.28	All	-	-	-	-	-
				J3:11/2	0.28	All					
				J3:12/3	0.28	All					

Junction: J4: Baynards Green											
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)**
J4:18/1 (New A43 Link Road)	J4:5/1 (Left)	1125	0	J4:17/1	0.26	All	-	-	-	-	-
	J4:5/2 (Left)	1125	0	J4:17/1	0.26	All					
				J4:17/2	0.26	To J4:5/2 (Ahead) To J4:5/3 (Ahead)					
J4:18/2 (New A43 Link Road)	J4:5/3 (Left)	1125	0	J4:17/1	0.26	All	-	-	-	-	-
				J4:17/2	0.26	To J4:5/2 (Ahead) To J4:5/3 (Ahead)					
	J4:5/4 (Left)	1125	0	J4:17/1	0.26	All					
				J4:17/2	0.26	All					

Lane Input Data

Junction: J1: Padbury Roundabout												
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)**
J1:1/1 (A43 north)	U	B	2	3	60.9	Geom	-	3.65	0.00	Y	Arm J1:2 Ahead	50.00
J1:1/2 (A43 north)	U	B	2	3	14.8	Geom	-	3.65	0.00	N	Arm J1:2 Ahead	50.00
J1:2/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J1:2/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J1:3/1 (A43 south)	U	C	2	3	52.2	Geom	-	3.65	0.00	Y	Arm J1:4 Ahead	30.00
J1:3/2 (A43 south)	U	C	2	3	52.2	Geom	-	3.65	0.00	N	Arm J1:4 Ahead	30.00
J1:4/1	U		2	3	8.7	Inf	-	-	-	-	-	-
J1:4/2	U		2	3	8.7	Inf	-	-	-	-	-	-
J1:5/1 (Junction 10 s'bound offslip)	U	D	2	3	10.8	Geom	-	3.65	0.00	Y	Arm J1:4 Left	40.00
J1:5/2 (Junction 10 s'bound offslip)	U	D	2	3	113.0	Geom	-	3.65	0.00	N	Arm J1:4 Left	50.00
											Arm J1:6 Ahead	50.00
J1:5/3 (Junction 10 s'bound offslip)	U	D	2	3	113.0	Geom	-	3.65	0.00	N	Arm J1:6 Ahead	50.00
J1:6/1	U	A	2	3	8.7	User	2080	-	-	-	-	-
J1:6/2	U	A	2	3	8.7	User	2080	-	-	-	-	-
J1:7/1	U		2	3	36.5	Inf	-	-	-	-	-	-

Junction: J2: Cherwell												
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)**
J2:1/1 (A43)	U	A	2	3	13.9	Geom	-	3.65	0.00	Y	Arm J2:4 Left	80.00
											Arm J2:10 Ahead	80.00
J2:1/2 (A43)	U	A	2	3	52.2	Geom	-	3.65	0.00	N	Arm J2:10 Ahead	80.00
J2:1/3 (A43)	U	A	2	3	52.2	Geom	-	3.65	0.00	N	Arm J2:10 Ahead	80.00
J2:2/1 (A43)	U		2	3	30.4	Inf	-	-	-	-	-	-
J2:2/2 (A43)	O		2	3	30.4	Inf	-	-	-	-	-	-
J2:3/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:3/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:5/1 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm J2:11 Left	20.00
J2:5/2 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm J2:6 Left	Inf
											Arm J2:9 Ahead	Inf
J2:6/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:6/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:7/1	U		2	3	7.0	Inf	-	-	-	-	-	-
J2:7/2	U		2	3	7.0	Inf	-	-	-	-	-	-
J2:8/1	U	B	2	3	11.3	Geom	-	4.00	0.00	Y	Arm J2:4 Ahead	30.00
											Arm J2:10 Right	30.00
J2:9/1	U		2	3	7.8	Inf	-	-	-	-	-	-
J2:10/1	U	D	2	3	8.7	Geom	-	3.65	0.00	Y	Arm J2:11 Ahead	Inf
J2:10/2	U	D	2	3	8.7	Geom	-	3.65	0.00	Y	Arm J2:11 Ahead	Inf
J2:10/3	U	D	2	3	8.7	Geom	-	3.65	0.00	N	Arm J2:6 Ahead	Inf
J2:10/4	U	D	2	3	8.7	Geom	-	3.65	0.00	N	Arm J2:6 Ahead	Inf
J2:11/1 (M40 SB onslip)	U		2	3	130.4	Inf	-	-	-	-	-	-
J2:11/2 (M40 SB onslip)	U		2	3	130.4	Inf	-	-	-	-	-	-
J2:12/1	U		2	3	173.9	Inf	-	-	-	-	-	-
J2:12/2	U		2	3	173.9	Inf	-	-	-	-	-	-

Junction: J3: Ardley roundabout												
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)**
J3:1/1 (B430)	O		2	3	60.0	Inf	-	-	-	-	-	-
J3:1/2 (B430)	O		2	3	8.7	Inf	-	-	-	-	-	-
J3:2/1 (Overbridge SB)	U	C	2	3	27.0	Geom	-	3.65	0.00	Y	Arm J3:4 Ahead	400.00
J3:2/2 (Overbridge SB)	U	C	2	3	27.0	Geom	-	4.00	0.00	N	Arm J3:4 Ahead	40.00
J3:2/3 (Overbridge SB)	U	C	2	3	7.8	Geom	-	4.00	0.00	N	Arm J3:18 Right	40.00
J3:3/1	U		2	3	165.2	Inf	-	-	-	-	-	-
J3:4/1	U	H	2	3	10.4	Geom	-	3.65	0.00	N	Arm J3:13 Ahead	Inf
J3:4/2	U	H	2	3	10.4	Geom	-	3.65	0.00	N	Arm J3:7 Right	Inf
											Arm J3:13 Ahead	Inf
J3:5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J3:6/1	U	D	2	3	9.6	Geom	-	3.65	0.00	Y	Arm J3:4 Right	40.00
J3:6/2	U	D	2	3	2.6	Geom	-	3.65	0.00	N	Arm J3:4 Right	40.00
J3:7/1	U	B	2	3	10.4	Geom	-	3.65	0.00	N	Arm J3:5 Ahead	50.00
											Arm J3:12 Right	50.00
J3:7/2	U	B	2	3	10.4	Geom	-	3.65	0.00	N	Arm J3:12 Right	50.00
J3:8/1 (M40 Northbound offslip)	U	G	2	3	173.9	Geom	-	3.65	0.00	Y	Arm J3:13 Left	35.00
J3:8/2 (M40 Northbound offslip)	U	G	2	3	173.9	Geom	-	3.65	0.00	N	Arm J3:7 Ahead	35.00
J3:9/1	U	J	2	3	13.9	Geom	-	3.65	0.00	Y	Arm J3:20 Left	Inf
J3:9/2	U	J	2	3	13.9	Geom	-	3.65	0.00	N	Arm J3:19 Ahead	Inf
J3:9/3	U	J	2	3	13.9	Geom	-	3.65	0.00	N	Arm J3:6 Right	Inf
											Arm J3:19 Ahead	Inf

J3:10/1	U		2	3	104.3	Inf	-	-	-	-	-	-
J3:11/1	U		2	3	69.6	Inf	-	-	-	-	-	-
J3:11/2	U		2	3	69.6	Inf	-	-	-	-	-	-
J3:12/1	U		2	3	13.9	Inf	-	-	-	-	-	-
J3:12/2	U		2	3	13.9	Inf	-	-	-	-	-	-
J3:12/3	U		2	3	13.9	Inf	-	-	-	-	-	-
J3:13/1	U		2	3	87.0	Inf	-	-	-	-	-	-
J3:13/2	U		2	3	87.0	Inf	-	-	-	-	-	-
J3:14/1 (Ardley Bypass)	U	A	2	3	104.3	Geom	-	3.65	0.00	Y	Arm J3:5 Left Arm J3:12 Ahead	30.00 35.00
J3:14/2 (Ardley Bypass)	U	A	2	3	104.3	Geom	-	3.65	0.00	N	Arm J3:12 Ahead	35.00
J3:14/3 (Ardley Bypass)	U	A	2	3	10.4	Geom	-	3.65	0.00	N	Arm J3:12 Ahead	35.00
J3:15/1	U		2	3	113.0	Inf	-	-	-	-	-	-
J3:15/2	U		2	3	113.0	Inf	-	-	-	-	-	-
J3:16/1	U		2	3	87.0	Inf	-	-	-	-	-	-
J3:16/2	U		2	3	87.0	Inf	-	-	-	-	-	-
J3:17/1	U		2	3	8.7	Inf	-	-	-	-	-	-
J3:18/1	U	I	2	3	16.5	Geom	-	4.00	0.00	Y	Arm J3:20 Right	30.00
J3:19/1 (Overbridge NB)	U		2	3	13.9	Inf	-	-	-	-	-	-
J3:19/2 (Overbridge NB)	U		2	3	13.9	Inf	-	-	-	-	-	-
J3:20/1 (M40 NB Merge xing)	U		2	3	9.6	Inf	-	-	-	-	-	-

Junction: J4: Baynards Green												
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)**
J4:1/1 (A43 North)	U	B	2	3	20.9	Geom	-	3.65	0.00	Y	Arm J4:2 Ahead	60.00
											Arm J4:16 Left	60.00
J4:1/2 (A43 North)	U	B	2	3	60.0	Geom	-	3.65	0.00	N	Arm J4:2 Ahead	60.00
J4:1/3 (A43 North)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm J4:21 Ahead	60.00
J4:1/4 (A43 North)	U	B	2	3	18.3	Geom	-	3.65	0.00	N	Arm J4:21 Ahead	60.00
J4:2/1	U	C	2	3	15.7	User	1950	-	-	-	-	-
J4:2/2	U	C	2	3	15.7	User	2080	-	-	-	-	-
J4:3/1 (B4100 East)	U	D	2	3	60.0	Geom	-	3.65	0.00	Y	Arm J4:17 Ahead	30.00
											Arm J4:19 Left	30.00
J4:3/2 (B4100 East)	U	D	2	3	12.2	Geom	-	3.65	0.00	N	Arm J4:17 Ahead	30.00
J4:4/1 (M40 Southbound Slip)	U		2	3	17.4	Inf	-	-	-	-	-	-
J4:4/2 (M40 Southbound Slip)	U		2	3	17.4	Inf	-	-	-	-	-	-
J4:5/1	U	J	2	3	7.0	Geom	-	3.65	0.00	Y	Arm J4:22 Ahead	Inf
J4:5/2	U	J	2	3	7.0	Geom	-	3.65	0.00	N	Arm J4:22 Ahead	Inf
J4:5/3	U	J	2	3	7.0	Geom	-	3.65	0.00	N	Arm J4:22 Ahead	Inf
J4:5/4	U	J	2	3	7.0	Geom	-	3.65	0.00	N	Arm J4:22 Ahead	Inf
J4:6/1 (M40 Northbound off slip)	U	K	2	3	139.1	Geom	-	3.65	0.00	Y	Arm J4:7 Ahead	40.00
											Arm J4:8 Left	40.00
J4:6/2 (M40 Northbound off slip)	U	K	2	3	139.1	Geom	-	3.65	0.00	N	Arm J4:7 Ahead	40.00

J4:6/3 (M40 Northbound off slip)	U	K	2	3	20.9	Geom	-	3.65	0.00	N	Arm J4:7 Ahead	40.00
J4:7/1	U	F	2	3	15.7	Geom	-	3.65	0.00	Y	Arm J4:10 Ahead	40.00
J4:7/2	U	F	2	3	15.7	User	2050	-	-	-	-	-
J4:7/3	U	F	2	3	15.7	User	2050	-	-	-	-	-
J4:8/1	U	O	2	3	17.4	Geom	-	3.65	0.00	Y		
J4:9/1 (B4100 West)	U	G	2	3	60.0	Geom	-	3.50	0.00	Y	Arm J4:10 Left	30.00
											Arm J4:11 Ahead	65.00
J4:9/2 (B4100 West)	U	G	2	3	7.0	Geom	-	3.50	0.00	N	Arm J4:11 Ahead	65.00
J4:10/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J4:10/2	U		2	3	60.0	User	2100	-	-	-	-	-
J4:10/3	U		2	3	60.0	User	2050	-	-	-	-	-
J4:11/1	U	A	2	3	11.3	User	2070	-	-	-	-	-
J4:11/2	U	A	2	3	11.3	User	2070	-	-	-	-	-
J4:12/1	U		2	3	173.9	Inf	-	-	-	-	-	-
J4:12/2	U		2	3	173.9	Inf	-	-	-	-	-	-
J4:13/1 (A43 - M40 SB)	U		2	3	173.9	Inf	-	-	-	-	-	-
J4:13/2 (A43 - M40 SB)	U		2	3	173.9	Inf	-	-	-	-	-	-
J4:14/1 (M40 - A43 NB)	U		2	3	17.4	Inf	-	-	-	-	-	-
J4:15/1	U		2	3	173.9	Inf	-	-	-	-	-	-
J4:16/1	U	M	2	3	20.0	Geom	-	3.65	0.00	Y		
J4:16/2	U	M	2	3	20.0	Geom	-	3.65	0.00	Y		
J4:17/1	U		2	3	9.6	Inf	-	-	-	-	-	-
J4:17/2	U		2	3	9.6	Inf	-	-	-	-	-	-
J4:18/1 (New A43 Link Road)	O		2	3	12.2	Inf	-	-	-	-	-	-
J4:18/2 (New A43 Link Road)	O		2	3	60.9	Inf	-	-	-	-	-	-
J4:19/1	U		2	3	8.7	Inf	-	-	-	-	-	-
J4:19/2	U		2	3	8.7	Inf	-	-	-	-	-	-
J4:20/1	U		2	3	36.5	Inf	-	-	-	-	-	-
J4:21/1 (A43 SB Cut-through)	U	I	2	3	18.3	Geom	-	3.65	0.00	Y	Arm J4:4 Ahead	Inf
J4:21/2 (A43 SB Cut-through)	U	I	2	3	18.3	Geom	-	3.65	0.00	N	Arm J4:4 Ahead	Inf

J4:22/1	U		2	3	4.7	Inf	-	-	-	-	-	-
J4:22/2	U		2	3	4.7	Inf	-	-	-	-	-	-
J4:22/3	U		2	3	4.7	Inf	-	-	-	-	-	-
J4:22/4	U		2	3	4.7	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2031 Opt 26 - AM'	08:00	09:00	01:00	
2: '2031 Opt 26 - PM'	17:00	18:00	01:00	
3: '2031 Opt 26 - off-peak'	00:00	01:00	01:00	((F1+F2)/2)*0.26
4: '2031 Opt 26 - inter-peak'	12:00	13:00	01:00	((F1+F2)/2)*0.89

Scenario 1: '2031 Option 26 - AM Peak' (FG1: '2031 Opt 26 - AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination									
		A	B	C	D	E	F	G	H	I	Tot.
Origin	A	0	446	112	0	1485	88	70	86	745	3032
	B	350	0	11	10	0	175	306	2	14	868
	C	78	4	0	295	0	145	3	9	48	582
	D	0	0	211	0	0	0	0	9	437	657
	E	1098	8	0	0	0	0	63	0	0	1169
	F	67	250	219	0	0	0	20	48	458	1062
	G	72	296	1	0	110	1	0	2	9	491
	H	42	6	6	10	0	64	5	0	26	159
	I	302	19	22	232	0	327	34	201	0	1137
	Tot.	2009	1029	582	547	1595	800	501	357	1737	9157

Traffic Lane Flows

Lane	Scenario 1: 2031 Option 26 - AM Peak
Junction: J1: Padbury Roundabout	
J1:1/1 (with short)	1256(In) 684(Out)
J1:1/2 (short)	572
J1:2/1	1126
J1:2/2	855
J1:3/1	200
J1:3/2	293
J1:4/1	416
J1:4/2	414
J1:5/1 (short)	216
J1:5/2 (with short)	779(In) 563(Out)
J1:5/3	283
J1:6/1	442
J1:6/2	283
J1:7/1	830
Junction: J2: Cherwell	
J2:1/1 (short)	353
J2:1/2 (with short)	1126(In) 773(Out)
J2:1/3	855
J2:2/1	408
J2:2/2	481
J2:3/1	200
J2:3/2	293
J2:4/1	582
J2:5/1	295
J2:5/2	287
J2:6/1	821
J2:6/2	1009
J2:7/1	408
J2:7/2	85
J2:8/1	481
J2:9/1	85
J2:10/1	117
J2:10/2	135
J2:10/3	773
J2:10/4	855
J2:11/1	265
J2:11/2	282
J2:12/1	265

J2:12/2	282
Junction: J3: Ardley roundabout	
J3:1/1 (with short)	159(In) 117(Out)
J3:1/2 (short)	42
J3:2/1	821
J3:2/2 (with short)	1009(In) 600(Out)
J3:2/3 (short)	409
J3:3/1	800
J3:4/1	843
J3:4/2	604
J3:5/1	357
J3:6/1 (with short)	26(In) 22(Out)
J3:6/2 (short)	4
J3:7/1	156
J3:7/2	211
J3:8/1	437
J3:8/2	220
J3:9/1	391
J3:9/2	408
J3:9/3	507
J3:10/1	657
J3:11/1	310
J3:11/2	859
J3:12/1	327
J3:12/2	355
J3:12/3	465
J3:13/1	1280
J3:13/2	457
J3:14/1	528
J3:14/2 (with short)	609(In) 355(Out)
J3:14/3 (short)	254
J3:15/1	1280
J3:15/2	457
J3:16/1	528
J3:16/2	609
J3:17/1	1137
J3:18/1	409
J3:19/1	408
J3:19/2	481
J3:20/1	800
Junction: J4: Baynards Green	

J4:1/1 (short)	754
J4:1/2 (with short)	1547(In) 793(Out)
J4:1/3 (with short)	1485(In) 715(Out)
J4:1/4 (short)	770
J4:2/1	321
J4:2/2	793
J4:3/1 (with short)	868(In) 518(Out)
J4:3/2 (short)	350
J4:4/1	769
J4:4/2	826
J4:5/1	438
J4:5/2	407
J4:5/3	382
J4:5/4	329
J4:6/1	310
J4:6/2 (with short)	859(In) 412(Out)
J4:6/3 (short)	447
J4:7/1	654
J4:7/2	794
J4:7/3	776
J4:8/1	501
J4:9/1 (with short)	491(In) 235(Out)
J4:9/2 (short)	256
J4:10/1	726
J4:10/2	794
J4:10/3	489
J4:11/1	253
J4:11/2	453
J4:12/1	769
J4:12/2	826
J4:13/1	769
J4:13/2	826
J4:14/1	1169
J4:15/1	1169
J4:16/1	699
J4:16/2	330
J4:17/1	376
J4:17/2	350
J4:18/1 (short)	328

J4:18/2 (with short)	830(In) 502(Out)
J4:19/1	533
J4:19/2	723
J4:20/1	1256
J4:21/1	769
J4:21/2	826
J4:22/1	438
J4:22/2	407
J4:22/3	382
J4:22/4	329

Lane Saturation Flows

Junction: J1: Padbury Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (A43 north)	3.65	0.00	Y	Arm J1:2 Ahead	50.00	100.0 %	1922	1922
J1:1/2 (A43 north)	3.65	0.00	N	Arm J1:2 Ahead	50.00	100.0 %	2058	2058
J1:2/1	Infinite Saturation Flow						Inf	Inf
J1:2/2	Infinite Saturation Flow						Inf	Inf
J1:3/1 (A43 south)	3.65	0.00	Y	Arm J1:4 Ahead	30.00	100.0 %	1886	1886
J1:3/2 (A43 south)	3.65	0.00	N	Arm J1:4 Ahead	30.00	100.0 %	2019	2019
J1:4/1	Infinite Saturation Flow						Inf	Inf
J1:4/2	Infinite Saturation Flow						Inf	Inf
J1:5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm J1:4 Left	40.00	100.0 %	1908	1908
J1:5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:4 Left	50.00	21.5 %	2058	2058
				Arm J1:6 Ahead	50.00	78.5 %		
J1:5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:6 Ahead	50.00	100.0 %	2058	2058
J1:6/1	This lane uses a directly entered Saturation Flow						2080	2080
J1:6/2	This lane uses a directly entered Saturation Flow						2080	2080
J1:7/1	Infinite Saturation Flow						Inf	Inf

Junction: J2: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (A43)	3.65	0.00	Y	Arm J2:4 Left	80.00	97.2 %	1944	1944
				Arm J2:10 Ahead	80.00	2.8 %		
J2:1/2 (A43)	3.65	0.00	N	Arm J2:10 Ahead	80.00	100.0 %	2081	2081
J2:1/3 (A43)	3.65	0.00	N	Arm J2:10 Ahead	80.00	100.0 %	2081	2081
J2:2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:3/1	Infinite Saturation Flow						Inf	Inf
J2:3/2	Infinite Saturation Flow						Inf	Inf
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:5/1 (MSA)	3.50	0.00	Y	Arm J2:11 Left	20.00	100.0 %	1828	1828
J2:5/2 (MSA)	3.50	0.00	Y	Arm J2:6 Left	Inf	70.4 %	1965	1965
				Arm J2:9 Ahead	Inf	29.6 %		
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:6/2	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:7/2	Infinite Saturation Flow						Inf	Inf
J2:8/1	4.00	0.00	Y	Arm J2:4 Ahead	30.00	49.7 %	1919	1919
				Arm J2:10 Right	30.00	50.3 %		
J2:9/1	Infinite Saturation Flow						Inf	Inf
J2:10/1	3.65	0.00	Y	Arm J2:11 Ahead	Inf	100.0 %	1980	1980
J2:10/2	3.65	0.00	Y	Arm J2:11 Ahead	Inf	100.0 %	1980	1980
J2:10/3	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:10/4	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:12/1	Infinite Saturation Flow						Inf	Inf
J2:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J3: Ardley roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1 (B430 Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:1/2 (B430 Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:2/1 (Overbridge SB)	3.65	0.00	Y	Arm J3:4 Ahead	400.00	100.0 %	1973	1973
J3:2/2 (Overbridge SB)	4.00	0.00	N	Arm J3:4 Ahead	40.00	100.0 %	2077	2077
J3:2/3 (Overbridge SB)	4.00	0.00	N	Arm J3:18 Right	40.00	100.0 %	2077	2077
J3:3/1	Infinite Saturation Flow						Inf	Inf
J3:4/1	3.65	0.00	N	Arm J3:13 Ahead	Inf	100.0 %	2120	2120
J3:4/2	3.65	0.00	N	Arm J3:7 Right	Inf	24.3 %	2120	2120
				Arm J3:13 Ahead	Inf	75.7 %		
J3:5/1	Infinite Saturation Flow						Inf	Inf
J3:6/1	3.65	0.00	Y	Arm J3:4 Right	40.00	100.0 %	1908	1908
J3:6/2	3.65	0.00	N	Arm J3:4 Right	40.00	100.0 %	2043	2043
J3:7/1	3.65	0.00	N	Arm J3:5 Ahead	50.00	100.0 %	2058	2058
				Arm J3:12 Right	50.00	0.0 %		
J3:7/2	3.65	0.00	N	Arm J3:12 Right	50.00	100.0 %	2058	2058
J3:8/1 (M40 Northbound offslip)	3.65	0.00	Y	Arm J3:13 Left	35.00	100.0 %	1899	1899
J3:8/2 (M40 Northbound offslip)	3.65	0.00	N	Arm J3:7 Ahead	35.00	100.0 %	2033	2033
J3:9/1	3.65	0.00	Y	Arm J3:20 Left	Inf	100.0 %	1980	1980
J3:9/2	3.65	0.00	N	Arm J3:19 Ahead	Inf	100.0 %	2120	2120
J3:9/3	3.65	0.00	N	Arm J3:6 Right	Inf	5.1 %	2120	2120
				Arm J3:19 Ahead	Inf	94.9 %		
J3:10/1	Infinite Saturation Flow						Inf	Inf
J3:11/1	Infinite Saturation Flow						Inf	Inf
J3:11/2	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf
J3:12/2	Infinite Saturation Flow						Inf	Inf
J3:12/3	Infinite Saturation Flow						Inf	Inf
J3:13/1	Infinite Saturation Flow						Inf	Inf
J3:13/2	Infinite Saturation Flow						Inf	Inf
J3:14/1 (Ardley Bypass)	3.65	0.00	Y	Arm J3:5 Left	30.00	38.1 %	1894	1894
				Arm J3:12 Ahead	35.00	61.9 %		
J3:14/2 (Ardley Bypass)	3.65	0.00	N	Arm J3:12 Ahead	35.00	100.0 %	2033	2033
J3:14/3 (Ardley Bypass)	3.65	0.00	N	Arm J3:12 Ahead	35.00	100.0 %	2033	2033
J3:15/1	Infinite Saturation Flow						Inf	Inf

J3:15/2	Infinite Saturation Flow						Inf	Inf
J3:16/1	Infinite Saturation Flow						Inf	Inf
J3:16/2	Infinite Saturation Flow						Inf	Inf
J3:17/1	Infinite Saturation Flow						Inf	Inf
J3:18/1	4.00	0.00	Y	Arm J3:20 Right	30.00	100.0 %	1919	1919
J3:19/1 (Overbridge NB Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:19/2 (Overbridge NB Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:20/1 (M40 NB Merge xing Lane 1)	Infinite Saturation Flow						Inf	Inf

Junction: J4: Baynards Green								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J4:1/1 (A43 North)	3.65	0.00	Y	Arm J4:2 Ahead	60.00	40.8 %	1932	1932
				Arm J4:16 Left	60.00	59.2 %		
J4:1/2 (A43 North)	3.65	0.00	N	Arm J4:2 Ahead	60.00	100.0 %	2068	2068
J4:1/3 (A43 North)	3.65	0.00	Y	Arm J4:21 Ahead	60.00	100.0 %	1932	1932
J4:1/4 (A43 North)	3.65	0.00	N	Arm J4:21 Ahead	60.00	100.0 %	2068	2068
J4:2/1	This lane uses a directly entered Saturation Flow						1950	1950
J4:2/2	This lane uses a directly entered Saturation Flow						2080	2080
J4:3/1 (B4100 East)	3.65	0.00	Y	Arm J4:17 Ahead	30.00	59.1 %	1886	1886
				Arm J4:19 Left	30.00	40.9 %		
J4:3/2 (B4100 East)	3.65	0.00	N	Arm J4:17 Ahead	30.00	100.0 %	2019	2019
J4:4/1 (M40 Southbound Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:4/2 (M40 Southbound Slip Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:5/1	3.65	0.00	Y	Arm J4:22 Ahead	Inf	100.0 %	1980	1980
J4:5/2	3.65	0.00	N	Arm J4:22 Ahead	Inf	100.0 %	2120	2120
J4:5/3	3.65	0.00	N	Arm J4:22 Ahead	Inf	100.0 %	2120	2120
J4:5/4	3.65	0.00	N	Arm J4:22 Ahead	Inf	100.0 %	2120	2120
J4:6/1 (M40 Northbound off slip)	3.65	0.00	Y	Arm J4:7 Ahead	40.00	79.7 %	1908	1908
				Arm J4:8 Left	40.00	20.3 %		
J4:6/2 (M40 Northbound off slip)	3.65	0.00	N	Arm J4:7 Ahead	40.00	100.0 %	2043	2043
J4:6/3 (M40 Northbound off slip)	3.65	0.00	N	Arm J4:7 Ahead	40.00	100.0 %	2043	2043
J4:7/1	3.65	0.00	Y	Arm J4:10 Ahead	40.00	100.0 %	1908	1908
J4:7/2	This lane uses a directly entered Saturation Flow						2050	2050
J4:7/3	This lane uses a directly entered Saturation Flow						2050	2050
J4:8/1	3.65	0.00	Y				1980	1980
J4:9/1 (B4100 West)	3.50	0.00	Y	Arm J4:10 Left	30.00	30.6 %	1905	1905
				Arm J4:11 Ahead	65.00	69.4 %		
J4:9/2 (B4100 West)	3.50	0.00	N	Arm J4:11 Ahead	65.00	100.0 %	2058	2058
J4:10/1	Infinite Saturation Flow						Inf	Inf
J4:10/2	This lane uses a directly entered Saturation Flow						2100	2100
J4:10/3	This lane uses a directly entered Saturation Flow						2050	2050
J4:11/1	This lane uses a directly entered Saturation Flow						2070	2070
J4:11/2	This lane uses a directly entered Saturation Flow						2070	2070
J4:12/1	Infinite Saturation Flow						Inf	Inf
J4:12/2	Infinite Saturation Flow						Inf	Inf

J4:13/1 (A43 - M40 SB Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:13/2 (A43 - M40 SB Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:14/1 (M40 - A43 NB Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:15/1	Infinite Saturation Flow						Inf	Inf
J4:16/1	3.65	0.00	Y				1980	1980
J4:16/2	3.65	0.00	Y				1980	1980
J4:17/1	Infinite Saturation Flow						Inf	Inf
J4:17/2	Infinite Saturation Flow						Inf	Inf
J4:18/1 (New A43 Link Road Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:18/2 (New A43 Link Road Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:19/1	Infinite Saturation Flow						Inf	Inf
J4:19/2	Infinite Saturation Flow						Inf	Inf
J4:20/1	Infinite Saturation Flow						Inf	Inf
J4:21/1 (A43 SB Cut-through)	3.65	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1980	1980
J4:21/2 (A43 SB Cut-through)	3.65	0.00	N	Arm J4:4 Ahead	Inf	100.0 %	2120	2120
J4:22/1	Infinite Saturation Flow						Inf	Inf
J4:22/2	Infinite Saturation Flow						Inf	Inf
J4:22/3	Infinite Saturation Flow						Inf	Inf
J4:22/4	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2031 Option 26 - PM Peak' (FG2: '2031 Opt 26 - PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination									
		A	B	C	D	E	F	G	H	I	Tot.
Origin	A	0	467	81	0	894	85	45	30	345	1947
	B	637	0	25	10	0	186	372	2	17	1249
	C	119	4	0	258	0	196	6	2	15	600
	D	0	0	248	0	0	0	0	10	291	549
	E	1597	10	0	0	0	0	50	0	0	1657
	F	87	207	229	0	0	0	24	36	326	909
	G	37	244	1	0	35	0	0	1	10	328
	H	67	1	3	4	0	36	1	0	127	239
	I	603	8	17	401	0	391	9	249	0	1678
	Tot.	3147	941	604	673	929	894	507	330	1131	9156

Traffic Lane Flows

Lane	Scenario 2: 2031 Option 26 - PM Peak
Junction: J1: Padbury Roundabout	
J1:1/1 (with short)	793(In) 476(Out)
J1:1/2 (short)	317
J1:2/1	816
J1:2/2	568
J1:3/1	362
J1:3/2	456
J1:4/1	595
J1:4/2	541
J1:5/1 (short)	233
J1:5/2 (with short)	658(In) 425(Out)
J1:5/3	251
J1:6/1	340
J1:6/2	251
J1:7/1	1136
Junction: J2: Cherwell	
J2:1/1 (short)	346
J2:1/2 (with short)	816(In) 470(Out)
J2:1/3	568
J2:2/1	689
J2:2/2	673
J2:3/1	362
J2:3/2	456
J2:4/1	604
J2:5/1	258
J2:5/2	342
J2:6/1	485
J2:6/2	766
J2:7/1	689
J2:7/2	129
J2:8/1	673
J2:9/1	129
J2:10/1	211
J2:10/2	204
J2:10/3	470
J2:10/4	568
J2:11/1	340
J2:11/2	333
J2:12/1	340

J2:12/2	333
Junction: J3: Ardley roundabout	
J3:1/1 (with short)	239(In) 105(Out)
J3:1/2 (short)	134
J3:2/1	485
J3:2/2 (with short)	766(In) 299(Out)
J3:2/3 (short)	467
J3:3/1	894
J3:4/1	548
J3:4/2	363
J3:5/1	330
J3:6/1 (with short)	127(In) 63(Out)
J3:6/2 (short)	64
J3:7/1	81
J3:7/2	248
J3:8/1	291
J3:8/2	258
J3:9/1	427
J3:9/2	689
J3:9/3	800
J3:10/1	549
J3:11/1	513
J3:11/2	1144
J3:12/1	391
J3:12/2	620
J3:12/3	666
J3:13/1	839
J3:13/2	292
J3:14/1	640
J3:14/2 (with short)	1038(In) 620(Out)
J3:14/3 (short)	418
J3:15/1	839
J3:15/2	292
J3:16/1	640
J3:16/2	1038
J3:17/1	1678
J3:18/1	467
J3:19/1	689
J3:19/2	673
J3:20/1	894
Junction: J4: Baynards Green	

J4:1/1 (short)	520
J4:1/2 (with short)	1053(In) 533(Out)
J4:1/3 (with short)	894(In) 435(Out)
J4:1/4 (short)	459
J4:2/1	65
J4:2/2	533
J4:3/1 (with short)	1249(In) 612(Out)
J4:3/2 (short)	637
J4:4/1	450
J4:4/2	479
J4:5/1	457
J4:5/2	649
J4:5/3	672
J4:5/4	412
J4:6/1	513
J4:6/2 (with short)	1144(In) 568(Out)
J4:6/3 (short)	576
J4:7/1	1112
J4:7/2	1240
J4:7/3	988
J4:8/1	507
J4:9/1 (with short)	328(In) 158(Out)
J4:9/2 (short)	170
J4:10/1	1149
J4:10/2	1240
J4:10/3	758
J4:11/1	236
J4:11/2	285
J4:12/1	450
J4:12/2	479
J4:13/1	450
J4:13/2	479
J4:14/1	1657
J4:15/1	1657
J4:16/1	703
J4:16/2	238
J4:17/1	417
J4:17/2	637
J4:18/1 (short)	511

J4:18/2 (with short)	1136(In) 625(Out)
J4:19/1	305
J4:19/2	488
J4:20/1	793
J4:21/1	450
J4:21/2	479
J4:22/1	457
J4:22/2	649
J4:22/3	672
J4:22/4	412

Lane Saturation Flows

Junction: J1: Padbury Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (A43 north)	3.65	0.00	Y	Arm J1:2 Ahead	50.00	100.0 %	1922	1922
J1:1/2 (A43 north)	3.65	0.00	N	Arm J1:2 Ahead	50.00	100.0 %	2058	2058
J1:2/1	Infinite Saturation Flow						Inf	Inf
J1:2/2	Infinite Saturation Flow						Inf	Inf
J1:3/1 (A43 south)	3.65	0.00	Y	Arm J1:4 Ahead	30.00	100.0 %	1886	1886
J1:3/2 (A43 south)	3.65	0.00	N	Arm J1:4 Ahead	30.00	100.0 %	2019	2019
J1:4/1	Infinite Saturation Flow						Inf	Inf
J1:4/2	Infinite Saturation Flow						Inf	Inf
J1:5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm J1:4 Left	40.00	100.0 %	1908	1908
J1:5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:4 Left	50.00	20.0 %	2058	2058
				Arm J1:6 Ahead	50.00	80.0 %		
J1:5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:6 Ahead	50.00	100.0 %	2058	2058
J1:6/1	This lane uses a directly entered Saturation Flow						2080	2080
J1:6/2	This lane uses a directly entered Saturation Flow						2080	2080
J1:7/1	Infinite Saturation Flow						Inf	Inf

Junction: J2: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (A43)	3.65	0.00	Y	Arm J2:4 Left	80.00	97.1 %	1944	1944
				Arm J2:10 Ahead	80.00	2.9 %		
J2:1/2 (A43)	3.65	0.00	N	Arm J2:10 Ahead	80.00	100.0 %	2081	2081
J2:1/3 (A43)	3.65	0.00	N	Arm J2:10 Ahead	80.00	100.0 %	2081	2081
J2:2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:3/1	Infinite Saturation Flow						Inf	Inf
J2:3/2	Infinite Saturation Flow						Inf	Inf
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:5/1 (MSA)	3.50	0.00	Y	Arm J2:11 Left	20.00	100.0 %	1828	1828
J2:5/2 (MSA)	3.50	0.00	Y	Arm J2:6 Left	Inf	62.3 %	1965	1965
				Arm J2:9 Ahead	Inf	37.7 %		
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:6/2	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:7/2	Infinite Saturation Flow						Inf	Inf
J2:8/1	4.00	0.00	Y	Arm J2:4 Ahead	30.00	39.8 %	1919	1919
				Arm J2:10 Right	30.00	60.2 %		
J2:9/1	Infinite Saturation Flow						Inf	Inf
J2:10/1	3.65	0.00	Y	Arm J2:11 Ahead	Inf	100.0 %	1980	1980
J2:10/2	3.65	0.00	Y	Arm J2:11 Ahead	Inf	100.0 %	1980	1980
J2:10/3	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:10/4	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:12/1	Infinite Saturation Flow						Inf	Inf
J2:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J3: Ardley roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1 (B430 Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:1/2 (B430 Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:2/1 (Overbridge SB)	3.65	0.00	Y	Arm J3:4 Ahead	400.00	100.0 %	1973	1973
J3:2/2 (Overbridge SB)	4.00	0.00	N	Arm J3:4 Ahead	40.00	100.0 %	2077	2077
J3:2/3 (Overbridge SB)	4.00	0.00	N	Arm J3:18 Right	40.00	100.0 %	2077	2077
J3:3/1	Infinite Saturation Flow						Inf	Inf
J3:4/1	3.65	0.00	N	Arm J3:13 Ahead	Inf	100.0 %	2120	2120
J3:4/2	3.65	0.00	N	Arm J3:7 Right	Inf	19.6 %	2120	2120
				Arm J3:13 Ahead	Inf	80.4 %		
J3:5/1	Infinite Saturation Flow						Inf	Inf
J3:6/1	3.65	0.00	Y	Arm J3:4 Right	40.00	100.0 %	1908	1908
J3:6/2	3.65	0.00	N	Arm J3:4 Right	40.00	100.0 %	2043	2043
J3:7/1	3.65	0.00	N	Arm J3:5 Ahead	50.00	100.0 %	2058	2058
				Arm J3:12 Right	50.00	0.0 %		
J3:7/2	3.65	0.00	N	Arm J3:12 Right	50.00	100.0 %	2058	2058
J3:8/1 (M40 Northbound offslip)	3.65	0.00	Y	Arm J3:13 Left	35.00	100.0 %	1899	1899
J3:8/2 (M40 Northbound offslip)	3.65	0.00	N	Arm J3:7 Ahead	35.00	100.0 %	2033	2033
J3:9/1	3.65	0.00	Y	Arm J3:20 Left	Inf	100.0 %	1980	1980
J3:9/2	3.65	0.00	N	Arm J3:19 Ahead	Inf	100.0 %	2120	2120
J3:9/3	3.65	0.00	N	Arm J3:6 Right	Inf	15.9 %	2120	2120
				Arm J3:19 Ahead	Inf	84.1 %		
J3:10/1	Infinite Saturation Flow						Inf	Inf
J3:11/1	Infinite Saturation Flow						Inf	Inf
J3:11/2	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf
J3:12/2	Infinite Saturation Flow						Inf	Inf
J3:12/3	Infinite Saturation Flow						Inf	Inf
J3:13/1	Infinite Saturation Flow						Inf	Inf
J3:13/2	Infinite Saturation Flow						Inf	Inf
J3:14/1 (Ardley Bypass)	3.65	0.00	Y	Arm J3:5 Left	30.00	38.9 %	1894	1894
				Arm J3:12 Ahead	35.00	61.1 %		
J3:14/2 (Ardley Bypass)	3.65	0.00	N	Arm J3:12 Ahead	35.00	100.0 %	2033	2033
J3:14/3 (Ardley Bypass)	3.65	0.00	N	Arm J3:12 Ahead	35.00	100.0 %	2033	2033
J3:15/1	Infinite Saturation Flow						Inf	Inf

J3:15/2	Infinite Saturation Flow						Inf	Inf
J3:16/1	Infinite Saturation Flow						Inf	Inf
J3:16/2	Infinite Saturation Flow						Inf	Inf
J3:17/1	Infinite Saturation Flow						Inf	Inf
J3:18/1	4.00	0.00	Y	Arm J3:20 Right	30.00	100.0 %	1919	1919
J3:19/1 (Overbridge NB Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:19/2 (Overbridge NB Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:20/1 (M40 NB Merge xing Lane 1)	Infinite Saturation Flow						Inf	Inf

Junction: J4: Baynards Green								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J4:1/1 (A43 North)	3.65	0.00	Y	Arm J4:2 Ahead	60.00	10.2 %	1932	1932
				Arm J4:16 Left	60.00	89.8 %		
J4:1/2 (A43 North)	3.65	0.00	N	Arm J4:2 Ahead	60.00	100.0 %	2068	2068
J4:1/3 (A43 North)	3.65	0.00	Y	Arm J4:21 Ahead	60.00	100.0 %	1932	1932
J4:1/4 (A43 North)	3.65	0.00	N	Arm J4:21 Ahead	60.00	100.0 %	2068	2068
J4:2/1	This lane uses a directly entered Saturation Flow						1950	1950
J4:2/2	This lane uses a directly entered Saturation Flow						2080	2080
J4:3/1 (B4100 East)	3.65	0.00	Y	Arm J4:17 Ahead	30.00	60.8 %	1886	1886
				Arm J4:19 Left	30.00	39.2 %		
J4:3/2 (B4100 East)	3.65	0.00	N	Arm J4:17 Ahead	30.00	100.0 %	2019	2019
J4:4/1 (M40 Southbound Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:4/2 (M40 Southbound Slip Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:5/1	3.65	0.00	Y	Arm J4:22 Ahead	Inf	100.0 %	1980	1980
J4:5/2	3.65	0.00	N	Arm J4:22 Ahead	Inf	100.0 %	2120	2120
J4:5/3	3.65	0.00	N	Arm J4:22 Ahead	Inf	100.0 %	2120	2120
J4:5/4	3.65	0.00	N	Arm J4:22 Ahead	Inf	100.0 %	2120	2120
J4:6/1 (M40 Northbound off slip)	3.65	0.00	Y	Arm J4:7 Ahead	40.00	90.3 %	1908	1908
				Arm J4:8 Left	40.00	9.7 %		
J4:6/2 (M40 Northbound off slip)	3.65	0.00	N	Arm J4:7 Ahead	40.00	100.0 %	2043	2043
J4:6/3 (M40 Northbound off slip)	3.65	0.00	N	Arm J4:7 Ahead	40.00	100.0 %	2043	2043
J4:7/1	3.65	0.00	Y	Arm J4:10 Ahead	40.00	100.0 %	1908	1908
J4:7/2	This lane uses a directly entered Saturation Flow						2050	2050
J4:7/3	This lane uses a directly entered Saturation Flow						2050	2050
J4:8/1	3.65	0.00	Y				1980	1980
J4:9/1 (B4100 West)	3.50	0.00	Y	Arm J4:10 Left	30.00	23.4 %	1909	1909
				Arm J4:11 Ahead	65.00	76.6 %		
J4:9/2 (B4100 West)	3.50	0.00	N	Arm J4:11 Ahead	65.00	100.0 %	2058	2058
J4:10/1	Infinite Saturation Flow						Inf	Inf
J4:10/2	This lane uses a directly entered Saturation Flow						2100	2100
J4:10/3	This lane uses a directly entered Saturation Flow						2050	2050
J4:11/1	This lane uses a directly entered Saturation Flow						2070	2070
J4:11/2	This lane uses a directly entered Saturation Flow						2070	2070
J4:12/1	Infinite Saturation Flow						Inf	Inf
J4:12/2	Infinite Saturation Flow						Inf	Inf

J4:13/1 (A43 - M40 SB Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:13/2 (A43 - M40 SB Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:14/1 (M40 - A43 NB Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:15/1	Infinite Saturation Flow						Inf	Inf
J4:16/1	3.65	0.00	Y				1980	1980
J4:16/2	3.65	0.00	Y				1980	1980
J4:17/1	Infinite Saturation Flow						Inf	Inf
J4:17/2	Infinite Saturation Flow						Inf	Inf
J4:18/1 (New A43 Link Road Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:18/2 (New A43 Link Road Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:19/1	Infinite Saturation Flow						Inf	Inf
J4:19/2	Infinite Saturation Flow						Inf	Inf
J4:20/1	Infinite Saturation Flow						Inf	Inf
J4:21/1 (A43 SB Cut-through)	3.65	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1980	1980
J4:21/2 (A43 SB Cut-through)	3.65	0.00	N	Arm J4:4 Ahead	Inf	100.0 %	2120	2120
J4:22/1	Infinite Saturation Flow						Inf	Inf
J4:22/2	Infinite Saturation Flow						Inf	Inf
J4:22/3	Infinite Saturation Flow						Inf	Inf
J4:22/4	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2031 Option 26 - Off Peak' (FG3: '2031 Opt 26 - off-peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination									
		A	B	C	D	E	F	G	H	I	Tot.
Origin	A	0	119	25	0	309	22	15	15	142	647
	B	128	0	5	3	0	47	88	1	4	276
	C	26	1	0	72	0	44	1	1	8	153
	D	0	0	60	0	0	0	0	2	95	157
	E	350	2	0	0	0	0	15	0	0	367
	F	20	59	58	0	0	0	6	11	102	256
	G	14	70	0	0	19	0	0	0	2	105
	H	14	1	1	2	0	13	1	0	20	52
	I	118	4	5	82	0	93	6	59	0	367
	Tot.	670	256	154	159	328	219	132	89	373	2380

Traffic Lane Flows

Lane	Scenario 3: 2031 Option 26 - Off Peak
Junction: J1: Padbury Roundabout	
J1:1/1 (with short)	266(In) 125(Out)
J1:1/2 (short)	141
J1:2/1	228
J1:2/2	209
J1:3/1	53
J1:3/2	119
J1:4/1	100
J1:4/2	157
J1:5/1 (short)	47
J1:5/2 (with short)	188(In) 141(Out)
J1:5/3	68
J1:6/1	103
J1:6/2	68
J1:7/1	257
Junction: J2: Cherwell	
J2:1/1 (short)	91
J2:1/2 (with short)	228(In) 137(Out)
J2:1/3	209
J2:2/1	144
J2:2/2	150
J2:3/1	53
J2:3/2	119
J2:4/1	154
J2:5/1	72
J2:5/2	81
J2:6/1	142
J2:6/2	257
J2:7/1	144
J2:7/2	28
J2:8/1	150
J2:9/1	28
J2:10/1	11
J2:10/2	76
J2:10/3	137
J2:10/4	209
J2:11/1	47
J2:11/2	112
J2:12/1	47

J2:12/2	112
Junction: J3: Ardley roundabout	
J3:1/1 (with short)	52(In) 29(Out)
J3:1/2 (short)	23
J3:2/1	142
J3:2/2 (with short)	257(In) 144(Out)
J3:2/3 (short)	113
J3:3/1	219
J3:4/1	162
J3:4/2	144
J3:5/1	89
J3:6/1 (with short)	20(In) 20(Out)
J3:6/2 (short)	0
J3:7/1	30
J3:7/2	60
J3:8/1	95
J3:8/2	62
J3:9/1	106
J3:9/2	144
J3:9/3	170
J3:10/1	157
J3:11/1	145
J3:11/2	222
J3:12/1	93
J3:12/2	128
J3:12/3	147
J3:13/1	257
J3:13/2	116
J3:14/1	152
J3:14/2 (with short)	215(In) 128(Out)
J3:14/3 (short)	87
J3:15/1	257
J3:15/2	116
J3:16/1	152
J3:16/2	215
J3:17/1	367
J3:18/1	113
J3:19/1	144
J3:19/2	150
J3:20/1	219
Junction: J4: Baynards Green	

J4:1/1 (short)	209
J4:1/2 (with short)	338(In) 129(Out)
J4:1/3 (with short)	309(In) 140(Out)
J4:1/4 (short)	169
J4:2/1	92
J4:2/2	129
J4:3/1 (with short)	276(In) 148(Out)
J4:3/2 (short)	128
J4:4/1	148
J4:4/2	180
J4:5/1	117
J4:5/2	184
J4:5/3	100
J4:5/4	87
J4:6/1	145
J4:6/2 (with short)	222(In) 135(Out)
J4:6/3 (short)	87
J4:7/1	314
J4:7/2	235
J4:7/3	174
J4:8/1	132
J4:9/1 (with short)	105(In) 41(Out)
J4:9/2 (short)	64
J4:10/1	328
J4:10/2	235
J4:10/3	107
J4:11/1	74
J4:11/2	84
J4:12/1	148
J4:12/2	180
J4:13/1	148
J4:13/2	180
J4:14/1	367
J4:15/1	367
J4:16/1	193
J4:16/2	63
J4:17/1	103
J4:17/2	128
J4:18/1 (short)	126

J4:18/2 (with short)	257(In) 131(Out)
J4:19/1	152
J4:19/2	114
J4:20/1	266
J4:21/1	148
J4:21/2	180
J4:22/1	117
J4:22/2	184
J4:22/3	100
J4:22/4	87

Lane Saturation Flows

Junction: J1: Padbury Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (A43 north)	3.65	0.00	Y	Arm J1:2 Ahead	50.00	100.0 %	1922	1922
J1:1/2 (A43 north)	3.65	0.00	N	Arm J1:2 Ahead	50.00	100.0 %	2058	2058
J1:2/1	Infinite Saturation Flow						Inf	Inf
J1:2/2	Infinite Saturation Flow						Inf	Inf
J1:3/1 (A43 south)	3.65	0.00	Y	Arm J1:4 Ahead	30.00	100.0 %	1886	1886
J1:3/2 (A43 south)	3.65	0.00	N	Arm J1:4 Ahead	30.00	100.0 %	2019	2019
J1:4/1	Infinite Saturation Flow						Inf	Inf
J1:4/2	Infinite Saturation Flow						Inf	Inf
J1:5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm J1:4 Left	40.00	100.0 %	1908	1908
J1:5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:4 Left	50.00	27.0 %	2058	2058
				Arm J1:6 Ahead	50.00	73.0 %		
J1:5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:6 Ahead	50.00	100.0 %	2058	2058
J1:6/1	This lane uses a directly entered Saturation Flow						2080	2080
J1:6/2	This lane uses a directly entered Saturation Flow						2080	2080
J1:7/1	Infinite Saturation Flow						Inf	Inf

Junction: J2: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (A43)	3.65	0.00	Y	Arm J2:4 Left	80.00	96.7 %	1944	1944
				Arm J2:10 Ahead	80.00	3.3 %		
J2:1/2 (A43)	3.65	0.00	N	Arm J2:10 Ahead	80.00	100.0 %	2081	2081
J2:1/3 (A43)	3.65	0.00	N	Arm J2:10 Ahead	80.00	100.0 %	2081	2081
J2:2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:3/1	Infinite Saturation Flow						Inf	Inf
J2:3/2	Infinite Saturation Flow						Inf	Inf
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:5/1 (MSA)	3.50	0.00	Y	Arm J2:11 Left	20.00	100.0 %	1828	1828
J2:5/2 (MSA)	3.50	0.00	Y	Arm J2:6 Left	Inf	65.4 %	1965	1965
				Arm J2:9 Ahead	Inf	34.6 %		
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:6/2	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:7/2	Infinite Saturation Flow						Inf	Inf
J2:8/1	4.00	0.00	Y	Arm J2:4 Ahead	30.00	44.0 %	1919	1919
				Arm J2:10 Right	30.00	56.0 %		
J2:9/1	Infinite Saturation Flow						Inf	Inf
J2:10/1	3.65	0.00	Y	Arm J2:11 Ahead	Inf	100.0 %	1980	1980
J2:10/2	3.65	0.00	Y	Arm J2:11 Ahead	Inf	100.0 %	1980	1980
J2:10/3	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:10/4	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:12/1	Infinite Saturation Flow						Inf	Inf
J2:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J3: Ardley roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1 (B430 Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:1/2 (B430 Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:2/1 (Overbridge SB)	3.65	0.00	Y	Arm J3:4 Ahead	400.00	100.0 %	1973	1973
J3:2/2 (Overbridge SB)	4.00	0.00	N	Arm J3:4 Ahead	40.00	100.0 %	2077	2077
J3:2/3 (Overbridge SB)	4.00	0.00	N	Arm J3:18 Right	40.00	100.0 %	2077	2077
J3:3/1	Infinite Saturation Flow						Inf	Inf
J3:4/1	3.65	0.00	N	Arm J3:13 Ahead	Inf	100.0 %	2120	2120
J3:4/2	3.65	0.00	N	Arm J3:7 Right	Inf	19.4 %	2120	2120
				Arm J3:13 Ahead	Inf	80.6 %		
J3:5/1	Infinite Saturation Flow						Inf	Inf
J3:6/1	3.65	0.00	Y	Arm J3:4 Right	40.00	100.0 %	1908	1908
J3:6/2	3.65	0.00	N	Arm J3:4 Right	40.00	0.0 %	2120	2120
J3:7/1	3.65	0.00	N	Arm J3:5 Ahead	50.00	100.0 %	2058	2058
				Arm J3:12 Right	50.00	0.0 %		
J3:7/2	3.65	0.00	N	Arm J3:12 Right	50.00	100.0 %	2058	2058
J3:8/1 (M40 Northbound offslip)	3.65	0.00	Y	Arm J3:13 Left	35.00	100.0 %	1899	1899
J3:8/2 (M40 Northbound offslip)	3.65	0.00	N	Arm J3:7 Ahead	35.00	100.0 %	2033	2033
J3:9/1	3.65	0.00	Y	Arm J3:20 Left	Inf	100.0 %	1980	1980
J3:9/2	3.65	0.00	N	Arm J3:19 Ahead	Inf	100.0 %	2120	2120
J3:9/3	3.65	0.00	N	Arm J3:6 Right	Inf	11.8 %	2120	2120
				Arm J3:19 Ahead	Inf	88.2 %		
J3:10/1	Infinite Saturation Flow						Inf	Inf
J3:11/1	Infinite Saturation Flow						Inf	Inf
J3:11/2	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf
J3:12/2	Infinite Saturation Flow						Inf	Inf
J3:12/3	Infinite Saturation Flow						Inf	Inf
J3:13/1	Infinite Saturation Flow						Inf	Inf
J3:13/2	Infinite Saturation Flow						Inf	Inf
J3:14/1 (Ardley Bypass)	3.65	0.00	Y	Arm J3:5 Left	30.00	38.8 %	1894	1894
				Arm J3:12 Ahead	35.00	61.2 %		
J3:14/2 (Ardley Bypass)	3.65	0.00	N	Arm J3:12 Ahead	35.00	100.0 %	2033	2033
J3:14/3 (Ardley Bypass)	3.65	0.00	N	Arm J3:12 Ahead	35.00	100.0 %	2033	2033
J3:15/1	Infinite Saturation Flow						Inf	Inf

J3:15/2	Infinite Saturation Flow						Inf	Inf
J3:16/1	Infinite Saturation Flow						Inf	Inf
J3:16/2	Infinite Saturation Flow						Inf	Inf
J3:17/1	Infinite Saturation Flow						Inf	Inf
J3:18/1	4.00	0.00	Y	Arm J3:20 Right	30.00	100.0 %	1919	1919
J3:19/1 (Overbridge NB Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:19/2 (Overbridge NB Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:20/1 (M40 NB Merge xing Lane 1)	Infinite Saturation Flow						Inf	Inf

Junction: J4: Baynards Green								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J4:1/1 (A43 North)	3.65	0.00	Y	Arm J4:2 Ahead	60.00	43.1 %	1932	1932
				Arm J4:16 Left	60.00	56.9 %		
J4:1/2 (A43 North)	3.65	0.00	N	Arm J4:2 Ahead	60.00	100.0 %	2068	2068
J4:1/3 (A43 North)	3.65	0.00	Y	Arm J4:21 Ahead	60.00	100.0 %	1932	1932
J4:1/4 (A43 North)	3.65	0.00	N	Arm J4:21 Ahead	60.00	100.0 %	2068	2068
J4:2/1	This lane uses a directly entered Saturation Flow						1950	1950
J4:2/2	This lane uses a directly entered Saturation Flow						2080	2080
J4:3/1 (B4100 East)	3.65	0.00	Y	Arm J4:17 Ahead	30.00	59.5 %	1886	1886
				Arm J4:19 Left	30.00	40.5 %		
J4:3/2 (B4100 East)	3.65	0.00	N	Arm J4:17 Ahead	30.00	100.0 %	2019	2019
J4:4/1 (M40 Southbound Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:4/2 (M40 Southbound Slip Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:5/1	3.65	0.00	Y	Arm J4:22 Ahead	Inf	100.0 %	1980	1980
J4:5/2	3.65	0.00	N	Arm J4:22 Ahead	Inf	100.0 %	2120	2120
J4:5/3	3.65	0.00	N	Arm J4:22 Ahead	Inf	100.0 %	2120	2120
J4:5/4	3.65	0.00	N	Arm J4:22 Ahead	Inf	100.0 %	2120	2120
J4:6/1 (M40 Northbound off slip)	3.65	0.00	Y	Arm J4:7 Ahead	40.00	89.7 %	1908	1908
				Arm J4:8 Left	40.00	10.3 %		
J4:6/2 (M40 Northbound off slip)	3.65	0.00	N	Arm J4:7 Ahead	40.00	100.0 %	2043	2043
J4:6/3 (M40 Northbound off slip)	3.65	0.00	N	Arm J4:7 Ahead	40.00	100.0 %	2043	2043
J4:7/1	3.65	0.00	Y	Arm J4:10 Ahead	40.00	100.0 %	1908	1908
J4:7/2	This lane uses a directly entered Saturation Flow						2050	2050
J4:7/3	This lane uses a directly entered Saturation Flow						2050	2050
J4:8/1	3.65	0.00	Y				1980	1980
J4:9/1 (B4100 West)	3.50	0.00	Y	Arm J4:10 Left	30.00	34.1 %	1904	1904
				Arm J4:11 Ahead	65.00	65.9 %		
J4:9/2 (B4100 West)	3.50	0.00	N	Arm J4:11 Ahead	65.00	100.0 %	2058	2058
J4:10/1	Infinite Saturation Flow						Inf	Inf
J4:10/2	This lane uses a directly entered Saturation Flow						2100	2100
J4:10/3	This lane uses a directly entered Saturation Flow						2050	2050
J4:11/1	This lane uses a directly entered Saturation Flow						2070	2070
J4:11/2	This lane uses a directly entered Saturation Flow						2070	2070
J4:12/1	Infinite Saturation Flow						Inf	Inf
J4:12/2	Infinite Saturation Flow						Inf	Inf

J4:13/1 (A43 - M40 SB Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:13/2 (A43 - M40 SB Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:14/1 (M40 - A43 NB Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:15/1	Infinite Saturation Flow						Inf	Inf
J4:16/1	3.65	0.00	Y				1980	1980
J4:16/2	3.65	0.00	Y				1980	1980
J4:17/1	Infinite Saturation Flow						Inf	Inf
J4:17/2	Infinite Saturation Flow						Inf	Inf
J4:18/1 (New A43 Link Road Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:18/2 (New A43 Link Road Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:19/1	Infinite Saturation Flow						Inf	Inf
J4:19/2	Infinite Saturation Flow						Inf	Inf
J4:20/1	Infinite Saturation Flow						Inf	Inf
J4:21/1 (A43 SB Cut-through)	3.65	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1980	1980
J4:21/2 (A43 SB Cut-through)	3.65	0.00	N	Arm J4:4 Ahead	Inf	100.0 %	2120	2120
J4:22/1	Infinite Saturation Flow						Inf	Inf
J4:22/2	Infinite Saturation Flow						Inf	Inf
J4:22/3	Infinite Saturation Flow						Inf	Inf
J4:22/4	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2031 Option 26 - Inter Peak' (FG4: '2031 Opt 26 - inter-peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination									
		A	B	C	D	E	F	G	H	I	Tot.
Origin	A	0	406	86	0	1059	77	51	52	485	2216
	B	439	0	16	9	0	161	302	2	14	943
	C	88	4	0	246	0	152	4	5	28	527
	D	0	0	204	0	0	0	0	8	324	536
	E	1199	8	0	0	0	0	50	0	0	1257
	F	69	203	199	0	0	0	20	37	349	877
	G	49	240	1	0	65	0	0	1	8	364
	H	49	3	4	6	0	45	3	0	68	178
	I	403	12	17	282	0	320	19	200	0	1253
	Tot.	2296	876	527	543	1124	755	449	305	1276	8151

Traffic Lane Flows

Lane	Scenario 4: 2031 Option 26 - Inter Peak
Junction: J1: Padbury Roundabout	
J1:1/1 (with short)	912(In) 557(Out)
J1:1/2 (short)	355
J1:2/1	851
J1:2/2	646
J1:3/1	246
J1:3/2	339
J1:4/1	434
J1:4/2	443
J1:5/1 (short)	188
J1:5/2 (with short)	586(In) 398(Out)
J1:5/3	291
J1:6/1	294
J1:6/2	291
J1:7/1	877
Junction: J2: Cherwell	
J2:1/1 (short)	311
J2:1/2 (with short)	851(In) 540(Out)
J2:1/3	646
J2:2/1	489
J2:2/2	513
J2:3/1	246
J2:3/2	339
J2:4/1	527
J2:5/1	246
J2:5/2	281
J2:6/1	562
J2:6/2	809
J2:7/1	489
J2:7/2	96
J2:8/1	513
J2:9/1	96
J2:10/1	147
J2:10/2	150
J2:10/3	540
J2:10/4	646
J2:11/1	270
J2:11/2	273
J2:12/1	270

J2:12/2	273
Junction: J3: Ardley roundabout	
J3:1/1 (with short)	178(In) 100(Out)
J3:1/2 (short)	78
J3:2/1	562
J3:2/2 (with short)	809(In) 419(Out)
J3:2/3 (short)	390
J3:3/1	755
J3:4/1	610
J3:4/2	439
J3:5/1	305
J3:6/1 (with short)	68(In) 48(Out)
J3:6/2 (short)	20
J3:7/1	105
J3:7/2	204
J3:8/1	324
J3:8/2	212
J3:9/1	365
J3:9/2	489
J3:9/3	581
J3:10/1	536
J3:11/1	367
J3:11/2	890
J3:12/1	320
J3:12/2	434
J3:12/3	503
J3:13/1	934
J3:13/2	342
J3:14/1	520
J3:14/2 (with short)	733(In) 434(Out)
J3:14/3 (short)	299
J3:15/1	934
J3:15/2	342
J3:16/1	520
J3:16/2	733
J3:17/1	1253
J3:18/1	390
J3:19/1	489
J3:19/2	513
J3:20/1	755
Junction: J4: Baynards Green	

J4:1/1 (short)	565
J4:1/2 (with short)	1157(In) 592(Out)
J4:1/3 (with short)	1059(In) 514(Out)
J4:1/4 (short)	545
J4:2/1	169
J4:2/2	592
J4:3/1 (with short)	943(In) 504(Out)
J4:3/2 (short)	439
J4:4/1	544
J4:4/2	580
J4:5/1	399
J4:5/2	490
J4:5/3	460
J4:5/4	320
J4:6/1	367
J4:6/2 (with short)	890(In) 427(Out)
J4:6/3 (short)	463
J4:7/1	807
J4:7/2	887
J4:7/3	783
J4:8/1	449
J4:9/1 (with short)	364(In) 175(Out)
J4:9/2 (short)	189
J4:10/1	856
J4:10/2	887
J4:10/3	553
J4:11/1	178
J4:11/2	367
J4:12/1	544
J4:12/2	580
J4:13/1	544
J4:13/2	580
J4:14/1	1257
J4:15/1	1257
J4:16/1	584
J4:16/2	292
J4:17/1	353
J4:17/2	439
J4:18/1 (short)	388

J4:18/2 (with short)	877(In) 489(Out)
J4:19/1	371
J4:19/2	541
J4:20/1	912
J4:21/1	544
J4:21/2	580
J4:22/1	399
J4:22/2	490
J4:22/3	460
J4:22/4	320

Lane Saturation Flows

Junction: J1: Padbury Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (A43 north)	3.65	0.00	Y	Arm J1:2 Ahead	50.00	100.0 %	1922	1922
J1:1/2 (A43 north)	3.65	0.00	N	Arm J1:2 Ahead	50.00	100.0 %	2058	2058
J1:2/1	Infinite Saturation Flow						Inf	Inf
J1:2/2	Infinite Saturation Flow						Inf	Inf
J1:3/1 (A43 south)	3.65	0.00	Y	Arm J1:4 Ahead	30.00	100.0 %	1886	1886
J1:3/2 (A43 south)	3.65	0.00	N	Arm J1:4 Ahead	30.00	100.0 %	2019	2019
J1:4/1	Infinite Saturation Flow						Inf	Inf
J1:4/2	Infinite Saturation Flow						Inf	Inf
J1:5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm J1:4 Left	40.00	100.0 %	1908	1908
J1:5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:4 Left	50.00	26.1 %	2058	2058
				Arm J1:6 Ahead	50.00	73.9 %		
J1:5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J1:6 Ahead	50.00	100.0 %	2058	2058
J1:6/1	This lane uses a directly entered Saturation Flow						2080	2080
J1:6/2	This lane uses a directly entered Saturation Flow						2080	2080
J1:7/1	Infinite Saturation Flow						Inf	Inf

Junction: J2: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (A43)	3.65	0.00	Y	Arm J2:4 Left	80.00	97.1 %	1944	1944
				Arm J2:10 Ahead	80.00	2.9 %		
J2:1/2 (A43)	3.65	0.00	N	Arm J2:10 Ahead	80.00	100.0 %	2081	2081
J2:1/3 (A43)	3.65	0.00	N	Arm J2:10 Ahead	80.00	100.0 %	2081	2081
J2:2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:3/1	Infinite Saturation Flow						Inf	Inf
J2:3/2	Infinite Saturation Flow						Inf	Inf
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:5/1 (MSA)	3.50	0.00	Y	Arm J2:11 Left	20.00	100.0 %	1828	1828
J2:5/2 (MSA)	3.50	0.00	Y	Arm J2:6 Left	Inf	65.8 %	1965	1965
				Arm J2:9 Ahead	Inf	34.2 %		
J2:6/1	Infinite Saturation Flow						Inf	Inf
J2:6/2	Infinite Saturation Flow						Inf	Inf
J2:7/1	Infinite Saturation Flow						Inf	Inf
J2:7/2	Infinite Saturation Flow						Inf	Inf
J2:8/1	4.00	0.00	Y	Arm J2:4 Ahead	30.00	43.9 %	1919	1919
				Arm J2:10 Right	30.00	56.1 %		
J2:9/1	Infinite Saturation Flow						Inf	Inf
J2:10/1	3.65	0.00	Y	Arm J2:11 Ahead	Inf	100.0 %	1980	1980
J2:10/2	3.65	0.00	Y	Arm J2:11 Ahead	Inf	100.0 %	1980	1980
J2:10/3	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:10/4	3.65	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2120	2120
J2:11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J2:11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J2:12/1	Infinite Saturation Flow						Inf	Inf
J2:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J3: Ardley roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1 (B430 Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:1/2 (B430 Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:2/1 (Overbridge SB)	3.65	0.00	Y	Arm J3:4 Ahead	400.00	100.0 %	1973	1973
J3:2/2 (Overbridge SB)	4.00	0.00	N	Arm J3:4 Ahead	40.00	100.0 %	2077	2077
J3:2/3 (Overbridge SB)	4.00	0.00	N	Arm J3:18 Right	40.00	100.0 %	2077	2077
J3:3/1	Infinite Saturation Flow						Inf	Inf
J3:4/1	3.65	0.00	N	Arm J3:13 Ahead	Inf	100.0 %	2120	2120
J3:4/2	3.65	0.00	N	Arm J3:7 Right	Inf	22.1 %	2120	2120
				Arm J3:13 Ahead	Inf	77.9 %		
J3:5/1	Infinite Saturation Flow						Inf	Inf
J3:6/1	3.65	0.00	Y	Arm J3:4 Right	40.00	100.0 %	1908	1908
J3:6/2	3.65	0.00	N	Arm J3:4 Right	40.00	100.0 %	2043	2043
J3:7/1	3.65	0.00	N	Arm J3:5 Ahead	50.00	100.0 %	2058	2058
				Arm J3:12 Right	50.00	0.0 %		
J3:7/2	3.65	0.00	N	Arm J3:12 Right	50.00	100.0 %	2058	2058
J3:8/1 (M40 Northbound offslip)	3.65	0.00	Y	Arm J3:13 Left	35.00	100.0 %	1899	1899
J3:8/2 (M40 Northbound offslip)	3.65	0.00	N	Arm J3:7 Ahead	35.00	100.0 %	2033	2033
J3:9/1	3.65	0.00	Y	Arm J3:20 Left	Inf	100.0 %	1980	1980
J3:9/2	3.65	0.00	N	Arm J3:19 Ahead	Inf	100.0 %	2120	2120
J3:9/3	3.65	0.00	N	Arm J3:6 Right	Inf	11.7 %	2120	2120
				Arm J3:19 Ahead	Inf	88.3 %		
J3:10/1	Infinite Saturation Flow						Inf	Inf
J3:11/1	Infinite Saturation Flow						Inf	Inf
J3:11/2	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf
J3:12/2	Infinite Saturation Flow						Inf	Inf
J3:12/3	Infinite Saturation Flow						Inf	Inf
J3:13/1	Infinite Saturation Flow						Inf	Inf
J3:13/2	Infinite Saturation Flow						Inf	Inf
J3:14/1 (Ardley Bypass)	3.65	0.00	Y	Arm J3:5 Left	30.00	38.5 %	1894	1894
				Arm J3:12 Ahead	35.00	61.5 %		
J3:14/2 (Ardley Bypass)	3.65	0.00	N	Arm J3:12 Ahead	35.00	100.0 %	2033	2033
J3:14/3 (Ardley Bypass)	3.65	0.00	N	Arm J3:12 Ahead	35.00	100.0 %	2033	2033
J3:15/1	Infinite Saturation Flow						Inf	Inf

J3:15/2	Infinite Saturation Flow						Inf	Inf
J3:16/1	Infinite Saturation Flow						Inf	Inf
J3:16/2	Infinite Saturation Flow						Inf	Inf
J3:17/1	Infinite Saturation Flow						Inf	Inf
J3:18/1	4.00	0.00	Y	Arm J3:20 Right	30.00	100.0 %	1919	1919
J3:19/1 (Overbridge NB Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:19/2 (Overbridge NB Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:20/1 (M40 NB Merge xing Lane 1)	Infinite Saturation Flow						Inf	Inf

Junction: J4: Baynards Green								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J4:1/1 (A43 North)	3.65	0.00	Y	Arm J4:2 Ahead	60.00	28.1 %	1932	1932
				Arm J4:16 Left	60.00	71.9 %		
J4:1/2 (A43 North)	3.65	0.00	N	Arm J4:2 Ahead	60.00	100.0 %	2068	2068
J4:1/3 (A43 North)	3.65	0.00	Y	Arm J4:21 Ahead	60.00	100.0 %	1932	1932
J4:1/4 (A43 North)	3.65	0.00	N	Arm J4:21 Ahead	60.00	100.0 %	2068	2068
J4:2/1	This lane uses a directly entered Saturation Flow						1950	1950
J4:2/2	This lane uses a directly entered Saturation Flow						2080	2080
J4:3/1 (B4100 East)	3.65	0.00	Y	Arm J4:17 Ahead	30.00	59.9 %	1886	1886
				Arm J4:19 Left	30.00	40.1 %		
J4:3/2 (B4100 East)	3.65	0.00	N	Arm J4:17 Ahead	30.00	100.0 %	2019	2019
J4:4/1 (M40 Southbound Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:4/2 (M40 Southbound Slip Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:5/1	3.65	0.00	Y	Arm J4:22 Ahead	Inf	100.0 %	1980	1980
J4:5/2	3.65	0.00	N	Arm J4:22 Ahead	Inf	100.0 %	2120	2120
J4:5/3	3.65	0.00	N	Arm J4:22 Ahead	Inf	100.0 %	2120	2120
J4:5/4	3.65	0.00	N	Arm J4:22 Ahead	Inf	100.0 %	2120	2120
J4:6/1 (M40 Northbound off slip)	3.65	0.00	Y	Arm J4:7 Ahead	40.00	86.4 %	1908	1908
				Arm J4:8 Left	40.00	13.6 %		
J4:6/2 (M40 Northbound off slip)	3.65	0.00	N	Arm J4:7 Ahead	40.00	100.0 %	2043	2043
J4:6/3 (M40 Northbound off slip)	3.65	0.00	N	Arm J4:7 Ahead	40.00	100.0 %	2043	2043
J4:7/1	3.65	0.00	Y	Arm J4:10 Ahead	40.00	100.0 %	1908	1908
J4:7/2	This lane uses a directly entered Saturation Flow						2050	2050
J4:7/3	This lane uses a directly entered Saturation Flow						2050	2050
J4:8/1	3.65	0.00	Y				1980	1980
J4:9/1 (B4100 West)	3.50	0.00	Y	Arm J4:10 Left	30.00	28.0 %	1907	1907
				Arm J4:11 Ahead	65.00	72.0 %		
J4:9/2 (B4100 West)	3.50	0.00	N	Arm J4:11 Ahead	65.00	100.0 %	2058	2058
J4:10/1	Infinite Saturation Flow						Inf	Inf
J4:10/2	This lane uses a directly entered Saturation Flow						2100	2100
J4:10/3	This lane uses a directly entered Saturation Flow						2050	2050
J4:11/1	This lane uses a directly entered Saturation Flow						2070	2070
J4:11/2	This lane uses a directly entered Saturation Flow						2070	2070
J4:12/1	Infinite Saturation Flow						Inf	Inf
J4:12/2	Infinite Saturation Flow						Inf	Inf

J4:13/1 (A43 - M40 SB Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:13/2 (A43 - M40 SB Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:14/1 (M40 - A43 NB Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:15/1	Infinite Saturation Flow						Inf	Inf
J4:16/1	3.65	0.00	Y				1980	1980
J4:16/2	3.65	0.00	Y				1980	1980
J4:17/1	Infinite Saturation Flow						Inf	Inf
J4:17/2	Infinite Saturation Flow						Inf	Inf
J4:18/1 (New A43 Link Road Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:18/2 (New A43 Link Road Lane 2)	Infinite Saturation Flow						Inf	Inf
J4:19/1	Infinite Saturation Flow						Inf	Inf
J4:19/2	Infinite Saturation Flow						Inf	Inf
J4:20/1	Infinite Saturation Flow						Inf	Inf
J4:21/1 (A43 SB Cut-through)	3.65	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1980	1980
J4:21/2 (A43 SB Cut-through)	3.65	0.00	N	Arm J4:4 Ahead	Inf	100.0 %	2120	2120
J4:22/1	Infinite Saturation Flow						Inf	Inf
J4:22/2	Infinite Saturation Flow						Inf	Inf
J4:22/3	Infinite Saturation Flow						Inf	Inf
J4:22/4	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2031 Option 26 - AM Peak' (FG1: '2031 Opt 26 - AM', Plan 1: 'Network Control Plan 1')
C1 - Padbury

Stage Timings

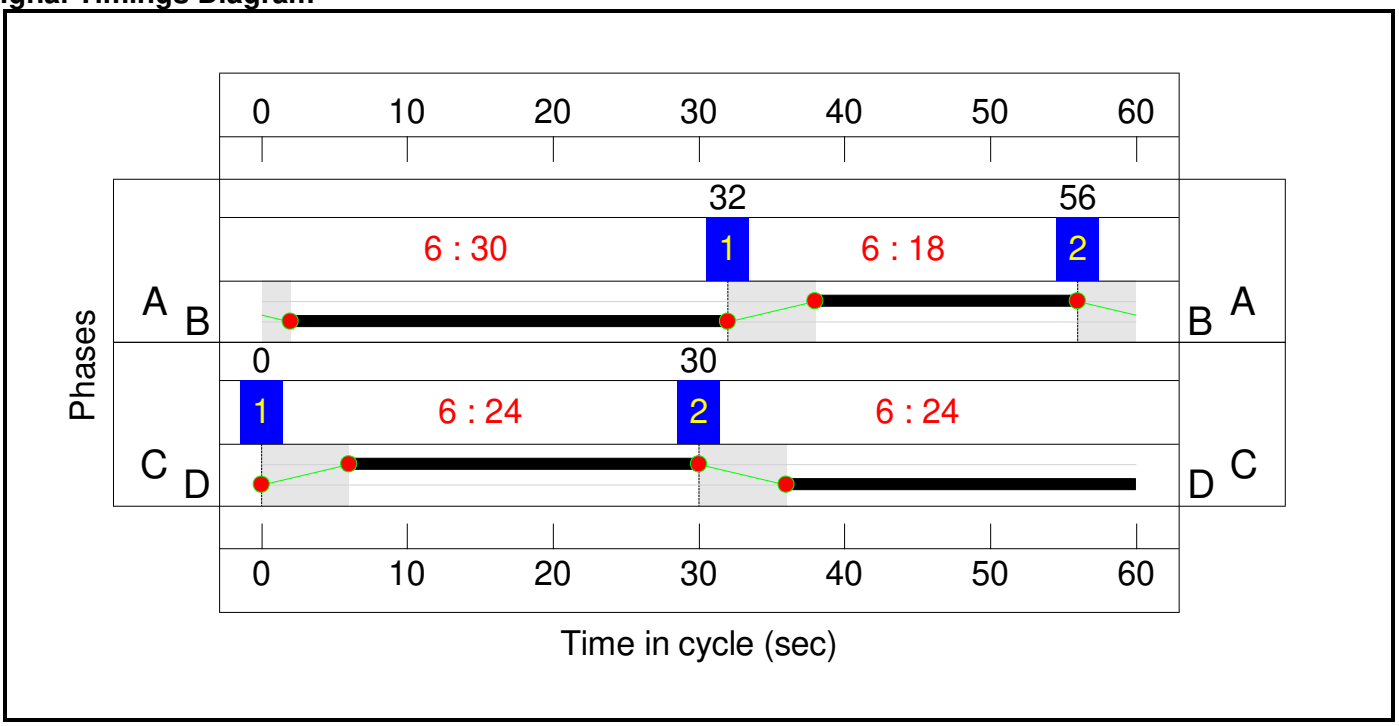
Stage Stream: 1

Stage	1	2
Duration	18	30
Change Point	32	56

Stage Stream: 2

Stage	1	2
Duration	24	24
Change Point	0	30

Signal Timings Diagram



C2 - Cherwell

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	29	20
Change Point	46	20

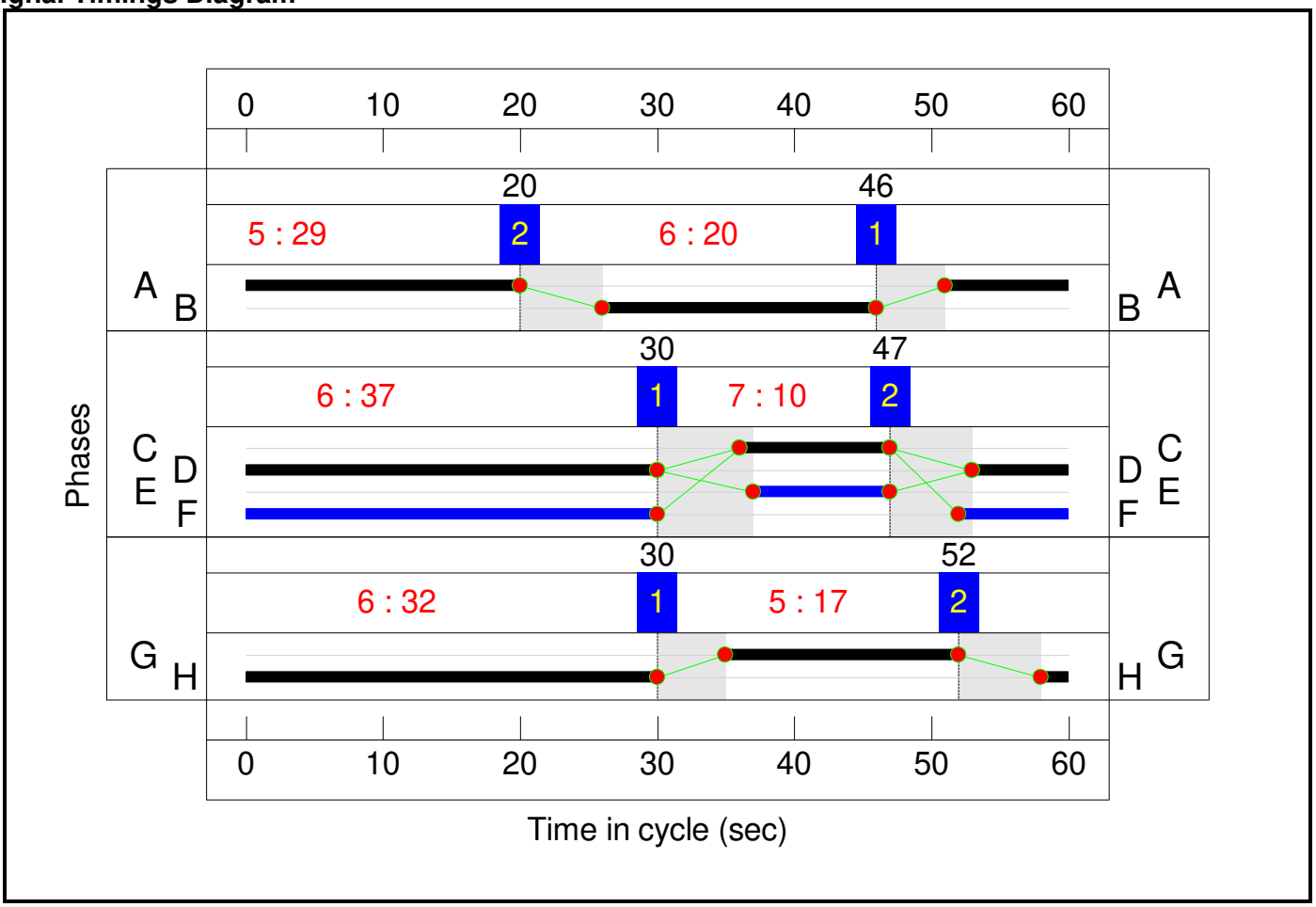
Stage Stream: 2

Stage	1	2
Duration	10	37
Change Point	30	47

Stage Stream: 3

Stage	1	2
Duration	17	32
Change Point	30	52

Signal Timings Diagram



C3 - Ardley

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	21	29
Change Point	30	56

Stage Stream: 2

Stage	1	2
Duration	30	17
Change Point	14	52

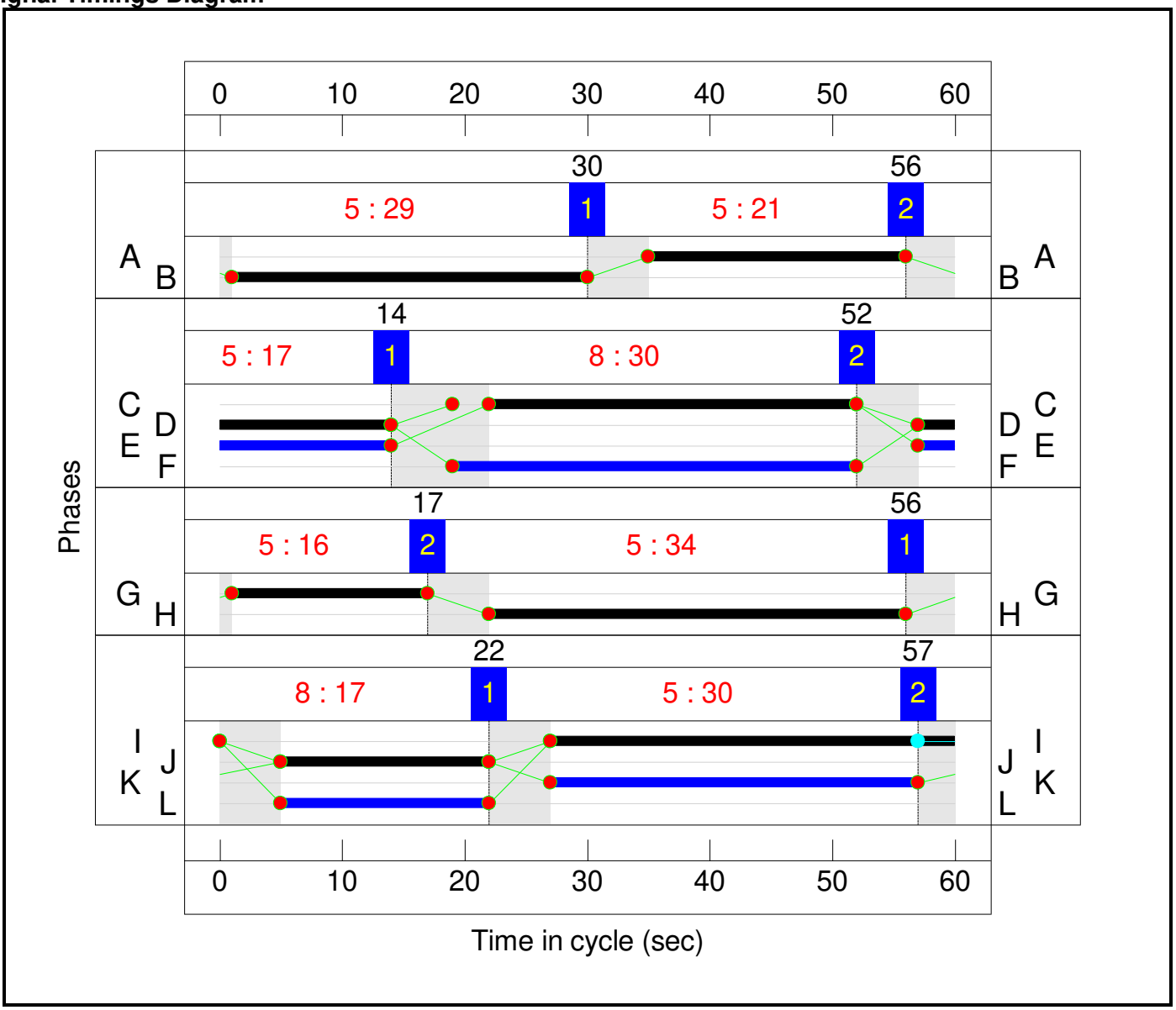
Stage Stream: 3

Stage	1	2
Duration	16	34
Change Point	56	17

Stage Stream: 4

Stage	1	2
Duration	30	17
Change Point	22	57

Signal Timings Diagram



C4 - Baynards Green

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	23	26
Change Point	0	29

Stage Stream: 2

Stage	1	2
Duration	30	18
Change Point	28	4

Stage Stream: 3

Stage	1	2
Duration	23	26
Change Point	7	35

Stage Stream: 4

Stage	1	2
Duration	38	10
Change Point	30	14

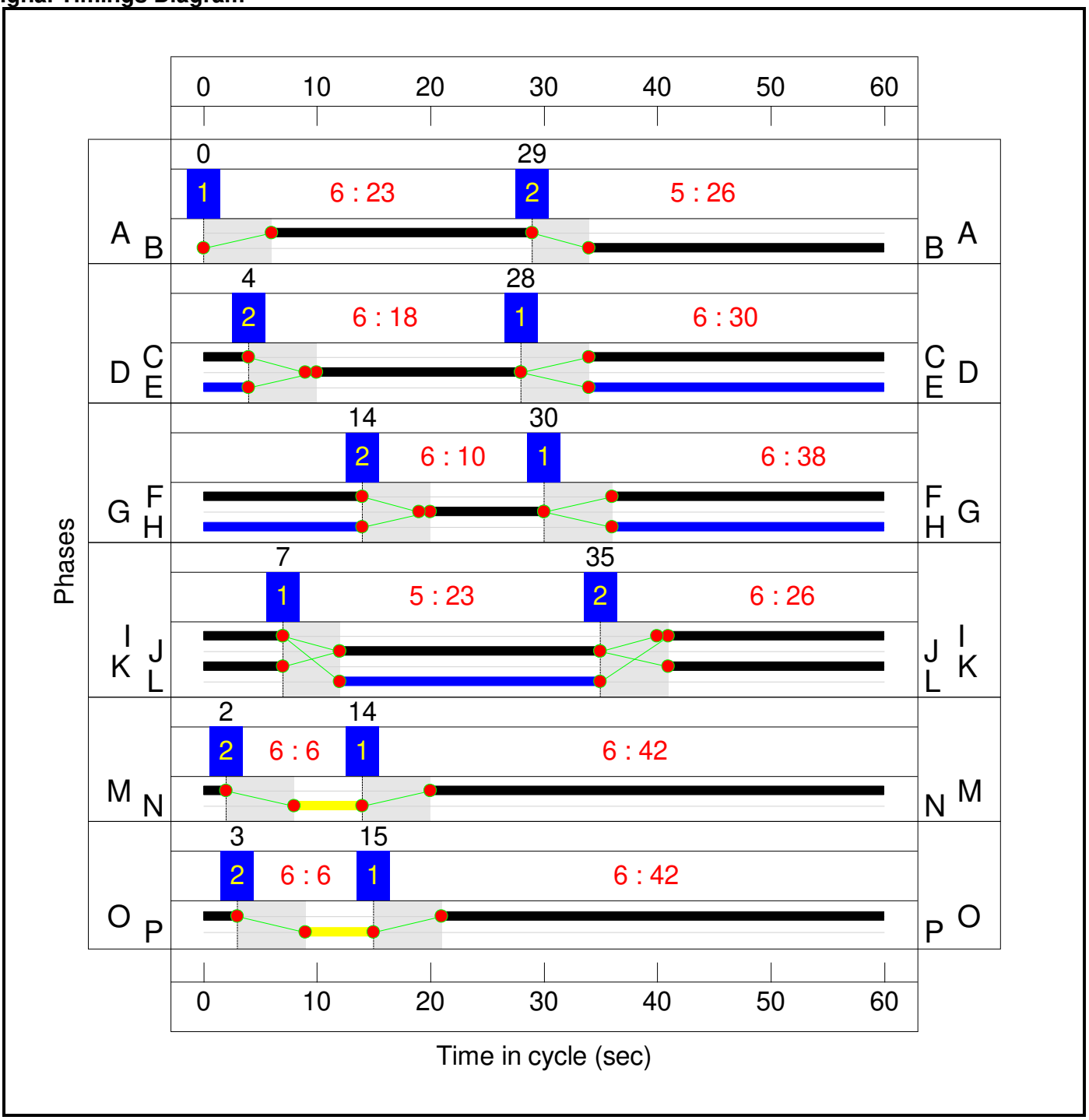
Stage Stream: 5

Stage	1	2
Duration	42	6
Change Point	14	2

Stage Stream: 6

Stage	1	2
Duration	42	6
Change Point	15	3

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: M40 Junction 10 Option 26 Network Model	-	-	**N/A**	-	-		-	-	-	-	-	-	**86.7%**
J1: Padbury Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**70.8%**
1/1+1/2	A43 north Ahead	U	1:1	N/A	C1:B		1	30	-	1256	1922:2058	965+807	70.8 : 70.8%
3/1	A43 south Ahead	U	1:2	N/A	C1:C		1	24	-	200	1886	786	25.5%
3/2	A43 south Ahead	U	1:2	N/A	C1:C		1	24	-	293	2019	841	34.8%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	1:2	N/A	C1:D		1	24	-	779	2058:1908	824+316	68.3 : 68.3%
5/3	Junction 10 s'bound offslip Ahead	U	1:2	N/A	C1:D		1	24	-	283	2058	858	33.0%
6/1	Right	U	1:1	N/A	C1:A		1	18	-	442	2080	659	67.1%
6/2	Right	U	1:1	N/A	C1:A		1	18	-	283	2080	659	43.0%
J2: Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**82.2%**
1/2+1/1	A43 Left Ahead	U	2:1	N/A	C2:A		1	29	-	1126	2081:1944	1000+457	77.3 : 77.3%
1/3	A43 Ahead	U	2:1	N/A	C2:A		1	29	-	855	2081	1041	82.2%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	481	Inf	1225	39.3%
5/1	MSA Left	U	2:2	N/A	C2:C		1	11	-	295	1828	366	80.7%
5/2	MSA Left Ahead	U	2:2	N/A	C2:C		1	11	-	287	1965	393	73.0%
8/1	Ahead Right	U	2:1	N/A	C2:B		1	20	-	481	1919	672	71.6%
10/1	Ahead	U	2:2	N/A	C2:D		1	37	-	117	1980	1254	9.3%
10/2	Ahead	U	2:2	N/A	C2:D		1	37	-	135	1980	1254	10.8%
10/3	Ahead	U	2:2	N/A	C2:D		1	37	-	773	2120	1343	57.6%
10/4	Ahead	U	2:2	N/A	C2:D		1	37	-	855	2120	1343	63.7%
J3: Ardley roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**81.2%**
1/1+1/2	B430 Ahead	O	N/A	N/A	-		-	-	-	159	Inf : Inf	782+281	15.0 : 15.0%

2/1	Overbridge SB Ahead	U	3:2	N/A	C3:C		1	30	-	821	1973	1019	80.5%
2/2+2/3	Overbridge SB Ahead Right	U	3:2	N/A	C3:C		1	30	-	1009	2077:2077	845+576	71.0 : 71.0%
4/1	Ahead	U	3:3	N/A	C3:H		1	34	-	843	2120	1237	68.2%
4/2	Right Ahead	U	3:3	N/A	C3:H		1	34	-	604	2120	1237	48.8%
6/1+6/2	Right	U	3:2	N/A	C3:D		1	17	-	26	1908:2043	521+95	4.2 : 4.2%
7/1	Ahead Right	U	3:1	N/A	C3:B		1	29	-	156	2058	1029	15.2%
7/2	Right	U	3:1	N/A	C3:B		1	29	-	211	2058	1029	20.5%
8/1	M40 Northbound offslip Left	U	3:3	N/A	C3:G		1	16	-	437	1899	538	81.2%
8/2	M40 Northbound offslip Ahead	U	3:3	N/A	C3:G		1	16	-	220	2033	576	38.2%
9/1	Left	U	3:4	N/A	C3:J		1	17	-	391	1980	594	65.8%
9/2	Ahead	U	3:4	N/A	C3:J		1	17	-	408	2120	636	64.2%
9/3	Right Ahead	U	3:4	N/A	C3:J		1	17	-	507	2120	636	79.7%
14/1	Ardley Bypass Left Ahead	U	3:1	N/A	C3:A		1	21	-	528	1894	694	76.0%
14/2+14/3	Ardley Bypass Ahead	U	3:1	N/A	C3:A		1	21	-	609	2033:2033	697+499	50.9 : 50.9%
18/1	Right	U	3:4	N/A	C3:I		1	33	-	409	1919	1087	37.6%
J4: Baynards Green	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.7%**
1/2+1/1	A43 North Ahead Left	U	4:1	N/A	C4:B		1	26	-	1547	2068:1932	931+869	85.2 : 86.7%
1/3+1/4	A43 North Ahead	U	4:1	N/A	C4:B		1	26	-	1485	1932:2068	869+931	82.2 : 82.7%
2/1	Ahead	U	4:2	N/A	C4:C		1	30	-	321	1950	1007	31.9%
2/2	Right Ahead	U	4:2	N/A	C4:C		1	30	-	793	2080	1075	73.8%
3/1+3/2	B4100 East Ahead Left	U	4:2	N/A	C4:D		1	18	-	868	1886:2019	597+404	86.7 : 86.7%
5/1	Ahead	U	4:3	N/A	C4:J		1	23	-	438	1980	792	55.3%
5/2	Ahead	U	4:3	N/A	C4:J		1	23	-	407	2120	848	48.0%
5/3	Ahead	U	4:3	N/A	C4:J		1	23	-	382	2120	848	45.0%
5/4	Ahead	U	4:3	N/A	C4:J		1	23	-	329	2120	848	38.8%

6/1	M40 Northbound off slip Ahead Left	U	4:3	N/A	C4:K		1	26	-	310	1908	859	36.1%
6/2+6/3	M40 Northbound off slip Ahead	U	4:3	N/A	C4:K		1	26	-	859	2043:2043	919+919	44.8 : 48.6%
7/1	Ahead	U	4:4	N/A	C4:F		1	38	-	654	1908	1240	52.7%
7/2	Ahead	U	4:4	N/A	C4:F		1	38	-	794	2050	1333	59.6%
7/3	Ahead Right	U	4:4	N/A	C4:F		1	38	-	776	2050	1333	58.2%
8/1		U	4:6	N/A	C4:O		1	42	-	501	1980	1419	35.3%
9/1+9/2	B4100 West Left Ahead	U	4:4	N/A	C4:G		1	10	-	491	1905:2058	349+377	67.3 : 67.9%
10/2		U	N/A	N/A	-		-	-	-	794	2100	2100	37.8%
10/3		U	N/A	N/A	-		-	-	-	489	2050	2050	23.9%
11/1	Ahead	U	4:1	N/A	C4:A		1	23	-	253	2070	828	30.6%
11/2	Right Ahead Right2	U	4:1	N/A	C4:A		1	23	-	453	2070	828	54.7%
16/1		U	4:5	N/A	C4:M		1	42	-	699	1980	1419	49.3%
16/2		U	4:5	N/A	C4:M		1	42	-	330	1980	1419	23.3%
18/2+18/1	New A43 Link Road Left	O	N/A	N/A	-		-	-	-	830	Inf : Inf	937+612	53.6 : 53.6%
21/1	A43 SB Cut-through Ahead	U	4:3	N/A	C4:I		1	26	-	769	1980	891	86.3%
21/2	A43 SB Cut-through Ahead	U	4:3	N/A	C4:I		1	26	-	826	2120	954	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: M40 Junction 10 Option 26 Network Model	**-**	**-**	**2459**	**0**	**0**	**82.2**	**28.1**	**0.0**	**110.3**	**-**	**-**	**-**	**-**
J1: Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**10.0**	**3.0**	**0.0**	**13.0**	**-**	**-**	**-**	**-**
1/1+1/2	1256	1256	-	-	-	2.6	1.2	-	3.8	10.8	27.2	1.2	28.4
3/1	200	200	-	-	-	1.2	0.2	-	1.4	24.5	3.3	0.2	3.5
3/2	293	293	-	-	-	1.4	0.3	-	1.7	21.1	4.8	0.3	5.1
5/2+5/1	779	779	-	-	-	2.9	1.1	-	4.0	18.3	7.5	1.1	8.6
5/3	283	283	-	-	-	0.9	0.2	-	1.2	15.0	3.1	0.2	3.4
6/1	442	442	-	-	-	0.6	0.0	-	0.6	5.2	1.2	0.0	1.2
6/2	283	283	-	-	-	0.4	0.0	-	0.4	5.0	0.6	0.0	0.6
J2: Cherwell	**-**	**-**	**481**	**0**	**0**	**13.1**	**7.6**	**0.0**	**20.7**	**-**	**-**	**-**	**-**
1/2+1/1	1126	1126	-	-	-	4.1	1.7	-	5.8	18.5	11.7	1.7	13.4
1/3	855	855	-	-	-	3.8	2.3	-	6.1	25.5	12.5	2.3	14.7
2/2	481	481	481	0	0	0.2	0.3	-	0.5	3.9	7.1	0.3	7.4
5/1	295	295	-	-	-	1.9	2.0	-	3.9	47.0	4.7	2.0	6.6
5/2	287	287	-	-	-	1.8	1.3	-	3.1	39.1	4.5	1.3	5.8
8/1	481	481	-	-	-	0.2	0.0	-	0.2	1.7	1.3	0.0	1.3
10/1	117	117	-	-	-	0.5	0.0	-	0.5	15.4	1.8	0.0	1.8
10/2	135	135	-	-	-	0.6	0.0	-	0.6	17.2	2.2	0.0	2.2
10/3	773	773	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/4	855	855	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J3: Ardley roundabout	**-**	**-**	**318**	**0**	**0**	**22.4**	**5.7**	**0.0**	**28.1**	**-**	**-**	**-**	**-**
1/1+1/2	159	159	318	0	0	0.0	0.1	-	0.1	2.6	0.3	0.1	0.4
2/1	821	821	-	-	-	3.6	0.0	-	3.6	15.8	13.3	0.0	13.3
2/2+2/3	1009	1009	-	-	-	3.1	0.0	-	3.1	11.2	10.6	0.0	10.6
4/1	843	843	-	-	-	0.1	0.0	-	0.1	0.4	0.4	0.0	0.4
4/2	604	604	-	-	-	0.0	0.0	-	0.0	0.1	0.1	0.0	0.1

6/1+6/2	26	26	-	-	-	0.2	0.0	-	0.2	22.7	0.2	0.0	0.2
7/1	156	156	-	-	-	1.0	0.1	-	1.1	24.4	2.5	0.1	2.5
7/2	211	211	-	-	-	0.0	0.1	-	0.1	2.2	0.0	0.1	0.1
8/1	437	437	-	-	-	2.4	2.1	-	4.5	37.1	6.7	2.1	8.8
8/2	220	220	-	-	-	1.1	0.3	-	1.4	22.3	2.9	0.3	3.2
9/1	391	391	-	-	-	1.9	1.0	-	2.8	26.1	6.4	1.0	7.3
9/2	408	408	-	-	-	2.2	0.0	-	2.2	19.0	6.7	0.0	6.7
9/3	507	507	-	-	-	1.9	0.0	-	1.9	13.8	5.4	0.0	5.4
14/1	528	528	-	-	-	2.4	1.6	-	4.0	27.3	7.6	1.6	9.2
14/2+14/3	609	609	-	-	-	2.4	0.5	-	2.9	17.3	4.5	0.5	5.1
18/1	409	409	-	-	-	0.0	0.0	-	0.0	0.2	0.4	0.0	0.4
J4: Baynards Green	**-**	**-**	**1660**	**0**	**0**	**36.7**	**11.8**	**0.0**	**48.5**	**-**	**-**	**-**	**-**
1/2+1/1	1547	1547	-	-	-	6.4	3.0	-	9.3	21.8	11.7	3.0	14.7
1/3+1/4	1485	1485	-	-	-	6.0	2.3	-	8.3	20.1	11.1	2.3	13.4
2/1	321	321	-	-	-	0.1	0.0	-	0.1	1.1	0.3	0.0	0.3
2/2	793	793	-	-	-	0.2	0.0	-	0.2	0.9	0.4	0.0	0.4
3/1+3/2	868	868	-	-	-	4.4	3.1	-	7.6	31.3	8.1	3.1	11.2
5/1	438	438	-	-	-	0.6	0.0	-	0.6	5.1	1.9	0.0	1.9
5/2	407	407	-	-	-	1.7	0.0	-	1.7	15.0	3.8	0.0	3.8
5/3	382	382	-	-	-	1.1	0.0	-	1.1	10.3	2.3	0.0	2.3
5/4	329	329	-	-	-	0.8	0.3	-	1.1	12.1	3.8	0.3	4.1
6/1	310	310	-	-	-	0.9	0.3	-	1.2	14.1	3.4	0.3	3.6
6/2+6/3	859	859	-	-	-	2.7	0.4	-	3.2	13.3	5.2	0.4	5.7
7/1	654	654	-	-	-	1.7	0.0	-	1.7	9.3	9.3	0.0	9.3
7/2	794	794	-	-	-	1.4	0.0	-	1.4	6.3	6.9	0.0	6.9
7/3	776	776	-	-	-	1.3	0.0	-	1.3	5.9	5.5	0.0	5.5
8/1	501	501	-	-	-	0.0	0.3	-	0.3	2.3	1.8	0.3	2.1
9/1+9/2	491	491	-	-	-	3.1	1.0	-	4.1	30.4	3.9	1.0	4.9
10/2	794	794	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.3	0.3
10/3	489	489	-	-	-	0.0	0.2	-	0.2	1.2	0.0	0.2	0.2
11/1	253	253	-	-	-	0.8	0.0	-	0.8	11.9	2.0	0.0	2.0

11/2	453	453	-	-	-	1.8	0.0	-	1.8	14.3	4.1	0.0	4.1
16/1	699	699	-	-	-	0.4	0.0	-	0.4	2.3	2.8	0.0	2.8
16/2	330	330	-	-	-	0.3	0.0	-	0.3	3.7	3.7	0.0	3.7
18/2+18/1	830	830	1660	0	0	0.0	0.6	-	0.6	2.7	2.5	0.6	3.0
21/1	769	769	-	-	-	0.4	0.0	-	0.4	1.8	0.9	0.0	0.9
21/2	826	826	-	-	-	0.4	0.0	-	0.4	1.8	0.9	0.0	0.9

C1 - Padbury	Stream: 1	PRC for Signalled Lanes (%):	27.0	Total Delay for Signalled Lanes (pcuHr):	4.80	Cycle Time (s): 60
C1 - Padbury	Stream: 2	PRC for Signalled Lanes (%):	31.7	Total Delay for Signalled Lanes (pcuHr):	8.21	Cycle Time (s): 60
C2 - Cherwell	Stream: 1	PRC for Signalled Lanes (%):	9.5	Total Delay for Signalled Lanes (pcuHr):	12.06	Cycle Time (s): 60
C2 - Cherwell	Stream: 2	PRC for Signalled Lanes (%):	11.5	Total Delay for Signalled Lanes (pcuHr):	8.11	Cycle Time (s): 60
C2 - Cherwell	Stream: 3	PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s): 60
C3 - Ardley	Stream: 1	PRC for Signalled Lanes (%):	18.4	Total Delay for Signalled Lanes (pcuHr):	8.12	Cycle Time (s): 60
C3 - Ardley	Stream: 2	PRC for Signalled Lanes (%):	11.7	Total Delay for Signalled Lanes (pcuHr):	6.91	Cycle Time (s): 60
C3 - Ardley	Stream: 3	PRC for Signalled Lanes (%):	10.8	Total Delay for Signalled Lanes (pcuHr):	5.98	Cycle Time (s): 60
C3 - Ardley	Stream: 4	PRC for Signalled Lanes (%):	12.9	Total Delay for Signalled Lanes (pcuHr):	6.95	Cycle Time (s): 60
C4 - Baynards Green	Stream: 1	PRC for Signalled Lanes (%):	3.8	Total Delay for Signalled Lanes (pcuHr):	20.27	Cycle Time (s): 60
C4 - Baynards Green	Stream: 2	PRC for Signalled Lanes (%):	3.8	Total Delay for Signalled Lanes (pcuHr):	7.86	Cycle Time (s): 60
C4 - Baynards Green	Stream: 3	PRC for Signalled Lanes (%):	3.9	Total Delay for Signalled Lanes (pcuHr):	9.71	Cycle Time (s): 60
C4 - Baynards Green	Stream: 4	PRC for Signalled Lanes (%):	32.6	Total Delay for Signalled Lanes (pcuHr):	8.51	Cycle Time (s): 60
C4 - Baynards Green	Stream: 5	PRC for Signalled Lanes (%):	82.7	Total Delay for Signalled Lanes (pcuHr):	0.78	Cycle Time (s): 60
C4 - Baynards Green	Stream: 6	PRC for Signalled Lanes (%):	154.9	Total Delay for Signalled Lanes (pcuHr):	0.32	Cycle Time (s): 60
		PRC Over All Lanes (%):	3.8	Total Delay Over All Lanes(pcuHr):	110.30	

Scenario 2: '2031 Option 26 - PM Peak' (FG2: '2031 Opt 26 - PM', Plan 1: 'Network Control Plan 1')
C1 - Padbury

Stage Timings

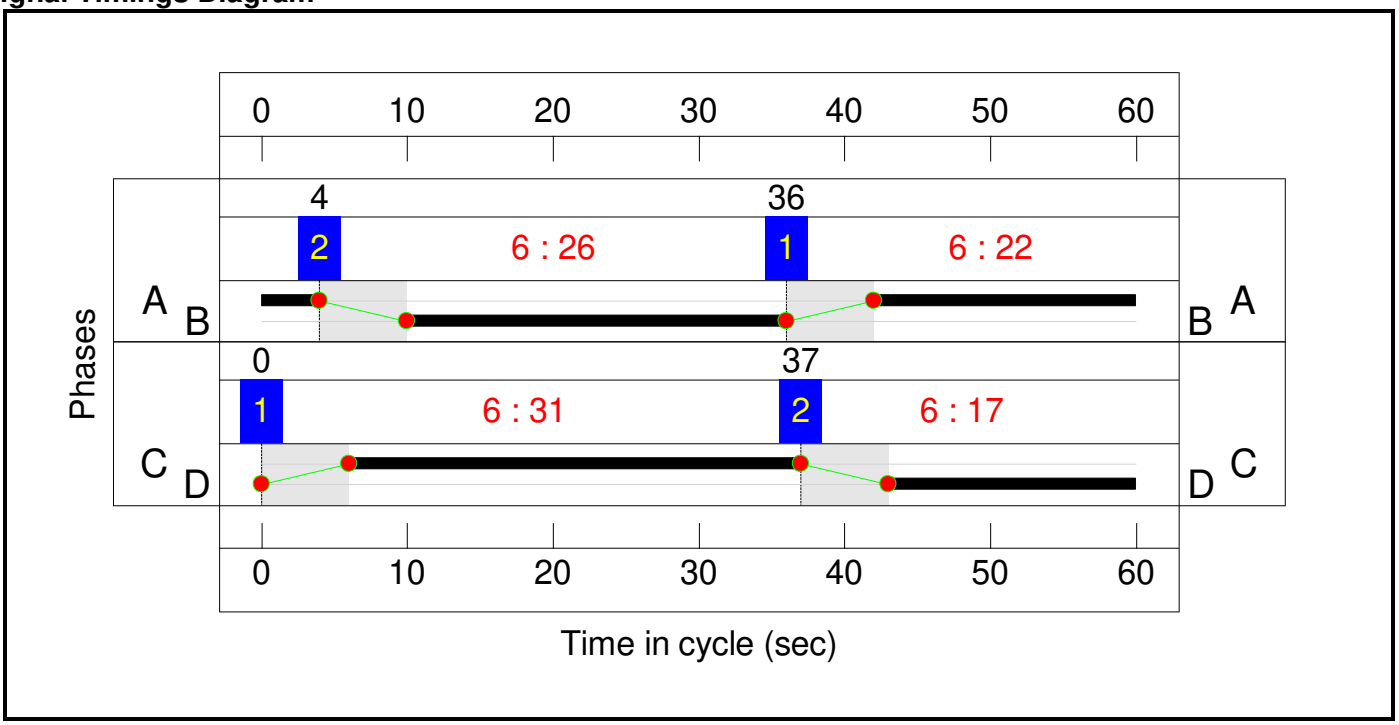
Stage Stream: 1

Stage	1	2
Duration	22	26
Change Point	36	4

Stage Stream: 2

Stage	1	2
Duration	31	17
Change Point	0	37

Signal Timings Diagram



C2 - Cherwell

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	20	29
Change Point	52	17

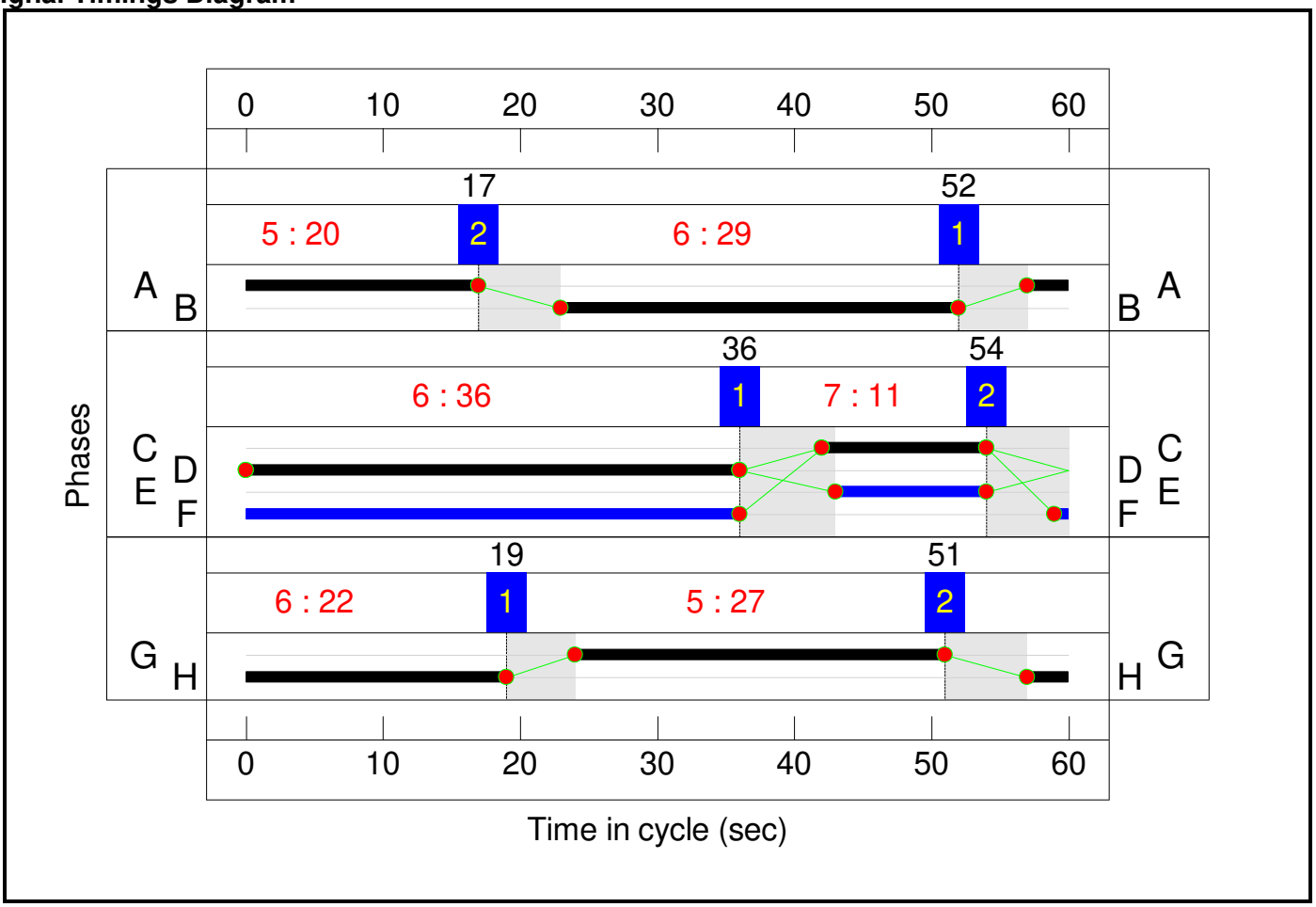
Stage Stream: 2

Stage	1	2
Duration	11	36
Change Point	36	54

Stage Stream: 3

Stage	1	2
Duration	27	22
Change Point	19	51

Signal Timings Diagram



C3 - Ardley

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	25	25
Change Point	5	35

Stage Stream: 2

Stage	1	2
Duration	17	30
Change Point	18	43

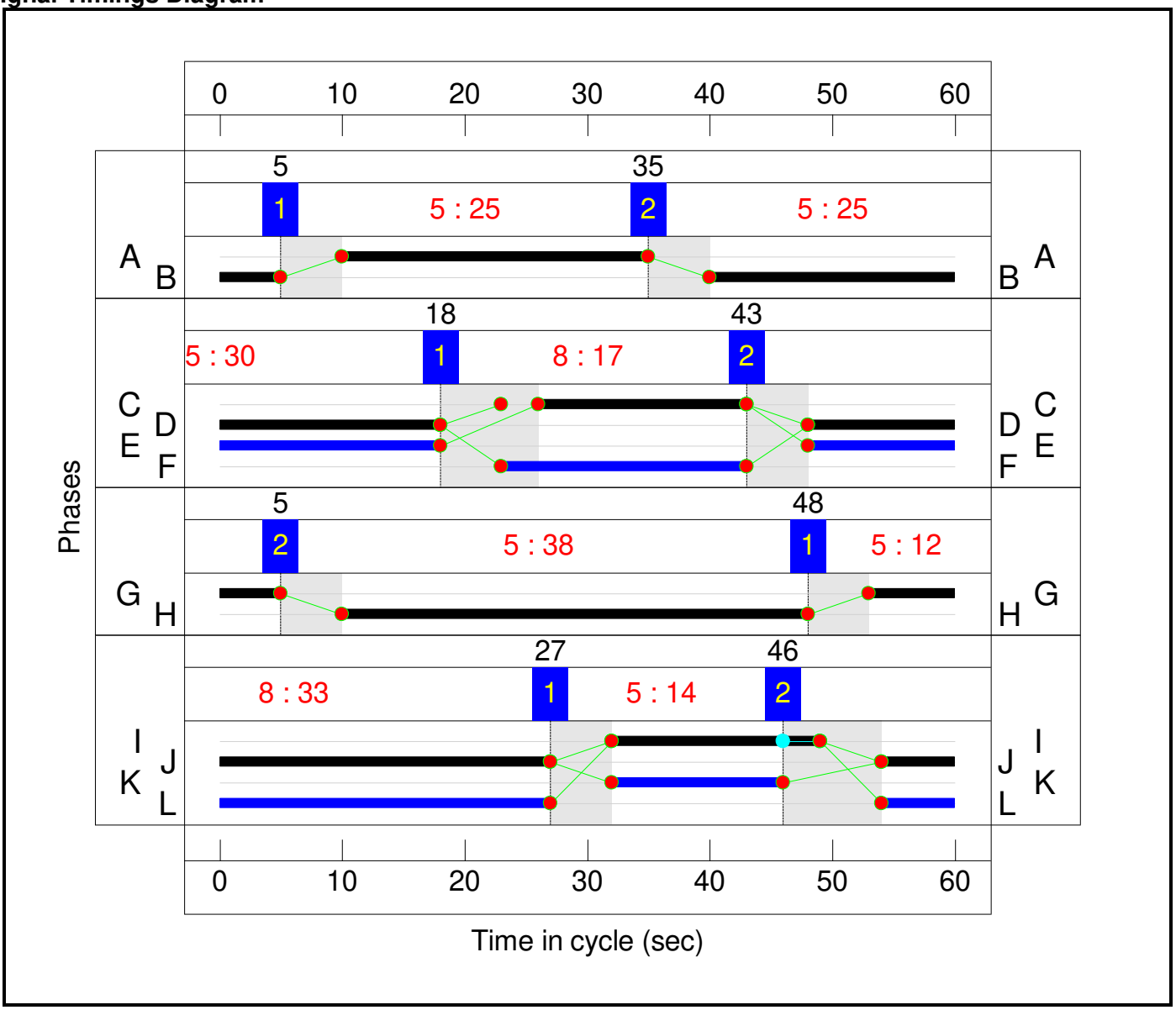
Stage Stream: 3

Stage	1	2
Duration	12	38
Change Point	48	5

Stage Stream: 4

Stage	1	2
Duration	14	33
Change Point	27	46

Signal Timings Diagram



C4 - Baynards Green

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	31	18
Change Point	23	0

Stage Stream: 2

Stage	1	2
Duration	25	23
Change Point	59	30

Stage Stream: 3

Stage	1	2
Duration	30	19
Change Point	31	6

Stage Stream: 4

Stage	1	2
Duration	41	7
Change Point	50	37

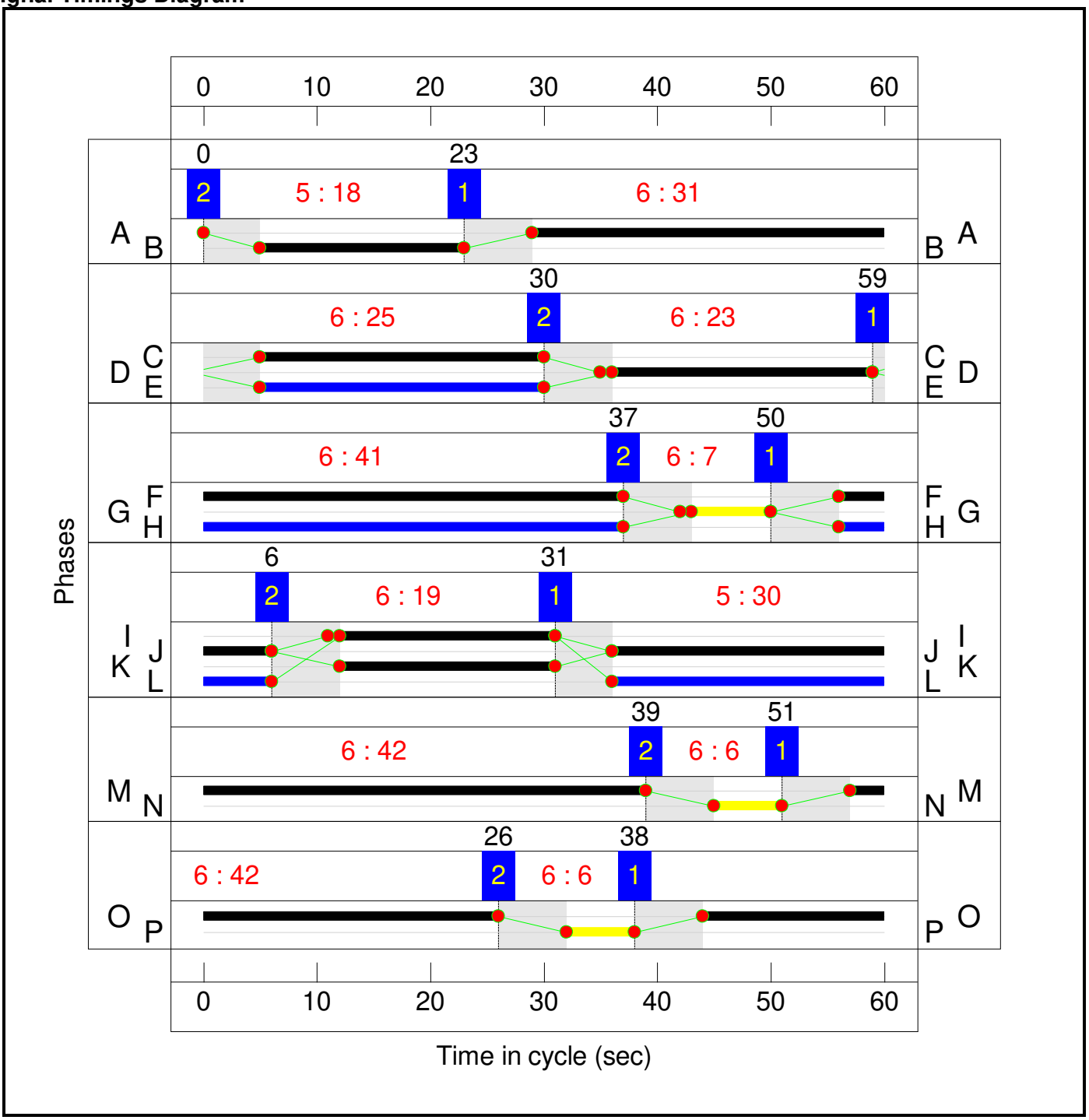
Stage Stream: 5

Stage	1	2
Duration	42	6
Change Point	51	39

Stage Stream: 6

Stage	1	2
Duration	42	6
Change Point	38	26

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: M40 Junction 10 Option 26 Network Model	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.4%**
J1: Padbury Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**68.8%**
1/1+1/2	A43 north Ahead	U	1:1	N/A	C1:B		1	26	-	793	1922:2058	865+576	55.0 : 55.0%
3/1	A43 south Ahead	U	1:2	N/A	C1:C		1	31	-	362	1886	1006	36.0%
3/2	A43 south Ahead	U	1:2	N/A	C1:C		1	31	-	456	2019	1077	42.3%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	1:2	N/A	C1:D		1	17	-	658	2058:1908	617+338	68.8 : 68.8%
5/3	Junction 10 s'bound offslip Ahead	U	1:2	N/A	C1:D		1	17	-	251	2058	617	40.7%
6/1	Right	U	1:1	N/A	C1:A		1	22	-	340	2080	797	42.6%
6/2	Right	U	1:1	N/A	C1:A		1	22	-	251	2080	797	31.5%
J2: Cherwell	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**80.3%**
1/2+1/1	A43 Left Ahead	U	2:1	N/A	C2:A		1	20	-	816	2081:1944	728+536	64.5 : 64.5%
1/3	A43 Ahead	U	2:1	N/A	C2:A		1	20	-	568	2081	728	78.0%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	673	Inf	1202	56.0%
5/1	MSA Left	U	2:2	N/A	C2:C		1	12	-	258	1828	396	65.1%
5/2	MSA Left Ahead	U	2:2	N/A	C2:C		1	12	-	342	1965	426	80.3%
8/1	Ahead Right	U	2:1	N/A	C2:B		1	29	-	673	1919	960	70.1%
10/1	Ahead	U	2:2	N/A	C2:D		1	36	-	211	1980	1221	17.3%
10/2	Ahead	U	2:2	N/A	C2:D		1	36	-	204	1980	1221	16.7%
10/3	Ahead	U	2:2	N/A	C2:D		1	36	-	470	2120	1307	36.0%
10/4	Ahead	U	2:2	N/A	C2:D		1	36	-	568	2120	1307	43.4%
J3: Ardley roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**81.9%**
1/1+1/2	B430 Ahead	O	N/A	N/A	-		-	-	-	239	Inf : Inf	363+463	29.0 : 29.0%

2/1	Overbridge SB Ahead	U	3:2	N/A	C3:C		1	17	-	485	1973	592	81.9%
2/2+2/3	Overbridge SB Ahead Right	U	3:2	N/A	C3:C		1	17	-	766	2077:2077	371+580	80.6 : 80.6%
4/1	Ahead	U	3:3	N/A	C3:H		1	38	-	548	2120	1378	39.8%
4/2	Right Ahead	U	3:3	N/A	C3:H		1	38	-	363	2120	1378	26.3%
6/1+6/2	Right	U	3:2	N/A	C3:D		1	30	-	127	1908:2043	585+595	10.8 : 10.8%
7/1	Ahead Right	U	3:1	N/A	C3:B		1	25	-	81	2058	892	9.1%
7/2	Right	U	3:1	N/A	C3:B		1	25	-	248	2058	892	27.8%
8/1	M40 Northbound offslip Left	U	3:3	N/A	C3:G		1	12	-	291	1899	411	70.7%
8/2	M40 Northbound offslip Ahead	U	3:3	N/A	C3:G		1	12	-	258	2033	440	58.6%
9/1	Left	U	3:4	N/A	C3:J		1	33	-	427	1980	1122	38.1%
9/2	Ahead	U	3:4	N/A	C3:J		1	33	-	689	2120	1201	57.4%
9/3	Right Ahead	U	3:4	N/A	C3:J		1	33	-	800	2120	1201	66.6%
14/1	Ardley Bypass Left Ahead	U	3:1	N/A	C3:A		1	25	-	640	1894	821	78.0%
14/2+14/3	Ardley Bypass Ahead	U	3:1	N/A	C3:A		1	25	-	1038	2033:2033	780+526	79.5 : 79.5%
18/1	Right	U	3:4	N/A	C3:I		1	17	-	467	1919	576	81.1%
J4: Baynards Green	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.4%**
1/2+1/1	A43 North Ahead Left	U	4:1	N/A	C4:B		1	18	-	1053	2068:1932	655+612	81.4 : 85.0%
1/3+1/4	A43 North Ahead	U	4:1	N/A	C4:B		1	18	-	894	1932:2068	612+655	71.1 : 70.1%
2/1	Ahead	U	4:2	N/A	C4:C		1	25	-	65	1950	845	7.7%
2/2	Right Ahead	U	4:2	N/A	C4:C		1	25	-	533	2080	901	59.1%
3/1+3/2	B4100 East Ahead Left	U	4:2	N/A	C4:D		1	23	-	1249	1886:2019	746+776	82.1 : 82.1%
5/1	Ahead	U	4:3	N/A	C4:J		1	30	-	457	1980	1023	44.7%
5/2	Ahead	U	4:3	N/A	C4:J		1	30	-	649	2120	1095	59.3%
5/3	Ahead	U	4:3	N/A	C4:J		1	30	-	672	2120	1095	61.4%
5/4	Ahead	U	4:3	N/A	C4:J		1	30	-	412	2120	1095	37.6%

6/1	M40 Northbound off slip Ahead Left	U	4:3	N/A	C4:K		1	19	-	513	1908	636	80.7%
6/2+6/3	M40 Northbound off slip Ahead	U	4:3	N/A	C4:K		1	19	-	1144	2043:2043	681+681	83.4 : 84.6%
7/1	Ahead	U	4:4	N/A	C4:F		1	41	-	1112	1908	1336	83.3%
7/2	Ahead	U	4:4	N/A	C4:F		1	41	-	1240	2050	1435	86.4%
7/3	Ahead Right	U	4:4	N/A	C4:F		1	41	-	988	2050	1435	68.9%
8/1		U	4:6	N/A	C4:O		1	42	-	507	1980	1419	35.7%
9/1+9/2	B4100 West Left Ahead	U	4:4	N/A	C4:G		1	7	-	328	1909:2058	255+274	62.1 : 62.0%
10/2		U	N/A	N/A	-		-	-	-	1240	2100	2100	59.0%
10/3		U	N/A	N/A	-		-	-	-	758	2050	2050	37.0%
11/1	Ahead	U	4:1	N/A	C4:A		1	31	-	236	2070	1104	21.4%
11/2	Right Ahead Right2	U	4:1	N/A	C4:A		1	31	-	285	2070	1104	25.8%
16/1		U	4:5	N/A	C4:M		1	42	-	703	1980	1419	49.5%
16/2		U	4:5	N/A	C4:M		1	42	-	238	1980	1419	16.8%
18/2+18/1	New A43 Link Road Left	O	N/A	N/A	-		-	-	-	1136	Inf : Inf	862+882	72.5 : 57.9%
21/1	A43 SB Cut-through Ahead	U	4:3	N/A	C4:I		1	19	-	450	1980	660	68.2%
21/2	A43 SB Cut-through Ahead	U	4:3	N/A	C4:I		1	19	-	479	2120	707	67.8%

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: M40 Junction 10 Option 26 Network Model	**-**	**-**	**3423**	**0**	**0**	**79.4**	**28.9**	**0.0**	**108.3**	**-**	**-**	**-**	**-**
J1: Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**10.9**	**2.7**	**0.0**	**13.6**	**-**	**-**	**-**	**-**
1/1+1/2	793	793	-	-	-	4.5	0.6	-	5.1	23.1	17.6	0.6	18.2
3/1	362	362	-	-	-	1.0	0.3	-	1.2	12.4	3.7	0.3	4.0
3/2	456	456	-	-	-	0.9	0.4	-	1.3	10.3	5.1	0.4	5.5
5/2+5/1	658	658	-	-	-	3.3	1.1	-	4.4	23.9	6.1	1.1	7.2
5/3	251	251	-	-	-	1.2	0.3	-	1.5	21.7	3.3	0.3	3.6
6/1	340	340	-	-	-	0.0	0.0	-	0.0	0.3	0.1	0.0	0.1
6/2	251	251	-	-	-	0.0	0.0	-	0.0	0.3	0.0	0.0	0.0
J2: Cherwell	**-**	**-**	**673**	**0**	**0**	**11.8**	**6.1**	**0.0**	**17.9**	**-**	**-**	**-**	**-**
1/2+1/1	816	816	-	-	-	3.8	0.9	-	4.7	20.7	14.0	0.9	15.0
1/3	568	568	-	-	-	3.0	1.7	-	4.7	29.7	8.7	1.7	10.5
2/2	673	673	673	0	0	0.1	0.6	-	0.7	3.8	4.0	0.6	4.6
5/1	258	258	-	-	-	1.5	0.9	-	2.5	34.3	3.9	0.9	4.8
5/2	342	342	-	-	-	2.1	2.0	-	4.1	42.8	5.3	2.0	7.3
8/1	673	673	-	-	-	0.5	0.0	-	0.5	2.6	3.8	0.0	3.8
10/1	211	211	-	-	-	0.4	0.0	-	0.4	6.7	2.1	0.0	2.1
10/2	204	204	-	-	-	0.4	0.0	-	0.4	7.1	2.1	0.0	2.1
10/3	470	470	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/4	568	568	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J3: Ardley roundabout	**-**	**-**	**478**	**0**	**0**	**21.2**	**6.3**	**0.0**	**27.5**	**-**	**-**	**-**	**-**
1/1+1/2	239	239	478	0	0	0.1	0.2	-	0.3	4.8	0.6	0.2	0.8
2/1	485	485	-	-	-	1.9	0.0	-	1.9	14.1	8.1	0.0	8.1
2/2+2/3	766	766	-	-	-	3.5	0.0	-	3.5	16.5	8.2	0.0	8.2
4/1	548	548	-	-	-	0.1	0.0	-	0.1	0.5	0.8	0.0	0.8
4/2	363	363	-	-	-	0.1	0.0	-	0.1	0.8	0.8	0.0	0.8

6/1+6/2	127	127	-	-	-	0.1	0.0	-	0.1	3.4	0.1	0.0	0.1
7/1	81	81	-	-	-	0.1	0.0	-	0.1	5.3	1.0	0.0	1.0
7/2	248	248	-	-	-	0.2	0.2	-	0.4	5.5	0.3	0.2	0.5
8/1	291	291	-	-	-	1.8	1.2	-	2.9	36.4	4.4	1.2	5.6
8/2	258	258	-	-	-	1.5	0.7	-	2.2	30.9	3.8	0.7	4.5
9/1	427	427	-	-	-	1.6	0.3	-	1.9	16.0	4.3	0.3	4.6
9/2	689	689	-	-	-	2.6	0.0	-	2.6	13.6	6.6	0.0	6.6
9/3	800	800	-	-	-	1.3	0.0	-	1.3	5.6	4.2	0.0	4.2
14/1	640	640	-	-	-	2.6	1.7	-	4.3	24.3	9.1	1.7	10.8
14/2+14/3	1038	1038	-	-	-	3.8	1.9	-	5.7	19.8	8.3	1.9	10.2
18/1	467	467	-	-	-	0.1	0.0	-	0.1	0.6	1.9	0.0	1.9
J4: Baynards Green	**-**	**-**	**2272**	**0**	**0**	**35.5**	**13.8**	**0.0**	**49.3**	**-**	**-**	**-**	**-**
1/2+1/1	1053	1053	-	-	-	5.6	2.4	-	8.0	27.3	8.1	2.4	10.6
1/3+1/4	894	894	-	-	-	4.5	1.2	-	5.7	22.8	6.6	1.2	7.8
2/1	65	65	-	-	-	0.0	0.0	-	0.0	1.6	0.2	0.0	0.2
2/2	533	533	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1+3/2	1249	1249	-	-	-	5.5	2.2	-	7.8	22.4	9.2	2.2	11.5
5/1	457	457	-	-	-	0.3	0.0	-	0.3	2.0	1.2	0.0	1.2
5/2	649	649	-	-	-	0.8	0.0	-	0.8	4.2	5.5	0.0	5.5
5/3	672	672	-	-	-	0.3	0.0	-	0.3	1.5	1.8	0.0	1.8
5/4	412	412	-	-	-	1.2	0.3	-	1.5	13.1	4.4	0.3	4.7
6/1	513	513	-	-	-	2.6	2.0	-	4.6	32.4	7.7	2.0	9.7
6/2+6/3	1144	1144	-	-	-	5.9	2.6	-	8.4	26.6	8.8	2.6	11.4
7/1	1112	1112	-	-	-	1.8	0.0	-	1.8	6.0	10.8	0.0	10.8
7/2	1240	1240	-	-	-	1.5	0.0	-	1.5	4.3	11.2	0.0	11.2
7/3	988	988	-	-	-	1.1	0.0	-	1.1	4.0	6.1	0.0	6.1
8/1	507	507	-	-	-	0.1	0.3	-	0.4	2.6	0.4	0.3	0.7
9/1+9/2	328	328	-	-	-	2.2	0.8	-	3.0	33.5	2.6	0.8	3.5
10/2	1240	1240	-	-	-	0.0	0.7	-	0.7	2.1	0.0	0.7	0.7
10/3	758	758	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.3	0.3
11/1	236	236	-	-	-	0.8	0.0	-	0.8	12.1	1.9	0.0	1.9

11/2	285	285	-	-	-	0.8	0.0	-	0.8	10.1	1.9	0.0	1.9
16/1	703	703	-	-	-	0.1	0.0	-	0.1	0.7	2.2	0.0	2.2
16/2	238	238	-	-	-	0.1	0.0	-	0.1	2.1	2.2	0.0	2.2
18/2+18/1	1136	1136	2272	0	0	0.1	0.9	-	1.1	3.4	2.5	0.9	3.5
21/1	450	450	-	-	-	0.1	0.0	-	0.1	0.7	0.3	0.0	0.3
21/2	479	479	-	-	-	0.1	0.0	-	0.1	0.9	0.3	0.0	0.3

C1 - Padbury	Stream: 1	PRC for Signalled Lanes (%):	63.5	Total Delay for Signalled Lanes (pcuHr):	5.14	Cycle Time (s): 60
C1 - Padbury	Stream: 2	PRC for Signalled Lanes (%):	30.7	Total Delay for Signalled Lanes (pcuHr):	8.43	Cycle Time (s): 60
C2 - Cherwell	Stream: 1	PRC for Signalled Lanes (%):	15.4	Total Delay for Signalled Lanes (pcuHr):	9.86	Cycle Time (s): 60
C2 - Cherwell	Stream: 2	PRC for Signalled Lanes (%):	12.0	Total Delay for Signalled Lanes (pcuHr):	7.32	Cycle Time (s): 60
C2 - Cherwell	Stream: 3	PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s): 60
C3 - Ardley	Stream: 1	PRC for Signalled Lanes (%):	13.2	Total Delay for Signalled Lanes (pcuHr):	10.52	Cycle Time (s): 60
C3 - Ardley	Stream: 2	PRC for Signalled Lanes (%):	9.8	Total Delay for Signalled Lanes (pcuHr):	5.53	Cycle Time (s): 60
C3 - Ardley	Stream: 3	PRC for Signalled Lanes (%):	27.3	Total Delay for Signalled Lanes (pcuHr):	5.31	Cycle Time (s): 60
C3 - Ardley	Stream: 4	PRC for Signalled Lanes (%):	10.9	Total Delay for Signalled Lanes (pcuHr):	5.84	Cycle Time (s): 60
C4 - Baynards Green	Stream: 1	PRC for Signalled Lanes (%):	5.9	Total Delay for Signalled Lanes (pcuHr):	15.24	Cycle Time (s): 60
C4 - Baynards Green	Stream: 2	PRC for Signalled Lanes (%):	9.7	Total Delay for Signalled Lanes (pcuHr):	7.79	Cycle Time (s): 60
C4 - Baynards Green	Stream: 3	PRC for Signalled Lanes (%):	6.4	Total Delay for Signalled Lanes (pcuHr):	16.07	Cycle Time (s): 60
C4 - Baynards Green	Stream: 4	PRC for Signalled Lanes (%):	4.2	Total Delay for Signalled Lanes (pcuHr):	7.47	Cycle Time (s): 60
C4 - Baynards Green	Stream: 5	PRC for Signalled Lanes (%):	81.7	Total Delay for Signalled Lanes (pcuHr):	0.27	Cycle Time (s): 60
C4 - Baynards Green	Stream: 6	PRC for Signalled Lanes (%):	151.9	Total Delay for Signalled Lanes (pcuHr):	0.37	Cycle Time (s): 60
		PRC Over All Lanes (%):	4.2	Total Delay Over All Lanes(pcuHr):	108.29	

Scenario 3: '2031 Option 26 - Off Peak' (FG3: '2031 Opt 26 - off-peak', Plan 1: 'Network Control Plan 1')
C1 - Padbury

Stage Timings

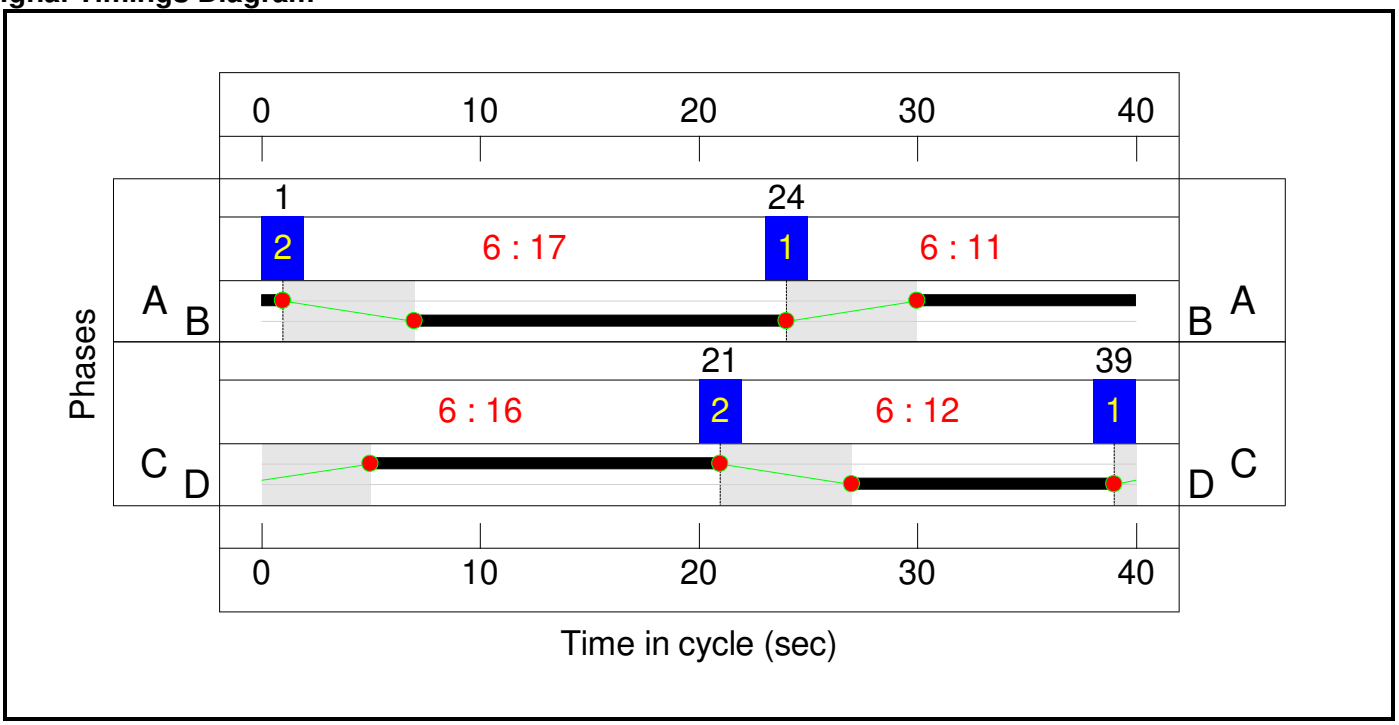
Stage Stream: 1

Stage	1	2
Duration	11	17
Change Point	24	1

Stage Stream: 2

Stage	1	2
Duration	16	12
Change Point	39	21

Signal Timings Diagram



C2 - Cherwell

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	13	16
Change Point	30	8

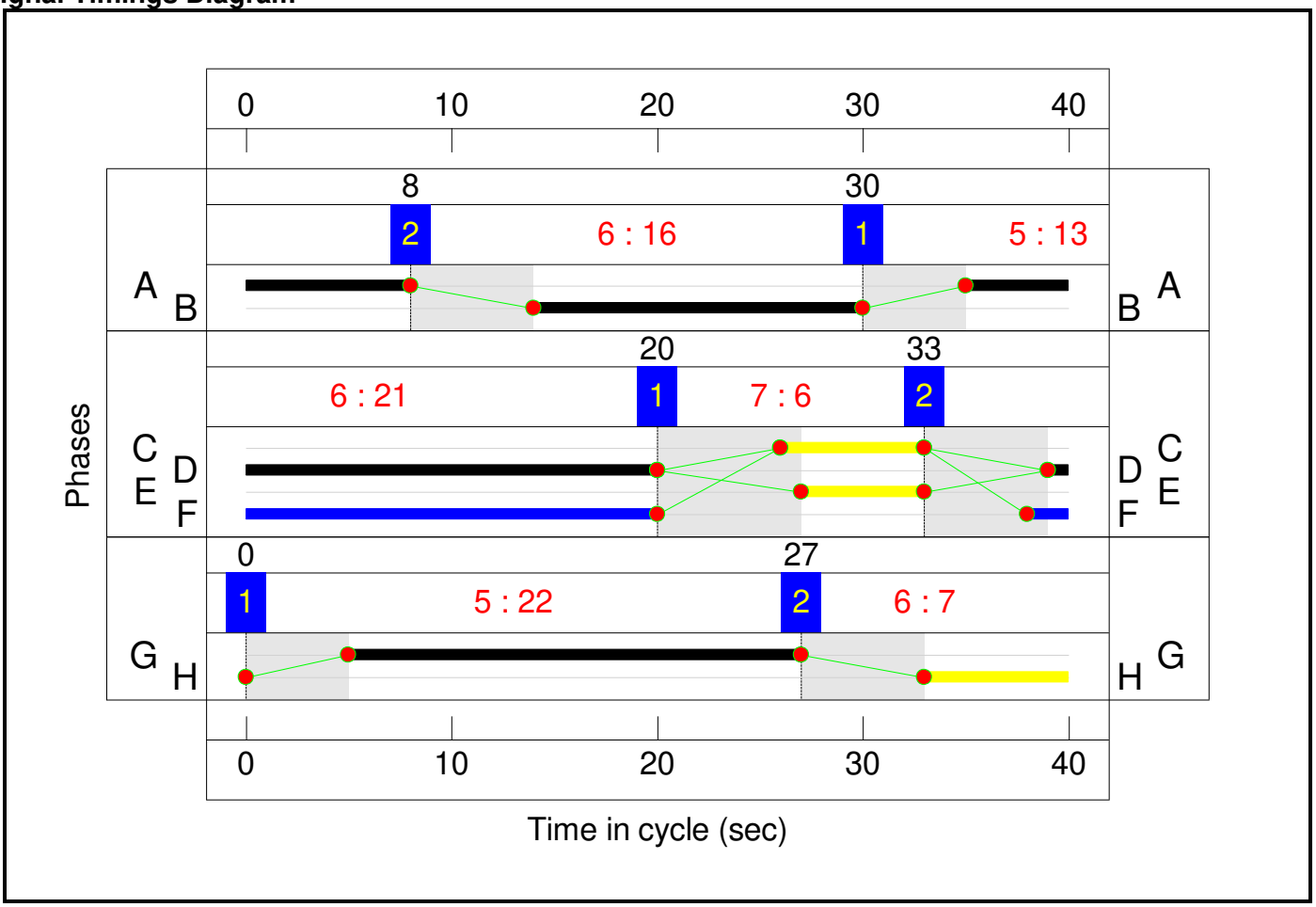
Stage Stream: 2

Stage	1	2
Duration	6	21
Change Point	20	33

Stage Stream: 3

Stage	1	2
Duration	22	7
Change Point	0	27

Signal Timings Diagram



C3 - Ardley

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	20	10
Change Point	36	21

Stage Stream: 2

Stage	1	2
Duration	20	7
Change Point	1	29

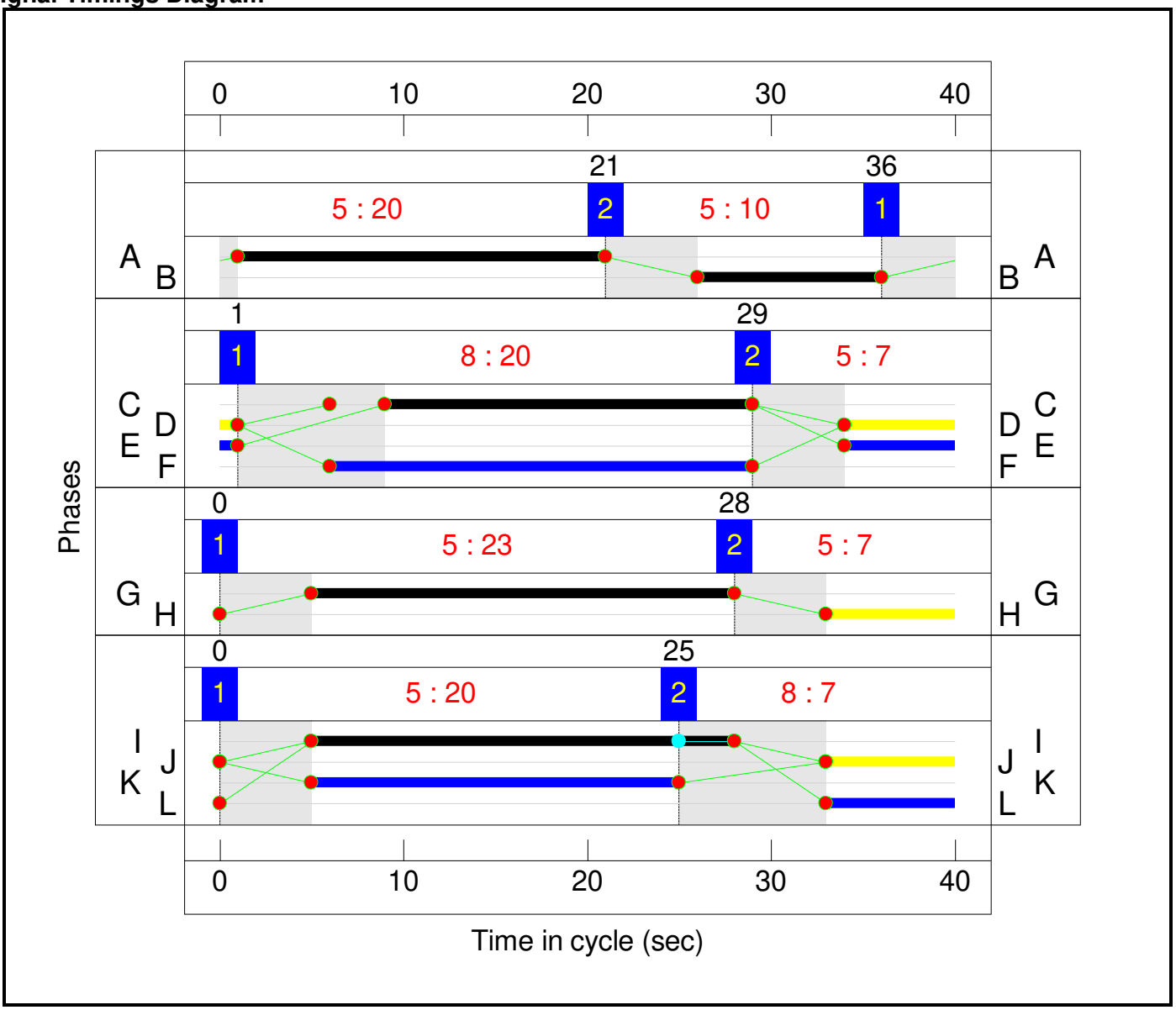
Stage Stream: 3

Stage	1	2
Duration	23	7
Change Point	0	28

Stage Stream: 4

Stage	1	2
Duration	20	7
Change Point	0	25

Signal Timings Diagram



C4 - Baynards Green

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	22	7
Change Point	12	0

Stage Stream: 2

Stage	1	2
Duration	21	7
Change Point	30	17

Stage Stream: 3

Stage	1	2
Duration	14	15
Change Point	20	39

Stage Stream: 4

Stage	1	2
Duration	21	7
Change Point	4	31

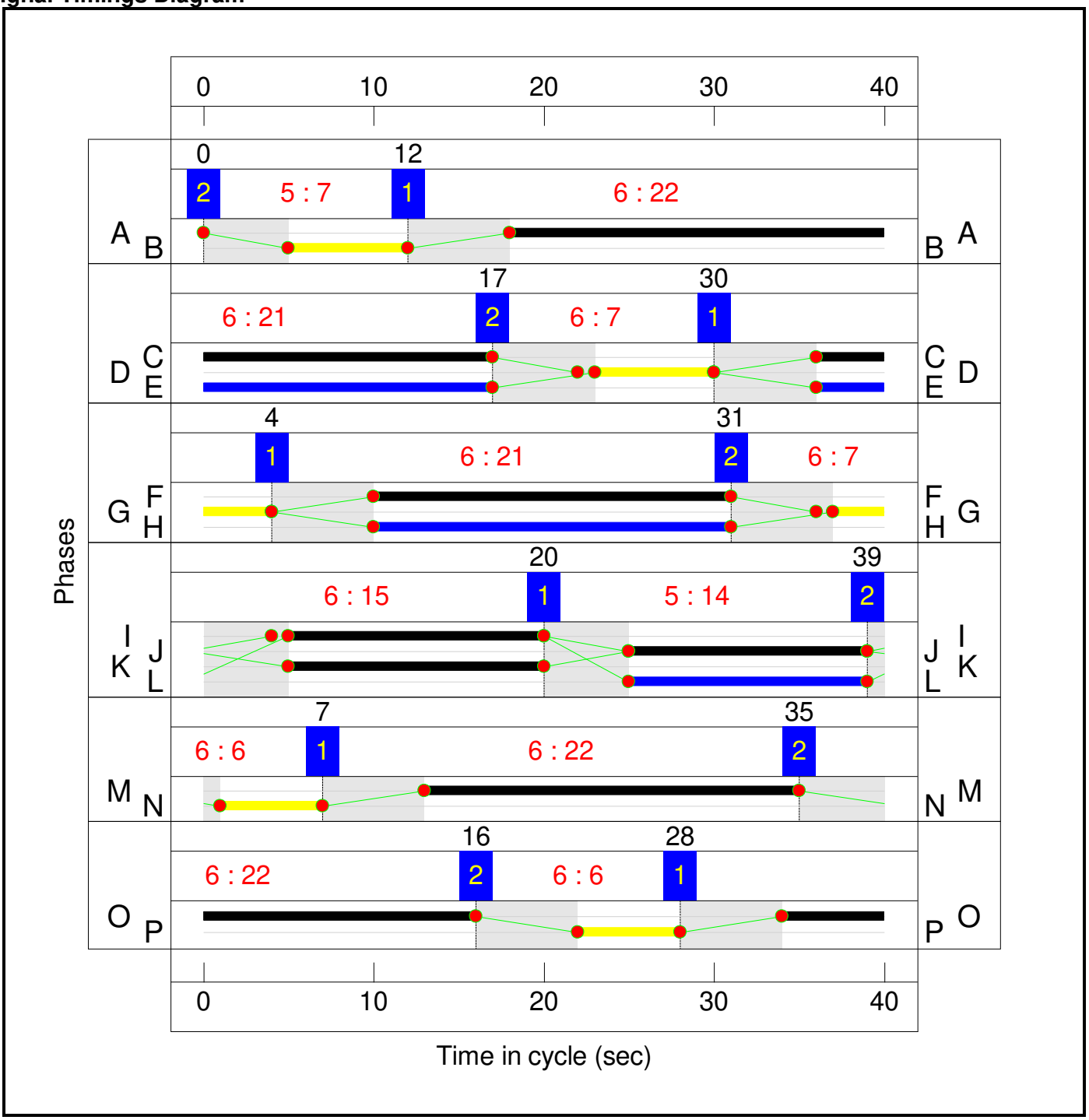
Stage Stream: 5

Stage	1	2
Duration	22	6
Change Point	7	35

Stage Stream: 6

Stage	1	2
Duration	22	6
Change Point	28	16

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: M40 Junction 10 Option 26 Network Model	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**54.1%**
J1: Padbury Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**21.1%**
1/1+1/2	A43 north Ahead	U	1:1	N/A	C1:B		1	17	-	266	1922:2058	865+926	14.5 : 15.2%
3/1	A43 south Ahead	U	1:2	N/A	C1:C		1	16	-	53	1886	802	6.6%
3/2	A43 south Ahead	U	1:2	N/A	C1:C		1	16	-	119	2019	858	13.9%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	1:2	N/A	C1:D		1	12	-	188	2058:1908	669+223	21.1 : 21.1%
5/3	Junction 10 s'bound offslip Ahead	U	1:2	N/A	C1:D		1	12	-	68	2058	669	10.2%
6/1	Right	U	1:1	N/A	C1:A		1	11	-	103	2080	624	16.5%
6/2	Right	U	1:1	N/A	C1:A		1	11	-	68	2080	624	10.9%
J2: Cherwell	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**28.7%**
1/2+1/1	A43 Left Ahead	U	2:1	N/A	C2:A		1	13	-	228	2081:1944	728+675	18.8 : 13.5%
1/3	A43 Ahead	U	2:1	N/A	C2:A		1	13	-	209	2081	728	28.7%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	150	Inf	1254	12.0%
5/1	MSA Left	U	2:2	N/A	C2:C		1	7	-	72	1828	366	19.7%
5/2	MSA Left Ahead	U	2:2	N/A	C2:C		1	7	-	81	1965	393	20.6%
8/1	Ahead Right	U	2:1	N/A	C2:B		1	16	-	150	1919	816	18.4%
10/1	Ahead	U	2:2	N/A	C2:D		1	21	-	11	1980	1089	1.0%
10/2	Ahead	U	2:2	N/A	C2:D		1	21	-	76	1980	1089	7.0%
10/3	Ahead	U	2:2	N/A	C2:D		1	21	-	137	2120	1166	11.7%
10/4	Ahead	U	2:2	N/A	C2:D		1	21	-	209	2120	1166	17.9%
J3: Ardley roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**40.1%**
1/1+1/2	B430 Ahead	O	N/A	N/A	-		-	-	-	52	Inf : Inf	928+928	3.1 : 2.5%

2/1	Overbridge SB Ahead	U	3:2	N/A	C3:C		1	20	-	142	1973	1036	13.7%
2/2+2/3	Overbridge SB Ahead Right	U	3:2	N/A	C3:C		1	20	-	257	2077:2077	944+741	15.3 : 15.3%
4/1	Ahead	U	3:3	N/A	C3:H		1	7	-	162	2120	424	38.2%
4/2	Right Ahead	U	3:3	N/A	C3:H		1	7	-	144	2120	424	34.0%
6/1+6/2	Right	U	3:2	N/A	C3:D		1	7	-	20	1908:2120	382+0	5.2 : 0.0%
7/1	Ahead Right	U	3:1	N/A	C3:B		1	10	-	30	2058	566	5.3%
7/2	Right	U	3:1	N/A	C3:B		1	10	-	60	2058	566	10.6%
8/1	M40 Northbound offslip Left	U	3:3	N/A	C3:G		1	23	-	95	1899	1139	8.3%
8/2	M40 Northbound offslip Ahead	U	3:3	N/A	C3:G		1	23	-	62	2033	1220	5.1%
9/1	Left	U	3:4	N/A	C3:J		1	7	-	106	1980	396	26.8%
9/2	Ahead	U	3:4	N/A	C3:J		1	7	-	144	2120	424	34.0%
9/3	Right Ahead	U	3:4	N/A	C3:J		1	7	-	170	2120	424	40.1%
14/1	Ardley Bypass Left Ahead	U	3:1	N/A	C3:A		1	20	-	152	1894	994	15.3%
14/2+14/3	Ardley Bypass Ahead	U	3:1	N/A	C3:A		1	20	-	215	2033:2033	1018+692	12.6 : 12.6%
18/1	Right	U	3:4	N/A	C3:I		1	23	-	113	1919	1151	9.8%
J4: Baynards Green	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**54.1%**
1/2+1/1	A43 North Ahead Left	U	4:1	N/A	C4:B		1	7	-	338	2068:1932	414+386	31.2 : 54.1%
1/3+1/4	A43 North Ahead	U	4:1	N/A	C4:B		1	7	-	309	1932:2068	386+414	36.2 : 40.9%
2/1	Ahead	U	4:2	N/A	C4:C		1	21	-	92	1950	1073	8.6%
2/2	Right Ahead	U	4:2	N/A	C4:C		1	21	-	129	2080	1144	11.3%
3/1+3/2	B4100 East Ahead Left	U	4:2	N/A	C4:D		1	7	-	276	1886:2019	377+404	39.2 : 31.7%
5/1	Ahead	U	4:3	N/A	C4:J		1	14	-	117	1980	743	15.8%
5/2	Ahead	U	4:3	N/A	C4:J		1	14	-	184	2120	795	23.1%
5/3	Ahead	U	4:3	N/A	C4:J		1	14	-	100	2120	795	12.6%
5/4	Ahead	U	4:3	N/A	C4:J		1	14	-	87	2120	795	10.9%

6/1	M40 Northbound off slip Ahead Left	U	4:3	N/A	C4:K		1	15	-	145	1908	763	19.0%
6/2+6/3	M40 Northbound off slip Ahead	U	4:3	N/A	C4:K		1	15	-	222	2043:2043	817+801	16.5 : 10.9%
7/1	Ahead	U	4:4	N/A	C4:F		1	21	-	314	1908	1049	29.9%
7/2	Ahead	U	4:4	N/A	C4:F		1	21	-	235	2050	1127	20.8%
7/3	Ahead Right	U	4:4	N/A	C4:F		1	21	-	174	2050	1127	15.4%
8/1		U	4:6	N/A	C4:O		1	22	-	132	1980	1139	11.6%
9/1+9/2	B4100 West Left Ahead	U	4:4	N/A	C4:G		1	7	-	105	1904:2058	306+412	13.4 : 15.5%
10/2		U	N/A	N/A	-		-	-	-	235	2100	2100	11.2%
10/3		U	N/A	N/A	-		-	-	-	107	2050	2050	5.2%
11/1	Ahead	U	4:1	N/A	C4:A		1	22	-	74	2070	1190	6.2%
11/2	Right Ahead Right2	U	4:1	N/A	C4:A		1	22	-	84	2070	1190	7.1%
16/1		U	4:5	N/A	C4:M		1	22	-	193	1980	1139	17.0%
16/2		U	4:5	N/A	C4:M		1	22	-	63	1980	1139	5.5%
18/2+18/1	New A43 Link Road Left	O	N/A	N/A	-		-	-	-	257	Inf : Inf	1065+1068	12.3 : 11.8%
21/1	A43 SB Cut-through Ahead	U	4:3	N/A	C4:I		1	15	-	148	1980	792	18.7%
21/2	A43 SB Cut-through Ahead	U	4:3	N/A	C4:I		1	15	-	180	2120	848	21.2%

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: M40 Junction 10 Option 26 Network Model	**-**	**-**	**768**	**0**	**0**	**15.4**	**3.1**	**0.0**	**18.4**	**-**	**-**	**-**	**-**
J1: Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**1.8**	**0.4**	**0.0**	**2.2**	**-**	**-**	**-**	**-**
1/1+1/2	266	266	-	-	-	0.4	0.1	-	0.5	7.3	1.2	0.1	1.3
3/1	53	53	-	-	-	0.2	0.0	-	0.2	16.7	0.6	0.0	0.6
3/2	119	119	-	-	-	0.4	0.1	-	0.5	13.8	1.0	0.1	1.1
5/2+5/1	188	188	-	-	-	0.5	0.1	-	0.6	12.3	1.1	0.1	1.2
5/3	68	68	-	-	-	0.2	0.1	-	0.2	12.4	0.5	0.1	0.6
6/1	103	103	-	-	-	0.0	0.0	-	0.0	1.4	0.1	0.0	0.1
6/2	68	68	-	-	-	0.0	0.0	-	0.0	1.4	0.0	0.0	0.0
J2: Cherwell	**-**	**-**	**150**	**0**	**0**	**2.0**	**0.6**	**0.0**	**2.7**	**-**	**-**	**-**	**-**
1/2+1/1	228	228	-	-	-	0.7	0.1	-	0.8	12.3	1.3	0.1	1.4
1/3	209	209	-	-	-	0.6	0.2	-	0.8	13.5	1.9	0.2	2.1
2/2	150	150	150	0	0	0.0	0.1	-	0.1	1.6	0.0	0.1	0.1
5/1	72	72	-	-	-	0.3	0.1	-	0.4	19.5	0.7	0.1	0.8
5/2	81	81	-	-	-	0.3	0.1	-	0.4	19.2	0.7	0.1	0.9
8/1	150	150	-	-	-	0.0	0.0	-	0.0	0.5	0.4	0.0	0.4
10/1	11	11	-	-	-	0.0	0.0	-	0.0	3.2	0.0	0.0	0.0
10/2	76	76	-	-	-	0.1	0.0	-	0.1	4.4	0.2	0.0	0.2
10/3	137	137	-	-	-	0.0	0.0	-	0.0	0.8	0.6	0.0	0.6
10/4	209	209	-	-	-	0.0	0.0	-	0.0	0.8	0.6	0.0	0.6
J3: Ardley roundabout	**-**	**-**	**104**	**0**	**0**	**4.3**	**0.5**	**0.0**	**4.9**	**-**	**-**	**-**	**-**
1/1+1/2	52	52	104	0	0	0.0	0.0	-	0.0	1.0	0.0	0.0	0.0
2/1	142	142	-	-	-	0.0	0.0	-	0.0	0.5	0.1	0.0	0.1
2/2+2/3	257	257	-	-	-	0.1	0.0	-	0.1	1.8	0.5	0.0	0.5
4/1	162	162	-	-	-	0.8	0.0	-	0.8	17.9	1.8	0.0	1.8
4/2	144	144	-	-	-	0.6	0.0	-	0.6	15.7	1.6	0.0	1.6

6/1+6/2	20	20	-	-	-	0.0	0.0	-	0.0	2.3	0.0	0.0	0.0
7/1	30	30	-	-	-	0.2	0.0	-	0.2	29.3	0.3	0.0	0.4
7/2	60	60	-	-	-	0.2	0.1	-	0.2	13.4	0.5	0.1	0.6
8/1	95	95	-	-	-	0.1	0.0	-	0.1	5.1	0.4	0.0	0.5
8/2	62	62	-	-	-	0.1	0.0	-	0.1	5.0	0.3	0.0	0.3
9/1	106	106	-	-	-	0.5	0.2	-	0.7	22.9	1.2	0.2	1.3
9/2	144	144	-	-	-	0.7	0.0	-	0.7	17.1	1.6	0.0	1.6
9/3	170	170	-	-	-	0.5	0.0	-	0.5	11.5	1.2	0.0	1.2
14/1	152	152	-	-	-	0.2	0.1	-	0.3	7.1	0.8	0.1	0.9
14/2+14/3	215	215	-	-	-	0.3	0.1	-	0.4	6.0	0.7	0.1	0.8
18/1	113	113	-	-	-	0.0	0.0	-	0.0	0.1	0.0	0.0	0.0
J4: Baynards Green	**-**	**-**	**514**	**0**	**0**	**7.2**	**1.5**	**0.0**	**8.7**	**-**	**-**	**-**	**-**
1/2+1/1	338	338	-	-	-	1.3	0.4	-	1.7	18.0	2.0	0.4	2.4
1/3+1/4	309	309	-	-	-	1.2	0.3	-	1.5	17.6	1.6	0.3	1.9
2/1	92	92	-	-	-	0.0	0.0	-	0.0	0.7	0.0	0.0	0.0
2/2	129	129	-	-	-	0.0	0.0	-	0.0	0.4	0.0	0.0	0.0
3/1+3/2	276	276	-	-	-	1.1	0.3	-	1.3	17.4	1.4	0.3	1.7
5/1	117	117	-	-	-	0.0	0.0	-	0.0	1.5	0.2	0.0	0.2
5/2	184	184	-	-	-	0.2	0.0	-	0.2	3.6	0.4	0.0	0.4
5/3	100	100	-	-	-	0.1	0.0	-	0.1	2.8	0.2	0.0	0.2
5/4	87	87	-	-	-	0.1	0.1	-	0.2	7.6	0.6	0.1	0.6
6/1	145	145	-	-	-	0.3	0.1	-	0.4	10.7	1.0	0.1	1.1
6/2+6/3	222	222	-	-	-	0.5	0.1	-	0.6	9.0	0.9	0.1	1.0
7/1	314	314	-	-	-	0.7	0.0	-	0.7	8.1	3.1	0.0	3.1
7/2	235	235	-	-	-	0.3	0.0	-	0.3	5.2	2.1	0.0	2.1
7/3	174	174	-	-	-	0.4	0.0	-	0.4	7.5	1.0	0.0	1.0
8/1	132	132	-	-	-	0.0	0.1	-	0.1	2.2	0.0	0.1	0.1
9/1+9/2	105	105	-	-	-	0.4	0.1	-	0.5	16.2	0.6	0.1	0.7
10/2	235	235	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.1	0.1
10/3	107	107	-	-	-	0.0	0.0	-	0.0	0.9	0.0	0.0	0.0
11/1	74	74	-	-	-	0.2	0.0	-	0.2	7.9	0.8	0.0	0.8

11/2	84	84	-	-	-	0.3	0.0	-	0.3	13.4	0.9	0.0	0.9
16/1	193	193	-	-	-	0.0	0.0	-	0.0	0.0	0.6	0.0	0.6
16/2	63	63	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
18/2+18/1	257	257	514	0	0	0.0	0.1	-	0.1	1.0	0.2	0.1	0.3
21/1	148	148	-	-	-	0.0	0.0	-	0.0	1.0	0.1	0.0	0.1
21/2	180	180	-	-	-	0.1	0.0	-	0.1	1.1	0.1	0.0	0.1

C1 - Padbury	Stream: 1	PRC for Signalled Lanes (%):	445.2	Total Delay for Signalled Lanes (pcuHr):	0.60	Cycle Time (s): 40
C1 - Padbury	Stream: 2	PRC for Signalled Lanes (%):	326.9	Total Delay for Signalled Lanes (pcuHr):	1.58	Cycle Time (s): 40
C2 - Cherwell	Stream: 1	PRC for Signalled Lanes (%):	213.6	Total Delay for Signalled Lanes (pcuHr):	1.58	Cycle Time (s): 40
C2 - Cherwell	Stream: 2	PRC for Signalled Lanes (%):	336.7	Total Delay for Signalled Lanes (pcuHr):	1.00	Cycle Time (s): 40
C2 - Cherwell	Stream: 3	PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s): 40
C3 - Ardley	Stream: 1	PRC for Signalled Lanes (%):	488.8	Total Delay for Signalled Lanes (pcuHr):	1.13	Cycle Time (s): 40
C3 - Ardley	Stream: 2	PRC for Signalled Lanes (%):	489.8	Total Delay for Signalled Lanes (pcuHr):	0.16	Cycle Time (s): 40
C3 - Ardley	Stream: 3	PRC for Signalled Lanes (%):	135.6	Total Delay for Signalled Lanes (pcuHr):	1.65	Cycle Time (s): 40
C3 - Ardley	Stream: 4	PRC for Signalled Lanes (%):	124.5	Total Delay for Signalled Lanes (pcuHr):	1.91	Cycle Time (s): 40
C4 - Baynards Green	Stream: 1	PRC for Signalled Lanes (%):	66.4	Total Delay for Signalled Lanes (pcuHr):	3.67	Cycle Time (s): 40
C4 - Baynards Green	Stream: 2	PRC for Signalled Lanes (%):	129.4	Total Delay for Signalled Lanes (pcuHr):	1.37	Cycle Time (s): 40
C4 - Baynards Green	Stream: 3	PRC for Signalled Lanes (%):	288.9	Total Delay for Signalled Lanes (pcuHr):	1.57	Cycle Time (s): 40
C4 - Baynards Green	Stream: 4	PRC for Signalled Lanes (%):	200.8	Total Delay for Signalled Lanes (pcuHr):	1.88	Cycle Time (s): 40
C4 - Baynards Green	Stream: 5	PRC for Signalled Lanes (%):	430.9	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s): 40
C4 - Baynards Green	Stream: 6	PRC for Signalled Lanes (%):	676.2	Total Delay for Signalled Lanes (pcuHr):	0.08	Cycle Time (s): 40
		PRC Over All Lanes (%):	66.4	Total Delay Over All Lanes(pcuHr):	18.42	

Scenario 4: '2031 Option 26 - Inter Peak' (FG4: '2031 Opt 26 - inter-peak', Plan 1: 'Network Control Plan 1')
C1 - Padbury

Stage Timings

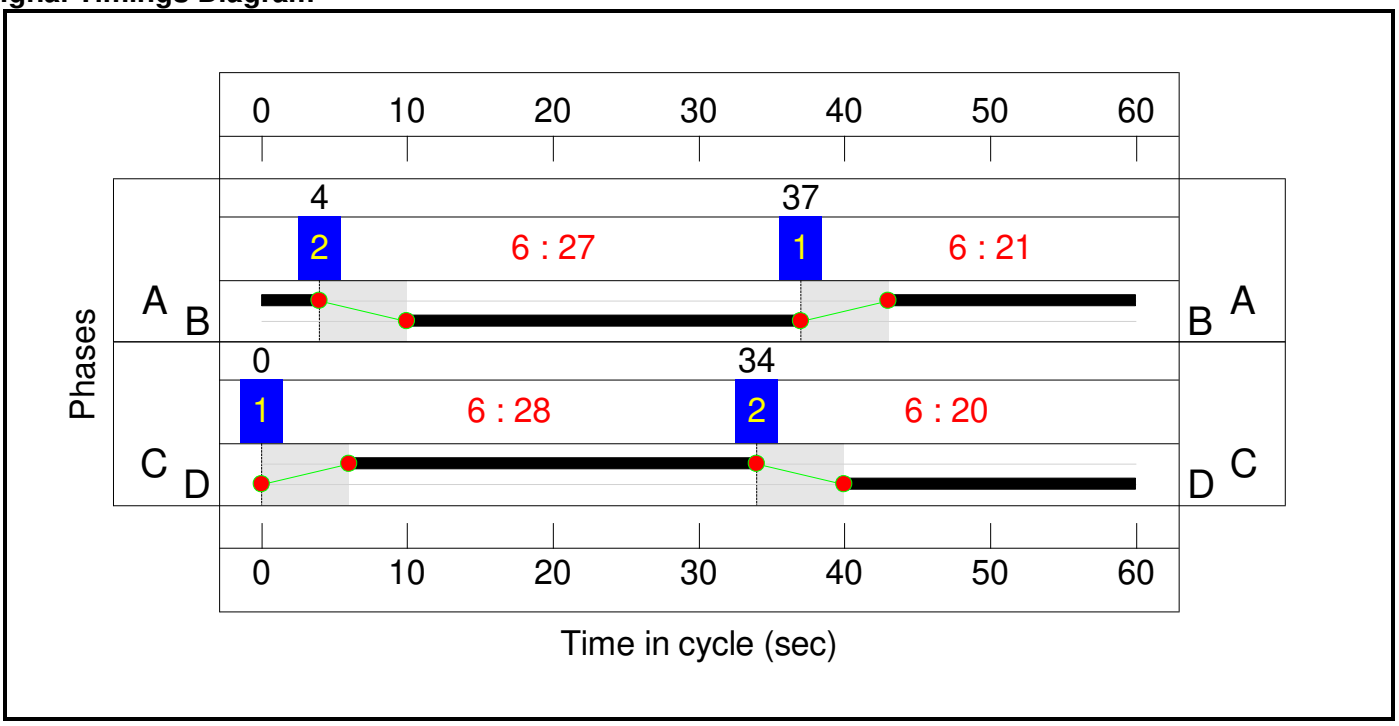
Stage Stream: 1

Stage	1	2
Duration	21	27
Change Point	37	4

Stage Stream: 2

Stage	1	2
Duration	28	20
Change Point	0	34

Signal Timings Diagram



C2 - Cherwell

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	28	21
Change Point	52	25

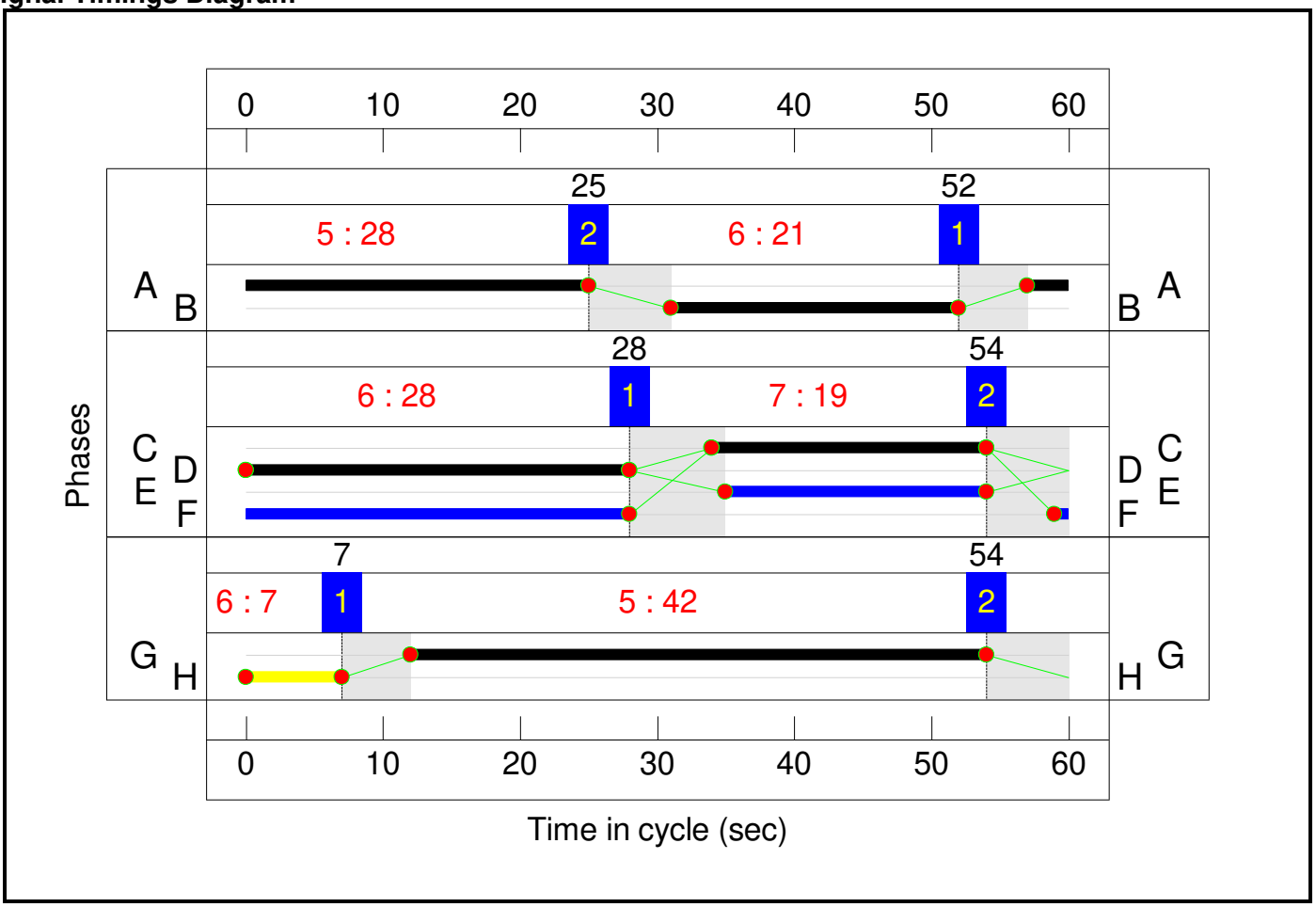
Stage Stream: 2

Stage	1	2
Duration	19	28
Change Point	28	54

Stage Stream: 3

Stage	1	2
Duration	42	7
Change Point	7	54

Signal Timings Diagram



C3 - Ardley

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	32	18
Change Point	36	13

Stage Stream: 2

Stage	1	2
Duration	26	21
Change Point	30	4

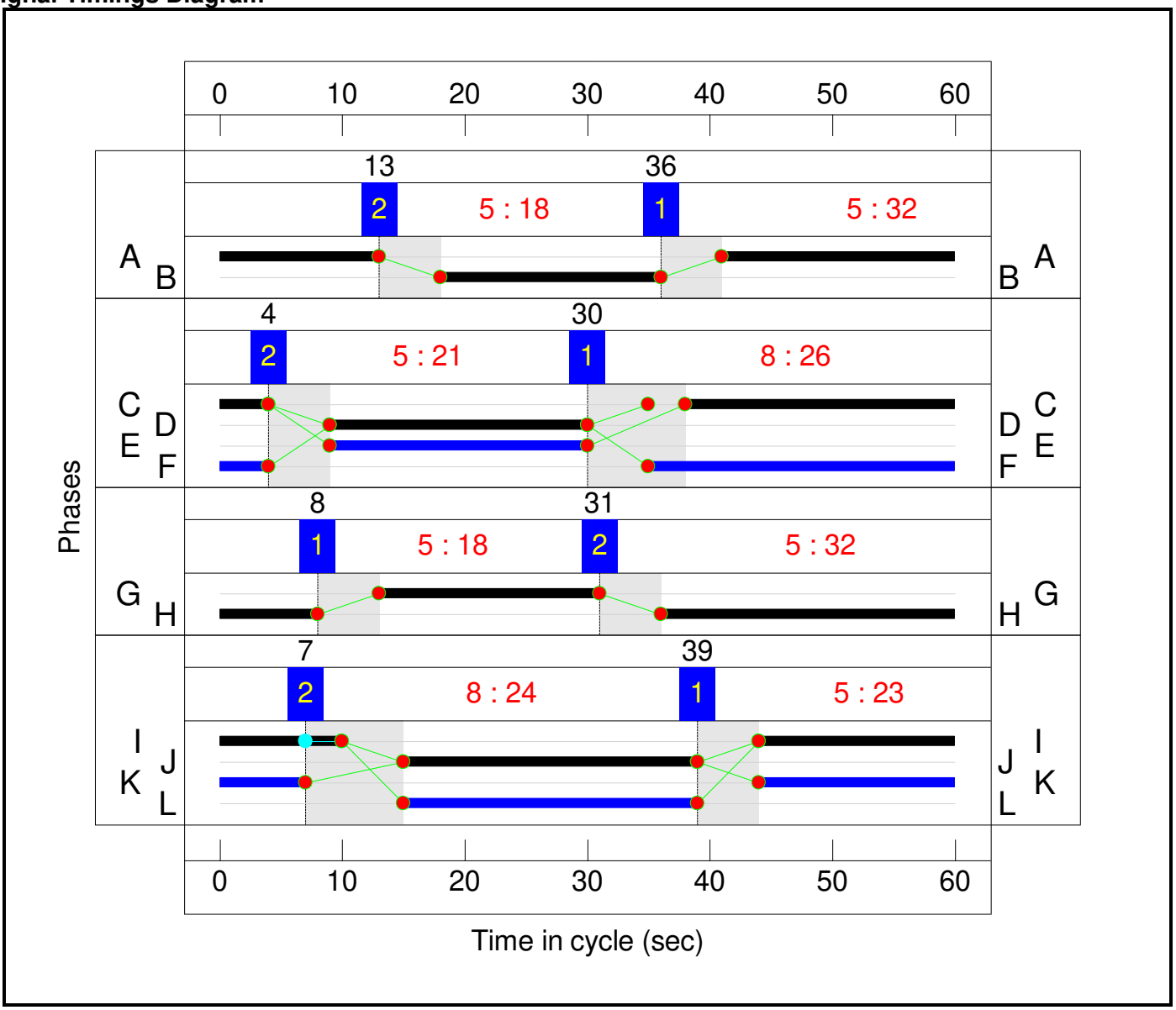
Stage Stream: 3

Stage	1	2
Duration	18	32
Change Point	8	31

Stage Stream: 4

Stage	1	2
Duration	23	24
Change Point	39	7

Signal Timings Diagram



C4 - Baynards Green

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	28	21
Change Point	0	34

Stage Stream: 2

Stage	1	2
Duration	28	20
Change Point	34	8

Stage Stream: 3

Stage	1	2
Duration	28	21
Change Point	7	40

Stage Stream: 4

Stage	1	2
Duration	41	7
Change Point	27	14

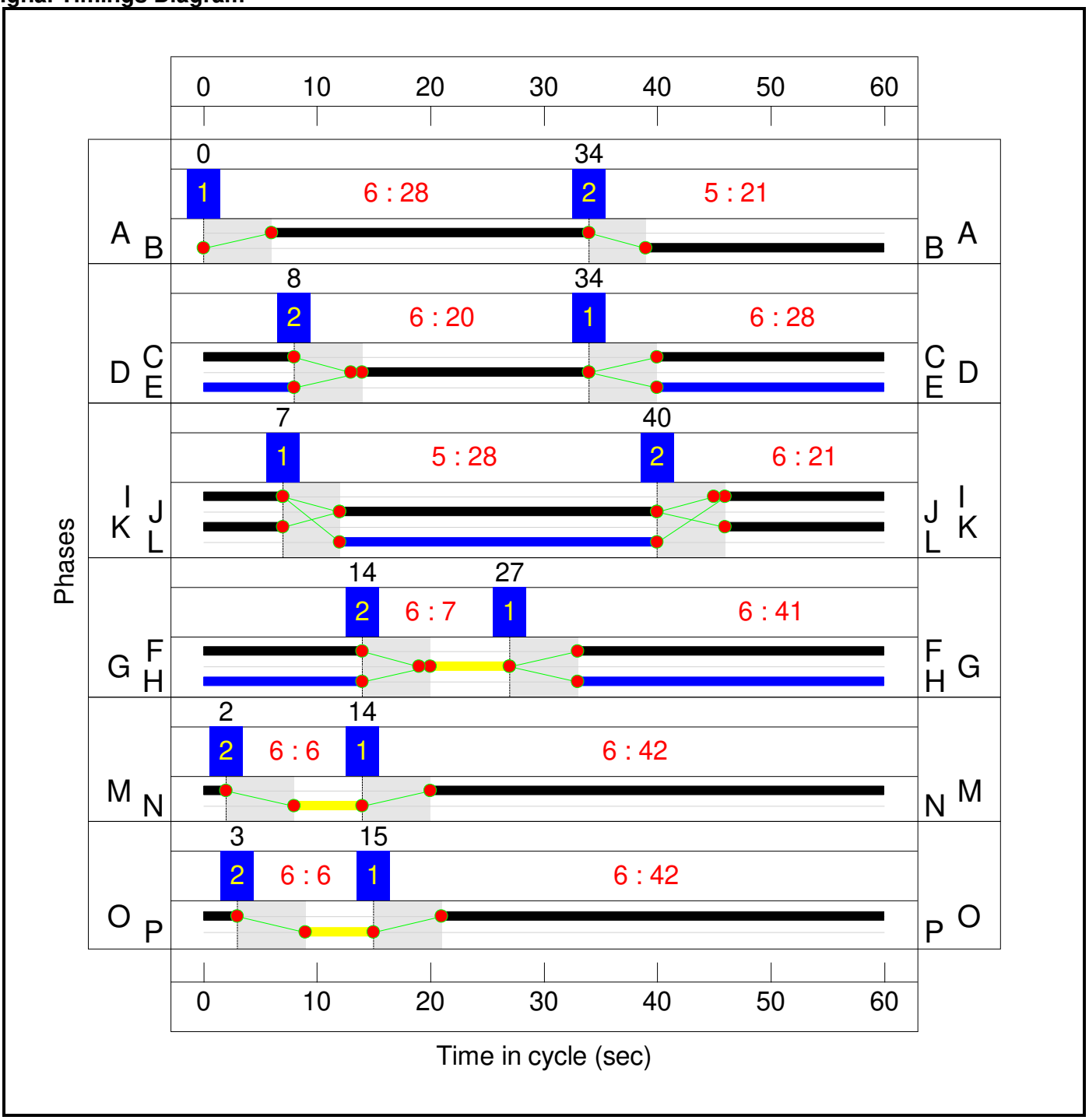
Stage Stream: 5

Stage	1	2
Duration	42	6
Change Point	14	2

Stage Stream: 6

Stage	1	2
Duration	42	6
Change Point	15	3

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: M40 Junction 10 Option 26 Network Model	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**79.8%**
J1: Padbury Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**62.1%**
1/1+1/2	A43 north Ahead	U	1:1	N/A	C1:B		1	27	-	912	1922:2058	897+572	62.1 : 62.1%
3/1	A43 south Ahead	U	1:2	N/A	C1:C		1	28	-	246	1886	912	27.0%
3/2	A43 south Ahead	U	1:2	N/A	C1:C		1	28	-	339	2019	976	34.7%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	1:2	N/A	C1:D		1	20	-	586	2058:1908	720+340	55.3 : 55.3%
5/3	Junction 10 s'bound offslip Ahead	U	1:2	N/A	C1:D		1	20	-	291	2058	720	40.4%
6/1	Right	U	1:1	N/A	C1:A		1	21	-	294	2080	763	38.5%
6/2	Right	U	1:1	N/A	C1:A		1	21	-	291	2080	763	38.2%
J2: Cherwell	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**72.9%**
1/2+1/1	A43 Left Ahead	U	2:1	N/A	C2:A		1	28	-	851	2081:1944	966+556	55.9 : 55.9%
1/3	A43 Ahead	U	2:1	N/A	C2:A		1	28	-	646	2081	1006	64.2%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	513	Inf	1219	42.1%
5/1	MSA Left	U	2:2	N/A	C2:C		1	20	-	246	1828	640	38.4%
5/2	MSA Left Ahead	U	2:2	N/A	C2:C		1	20	-	281	1965	688	40.9%
8/1	Ahead Right	U	2:1	N/A	C2:B		1	21	-	513	1919	704	72.9%
10/1	Ahead	U	2:2	N/A	C2:D		1	28	-	147	1980	957	15.4%
10/2	Ahead	U	2:2	N/A	C2:D		1	28	-	150	1980	957	15.7%
10/3	Ahead	U	2:2	N/A	C2:D		1	28	-	540	2120	1025	52.7%
10/4	Ahead	U	2:2	N/A	C2:D		1	28	-	646	2120	1025	63.0%
J3: Ardley roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**65.8%**
1/1+1/2	B430 Ahead	O	N/A	N/A	-		-	-	-	178	Inf : Inf	757+583	13.2 : 13.4%

2/1	Overbridge SB Ahead	U	3:2	N/A	C3:C		1	26	-	562	1973	888	63.3%
2/2+2/3	Overbridge SB Ahead Right	U	3:2	N/A	C3:C		1	26	-	809	2077:2077	725+675	57.8 : 57.8%
4/1	Ahead	U	3:3	N/A	C3:H		1	32	-	610	2120	1166	52.3%
4/2	Right Ahead	U	3:3	N/A	C3:H		1	32	-	439	2120	1166	37.7%
6/1+6/2	Right	U	3:2	N/A	C3:D		1	21	-	68	1908:2043	556+232	8.6 : 8.6%
7/1	Ahead Right	U	3:1	N/A	C3:B		1	18	-	105	2058	652	16.1%
7/2	Right	U	3:1	N/A	C3:B		1	18	-	204	2058	652	31.3%
8/1	M40 Northbound offslip Left	U	3:3	N/A	C3:G		1	18	-	324	1899	601	53.9%
8/2	M40 Northbound offslip Ahead	U	3:3	N/A	C3:G		1	18	-	212	2033	644	32.9%
9/1	Left	U	3:4	N/A	C3:J		1	24	-	365	1980	825	44.2%
9/2	Ahead	U	3:4	N/A	C3:J		1	24	-	489	2120	883	55.4%
9/3	Right Ahead	U	3:4	N/A	C3:J		1	24	-	581	2120	883	65.8%
14/1	Ardley Bypass Left Ahead	U	3:1	N/A	C3:A		1	32	-	520	1894	1042	49.9%
14/2+14/3	Ardley Bypass Ahead	U	3:1	N/A	C3:A		1	32	-	733	2033:2033	919+633	47.2 : 47.2%
18/1	Right	U	3:4	N/A	C3:I		1	26	-	390	1919	864	45.2%
J4: Baynards Green	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**79.8%**
1/2+1/1	A43 North Ahead Left	U	4:1	N/A	C4:B		1	21	-	1157	2068:1932	758+708	78.1 : 79.8%
1/3+1/4	A43 North Ahead	U	4:1	N/A	C4:B		1	21	-	1059	1932:2068	708+758	72.6 : 71.9%
2/1	Ahead	U	4:2	N/A	C4:C		1	28	-	169	1950	943	17.9%
2/2	Right Ahead	U	4:2	N/A	C4:C		1	28	-	592	2080	1005	58.9%
3/1+3/2	B4100 East Ahead Left	U	4:2	N/A	C4:D		1	20	-	943	1886:2019	660+575	76.4 : 76.4%
5/1	Ahead	U	4:3	N/A	C4:J		1	28	-	399	1980	957	41.7%
5/2	Ahead	U	4:3	N/A	C4:J		1	28	-	490	2120	1025	47.8%
5/3	Ahead	U	4:3	N/A	C4:J		1	28	-	460	2120	1025	44.9%
5/4	Ahead	U	4:3	N/A	C4:J		1	28	-	320	2120	1025	31.2%

6/1	M40 Northbound off slip Ahead Left	U	4:3	N/A	C4:K		1	21	-	367	1908	700	52.5%
6/2+6/3	M40 Northbound off slip Ahead	U	4:3	N/A	C4:K		1	21	-	890	2043:2043	749+749	57.0 : 61.8%
7/1	Ahead	U	4:4	N/A	C4:F		1	41	-	807	1908	1336	60.4%
7/2	Ahead	U	4:4	N/A	C4:F		1	41	-	887	2050	1435	61.8%
7/3	Ahead Right	U	4:4	N/A	C4:F		1	41	-	783	2050	1435	54.6%
8/1		U	4:6	N/A	C4:O		1	42	-	449	1980	1419	31.6%
9/1+9/2	B4100 West Left Ahead	U	4:4	N/A	C4:G		1	7	-	364	1907:2058	254+274	68.8 : 68.9%
10/2		U	N/A	N/A	-		-	-	-	887	2100	2100	42.2%
10/3		U	N/A	N/A	-		-	-	-	553	2050	2050	27.0%
11/1	Ahead	U	4:1	N/A	C4:A		1	28	-	178	2070	1001	17.8%
11/2	Right Ahead Right2	U	4:1	N/A	C4:A		1	28	-	367	2070	1001	36.7%
16/1		U	4:5	N/A	C4:M		1	42	-	584	1980	1419	41.2%
16/2		U	4:5	N/A	C4:M		1	42	-	292	1980	1419	20.6%
18/2+18/1	New A43 Link Road Left	O	N/A	N/A	-		-	-	-	877	Inf : Inf	920+913	53.1 : 42.5%
21/1	A43 SB Cut-through Ahead	U	4:3	N/A	C4:I		1	21	-	544	1980	726	74.9%
21/2	A43 SB Cut-through Ahead	U	4:3	N/A	C4:I		1	21	-	580	2120	777	74.6%

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: M40 Junction 10 Option 26 Network Model	**-**	**-**	**2623**	**0**	**0**	**70.9**	**15.9**	**0.0**	**86.8**	**-**	**-**	**-**	**-**
J1: Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**6.9**	**2.2**	**0.0**	**9.1**	**-**	**-**	**-**	**-**
1/1+1/2	912	912	-	-	-	1.4	0.8	-	2.2	8.7	19.8	0.8	20.6
3/1	246	246	-	-	-	0.8	0.2	-	0.9	13.7	3.9	0.2	4.1
3/2	339	339	-	-	-	1.0	0.3	-	1.3	13.7	5.4	0.3	5.7
5/2+5/1	586	586	-	-	-	2.5	0.6	-	3.1	19.0	5.3	0.6	5.9
5/3	291	291	-	-	-	1.2	0.3	-	1.5	19.0	3.6	0.3	4.0
6/1	294	294	-	-	-	0.0	0.0	-	0.0	0.3	0.0	0.0	0.0
6/2	291	291	-	-	-	0.0	0.0	-	0.0	0.3	0.0	0.0	0.0
J2: Cherwell	**-**	**-**	**513**	**0**	**0**	**12.1**	**2.5**	**0.0**	**14.6**	**-**	**-**	**-**	**-**
1/2+1/1	851	851	-	-	-	3.9	0.6	-	4.5	19.0	8.6	0.6	9.2
1/3	646	646	-	-	-	2.7	0.9	-	3.6	20.1	9.4	0.9	10.3
2/2	513	513	513	0	0	0.3	0.4	-	0.7	4.7	7.7	0.4	8.1
5/1	246	246	-	-	-	1.0	0.3	-	1.3	19.2	3.1	0.3	3.4
5/2	281	281	-	-	-	1.2	0.3	-	1.5	19.2	3.5	0.3	3.9
8/1	513	513	-	-	-	1.8	0.0	-	1.8	12.6	3.9	0.0	3.9
10/1	147	147	-	-	-	0.6	0.0	-	0.6	14.8	2.4	0.0	2.4
10/2	150	150	-	-	-	0.7	0.0	-	0.7	15.8	2.5	0.0	2.5
10/3	540	540	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/4	646	646	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J3: Ardley roundabout	**-**	**-**	**356**	**0**	**0**	**20.4**	**2.6**	**0.0**	**23.0**	**-**	**-**	**-**	**-**
1/1+1/2	178	178	356	0	0	0.0	0.1	-	0.1	2.0	0.3	0.1	0.3
2/1	562	562	-	-	-	3.8	0.0	-	3.8	24.6	9.3	0.0	9.3
2/2+2/3	809	809	-	-	-	3.8	0.0	-	3.8	16.8	7.8	0.0	7.8
4/1	610	610	-	-	-	0.1	0.0	-	0.1	0.8	0.8	0.0	0.8
4/2	439	439	-	-	-	0.1	0.0	-	0.1	0.4	0.3	0.0	0.3

6/1+6/2	68	68	-	-	-	0.1	0.0	-	0.1	6.9	0.2	0.0	0.2
7/1	105	105	-	-	-	0.7	0.1	-	0.8	28.9	1.7	0.1	1.8
7/2	204	204	-	-	-	0.0	0.2	-	0.2	4.0	0.0	0.2	0.2
8/1	324	324	-	-	-	1.5	0.6	-	2.1	23.4	4.4	0.6	5.0
8/2	212	212	-	-	-	0.9	0.2	-	1.2	19.8	2.7	0.2	2.9
9/1	365	365	-	-	-	1.8	0.4	-	2.2	21.3	5.9	0.4	6.3
9/2	489	489	-	-	-	2.6	0.0	-	2.6	19.3	8.0	0.0	8.0
9/3	581	581	-	-	-	2.1	0.0	-	2.1	13.2	6.4	0.0	6.4
14/1	520	520	-	-	-	1.2	0.5	-	1.7	11.8	5.3	0.5	5.8
14/2+14/3	733	733	-	-	-	1.5	0.4	-	2.0	9.7	4.1	0.4	4.5
18/1	390	390	-	-	-	0.0	0.0	-	0.0	0.2	0.3	0.0	0.3
J4: Baynards Green	**-**	**-**	**1754**	**0**	**0**	**31.5**	**8.6**	**0.0**	**40.0**	**-**	**-**	**-**	**-**
1/2+1/1	1157	1157	-	-	-	5.4	1.8	-	7.3	22.7	8.7	1.8	10.6
1/3+1/4	1059	1059	-	-	-	4.8	1.3	-	6.1	20.8	7.7	1.3	9.0
2/1	169	169	-	-	-	0.0	0.0	-	0.0	0.4	0.2	0.0	0.2
2/2	592	592	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1+3/2	943	943	-	-	-	4.4	1.6	-	6.0	22.9	7.4	1.6	9.0
5/1	399	399	-	-	-	0.3	0.0	-	0.3	3.1	1.4	0.0	1.4
5/2	490	490	-	-	-	1.7	0.0	-	1.7	12.5	3.9	0.0	3.9
5/3	460	460	-	-	-	0.6	0.0	-	0.6	5.0	1.7	0.0	1.7
5/4	320	320	-	-	-	0.5	0.2	-	0.8	8.7	2.6	0.2	2.8
6/1	367	367	-	-	-	1.5	0.5	-	2.1	20.3	4.8	0.5	5.3
6/2+6/3	890	890	-	-	-	3.8	0.7	-	4.5	18.3	6.3	0.7	7.0
7/1	807	807	-	-	-	1.2	0.0	-	1.2	5.4	7.6	0.0	7.6
7/2	887	887	-	-	-	0.8	0.0	-	0.8	3.3	6.6	0.0	6.6
7/3	783	783	-	-	-	0.8	0.0	-	0.8	3.8	4.4	0.0	4.4
8/1	449	449	-	-	-	0.0	0.2	-	0.3	2.1	1.3	0.2	1.5
9/1+9/2	364	364	-	-	-	2.5	1.1	-	3.6	35.6	3.0	1.1	4.1
10/2	887	887	-	-	-	0.0	0.4	-	0.4	1.5	0.0	0.4	0.4
10/3	553	553	-	-	-	0.0	0.2	-	0.2	1.2	0.0	0.2	0.2
11/1	178	178	-	-	-	0.3	0.0	-	0.3	6.4	0.8	0.0	0.8

11/2	367	367	-	-	-	1.2	0.0	-	1.2	12.2	3.0	0.0	3.0
16/1	584	584	-	-	-	0.3	0.0	-	0.3	1.7	1.5	0.0	1.5
16/2	292	292	-	-	-	0.3	0.0	-	0.3	3.7	3.0	0.0	3.0
18/2+18/1	877	877	1754	0	0	0.3	0.5	-	0.8	3.2	5.5	0.5	5.9
21/1	544	544	-	-	-	0.2	0.0	-	0.2	1.2	0.5	0.0	0.5
21/2	580	580	-	-	-	0.2	0.0	-	0.2	1.3	0.6	0.0	0.6

C1 - Padbury	Stream: 1	PRC for Signalled Lanes (%):	44.9	Total Delay for Signalled Lanes (pcuHr):	2.27	Cycle Time (s): 60
C1 - Padbury	Stream: 2	PRC for Signalled Lanes (%):	62.9	Total Delay for Signalled Lanes (pcuHr):	6.85	Cycle Time (s): 60
C2 - Cherwell	Stream: 1	PRC for Signalled Lanes (%):	23.4	Total Delay for Signalled Lanes (pcuHr):	9.90	Cycle Time (s): 60
C2 - Cherwell	Stream: 2	PRC for Signalled Lanes (%):	42.8	Total Delay for Signalled Lanes (pcuHr):	4.07	Cycle Time (s): 60
C2 - Cherwell	Stream: 3	PRC for Signalled Lanes (%):	0.0	Total Delay for Signalled Lanes (pcuHr):	0.00	Cycle Time (s): 60
C3 - Ardley	Stream: 1	PRC for Signalled Lanes (%):	80.3	Total Delay for Signalled Lanes (pcuHr):	4.75	Cycle Time (s): 60
C3 - Ardley	Stream: 2	PRC for Signalled Lanes (%):	42.2	Total Delay for Signalled Lanes (pcuHr):	7.75	Cycle Time (s): 60
C3 - Ardley	Stream: 3	PRC for Signalled Lanes (%):	67.0	Total Delay for Signalled Lanes (pcuHr):	3.46	Cycle Time (s): 60
C3 - Ardley	Stream: 4	PRC for Signalled Lanes (%):	36.8	Total Delay for Signalled Lanes (pcuHr):	6.93	Cycle Time (s): 60
C4 - Baynards Green	Stream: 1	PRC for Signalled Lanes (%):	12.8	Total Delay for Signalled Lanes (pcuHr):	14.96	Cycle Time (s): 60
C4 - Baynards Green	Stream: 2	PRC for Signalled Lanes (%):	17.9	Total Delay for Signalled Lanes (pcuHr):	6.01	Cycle Time (s): 60
C4 - Baynards Green	Stream: 3	PRC for Signalled Lanes (%):	20.1	Total Delay for Signalled Lanes (pcuHr):	10.46	Cycle Time (s): 60
C4 - Baynards Green	Stream: 4	PRC for Signalled Lanes (%):	30.7	Total Delay for Signalled Lanes (pcuHr):	6.44	Cycle Time (s): 60
C4 - Baynards Green	Stream: 5	PRC for Signalled Lanes (%):	118.7	Total Delay for Signalled Lanes (pcuHr):	0.57	Cycle Time (s): 60
C4 - Baynards Green	Stream: 6	PRC for Signalled Lanes (%):	184.4	Total Delay for Signalled Lanes (pcuHr):	0.27	Cycle Time (s): 60
		PRC Over All Lanes (%):	12.8	Total Delay Over All Lanes(pcuHr):	86.77	

APPENDIX 23

TN11: EMBEDDED HIGHWAY WORKS PHASING

OXFORDSHIRE RAILFREIGHT INTERCHANGE LIMITED

TECHNICAL NOTE 11: EMBEDDED HIGHWAY WORKS PHASING

ADC Infrastructure Limited
City Buildings
34-36 Carrington Street
Nottingham
NG1 7FG

www.ADCinfrastructure.com

project number: ADC1794				report reference: ADC1794-RP-AF
version	date	lead author(s)	reviewer(s)	comments
1	10/02/2023	[redacted]		internal draft
2	08/03/2023			issued to Client Team
3	10/03/2023			issued to TWG
4	24/02/2025			updated to reflect revised M40 J10 mitigation and issued to TWG

CONTENTS PAGE

1.0 INTRODUCTION 4

2.0 THE EMBEDDED HIGHWAY WORKS 5

Summary of the Embedded Highway Works 5
M40 Junction 10 highway improvements 5
First phase of the proposed development 6
Ardley Roundabout 8
Cherwell Roundabout 8
Padbury roundabout 10
Baynard's Green roundabout 10
Junction modelling results 10
Conclusions 10

3.0 PHASING OF EMBEDDED HIGHWAY WORKS 11

Ardley Bypass 11
Principal Access junction and HGV routing strategy 11
Middleton Stoney Relief Road 11
Heyford Park Link Road 12
Secondary access 13
M40 Junction 9 13

4.0 SUMMARY OF EMBEDDED HIGHWAY WORKS PHASING 15

DRAWINGS

OxSRFI-BWB-GEN-XX-SK-CH-SK060-S1 P02	M40 J10 Cherwell Roundabout and SB merge interim layout
ADC1794-DR-013-P1	Proposed B430/B4030 Crossroads Improvement
OxSRFI-BWB-GEN-XX-SK-CH-SK061-S1-P02	Chilgrove Drive Camp Road
OxSRFI-BWB-GEN-XX-SK-CH-SK054-S1-P05	Highway Works Phase 1: Pre-occupation
OxSRFI-BWB-GEN-XX-SK-CH-SK055-S1-P04	Highway Works Phase 2: Pre-occupation greater than 2m sqft

APPENDICES

Appendix A	Highway works drawings
Appendix B	2031 reference case traffic flows
Appendix C	OxSRFI phase 1 development flows
Appendix D	2031 do something phase 1 flows
Appendix E	2031 reference case LinSig model
Appendix F	2031 do something phase 1 LinSig model

1.0 INTRODUCTION

1.1 ADC Infrastructure Ltd and BWB Consulting Ltd are appointed by Oxfordshire Railfreight Ltd (the Applicant) to assess and design the transport and infrastructure requirements of a Nationally Significant Infrastructure Project (NSIP), that being a proposed Strategic Rail Freight Interchange in Oxfordshire, to be known as Oxfordshire Strategic Rail Freight Interchange (OxSRFI).

1.2 Ensuring good access to the Strategic Road Network (SRN) is a prerequisite for the Proposed Development.

1.3 The access strategy for the Proposed Development has evolved through extensive option testing and consultation with the Transport Working Group[1] (TWG). It is centred on significant improvements to Junction 10 of the M40 motorway, in combination with the provision of a new bypass for the village of Ardley. Additionally, the access strategy would also introduce a new relief road around the north-east quadrant of the village of Middleton Stoney, referred to as the Middleton Stoney Relief Road (MSRR). The Unnamed Road that passes through the Main Site would be removed as part of the development proposals, to be replaced with a new road link to the south of the Main Site, termed the Heyford Park Link Road (HPLR). An improvement scheme at the A34 approach to M40 Junction 9 is also proposed.

1.4 Collectively termed the 'Highway Works' these changes to the highway network are embedded into the design of the Proposed Development.

1.5 The objectives of the embedded highway works are to ensure adequate capacity at M40 Junction 10 to accommodate the required access to the SRN, whilst delivering appropriate new site access infrastructure, and contributing to the overall mitigation of potential adverse environmental impacts of the development. It is also expected that the Highway Works at M40 Junction 10 would aid the delivery of planned growth and development across the wider area.

1.6 This Technical Note summaries the phased delivery of the embedded highway works to support the first phase of the OxSRFI development.

[1] Transport Working Group (TWG) comprising representatives from National Highways, Aecom (National Highways' term consultant), and Oxfordshire County Council. In addition, Cherwell District Council, the local planning authority, attend the TWG meetings as appropriate.

2.0 THE EMBEDDED HIGHWAY WORKS

Summary of the Embedded Highway Works

2.1 The embedded highway works are shown on the highway works overview drawing **OxSRFI-BWB-GEN-ZZ-SK-C-SK041-S1-P08** provided at **Appendix A**, and include the following main components:

Element	Description
M40 Junction 10 highway improvements	the highway works to be carried out in connection with the improvement of M40 J10, including works at the A43 Baynard's Green Roundabout.
Ardley Bypass	a bypass to the east of the village of Ardley
Principal Access and HGV routing strategy	the principal access to the Main Site from the Ardley Bypass and B430
Middleton Stoney Relief Road (MSRR)	a relief road around the north-eastern side of the village of Middleton Stoney
Heyford Park Link Road (HPLR)	the length of new road between the new junction of the B430 with the MSRR and Camp Road
Secondary access	the secondary access to the Main Site for buses, emergency vehicles and pedestrians/cyclists only, taken from the HPLR
M40 Junction 9 highway improvements	additional left-turn lane from A34 to M40 northbound

2.2 The highway works overview drawing also show the proposed highway works where the proposed changes and enhancements to the PRoW interact with the highway network, as follows:

- a new Toucan crossing on the B430 to connect the improved bridleway cycleway route
- the Middleton Road walking, cycling, and horse-riding enhancement
- equestrian crossing at the Camp Road/Chilgrove Drive junction.

2.3 Also shown is the proposal to improve pedestrian facilities within the village of Middleton Stoney by providing signal-controlled crossings facilities at the B430/B4030 crossroads in the village.

2.4 A separate technical note detailing the phasing of the PRoW and footway and cycleway improvements will be prepared.

2.5 The embedded highway works are discussed in more detail below.

M40 Junction 10 highway improvements

2.6 Throughout the period June 2021 to February 2023, and from July 2024 to February 2025[2], in consultation with the TWG, the Applicant team undertook option assessment work to consider and identify an improvement scheme at M40 Junction 10 that, along with the proposed bypass of Ardley village, would provide the required access to the SRN for the OxSRFI development.

2.7 That work is reported in the following Technical Notes and resulted in the preferred Option 28:

- Technical Note 5 'M40 Junction 10 Options Report' (ADC1794-RP-M-V3), June 2021

[2] The project was publicly paused between April 2023 and July 2024.

- Technical Note 6 'M40 Junction 10 Options Report Traffic Flow Derivation' (ADC1794-RP-N-V2), June 2021
- Technical Note 8 'M40 Junction 10 Options 3A and 3B' (ADC1794-RP-Q-V4), October 2021
- Technical Note 9 'M40 Junction 10 Option 25' (ADC1794-RP-T-V3), April 2022
- Technical Note 9 Addendum 'M40 Junction 10 Option 25a' (ADC1794-RP-T1-V2), Jan 2023.
- Technical Note 10 'M40 Junction 10 Highway Improvements' (ADC1794RP-RP-U-V2), March 2023
- Technical Note 13 'M40J10 and Baynards Green - Option 28' (ADC1794-RP-AI-V4), Nov 2024.

2.8 The TWG have provided comments on the preferred option (Option 28) with suggested changes incorporated into the design. The proposed improvement works have been agreed in principle and will be tested using the Bicester Transport Model (BTM) and using the VISSIM micro-simulation model.

M40 Junction 10 highway improvements: Phasing

2.9 The M40 Junction 10 highway improvements incorporate significant upgrades to the Ardley, Cherwell, and Baynard's Green roundabouts, and deliver a new northbound free-flow link between the M40 (south) and the A43 at Padbury Roundabout. The works are comprehensive and are required to achieve the step-change in performance needed to deliver the access strategy and mitigation for the full OxSRFI development. The new free-flow link includes new structures which are likely to require a prolonged construction programme when compared to the works at the individual junctions that make up the M40 Junction 10 complex.

2.10 A phased approach to the delivery of the M40 J10 highway improvements has been considered, and it is proposed that the works be delivered in two phases:

- **Phase 1 would deliver improvements to the Ardley and Baynard's Green roundabouts, with an interim improvement at the Cherwell Roundabout, prior to first occupation on site**.

- **Phase 2 would deliver the full M40 Junction 10 highway improvements, including the new free-flow link between the M40 and the A43, the Cherwell and Padbury junction improvements, and the widening of the A43 to three lanes in both directions between Padbury and Baynards Green Roundabouts. The Phase 2 works would be required prior to the occupation of more than 2 million sqft of development at OxSRFI[3]**.

2.11 The agreed scenarios to be assessed as part of the Transport Assessment for the Proposed Development include a 2031 opening year scenario which includes 2 million sqft of development[3]. and the Phase 1 highway works. This scenario will be tested in the BTM and using the VISSIM model. However, in advance of that work, the M40 Junction 10 Phase 1 highway improvements proposals have been tested in LinSig and the outcomes are discussed below.

First phase of the proposed development

Proposed Development traffic generation

2.12 When complete, the OxSRFI will accommodate 12 freight trains per day (775m long) and include container storage and HGV parking. It will include up to 6.5 million sqft (603,850 sqm) of B8

[3] Including an additional allowance for 1/3 mezzanine floor space and assuming the Rail Terminal is operating at four trains per day.

warehousing with ancillary office space, and an allowance for a further 2.17 million sqft (201,283 sqm) of mezzanine floor space. Using the agreed trip rates and accounting for the effects of the Travel Plan, the vehicle trip generation profile of the Proposed Development is shown in the table below.

Period	Lights			Heavies			Total vehicles		
	arrive	depart	2-way	arrive	depart	2-way	arrive	depart	2-way
AM peak hour	667	72	739	172	159	331	840	231	1070
PM peak hour	220	767	987	157	143	300	377	910	1288
Daily	5861	5,766	11,627	2,459	2,461	4,920	8,319	8,227	16,547

2.13 The embedded highway works have been designed to accommodate the traffic due to the development when fully built out, which is expected to take six years from the start of construction following the approval of the Development Consent Order.

Phase 1 traffic generation

2.14 At this stage it is not possible to state with certainty the likely floor area of the first phase of the development as the demand for units on the site would be led by the market. Therefore, to ensure a robust analysis and provide the Applicant with a degree of flexibility, a first phase of development up to 2 million sqft (185,800sqm) of B8 development with an additional 1/3 mezzanine floor space (61,967sqm) has been considered. The Rail Terminal operating at up to four trains per day has also been assumed.

2.15 This would give the following vehicle trip generation profile for the first phase of the development. The effect of the Travel Plan is not included within this profile, to give a robust assessment of the Phase 1 highway works.

Period	Lights			Heavies			Total vehicles		
	arrive	depart	2-way	arrive	depart	2-way	arrive	depart	2-way
AM peak hour	278	30	308	53	50	102	331	80	410
PM peak hour	91	320	411	49	44	93	140	364	504
Daily	2,468	2,434	4,902	764	761	1,524	3,232	3,195	6,426

Phase 1 traffic flows at M40 Junction 10

2.16 The proposed first phase of the embedded highway works include the Principal Access roundabout, the Ardley Bypass, and the proposed works to the Baynard's Green and Ardley roundabouts at the M40 Junction 10 complex. An interim improvement would be provided at Cherwell roundabout. These first phase works would be in place at first occupation on site.

2.17 The agreed opening year for assessment is 2031. To inform the Phase 1 assessment (and in advance of the BTM traffic flows), morning and evening peak hour traffic flow sets have been calculated for a '2031 reference case' scenario and a '2031 with Phase 1 development' scenario.

2.18 During the option testing for the embedded highway mitigation works, ADC, in agreement with the TWG, updated the M40 Junction 10 and Baynard's Green 2031 Reference Case VISSIM model. This included the use of updated traffic flow data taken from the agreed 2031 Reference Case run of the Bicester Transport Model (BTM). The 2031 Reference Case traffic flow cordon for the VISSIM model (as extracted from the BTM) is provided at **Appendix B**. This 2031 Reference Case flow set has been used as the basis for the assessment of the phasing strategy. These traffic flows have already been agreed with the TWG as part of the option assessment work presented in Technical Note 13.

2.19 The BTM was also run for the 2031 Do-Something assessment scenario for an earlier iteration of the highway mitigation proposals. The BTM modelling incorporates the agreed methodology for the distribution and assignment of the OxSRFI development traffic and therefore provides a representative forecast of the development traffic assignment. The corresponding OxSRFI development traffic cordon for the VISSIM model has therefore been extracted from the BTM model and the light vehicle and HGV assignments applied to the phase 1 development traffic generations at paragraph 2.15 above. The phase 1 OxSRFI development flows for the morning and evening peak hours are provided at **Appendix C.**

2.20 The 2031 phase 1 traffic flows have been derived by adding the phase 1 OxSRFI development traffic assignment given at **Appendix C** to the 2031 Reference Case traffic flow given at **Appendix B**. These flows were then transposed into the M40 Junction 10 and Baynard's Green Do-Something LinSig network model. The 2031 Do-something traffic flow are provided at **Appendix D**.

Ardley Roundabout

2.21 Under the Option 28 embedded highway works scheme, the Ardley Roundabout would be enlarged to the south. The existing M40 northbound merge slip road would be removed and a new M40 northbound merge would be constructed to the north of the roundabout. The M40 northbound diverge would be realigned to improve the approach road curvature, connecting to Ardley roundabout at a signal-controlled node. The proposed Ardley Bypass arm would operate under traffic signal control, connecting to the southern side of the Ardley roundabout, where there would be three entry lanes and three circulating lanes. The A43 southbound would also connect via a traffic signal-controlled node, with the right-turn to the M40 northbound and the MSA accommodated via a cut-through. The existing B430 approach would be provided as a priority-controlled node, with two entry lanes as existing.

2.22 Provision of the northbound M40-A43 free-flow links would remove circa. 1,200 pcus in the morning peak hour and circa. 1,800 pcus in the evening peak hour from Ardley Roundabout. However, under the Phase 1 proposals, the free-flow link would not yet be constructed and therefore the Ardley Roundabout would be required to accommodate the M40-A43 northbound traffic. Despite the significantly higher traffic flows, the modelling results detailed later in this technical note demonstrate that proposed Ardley Roundabout improvement (without the free-flow link) would operate acceptably with the first phase in place.

Cherwell Roundabout

2.23 Under the Option 28 embedded highway works scheme, the right-turn from the Cherwell Valley Motorway Service Area (MSA) would be displaced so that vehicles wanting to travel north from the MSA do so via the cut-through at Ardley roundabout. This allows both lanes on the A43 northbound approach to the Cherwell Roundabout to be free flow on entry. The nearside lane would be an 'ahead' lane towards the A43 and the offside lane would be a right-turn lane towards the and the M40 southbound on-slip and MSA. The A43 southbound approach would be widened to accommodate five lanes, with the nearside lane being for entry to the MSA. Two lanes would be provided to exit onto the M40 southbound on-slip and two lanes would be provided exiting on the bridge over the M40 towards the Ardley Roundabout.

2.24 As is case for the Ardley Roundabout, the provision of the northbound M40-A43 free-flow link would remove significant traffic volumes from Cherwell Roundabout. However, under the Phase 1 proposals, the free-flow link would not yet be constructed and therefore the Cherwell Roundabout would be required to handle significantly higher traffic flows. The junction would not operate acceptably as proposed as the M40 to A43 northbound traffic flow could not be

accommodated in a single lane. Further, with the additional right turning traffic associated with OxSRFI traffic travelling to the M40 south would mean that under the existing layout, right turning traffic would block the A43 northbound exit.

2.25 Therefore, to improve the performance of the Cherwell Roundabout during Phase 1, an interim improvement has been designed. Under the interim proposals, the northbound A43 approach would remain as existing, with the nearside lane being a free-flow lane to the A43 north and the offside lane being priority controlled for traffic to the north and also right-turning traffic to the MSA and M40 southbound. The northbound circulating carriageway would be widened to provide a full right-turn lane and two ahead lanes to prevent queueing right-turning vehicles from blocking the northbound exit.

2.26 To further improve performance during Phase 1, the entry lane to the MSA would be extended such that it would not be blocked by traffic queueing on the southbound circulatory. The two-lane section on the M40 southbound exit would be lengthened by 40m to improve performance of the merge and reduce instances of queueing, and amendments would be made to allow two lanes to exit over the bridge towards Ardley Roundabout.

2.27 The interim proposals at Cherwell Roundabout are shown at **Drawing OxSRFI-BWB-GEN-XX-SK-CH-SK060-S1 P02** at the drawings section of the report. An extract is shown on **Figure 3** below.

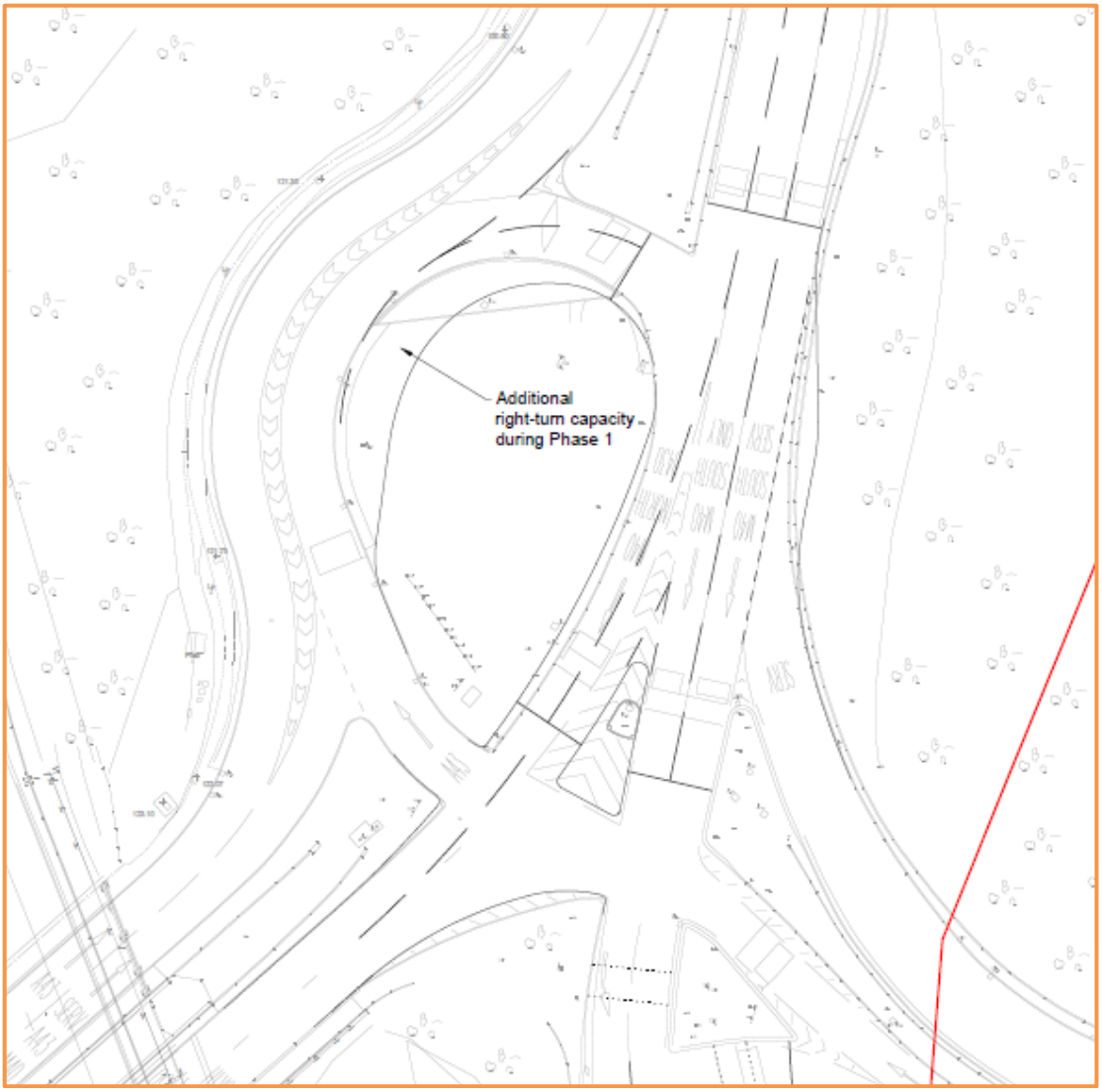


Figure 3: Cherwell roundabout proposed layout

Padbury roundabout

2.28 Padbury roundabout would be as per the committed OCC Housing Growth Deal scheme during the Phase 1 highway works.

Baynard's Green roundabout

2.29 The reference case modelling of the Baynard's Green Roundabout shows that it would be significantly over capacity in the future assessment scenarios. Hence, to improve traffic conditions and accommodate the development traffic the full Baynard's Green proposals would be implemented in Phase 1, but without the three-lane northbound and southbound sections of the A43 between Padbury Roundabout and Baynards Green Roundabout.

Junction modelling results

2.30 The LinSig model results for the '2031 reference case' and the '2031 with Phase 1 development' in place are provided in **Appendix E and F**, respectively.

2.31 The table below provides a comparison between the forecast capacity at the future baseline (Reference Case) M40 Junction 10 (with committed Housing Growth Deal improvements at Padbury only, no OxSRFI development), with the forecast capacity at the junctions under the first phase of the embedded highway works with the first phase of the OxSRFI development in place in the 2031 opening year.

M40 Junction 10 performance in 2031				
Junction	Future baseline (Reference Case)		Phase 1 mitigation	
	AM Peak	PM Peak	AM Peak	PM Peak
Baynard's Green	149% (RFC)	136% (RFC)	7.7%	7.2%
Padbury	10.2%	4.7%	2.6%	1.5%
Cherwell	-5.9%	-7.2%	2.2%	-8.5%
Ardley	83% (RFC)	95% (RFC)	1.6%	2.1%

2.32 As shown in the table above, the results are summarised as follows:

- Baynard's Green would operate within capacity in the '2031 with Phase 1 development' morning and evening peak hours with Phase 1 in place, and significantly better than the existing junction performance in the '2031 reference case'.
- In the '2031 with Phase 1 development' scenario the growth deal scheme at Padbury Roundabout would operate within capacity in the '2031 with Phase 1 development' scenario for the morning and evening peak hours.
- In the '2031 with Phase 1 development' scenario the performance of the interim Cherwell Roundabout would be improved when compared to the existing layout in the morning peak hour, and whilst performance would deteriorate slightly in the evening peak hours, the impact would not be severe.
- The proposed Ardley Roundabout scheme would operate acceptably in the '2031 with Phase 1 development' morning and evening peak hours.

Conclusions

2.33 The summary results presented above show that the Phase 1 M40 Junction 10 highway proposals can accommodate background traffic growth up to 2031 and the proposed first phase of OxSRFI development traffic.

3.0 PHASING OF EMBEDDED HIGHWAY WORKS

Ardley Bypass

3.1 The Ardley Bypass would connect to M40 Junction 10 at the Ardley roundabout and is proposed as two lanes northbound, and a single lane southbound (S2+1). At the southern end, the bypass connects to the existing B430 (south) at the Principal Access junction (see below) and hence provides direct access into the Proposed Development. The B430 to the north of the new site access roundabout would be stopped up for vehicular traffic, with the existing B430 traffic using the new bypass to access M40 Junction 10. The proposed Ardley Bypass therefore would remove through-traffic from the village.

3.2 54% of the light vehicle trips and 100% of the HGV trips associated with the proposed OxSRFI would access the Main Site via M40 Junction 10. Unmitigated, this traffic would use the B430 to access Junction 10, passing through the village of Ardley and have to use the narrow railway bridge over the Chiltern Main Line Railway. It is considered that these additional traffic volumes travelling on the B430 between the OxSRFI and the Junction 10, and the associated noise, vibration, and air quality effects, would represent an unacceptable impact on Ardley village. Therefore, **the Ardley Bypass would be delivered prior to occupation of the first unit on site**.

Principal Access junction and HGV routing strategy

3.3 It is proposed to access the site via a partially traffic signal controlled roundabout on the B430, located south of the Chiltern Mainline railway. The preliminary design is shown on drawing **OxSRFI-BWB-GEN-XX-SK-CH-SK018_S1-P06** provided at **Appendix A**. The northern arm would mark the start of the Ardley Bypass (with the existing section of the B430 to the north stopped-up) and the southern arm would be the existing B430.

3.4 A segregated left-turn lane would be provided from the site access arm to the Ardley Bypass northbound, with a height restriction on the site access arm of the roundabout preventing HGVs from turning right (as part of the HGV routing strategy). The Ardley Bypass and site access approaches to the roundabout would be under traffic signal control, the latter incorporating staggered Toucan crossings. The B430 approach would be priority controlled.

3.5 **The Principal Access junction (and HGV routing strategy) would provide the vehicle access to OxSRFI along with pedestrian, cycle, and bus access, and hence is required to be delivered prior to occupation of the first unit on site**.

Middleton Stoney Relief Road

3.6 The case for delivering a relief road around the northeast quadrant of Middleton Stoney is set out in the Middleton Stoney Relief Road and Heyford Park Link Road Junctions Options Report[4].

3.7 Without intervention, the proposed OxSRFI could significantly increase traffic demand in Middleton Stoney, with the largest increase being between the B430 north of the village and the B4030 Bicester Road to the east. Based on the work undertaken to support the Heyford Park development[5], it is recognised that further capacity improvements at the crossroads junction of the B430/B4030 would not be feasible without impacting properties within the village, nor

[4] Middleton Stoney Relief Road and Heyford Park Link Road Junctions Options Report, report reference ADC1794-RP-R -V3, 8 April 2022.
[5] Planning permission 18/00825/HYBRID

would such traffic increases through the village be desirable for environmental reasons such as the impact on noise, air quality, and amenity.

3.8 Therefore, given the identified congestion issues within Middleton Stoney and the additional traffic demand likely to be generated by the proposed OxSRFI development, a Middleton Stoney Relief Road (MSRR) is proposed, to improve traffic conditions within the village and improve journey time reliability for employees accessing the OxSRFI from the southeast. The MSRR would be provided around the northeast quadrate of the village, connecting the B430 and the B4030 (east).

3.9 It is expected that these measures would lead to a significant reduction in the east-west (and vice versa) traffic flows through the village, which would off-set the additional north-south (and vice versa) traffic flows on the B430 that would be associated with the OxSRFI development.

3.10 Analysis shows that 2m sqft of development would result in a two-way traffic increase in Middleton Stoney of c.150 vehicle trips, which equates to between 2 and 3 additional trips per minute through the village. The HGV routing strategy would ensure these trips are light vehicles only, which would be further reduced via the measures associated with the Travel Plan. Hence, impacts in Middleton Stoney due to the first phase of development may not be severe. This will be tested in the BTM.

3.11 **The Middleton Stoney Relief Road would be delivered as part of the Phase 2 highway works, prior to occupation of more than 2 million sqft of development**[3].

3.12 Feedback received from the Stage 1 Consultation included a desire from residents and representatives from the Parish Council for improved pedestrian crossing facilities at the B430/B4030 crossroads junction in the village. It is therefore proposed, subject to agreement with OCC, that **as part of the Phase 2 highway works, a signal-controlled crossing improvement scheme at the B430/B4030 crossroads**, as shown indicatively on drawing **ADC1794-DR-013 Rev P1** would be delivered by the OxSRFI scheme. However, subject to agreement with OCC, it may be desirable to bring forward the works at the B430/B4030 crossroads as part of the Phase 1 works.

3.13 The drawing includes the kerbline changes that would be required as part of the committed improvement scheme at the junction to provide a right turn to the B4030 from the B430 south that is associated with the Heyford Park scheme. However, should that scheme not be brought forward (as suggested by OCC), then the signal-controlled crossing components of the scheme with associated footways would still be provided.

Heyford Park Link Road

3.14 The Unnamed Road passes through the main site area, connecting the B430 to Camp Road and providing access to Heyford Park and Upper Heyford. It is not possible or desirable under the proposals for the OxSRFI development to retain this route for through-traffic and hence a new Heyford Park Link Road (HPLR) is proposed, connecting Camp Road and the B430 south of the development site. This would form part of the embedded mitigation.

3.15 The Middleton Stoney Relief Road would lead to a significant reduction in the east-west (and vice versa) traffic flows through the Middleton Stoney village. Much of this traffic is associated with the Heyford Park development and would reassign to use the Middleton Stoney Relief Road and the Unnamed Road. Without intervention, this would lead to congestion at the existing priority controlled junction of the Unnamed Road with the B430.

3.16 As part of the planning permission for the adjacent development at Heyford Park, there is a committed highway improvement scheme that would signalise the B430/Unnamed Road junction. Should that improvement be implemented by Heyford Park ahead of the Middleton Stoney Relief Road it is expected that this would resolve congestion at the B430/Unnamed Road junction. However, the timing of the Heyford Park works are not in the control of the Applicant and hence it is proposed that the trigger for the Heyford Park Link Road is the same as the Middleton Stoney Relief Road.

3.17 **The delivery of the Heyford Park Link Road would be delivered as part of the Phase 2 highway works, prior to occupation of more than 2 million sqft of development**[3].

3.18 As part of the Public Rights of Way (PRoW), walking, and cycling strategy for the Proposed Development, it is proposed to provide a new bridleway around the perimeter of the Main Site. As part of those works a signal-controlled crossing facility, including provision for equestrians, is proposed on Camp Road to the south of its junction with the Unnamed Road.

3.19 The new bridleway would make use of the clearing through the adjacent woodland that currently exists due to the presence of the power lines, which are due to be relocated. The new bridleway with crossing on Camp Road (south) would provide a connection to the Aves Ditch PRoW to the east of the Proposed Development. As part of the Heyford Park planning permission there is a committed improvement scheme to provide a new traffic signal controlled junction at the Camp Road/Chilgrove Drive/Unnamed Road junction that will also provide access to part of the Heyford Park development. The bridleway and crossing on Camp Road that is proposed as part of the OxSRFI scheme is compatible with the Heyford Park committed junction improvement works. However, it is not compatible with the existing priority-controlled junction arrangement, due to the restricted forward visibility from the Unnamed Road to Camp Road south. It would be desirable to provide the new bridleway route as part of the Phase 1 works. However, the timing of the Heyford Park works are not in the control of the Applicant. Hence, should the committed Heyford Park works at the Camp Road/Chilgrove Drive/Unnamed Road junction not have been implemented prior to first occupation of the OxSRFI development, a scheme to amend the priority of the Camp Road/Chilgrove Drive/Unnamed Road junction is proposed as part of the Phase 1 highway works to ensure that appropriate visibility is provided to the new crossing. The proposed scheme is shown on drawing **OxSRFI-BWB-GEN-XX-SK-CH-SK061-S1-P02**.

3.20 **The delivery of the proposed equestrian crossing on Camp Road and (if required) the realignment of the Camp Road/Chilgrove Drive/Unnamed Road junction would therefore be delivered prior to first occupation of the OxSRFI development**.

Secondary access

3.21 A secondary access, for the use of pedestrians, cyclists, buses and emergency vehicles only, is proposed on the southern boundary of the Main Site connecting with the Heyford Park Link Road via a simple priority-controlled junction. **The secondary site access junction would be delivered as part of the delivery of the Heyford Park Link Road**. A temporary link to the Unnamed Road would be provided during phase 1.

M40 Junction 9

3.22 Analysis of the initial runs of the BTM show that in the evening peak hour, capacity constraints on the A34 eastbound approach to M40 Junction 9 results in traffic wishing to travel north on

the M40 to reassign away from the SRN and onto the B430, travelling north through Middleton Stoney towards M40 Junction 10.

3.23 Whilst residual impacts due to this reassignment would not negate the positive effects of the Middleton Stoney Relief Road, it would be beneficial to keep this traffic on the SRN. Therefore, it is concluded that a relatively small, targeted piece of mitigation on the A34 approach to M40 Junction 9 would help facilitate the positive effects of the embedded highway works.

3.24 A separate Technical Note (TN12) presents the analysis and proposed M40 Junction 9 scheme. However, as the proposed scheme is intended to counter reassignment effects due to the implementation of the M40-A43 free-flow link, it is proposed that **the M40 Junction 9 improvements would be delivered as part of the Phase 2 highway works, prior to occupation of more than 2 million sqft of development**[3].

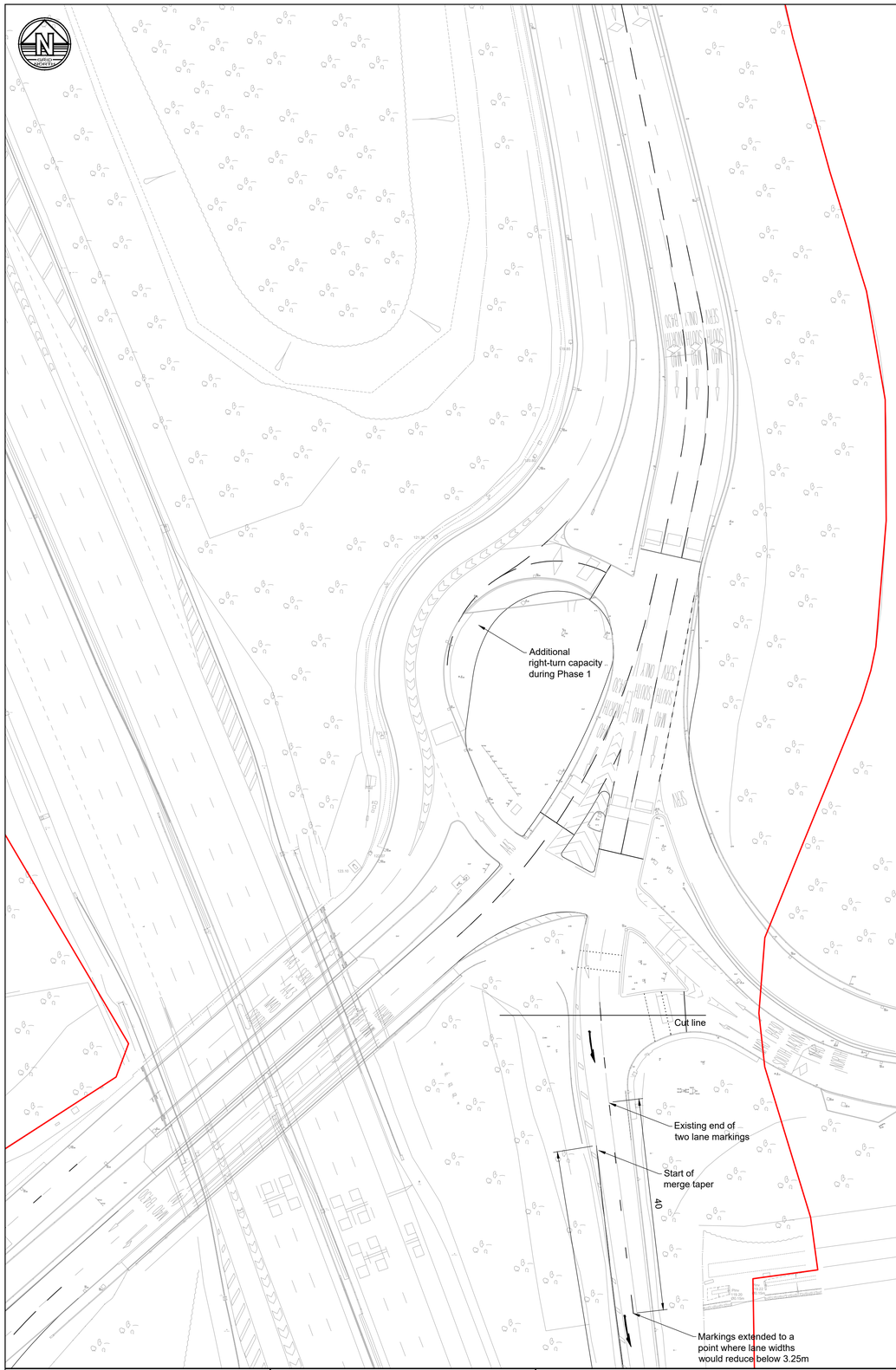
4.0 SUMMARY OF EMBEDDED HIGHWAY WORKS PHASING

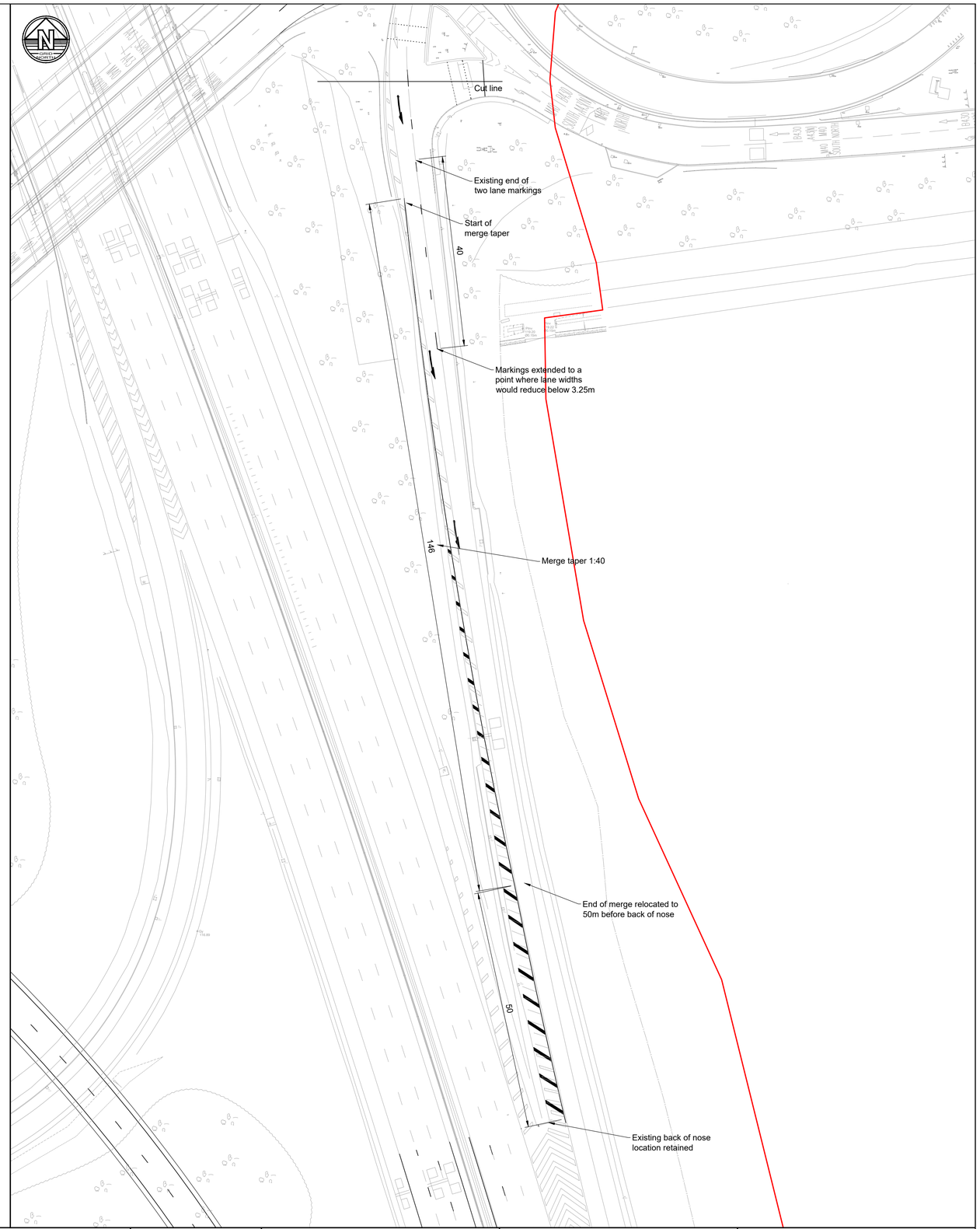
4.1 Phases 1 and 2 of the embedded highway works are shown on **drawings OxSRFI-BWB-GEN-XX-SK-CH-SK054-S1-P05** and **OxSRFI-BWB-GEN-XX-SK-CH-SK055-S1-P03**. The phasing of the highway works is summarised as follows:

Element	Description	Phase	Condition	Comment
M40 J10 Highway Works – Phase 1	The highway works at M40 J10 are extensive and complex. The new free-flow link includes a new structure and is likely to require a prolonged construction programme. Hence, a phased approach to delivering the M40 J10 works is appropriate. The first phase improvement of J10 would include the works to the Baynard's Green, and Ardley roundabouts, including the changes to the northbound M40 slip roads, and an interim improvement a Cherwell roundabout, prior to occupation of the first unit on the site.	Phase 1	Prior to first occupation	Deliver improvements to the Ardley, Cherwell, and Baynard's Green roundabouts.
M40 J10 Highway Works – Phase 2	Completion of the remaining works including M40 to A43 northbound free-flow link and associated changes at Padbury roundabout, full improvement scheme at Cherwell roundabout, and the M40 southbound slip-road improvement.	Phase 2	Prior to occupation of more than 2 million sqft of development	Delivers the full M40 Junction 10 scheme
Ardley Bypass and HGV routing strategy	The bypass of the village of Ardley is considered a pre-requisite of the scheme to prevent unacceptable impacts in Ardley.	Phase 1	Prior to first occupation	
Principal site access	The principal access to the Main Site from the Ardley Bypass and B430	Phase 1	Prior to first occupation	
Middleton Stoney Relief Road	Analysis shows that 2m sqft of development would result in 2-way traffic increase in Middleton Stoney of between 2 and 3 trips per minute. Hence, first impacts in Middleton Stoney may not be severe. BTM to test this.	Phase 2	Prior to occupation of more than 2 million sqft of development	Subject to BTM analysis
Heyford Park Link Road	The Heyford Park Link Road is required when the Middleton Stoney Relief Road opens, unless the committed improvement works to the B430/Unnamed Road junction to be provided as part of the Heyford Park committed development are already implemented.	Phase 2	Prior to occupation of more than 2 million sqft of development	Timescales for the Heyford Park improvements are not within the Applicant's controlled and hence

				have been linked to delivery of the MSRR
Secondary access	The secondary access to the Main Site for buses, emergency vehicles and pedestrians/cyclists from the Heyford Park Link Road and hence would be delivered at the same time.	Phase 2	With HPLR.	A temporary link to the Unnamed Road would be provided during Phase 1
M40 Junction 9	A targeted piece of mitigation on the A34 approach to M40 Junction 9 to help facilitate the positive reassignment effects of the embedded highway works.	Phase 2	Prior to occupation of more than 2 million sqft of development	Triggered by completion of the M40-A43 free-flow links

DRAWINGS





Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in metres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

© Copyright BWB Consulting Ltd

Legend

ISSUES & REVISIONS

Rev	Date	Details of issue / revision	Drw	Rev
P01	02.02.23	Preliminary Issue	SRH	SRH
P02	06.04.23	Cherwell roundabout added	SRH	SRH

BWB
A CAF GROUP COMPANY
Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client
OXFORDSHIRE RAILFREIGHT LTD.

Project Title
OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title
M40 J10 CHERWELL ROUNDABOUT AND SOUTHBOUND MERGE INTERIM LAYOUT

Drawn:	S. Hilditch		Reviewed:	S. Hilditch		
BWB Ref:	NTH2479	Date:	02.02.23	Scale@A1:	1:500	

Drawing Status
PRELIMINARY

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-BWB-GEN-XX-SK-CH-SK060	**S1**	**P02**

Y:\NTH\NTH2479_Oxfordshire RFI\02. Project Delivery\01. WIP\Sketches\OxSRFI-BWB-GEN-XX-SK-CH-SK060_M40 J10 Phase 1 Cherwell roundabout and SB merge GA.dwg

Proposed Puffin crossings

Kerbline and footway as per the committed improvement scheme

Proposed Puffin crossing

Kerbline and footway as per the committed improvement scheme

Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.

2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

3. All dimensions in metres unless noted otherwise. All levels in metres unless noted otherwise.

4. Any discrepancies noted on site are to be reported to the engineer immediately.

KEY:

- 4m Straight Signal Pole
- 4m Cranked Signal Pole

VEHICLE SIGNAL HEADS

- Primary Signal Head (LED)
- Secondary Signal Head (LED)

PEDESTRIAN/CYCLE

- Nearside PEDESTRIAN Signal (LED)
- Pedestrian Push Button with Tactile Cone

Rev	Date	Description	Dr	Rev
P1	04.11.22	First issue	MH	SD

Client:
Oxfordshire Strategic Railfreight Interchange Limited

Project:
OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Title:
Proposed B430/B4030 Crossroads Improvements

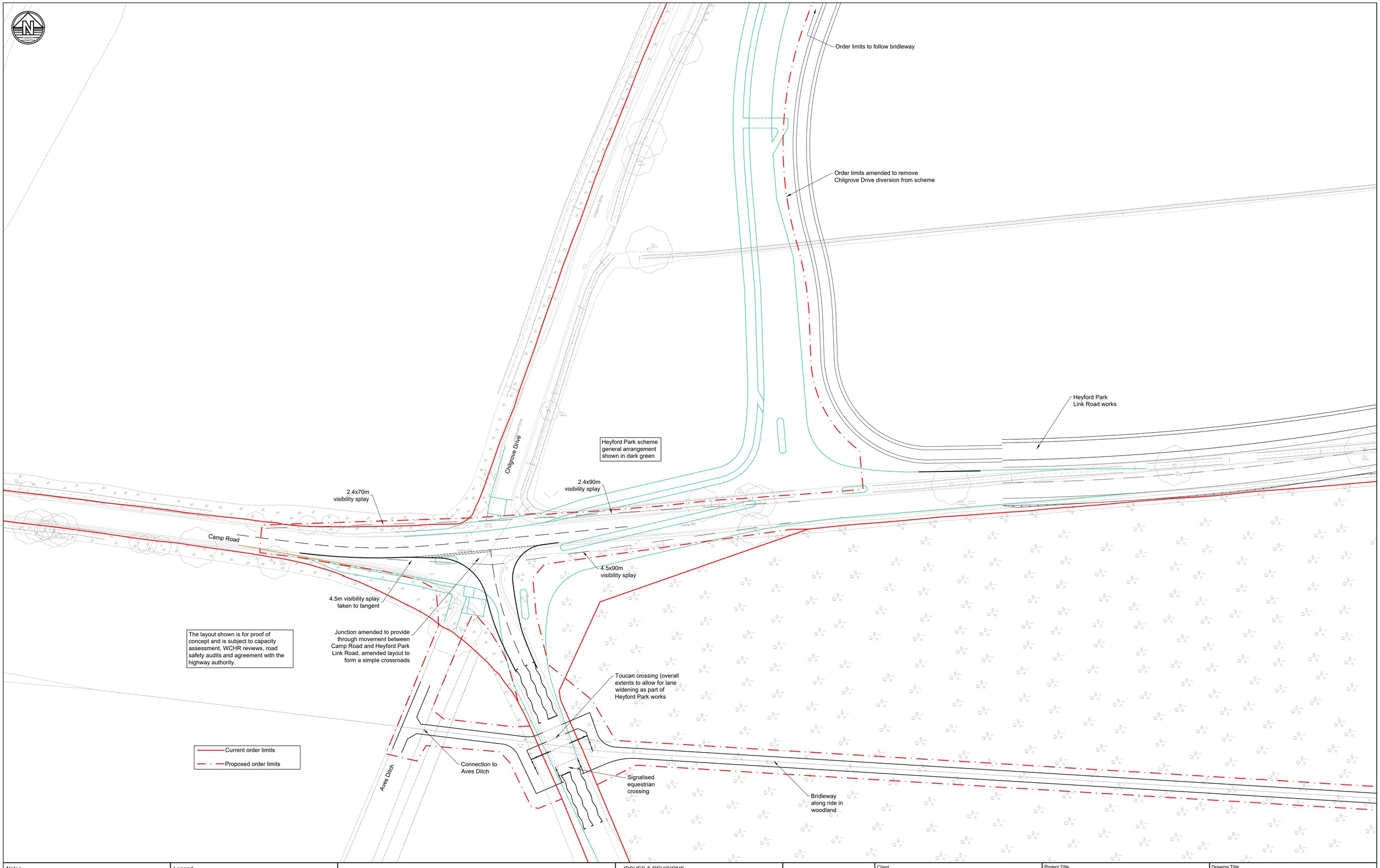
ADC INFRASTRUCTURE

Drawn:	Reviewed:
M. Higgins	S. Dunhill

Size:	Scale:	Date:
A3	1:500	04 / 11 / 2022

Status: PRELIMINARY ISSUE

Project Reference	Type	Number	Revision
ADC1794-DR-		013	P1



Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in metres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

© Copyright BWB Consulting Ltd

Legend

ISSUES & REVISIONS

Rev	Date	Details of issue / revision	Drw	Rev
P01	02.02.23	Preliminary Issue	SRH	SRH
P02	13.02.23	Order limits amended	SRH	SRH

BWB
A CAF GROUP COMPANY
Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client
OXFORDSHIRE RAILFREIGHT LTD.

Project Title
OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title
CAMP ROAD / CHILGOVE DRIVE GENERAL ARRANGEMENT

Drawn:	S. Hilditch		Reviewed:	S. Hilditch		
BWB Ref:	NTH2479	Date:	02.02.23	Scale@A1:	1:500	

Drawing Status: **PRELIMINARY**

Project - Originator - Zone - Level - Type - Role - Number: **OxSRFI-BWB-GEN-XX-SK-CH-SK061**

Status: **S1**

Rev: **P02**

Y:\NTH\NTH2479_Oxfordshire RFI\02. Project Delivery\01. WIP\Sketches\OxSRFI-BWB-GEN-XX-SK-CH-SK061_Chilgrove Drive Camp Road GA.dwg

Earthworks for part of M40 northbound to A43 northbound free-flow loop

Cherwell Valley Services

M40 J10

Minor amendments to Cherwell roundabout

Fewcott

Ardley roundabout enlarged

Roadmarking amendment to existing slip road

Existing J10 northbound entry slip stopped up

Existing J10 northbound exit slip realigned

Archaeology feature

Turning head

Ardley

Quarry cottages lane stopped up over railway, replaced by bridleway

See inset for M40 J10

Ardley Road diverted over new bypass

Turning head

Existing B430 stopped up south of Ardley, replaced with footway/cycleway/bridleway link

Upper Heyford Airfield

B430 Ardley bypass and OxSRFI link road (Single 2+1)

Segregated left turn lane on exit to direct all HGVs to J10

Principal OxSRFI access

Bridge over Chiltern Mainline

Roundabout on existing B430 (partially signalised)

Bridge over new rail sidings

Heyford Park

B430

Bucknell

Camp Road / Chilgrove Drive priority amendment and equestrian crossing

B430 Toucan crossing

B4030

Middleton Stoney

M40

B4030

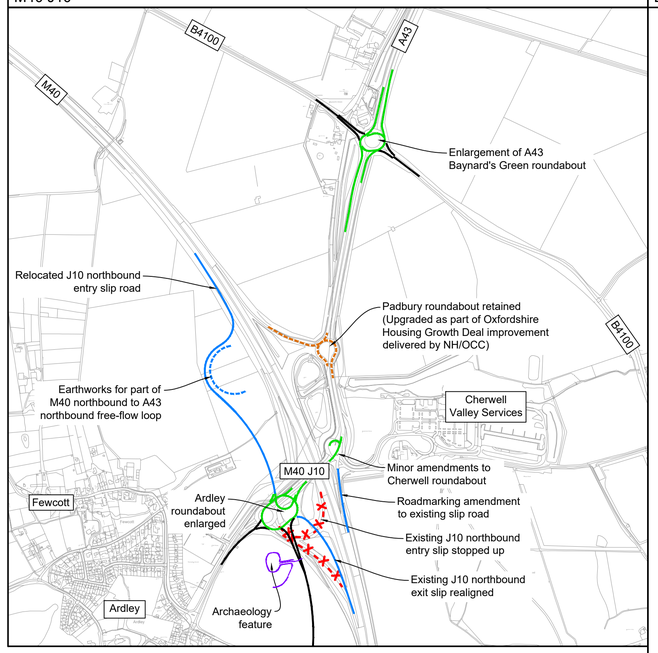
B430

Bicester

0 250 500 750 1000

SCALE: METRES

M40 J10



Legend

- Upgraded / new motorway (National Highways)
- Upgraded / new all-purpose trunk road (National Highways)
- Upgraded / new local roads (OCC)
- Private access roads
- Existing highway stopped up

Rev	Date	Details of issue / revision	Drw	Rev
P05	14.02.25	Updated to M40 J10 option 28	SRH	SRH
P04	28.02.23	General updates	SRH	SRH
P03	24.02.23	General updates	SRH	SRH
P02	02.02.23	M40 SB merge slip added	SRH	SRH
P01	15.12.22	Preliminary Issue	SRH	SRH

Issues & Revisions

BWB CONSULTANCY | ENVIRONMENT INFRASTRUCTURE | BUILDINGS

- ☐ Birmingham | 0121 233 3322
- ☐ Leeds | 0113 233 8000
- ☐ London | 020 7407 3879
- ☐ Manchester | 0161 233 4260
- ■ Nottingham | 0115 924 1100

www.bwbconsulting.com

Client

OXFORDSHIRE RAILFREIGHT LTD.

Project Title

OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title

HIGHWAY WORKS PHASE 1 (PRE-OCCUPATION)

Drawn:	S. Hilditch		Reviewed:	S. Hilditch	
BWB Ref:	NTH2479	Date:	15.12.22	Scale@A1:	1:10,000

Drawing Status

PRELIMINARY

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-BWB-GEN-ZZ-SK-CH-SK054	S1	P05

© Copyright BWB Consulting Ltd

free-flow loop lower level)

A43 southbound widened to 4 lanes

M40 northbound to A43 northbound free-flow loop

Cherwell Valley Services

Right turn out of services stopped up

Amendments to Cherwell roundabout

M40 J10

Minor amendments to services entry and exit

Fewcott

Ardley

See inset for M40 J10

Existing J10 southbound entry slip widened and lengthened to a 2-lane merge

Upper Heyford Airfield

Heyford Park

Existing road to Heyford Park stopped up, replaced by the Heyford Park Link Road

B430

Secondary OxSRFI access (buses and cyclists only)

Junction closed and removed

Bucknell

Heyford Park Link Road

Signal junctions with existing B430

No right turn from Middleton Stoney onto Relief Road

No left turn from Relief Road into Middleton Stoney

B4030

Middleton Road walking, cycling and horse-riding enhancement

Bridleway underpass

Gagle brook crossing

M40

B4030

Village gateway

Middleton Road roundabout

Middleton Stoney

Middleton Stoney crossroads pedestrian crossing improvements

Potential for 7.5T environmental weight restriction in the east side of Middleton Stoney, subject to further review.

Except for access

B4030

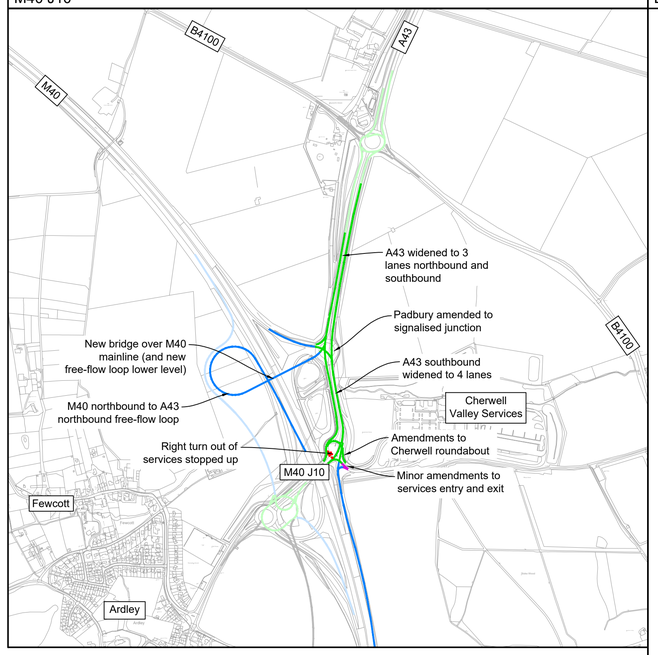
B430

Bicester

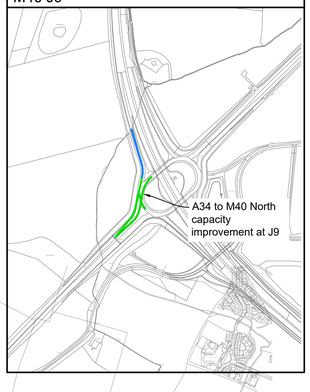
0 250 500 750 1000

SCALE: METRES

M40 J10



M40 J9



Legend

- Upgraded / new motorway (National Highways)
- Upgraded / new all-purpose trunk road (National Highways)
- Upgraded / new local roads (OCC)
- Private access roads
- Existing highway stopped up

Rev	Date	Details of issue / revision	Drw	Rev
P04	14.02.25	Updated to M40 J10 option 28	SRH	SRH
P03	28.02.23	General updates	SRH	SRH
P02	24.02.23	General updates	SRH	SRH
P01	15.12.22	Preliminary Issue	SRH	SRH

Issues & Revisions

BWB CONSULTANCY | ENVIRONMENT INFRASTRUCTURE | BUILDINGS

☐ Birmingham | 0121 233 3322
☐ Leeds | 0113 233 8000
☐ London | 020 7407 3879
☐ Manchester | 0161 233 4260
■ Nottingham | 0115 924 1100
www.bwbconsulting.com

Client

OXFORDSHIRE RAILFREIGHT LTD.

Project Title

OxSRFI
OXFORDSHIRE
STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title

HIGHWAY WORKS PHASE 2 (PRE-OCCUPATION OF >2million sq ft)

Drawn:	S. Hilditch		Reviewed:	S. Hilditch	
BWB Ref:	NTH2479	Date:	15.12.22	Scale@A1:	1:10,000

Drawing Status

PRELIMINARY

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-BWB-GEN-ZZ-SK-CH-SK055	S1	P04

© Copyright BWB Consulting Ltd

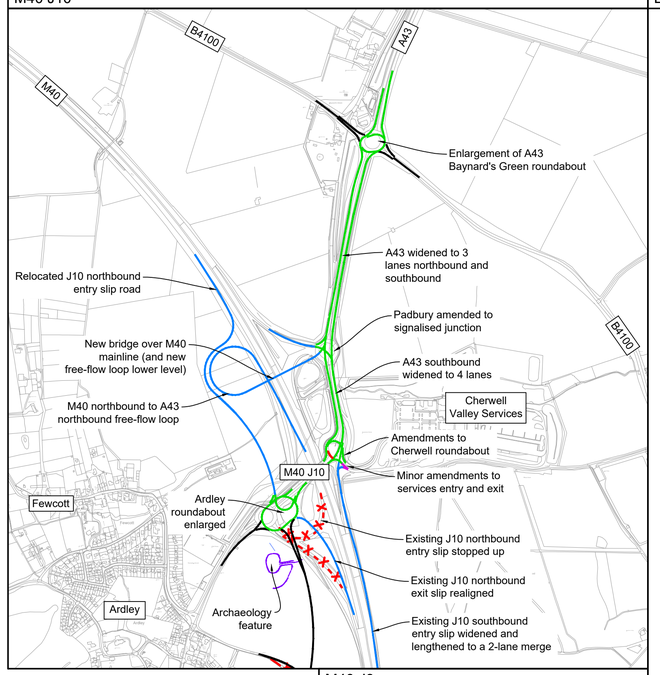
APPENDIX A

HIGHWAY WORKS DRAWINGS

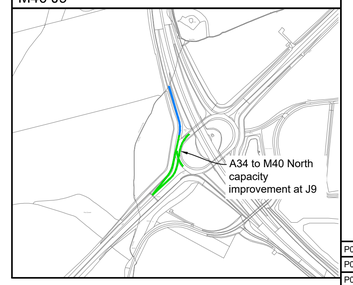
free-flow loop lower level)
A43 southbound widened to 4 lanes
M40 northbound to A43 northbound free-flow loop
Cherwell Valley Services
Amendments to Cherwell roundabout
M40 J10
Minor amendments to services entry and exit
Fewcott
Ardley roundabout enlarged
Existing J10 northbound entry slip stopped up
Existing J10 northbound exit slip realigned
Turning head
Ardley
Archaeology feature
Existing J10 southbound entry slip widened and lengthened to a 2-lane merge
Quarry cottages lane stopped up over railway, replaced by bridleway
See inset for M40 J10
Ardley Road diverted over new bypass
Turning head
Existing B430 stopped up south of Ardley, replaced with footway/cycleway/bridleway link
Upper Heyford Airfield
B430 Ardley bypass and OxSRFI link road (Single 2+1)
Segregated left turn lane on exit to direct all HGVs to J10
Principal OxSRFI access
Bridge over Chiltern Mainline
Roundabout on existing B430 (partially signalised)
Bridge over new rail sidings
Existing road to Heyford Park stopped up, replaced by the Heyford Park Link Road
Heyford Park
B430
Secondary OxSRFI access (buses and cyclists only)
Camp Road / Chilgrove Drive priority amendment and equestrian crossing
Junction closed and removed
Bucknell
Heyford Park Link Road
B430 Toucan crossing
Signal junctions with existing B430
No right turn from Middleton Stoney onto Relief Road
No left turn from Relief Road into Middleton Stoney
Middleton Road walking, cycling and horse-riding enhancement
B4030
Bridleway underpass
Gagle brook crossing
M40
B4030
Village gateway
Middleton Road roundabout
Middleton Stoney
Middleton Stoney crossroads pedestrian crossing improvements
Potential for 7.5T environmental weight restriction in the east side of Middleton Stoney, subject to further review.
Except for access
B4030
Bicester
B430

© Copyright BWB Consulting Ltd

M40 J10



M40 J9



0 250 500 750 1000

SCALE: METRES

GRID NORTH

Legend

- Upgraded / new motorway (National Highways)
- Upgraded / new all-purpose trunk road (National Highways)
- Upgraded / new local roads (OCC)
- Private access roads
- Existing highway stopped up

Rev	Date	Details of issue / revision	Drw	Rev
P08	27.01.25	Principal access and J10 works amended	SRH	SRH
P07	05.12.24	Updated to M40 J10 Option 28	SRH	SRH
P06	10.03.23	Scheme updates	SRH	SRH
P05	15.12.22	J10 amendments	SRH	SRH
P04	04.10.22	Updates following Stage 1 consultation	SRH	SRH
P03	30.03.22	Minor text amendment	SRH	SRH
P02	29.03.22	Updated following comments	SRH	SRH
P01	22.03.22	Preliminary Issue	SRH	SRH

Issues & Revisions

BWB CONSULTANCY | ENVIRONMENT INFRASTRUCTURE | BUILDINGS

Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7407 3879
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client

OXFORDSHIRE RAILFREIGHT LTD.

Project Title

OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title

HIGHWAY WORKS OVERVIEW (PHASES 1 & 2)

Drawn:	S. Hilditch		Reviewed:	S. Hilditch	
BWB Ref:	NTH2479	Date:	22.03.22	Scale@A1:	1:10,000

Drawing Status

PRELIMINARY

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-BWB-GEN-ZZ-SK-CH-SK041	S1	P08

GRID NORTH

Existing bridge converted to pedestrian/cycle use

Existing B430

Assumed Network Rail ownership boundary (to be confirmed)

B430 Ardley Bypass

Indicative alignment of proposed Bridleway under the bypass

31.1

Existing B430 stopped up north of the access junction

Cycle Track to Ardley

Indicative outline of OxSRFI private access bridge over private sidings (subject to survey and design development)

OxSRFI access road

14.1

ANPR camera

Segregated left turn lane from OxSRFI to B430 Ardley Bypass

18.1

17.8° skew

Indicative Outline of Bridge over Chiltern Main Line (subject to survey and design development) Approx distance from rail level to road level 8.5m

32.2

Height barrier over exit lane to direct all HGV traffic north

ANPR camera

39.8

Outline of B430 Bridge over private sidings

15.7

Chiltern Main Line

Southern rail connection

11.7

OCC highway boundary

Indicative SSSI boundary

The layout shown is for proof of concept and is subject to capacity assessment, WCHR reviews, road safety audits and agreement with the highway authority.

OxSRFI principal access junction Level to be generally at existing level of B430

Rail Freight Hunt

Cycle Track alongside B430

B430

ANPR cameras

Cut line

Cut line

Amendments to B430 / recycling centre access to improve the right turn out

© Copyright BWB Consulting Ltd

Legend

Rev	Date	Details of issue / revision	Drw	Rev
P06	06.02.25	Layout reverted to roundabout	SRH	SRH
P05	09.10.24	Layout amended to signalised junction	SRH	SRH
P04	30.03.23	General scheme updates	SRH	SRH
P03	03.05.22	Amendments to labels, cycle tracks added	SRH	SRH
P02	09.06.21	B430 NB exit widened to two lanes	SRH	SRH
P01	04.06.21	Preliminary issue	SRH	SRH

Issues & Revisions

BWB CONSULTANCY | ENVIRONMENT INFRASTRUCTURE | BUILDINGS

- Birmingham | 0121 233 3322
- Leeds | 0113 233 8000
- London | 020 7407 3879
- Manchester | 0161 233 4260
- Nottingham | 0115 924 1100

www.bwbconsulting.com

Client

OXFORDSHIRE RAILFREIGHT LIMITED

Project Title

OxSRFI OXFORDSHIRE STRATEGIC RAIL FREIGHT INTERCHANGE

Drawing Title

OxSRFI PRINCIPAL ACCESS JUNCTION GENERAL ARRANGEMENT

Drawn:	S. Hilditch		Reviewed:	S. Hilditch	
BWB Ref:	NTH2479	Date:	04.06.21	Scale@A1:	1:500

Drawing Status

PRELIMINARY

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
OxSRFI-BWB-GEN-ZZ-SK-CH-SK018	S1	P06

APPENDIX B

2031 REFERENCE CASE TRAFFIC FLOWS

2031 AM Peak Reference Case LIGHT VEHICLES (in vehs) - from BTM											
		To Zone (Destination)									
		1	2	3	4	5	6	7	8	9	**Total**
From Zone (Origin)	1	0	169	59	1125	324	0	15	1	17	**1712**
	2	225	0	0	2	16	193	273	0	0	**708**
	3	52	0	0	163	70	106	0	0	0	**391**
	4	951	2	214	0	2	2636	6	13	4	**3829**
	5	119	15	0	0	0	91	12	31	110	**378**
	6	0	289	130	3052	145	0	29	11	43	**3700**
	7	70	455	0	108	0	0	0	0	1	**633**
	8	5	1	0	2	54	10	0	0	46	**117**
	9	12	0	0	0	174	98	9	16	0	**308**
	Total	**1433**	**932**	**404**	**4452**	**783**	**3136**	**344**	**72**	**221**	**11776**

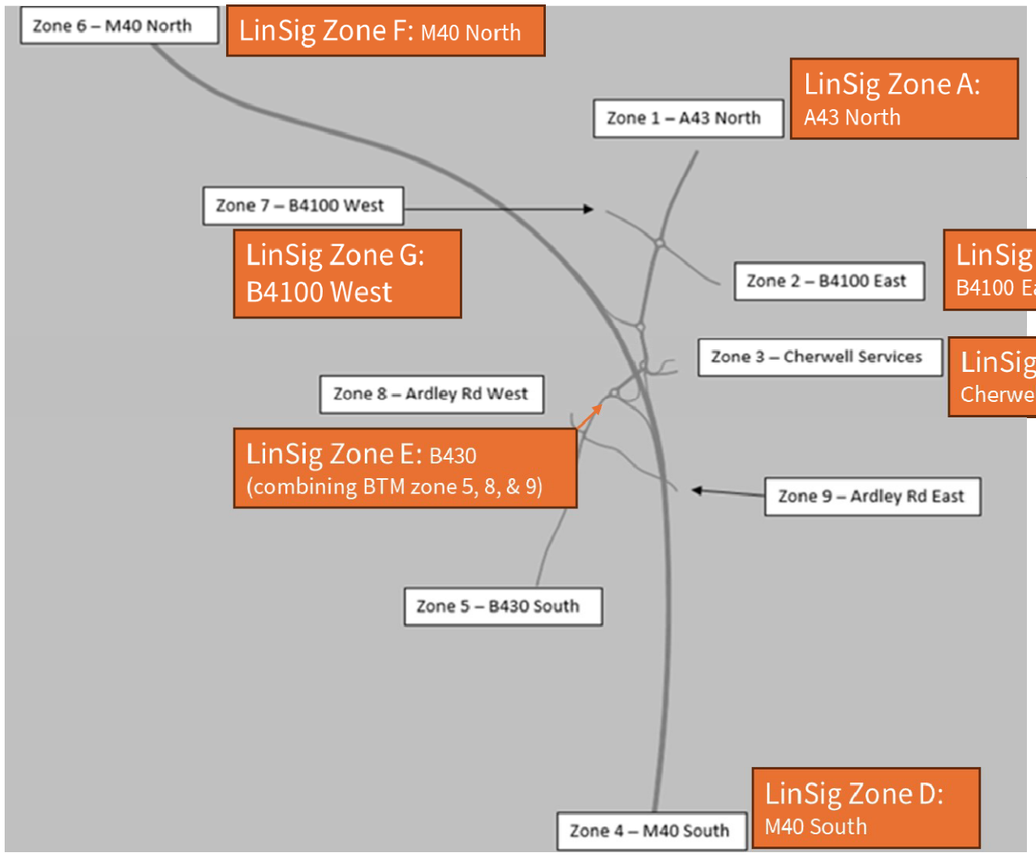
2031 AM Peak Reference Case HEAVY VEHICLES (in vehs) - from BTM											
		To Zone (Destination)									
		1	2	3	4	5	6	7	8	9	**Total**
From Zone (Origin)	1	0	0	2	231	5	0	0	0	0	**238**
	2	15	0	0	0	0	0	12	0	0	**27**
	3	12	0	0	54	0	43	0	0	0	**109**
	4	132	0	15	0	0	325	0	0	0	**473**
	5	0	0	0	0	0	14	0	0	0	**14**
	6	0	15	57	526	0	0	0	0	0	**598**
	7	0	7	0	0	0	0	0	0	0	**7**
	8	0	0	0	0	7	0	0	0	0	**7**
	9	0	0	0	0	0	0	0	0	0	**0**
	Total	**160**	**22**	**74**	**811**	**12**	**383**	**12**	**0**	**0**	**1474**

2031 AM Peak Reference Case TOTAL TRAFFIC (in vehs) - from BTM											
		To Zone (Destination)									
		1	2	3	4	5	6	7	8	9	**Total**
From Zone (Origin)	1	0	169	61	1357	328	0	15	1	17	**1950**
	2	240	0	0	2	16	193	285	0	0	**736**
	3	64	0	0	217	70	149	0	0	0	**500**
	4	1083	2	229	0	2	2962	6	13	4	**4303**
	5	119	15	0	0	0	105	12	31	110	**392**
	6	0	305	187	3578	145	0	29	11	43	**4298**
	7	70	461	0	108	0	0	0	0	1	**640**
	8	5	1	0	2	61	10	0	0	46	**124**
	9	12	0	0	0	174	98	9	16	0	**308**
	Total	**1593**	**954**	**478**	**5262**	**795**	**3518**	**356**	**72**	**221**	**13250**

2031 AM Peak Reference Case TOTAL TRAFFIC (in pcus*) - from BTM											
		To Zone (Destination)									
		1	2	3	4	5	6	7	8	9	**Total**
From Zone (Origin)	1	0	169	63	1541	332	0	15	1	17	**2139**
	2	252	0	0	2	16	193	294	0	0	**757**
	3	74	0	0	259	70	184	0	0	0	**586**
	4	1189	2	242	0	2	3221	6	13	4	**4679**
	5	119	15	0	0	0	116	12	31	110	**403**
	6	0	317	232	3997	145	0	29	11	43	**4774**
	7	70	467	0	108	0	0	0	0	1	**645**
	8	5	1	0	2	67	10	0	0	46	**130**
	9	12	0	0	0	174	98	9	16	0	**308**
	Total	**1720**	**972**	**537**	**5908**	**805**	**3823**	**365**	**72**	**221**	**14424**

*AM peak HGV pcus factor in the BTM (1 HGV equals 1.7966 pcus)

BTM Reference Case traffic flow data cordon



LinSig Network (see above)

2031 AM Peak Reference Case TOTAL TRAFFIC (in pcus)								
	A	**B**	**C**	**D**	**E**	**F**	**G**	**Total**
A	0	169	63	1541	351	0	15	**2139**
B	252	0	0	2	16	193	294	**757**
C	74	0	0	259	70	184	0	**586**
D	1189	2	242	0	20	0	6	**1458**
E	136	16	0	2	0	225	21	**399**
F	0	317	232	0	199	0	29	**778**
G	70	467	0	108	1	0	0	**645**
Total	**1720**	**972**	**537**	**1912**	**656**	**602**	**365**	**6764**

2031 PM Peak Reference Case LIGHT VEHICLES (in vehs) - from BTM											
		To Zone (Destination)									
		1	2	3	4	5	6	7	8	9	**Total**
From Zone (Origin)	1	0	263	109	1145	101	0	58	3	14	**1694**
	2	372	0	0	7	5	228	303	4	0	**918**
	3	76	0	0	219	0	144	0	0	0	**440**
	4	1581	1	182	0	6	3745	0	23	0	**5539**
	5	134	2	0	0	0	117	0	126	77	**456**
	6	0	168	145	3073	93	0	0	15	53	**3548**
	7	55	275	0	43	1	0	0	0	1	**375**
	8	8	0	0	2	35	9	0	0	21	**75**
	9	0	0	0	0	9	91	0	28	0	**128**
	Total	**2225**	**710**	**436**	**4490**	**251**	**4334**	**361**	**199**	**167**	**13172**

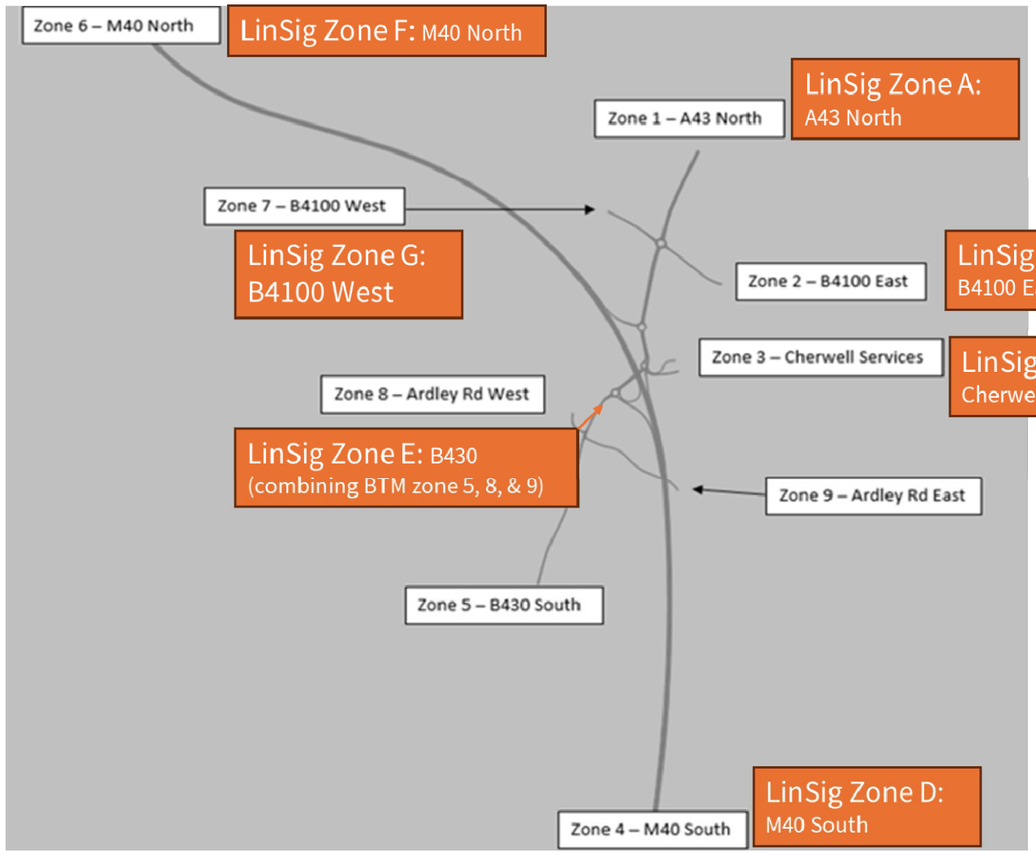
2031 PM Peak Reference Case HEAVY VEHICLES (in vehs) - from BTM											
		To Zone (Destination)									
		1	2	3	4	5	6	7	8	9	**Total**
From Zone (Origin)	1	0	9	1	96	0	0	0	0	0	**106**
	2	0	0	0	0	0	4	0	0	0	**5**
	3	13	0	0	46	0	37	0	0	0	**96**
	4	127	0	46	0	0	424	0	0	0	**597**
	5	3	0	0	0	0	0	0	1	0	**4**
	6	0	0	50	315	0	0	0	0	0	**365**
	7	0	5	0	0	0	0	0	0	0	**5**
	8	0	0	0	0	0	0	0	0	0	**0**
	9	0	0	0	0	0	0	0	0	0	**0**
	Total	**142**	**14**	**98**	**456**	**0**	**466**	**0**	**1**	**0**	**1177**

2031 PM Peak Reference Case TOTAL TRAFFIC (in vehs) - from BTM											
		To Zone (Destination)									
		1	2	3	4	5	6	7	8	9	**Total**
From Zone (Origin)	1	0	273	110	1241	101	0	58	3	14	**1801**
	2	372	0	0	7	5	232	303	4	0	**923**
	3	89	0	0	265	0	181	0	0	0	**535**
	4	1707	1	228	0	6	4170	0	23	0	**6136**
	5	136	2	0	0	0	117	0	127	77	**460**
	6	0	168	195	3388	93	0	0	15	53	**3913**
	7	55	280	0	43	1	0	0	0	1	**380**
	8	8	0	0	2	35	9	0	0	21	**75**
	9	0	0	0	0	9	91	0	28	0	**128**
	Total	**2367**	**725**	**533**	**4946**	**251**	**4799**	**361**	**201**	**167**	**14349**

2031 PM Peak Reference Case TOTAL TRAFFIC (in pcus*) - from BTM											
		To Zone (Destination)									
		1	2	3	4	5	6	7	8	9	**Total**
From Zone (Origin)	1	0	280	111	1316	101	0	58	3	14	**1884**
	2	372	0	0	7	5	235	303	4	0	**927**
	3	99	0	0	301	0	210	0	0	0	**610**
	4	1806	1	264	0	6	4500	0	23	0	**6601**
	5	138	2	0	0	0	117	0	128	77	**463**
	6	0	168	234	3633	93	0	0	15	53	**4197**
	7	55	284	0	43	1	0	0	0	1	**384**
	8	8	0	0	2	35	9	0	0	21	**75**
	9	0	0	0	0	9	91	0	28	0	**128**
	Total	**2477**	**736**	**609**	**5301**	**251**	**5162**	**361**	**202**	**167**	**15266**

*PM peak HGV pcus factor in the BTM (1 HGV equals 1.7786 pcus)

BTM Reference Case traffic flow data cordon



LinSig Network (see above)

2031 PM Peak Reference Case TOTAL TRAFFIC (in pcus)								
	A	**B**	**C**	**D**	**E**	**F**	**G**	**Total**
A	0	280	111	1316	119	0	58	**1884**
B	372	0	0	7	9	235	303	**927**
C	99	0	0	301	0	210	0	**610**
D	1806	1	264	0	29	0	0	**2101**
E	146	2	0	2	0	217	0	**367**
F	0	168	234	0	162	0	0	**564**
G	55	284	0	43	1	0	0	**384**
Total	**2477**	**736**	**609**	**1668**	**321**	**662**	**361**	**6834**

APPENDIX C

PHASE 1 OXSRFI DEVELOPMENT TRAFFIC FLOWS

OxSRFI PHASE 1 DEVELOPMENT TRAFFIC AM PEAK - LIGHT VEHICLES (in vehs) - from BTM													
		To Zone (Destination)											
		1	2	3	4	5	6	7	8	9	10	11 + 12	**Total**
From Zone (Origin)	1											74	**74**
	2											17	**17**
	3											0	**0**
	4											4	**4**
	5											13	**13**
	6											30	**30**
	7											11	**11**
	8											2	**2**
	9											0	**0**
	10											125	**125**
	11 + 12	4	1	0	0	1	2	1	1	4	17	0	**30**
	Total	**4**	**1**	**0**	**0**	**1**	**2**	**1**	**1**	**4**	**17**	**278**	**308**

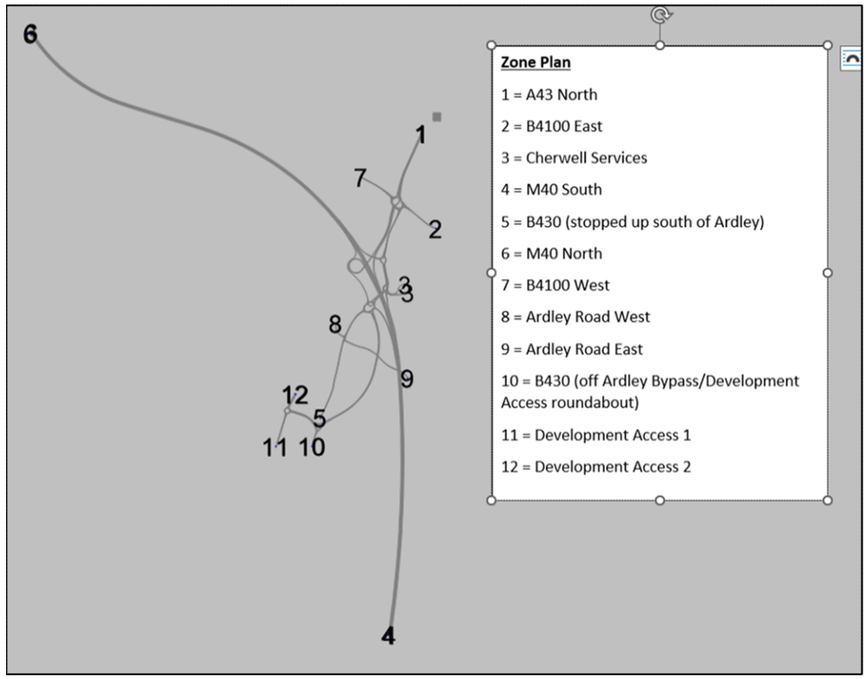
OxSRFI PHASE 1 DEVELOPMENT TRAFFIC AM PEAK - HEAVY VEHICLES (in vehs) - from BTM													
		To Zone (Destination)											
		1	2	3	4	5	6	7	8	9	10	11 + 12	**Total**
From Zone (Origin)	1											5	**5**
	2											1	**1**
	3											0	**0**
	4											29	**29**
	5											0	**0**
	6											17	**17**
	7											0	**0**
	8											0	**0**
	9											0	**0**
	10											0	**0**
	11 + 12	5	1	0	27	0	16	0	0	0	0	0	**50**
	Total	**5**	**1**	**0**	**27**	**0**	**16**	**0**	**0**	**0**	**0**	**53**	**103**

OxSRFI PHASE 1 DEVELOPMENT TRAFFIC AM Peak - TOTAL TRAFFIC (in vehs) - from BTM													
		To Zone (Destination)											
		1	2	3	4	5	6	7	8	9	10	11 + 12	**Total**
From Zone (Origin)	1											79	**79**
	2											18	**18**
	3											0	**0**
	4											33	**33**
	5											13	**13**
	6											48	**48**
	7											12	**12**
	8											2	**2**
	9											0	**0**
	10											125	**125**
	11 + 12	9	2	0	28	1	18	1	1	4	17	0	**80**
	Total	**9**	**2**	**0**	**28**	**1**	**18**	**1**	**1**	**4**	**17**	**331**	**411**

OxSRFI PHASE 1 DEVELOPMENT TRAFFIC AM PEAK - TOTAL TRAFFIC (in pcus*)													
		To Zone (Destination)											
		1	2	3	4	5	6	7	8	9	10	11 + 12	**Total**
From Zone (Origin)	1											84	**84**
	2											20	**20**
	3											0	**0**
	4											62	**62**
	5											13	**13**
	6											65	**65**
	7											12	**12**
	8											2	**2**
	9											0	**0**
	10											125	**125**
	11 + 12	14	3	0	55	1	34	1	1	4	17	0	**130**
	Total	**14**	**3**	**0**	**55**	**1**	**34**	**1**	**1**	**4**	**17**	**384**	**514**

* 1 HGV equals 2 pcus

BTM traffic flow data cordon for OxSRFI development traffic (extracted from Option 26 BTM Do-Something BTM run)



Zones 11 and 12 are OxSRFI site

OxSRFI DEVELOPMENT TRAFFIC PM PEAK - LIGHT VEHICLES (in vehs) - from BTM													
		To Zone (Destination)											
		1	2	3	4	5	6	7	8	9	10	11 + 12	**Total**
From Zone (Origin)	1											21	**21**
	2											7	**7**
	3											0	**0**
	4											1	**1**
	5											4	**4**
	6											7	**7**
	7											2	**2**
	8											1	**1**
	9											0	**0**
	10											49	**49**
	11 + 12	89	9	0	5	16	37	14	3	21	133	0	**329**
	Total	**89**	**9**	**0**	**5**	**16**	**37**	**14**	**3**	**21**	**133**	**91**	**420**

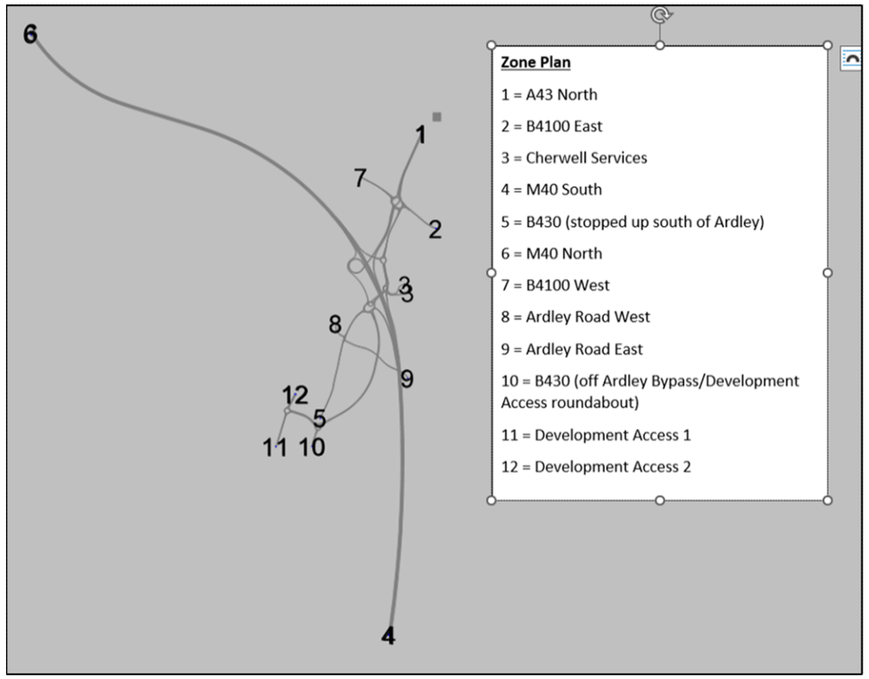
OxSRFI DEVELOPMENT TRAFFIC PM PEAK - HEAVY VEHICLES (in vehs) - from BTM													
		To Zone (Destination)											
		1	2	3	4	5	6	7	8	9	10	11 + 12	**Total**
From Zone (Origin)	1											5	**5**
	2											1	**1**
	3											0	**0**
	4											26	**26**
	5											0	**0**
	6											16	**16**
	7											0	**0**
	8											0	**0**
	9											0	**0**
	10											0	**0**
	11 + 12	5	1	0	24	0	14	0	0	0	0	0	**44**
	Total	**5**	**1**	**0**	**24**	**0**	**14**	**0**	**0**	**0**	**0**	**49**	**93**

OxSRFI DEVELOPMENT TRAFFIC PM Peak - TOTAL TRAFFIC (in vehs) - from BTM													
		To Zone (Destination)											
		1	2	3	4	5	6	7	8	9	10	11 + 12	**Total**
From Zone (Origin)	1											26	**26**
	2											8	**8**
	3											0	**0**
	4											27	**27**
	5											4	**4**
	6											23	**23**
	7											2	**2**
	8											1	**1**
	9											0	**0**
	10											49	**49**
	11 + 12	94	10	0	29	16	51	15	3	21	133	0	**373**
	Total	**94**	**10**	**0**	**29**	**16**	**51**	**15**	**3**	**21**	**133**	**140**	**513**

OxSRFI DEVELOPMENT TRAFFIC PM PEAK - TOTAL TRAFFIC (in pcus*)													
		To Zone (Destination)											
		1	2	3	4	5	6	7	8	9	10	11 + 12	**Total**
From Zone (Origin)	1											31	**31**
	2											9	**9**
	3											0	**0**
	4											54	**54**
	5											4	**4**
	6											39	**39**
	7											3	**3**
	8											1	**1**
	9											0	**0**
	10											49	**49**
	11 + 12	98	11	0	53	16	66	15	3	21	133	0	**417**
	Total	**98**	**11**	**0**	**53**	**16**	**66**	**15**	**3**	**21**	**133**	**189**	**606**

* 1 HGV equals 2 pcus

BTM traffic flow data cordon for OxSRFI development traffic (extracted from Option 26 BTM Do-Something BTM run)



Zones 11 and 12 are OxSRFI site

APPENDIX D

2031 DO SOMETHING PHASE 1 TRAFFIC FLOWS

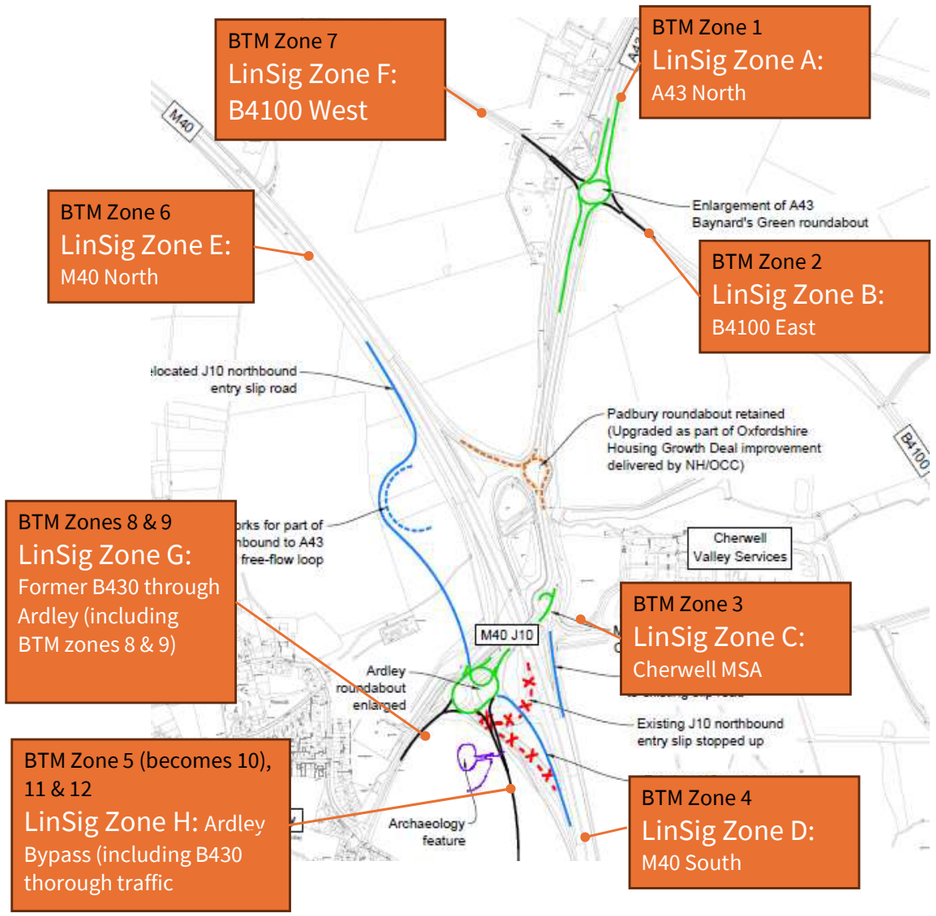
2031 Do-Something phase 1 AM PEAK - LIGHT VEHICLES (in vehs)													
		To Zone (Destination)											
		1	2	3	4	5	6	7	8	9	10	11 + 12	**Total**
From Zone (Origin)	1	0	169	59	1125	0	0	15	1	17	324	74	**1785**
	2	225	0	0	2	0	193	273	0	0	16	17	**726**
	3	52	0	0	163	0	106	0	0	0	70	0	**391**
	4	951	2	214	0	0	2636	6	13	4	2	4	**3834**
	5	0	0	0	0	0	0	0	0	0	0	13	**13**
	6	0	289	130	3052	0	0	29	11	43	145	30	**3731**
	7	70	455	0	108	0	0	0	0	1	0	11	**644**
	8	5	1	0	2	0	10	0	0	46	54	2	**119**
	9	12	0	0	0	0	98	9	16	0	174	0	**308**
	10	119	15	0	0	0	91	12	31	110	0	125	**503**
	11 + 12	4	1	0	0	1	2	1	1	4	17	0	**30**
	Total	**1437**	**932**	**404**	**4452**	**1**	**3137**	**345**	**74**	**225**	**800**	**278**	**12084**

2031 Do-Something phase 1 AM PEAK - HEAVY VEHICLES (in vehs)													
		To Zone (Destination)											
		1	2	3	4	5	6	7	8	9	10	11 + 12	**Total**
From Zone (Origin)	1	0	0	2	231	0	0	0	0	0	5	5	**243**
	2	15	0	0	0	0	0	12	0	0	0	1	**28**
	3	12	0	0	54	0	43	0	0	0	0	0	**109**
	4	132	0	15	0	0	325	0	0	0	0	29	**502**
	5	0	0	0	0	0	0	0	0	0	0	0	**0**
	6	0	15	57	526	0	0	0	0	0	0	17	**615**
	7	0	7	0	0	0	0	0	0	0	0	0	**7**
	8	0	0	0	0	0	0	0	0	0	7	0	**7**
	9	0	0	0	0	0	0	0	0	0	0	0	**0**
	10	0	0	0	0	0	14	0	0	0	0	0	**14**
	11 + 12	5	1	0	27	0	16	0	0	0	0	0	**50**
	Total	**164**	**23**	**74**	**838**	**0**	**399**	**12**	**0**	**0**	**12**	**53**	**1577**

2031 Do-Something phase 1 AM Peak - TOTAL TRAFFIC (in vehs)													
		To Zone (Destination)											
		1	2	3	4	5	6	7	8	9	10	11 + 12	**Total**
From Zone (Origin)	1	0	169	61	1357	0	0	15	1	17	328	79	**2029**
	2	240	0	0	2	0	193	285	0	0	16	18	**754**
	3	64	0	0	217	0	149	0	0	0	70	0	**500**
	4	1083	2	229	0	0	2962	6	13	4	2	33	**4336**
	5	0	0	0	0	0	0	0	0	0	0	13	**13**
	6	0	305	187	3578	0	0	29	11	43	145	48	**4346**
	7	70	461	0	108	0	0	0	0	1	0	12	**652**
	8	5	1	0	2	0	10	0	0	46	61	2	**127**
	9	12	0	0	0	0	98	9	16	0	174	0	**308**
	10	119	15	0	0	0	105	12	31	110	0	125	**517**
	11 + 12	9	2	0	28	1	18	1	1	4	17	0	**80**
	Total	**1602**	**956**	**478**	**5290**	**1**	**3536**	**357**	**74**	**225**	**812**	**331**	**13661**

2031 Do-Something phase 1 AM PEAK - TOTAL TRAFFIC (in pcus)													
		To Zone (Destination)											
		1	2	3	4	5	6	7	8	9	10	11 + 12	**Total**
From Zone (Origin)	1	0	169	63	1541	0	0	15	1	17	332	84	**2224**
	2	252	0	0	2	0	193	294	0	0	16	20	**777**
	3	74	0	0	259	0	184	0	0	0	70	0	**586**
	4	1189	2	242	0	0	3221	6	13	4	2	62	**4741**
	5	0	0	0	0	0	0	0	0	0	0	13	**13**
	6	0	317	232	3997	0	0	29	11	43	145	65	**4840**
	7	70	467	0	108	0	0	0	0	1	0	12	**658**
	8	5	1	0	2	0	10	0	0	46	67	2	**133**
	9	12	0	0	0	0	98	9	16	0	174	0	**308**
	10	119	15	0	0	0	116	12	31	110	0	125	**528**
	11 + 12	14	3	0	55	1	34	1	1	4	17	0	**130**
	Total	**1734**	**975**	**537**	**5963**	**1**	**3857**	**367**	**74**	**225**	**822**	**384**	**14938**

BTM and LingSig model zones for M40 Junction 10 and Baynard's Green Option 28



LinSig Network (Option 28 - PHASE 1)

2031 AM Do-Something TOTAL TRAFFIC (in pcus)									
	A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**Total**
A	0	169	63	1541	0	15	19	416	**2224**
B	252	0	0	2	193	294	0	36	**777**
C	74	0	0	259	184	0	0	70	**586**
D	1189	2	242	-	-	6	18	64	**1520**
E	0	317	232	-	0	29	54	210	**843**
F	70	467	0	108	0	0	1	12	**658**
G	17	1	0	2	109	9	0	243	**380**
H	133	18	0	55	151	13	146	0	**516**
Total	**1734**	**975**	**537**	**1967**	**636**	**367**	**238**	**1051**	**7503**

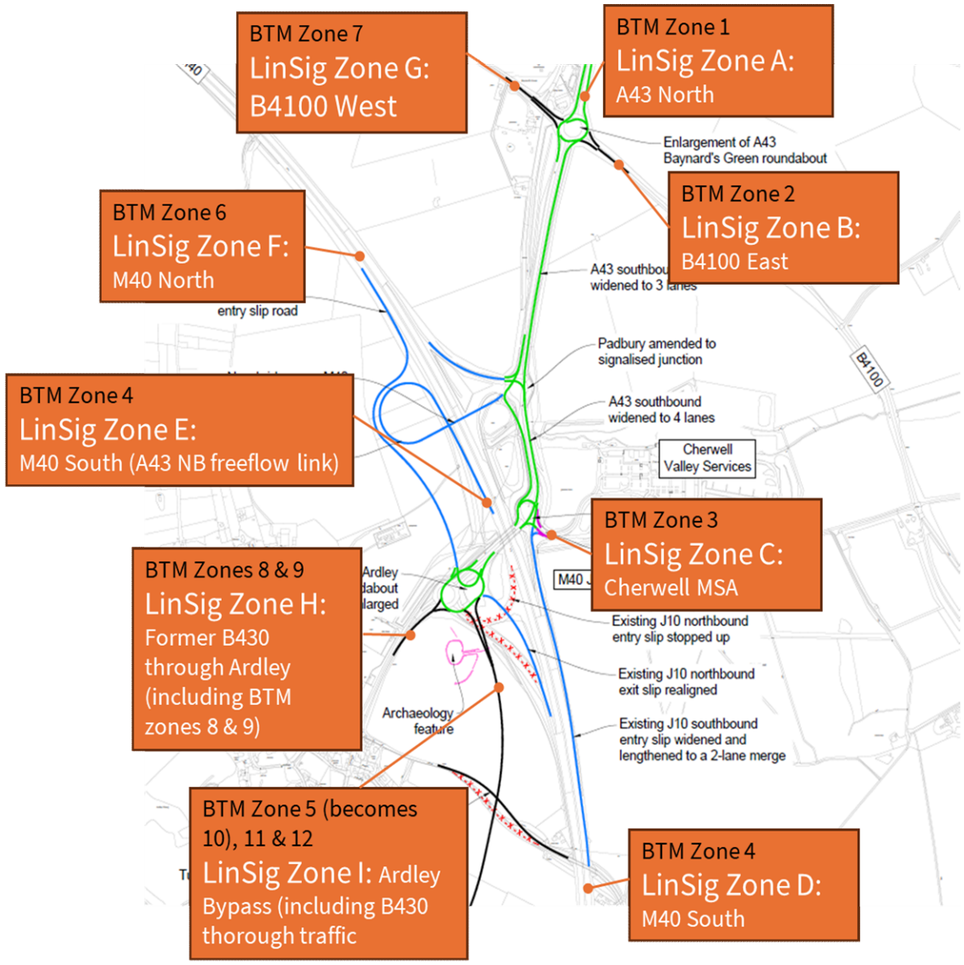
2031 Do-Something phase 1 PM PEAK - LIGHT VEHICLES (in vehs)													
		To Zone (Destination)											
		1	2	3	4	5	6	7	8	9	10	11 + 12	**Total**
From Zone (Origin)	1	0	263	109	1145	0	0	58	3	14	101	21	**1715**
	2	372	0	0	7	0	228	303	4	0	5	7	**925**
	3	76	0	0	219	0	144	0	0	0	0	0	**440**
	4	1581	1	182	0	0	3745	0	23	0	6	1	**5540**
	5	0	0	0	0	0	0	0	0	0	0	4	**4**
	6	0	168	145	3073	0	0	0	15	53	93	7	**3555**
	7	55	275	0	43	0	0	0	0	1	1	2	**377**
	8	8	0	0	2	0	9	0	0	21	35	1	**76**
	9	0	0	0	0	0	91	0	28	0	9	0	**128**
	10	134	2	0	0	0	117	0	126	77	0	49	**505**
	11 + 12	89	9	0	5	16	37	14	3	21	133	0	**329**
	Total	**2314**	**719**	**436**	**4495**	**16**	**4371**	**375**	**203**	**188**	**384**	**91**	**13592**

2031 Do-Something phase 1 PM PEAK - HEAVY VEHICLES (in vehs)													
		To Zone (Destination)											
		1	2	3	4	5	6	7	8	9	10	11 + 12	**Total**
From Zone (Origin)	1	0	9	1	96	0	0	0	0	0	0	5	**112**
	2	0	0	0	0	0	4	0	0	0	0	1	**6**
	3	13	0	0	46	0	37	0	0	0	0	0	**96**
	4	127	0	46	0	0	424	0	0	0	0	26	**623**
	5	0	0	0	0	0	0	0	0	0	0	0	**0**
	6	0	0	50	315	0	0	0	0	0	0	16	**381**
	7	0	5	0	0	0	0	0	0	0	0	0	**5**
	8	0	0	0	0	0	0	0	0	0	0	0	**0**
	9	0	0	0	0	0	0	0	0	0	0	0	**0**
	10	3	0	0	0	0	0	0	1	0	0	0	**4**
	11 + 12	5	1	0	24	0	14	0	0	0	0	0	**44**
	Total	**147**	**15**	**98**	**480**	**0**	**480**	**1**	**1**	**0**	**0**	**49**	**1270**

2031 Do-Something phase 1 PM Peak - TOTAL TRAFFIC (in vehs)													
		To Zone (Destination)											
		1	2	3	4	5	6	7	8	9	10	11 + 12	**Total**
From Zone (Origin)	1	0	273	110	1241	0	0	58	3	14	101	26	**1827**
	2	372	0	0	7	0	232	303	4	0	5	8	**931**
	3	89	0	0	265	0	181	0	0	0	0	0	**535**
	4	1707	1	228	0	0	4170	0	23	0	6	27	**6163**
	5	0	0	0	0	0	0	0	0	0	0	4	**4**
	6	0	168	195	3388	0	0	0	15	53	93	23	**3936**
	7	55	280	0	43	0	0	0	0	1	1	2	**382**
	8	8	0	0	2	0	9	0	0	21	35	1	**76**
	9	0	0	0	0	0	91	0	28	0	9	0	**128**
	10	136	2	0	0	0	117	0	127	77	0	49	**509**
	11 + 12	94	10	0	29	16	51	15	3	21	133	0	**373**
	Total	**2461**	**734**	**533**	**4975**	**16**	**4851**	**376**	**204**	**188**	**384**	**140**	**14862**

2031 Do-Something phase 1 PM PEAK - TOTAL TRAFFIC (in pcus)													
		To Zone (Destination)											
		1	2	3	4	5	6	7	8	9	10	11 + 12	**Total**
From Zone (Origin)	1	0	280	111	1316	0	0	58	3	14	101	31	**1914**
	2	372	0	0	7	0	235	303	4	0	5	9	**936**
	3	99	0	0	301	0	210	0	0	0	0	0	**610**
	4	1806	1	264	0	0	4500	0	23	0	6	54	**6654**
	5	0	0	0	0	0	0	0	0	0	0	4	**4**
	6	0	168	234	3633	0	0	0	15	53	93	39	**4236**
	7	55	284	0	43	1	0	0	0	1	1	3	**387**
	8	8	0	0	2	0	9	0	0	21	35	1	**76**
	9	0	0	0	0	0	91	0	28	0	9	0	**128**
	10	138	2	0	0	0	117	0	128	77	0	49	**512**
	11 + 12	98	11	0	53	16	66	15	3	21	133	0	**417**
	Total	**2576**	**746**	**609**	**5354**	**17**	**5228**	**376**	**205**	**188**	**384**	**189**	**15873**

BTM and LingSig model zones for M40 Junction 10 and Baynard's Green Option 28



LinSig Network (Option 28 - Phase 1)

2031 PM Do-Something TOTAL TRAFFIC (in pcus)									
	A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**Total**
A	0	280	111	1316	0	58	18	132	**1914**
B	372	0	0	7	235	303	4	14	**936**
C	99	0	0	301	210	0	0	0	**610**
D	1806	1	264	-	-	0	23	60	**2154**
E	0	168	234	-	0	0	68	132	**603**
F	55	284	0	43	0	0	1	3	**386**
G	8	0	0	2	99	0	0	46	**154**
H	237	13	0	53	183	15	229	0	**730**
Total	**2576**	**746**	**609**	**1721**	**728**	**376**	**344**	**387**	**7487**

APPENDIX E

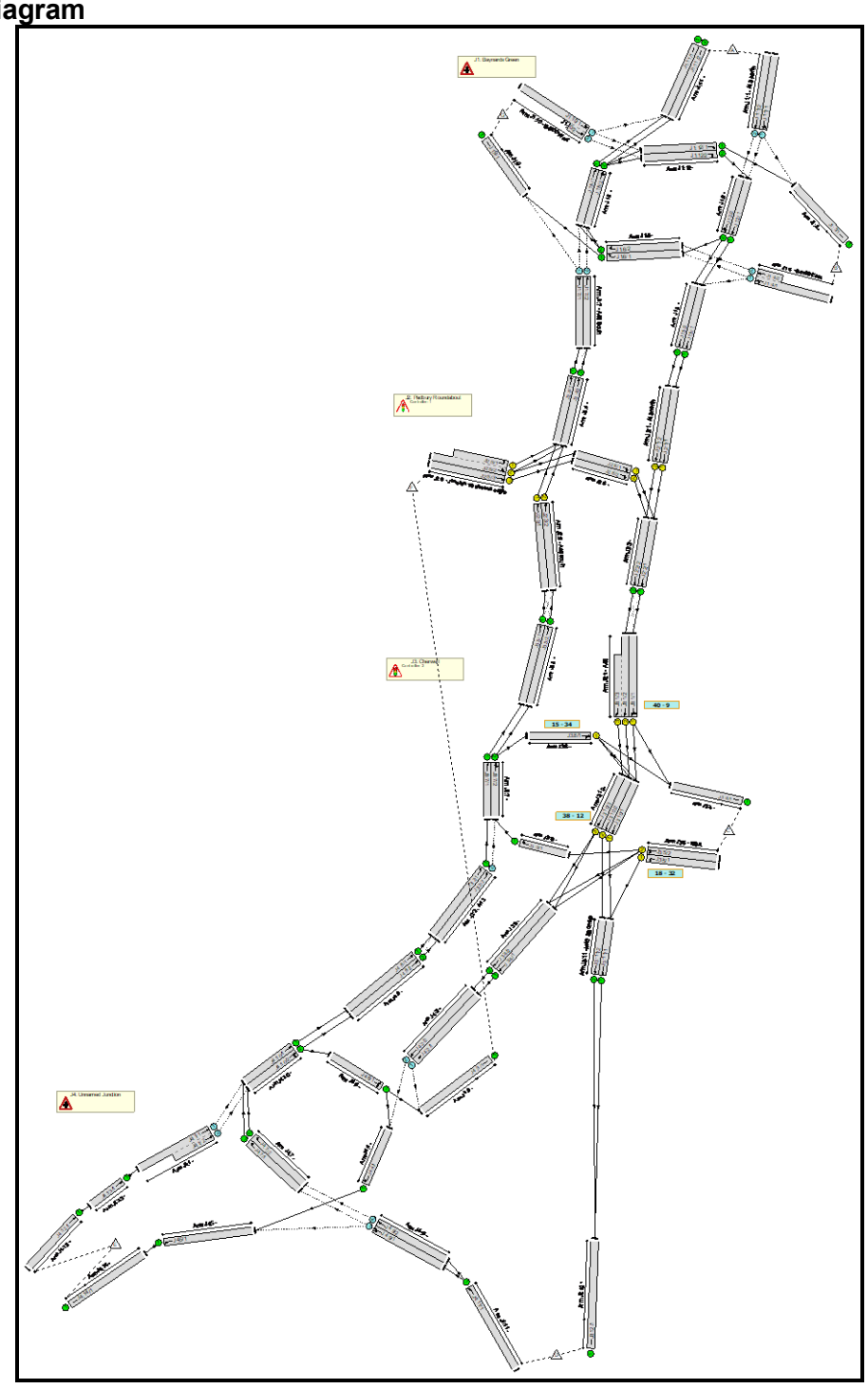
2031 REFERENCE CASE LINSIG MODEL

Full Input Data And Results

User and Project Details

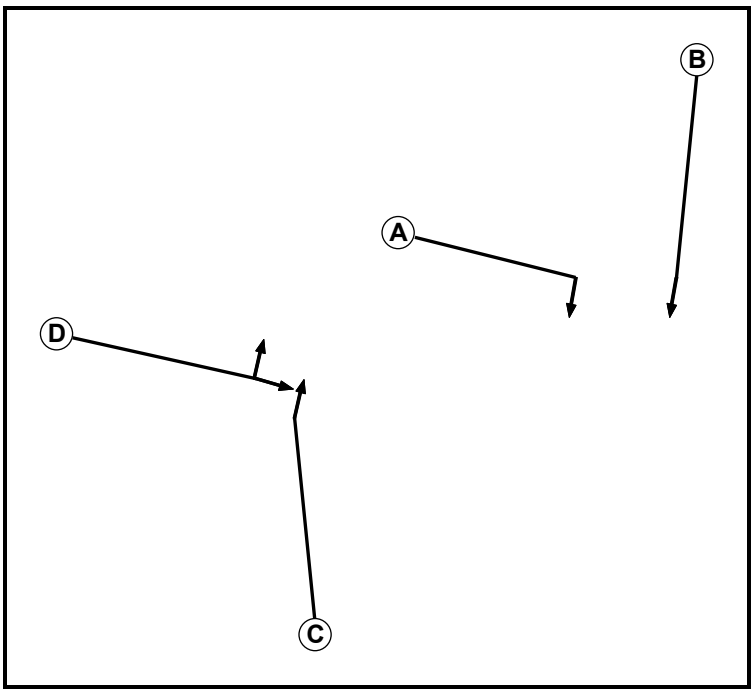
Project:	**Oxfordshire SRFI**
Title:	**2031 Reference Case Network Model**
Location:	
Additional detail:	Entry and exit links configured to be consistent with Option 28 for comparison.
File name:	250130 M40 J10 - 2031 reference case.lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



C1

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

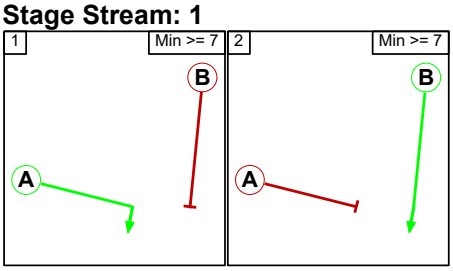
		Starting Phase			
		A	B	C	D
Terminating Phase	A		6	-	-
	B	6		-	-
	C	-	-		6
	D	-	-	6	

Phases in Stage

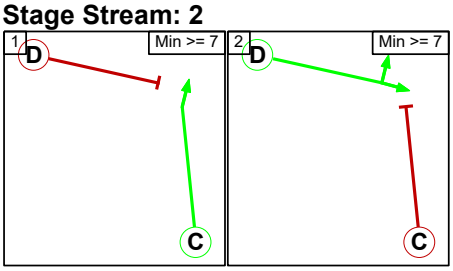
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Prohibited Stage Change

Stage Stream: 1

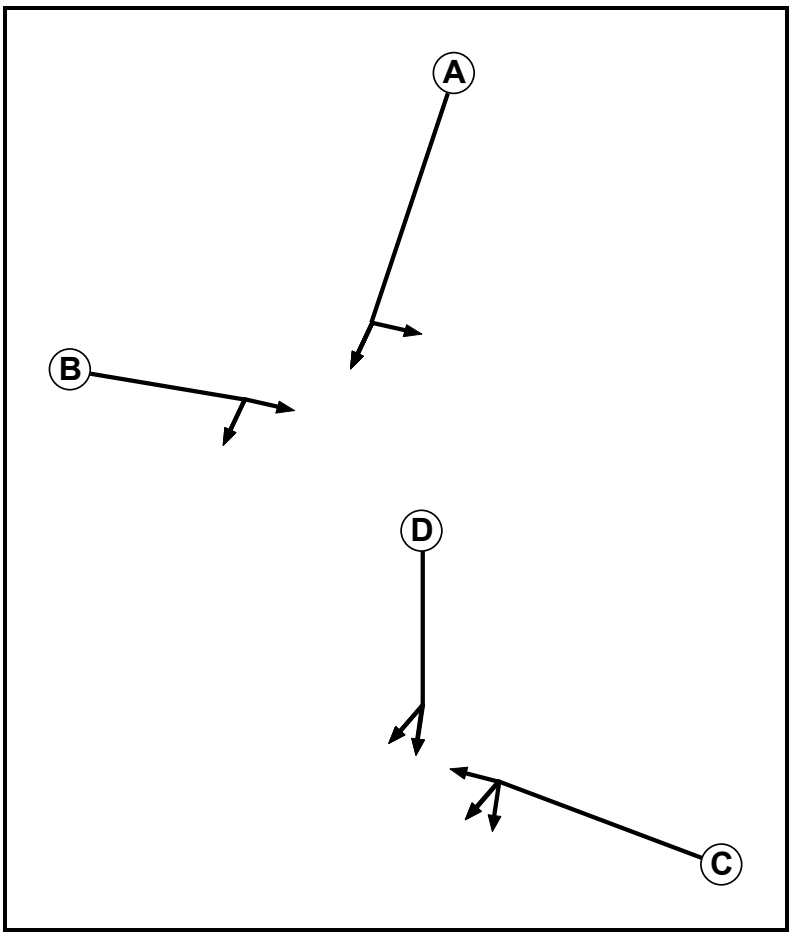
From Stage \ To Stage	1	2
1		6
2	6	

Stage Stream: 2

From Stage \ To Stage	1	2
1		6
2	6	

C2

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

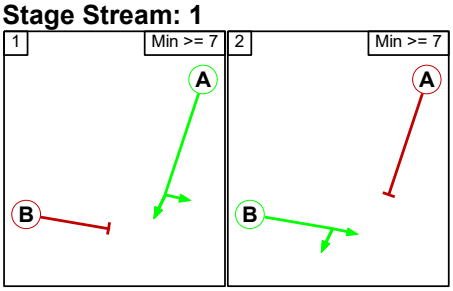
		Starting Phase			
		A	B	C	D
Terminating Phase	A		6	-	-
	B	6		-	-
	C	-	-		6
	D	-	-	6	

Phases in Stage

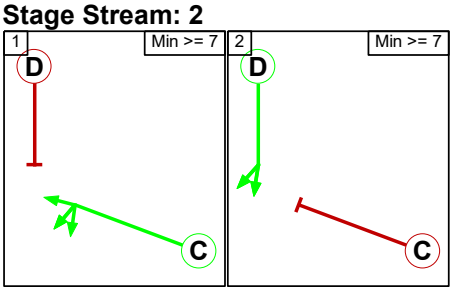
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Prohibited Stage Change

Stage Stream: 1

	To Stage		
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

	To Stage		
		1	2
From Stage	1		6
	2	6	

Give-Way Lane Input Data

Junction: J1: Baynards Green											
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)**
J1:1/1 (A43 North)	J1:2/1 (Ahead)	1233	0	J1:12/1	0.30	All	-	-	-	-	-
				J1:12/2	0.30	All					
	J1:3/1 (Left)	1233	0	J1:12/1	0.30	All					
J1:1/2 (A43 North)	J1:2/2 (Ahead)	1233	0	J1:12/1	0.30	All	-	-	-	-	-
				J1:12/2	0.30	All					
J1:4/1 (B4100 East)	J1:5/1 (Left)	729	0	J1:2/1	0.24	All	-	-	-	-	-
	J1:6/1 (Ahead)	729	0	J1:2/1	0.24	All					
				J1:2/2	0.24	All					
J1:4/2 (B4100 East)	J1:6/2 (Ahead)	729	0	J1:2/1	0.24	All	-	-	-	-	-
				J1:2/2	0.24	All					
J1:7/1 (A43 South)	J1:8/1 (Ahead)	1268	0	J1:6/1	0.31	All	-	-	-	-	-
				J1:6/2	0.31	All					
	J1:9/1 (Ahead)	1268	0	J1:6/1	0.31	All					
J1:7/2 (A43 South)	J1:8/2 (Ahead)	1268	0	J1:6/1	0.31	All	-	-	-	-	-
				J1:6/2	0.31	All					
J1:10/1 (B4100 West)	J1:11/1 (Left)	882	0	J1:8/1	0.25	All	-	-	-	-	-
	J1:12/1 (Ahead)	883	0	J1:8/1	0.25	All					
				J1:8/2	0.25	All					
J1:10/2 (B4100 West)	J1:12/2 (Ahead)	883	0	J1:8/1	0.25	All	-	-	-	-	-
				J1:8/2	0.25	All					

Junction: J2: Padbury Roundabout
There are no Opposed Lanes in this Junction

Junction: J3: Cherwell											
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)**
J3:2/2 (A43)	J3:7/2 (Ahead)	1030	0	J3:9/1	0.48	All	-	-	-	-	-

Junction: J4: Unnamed Junction											
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)**
J4:1/1	J4:10/1 (Ahead)	1057	0	J4:7/1	0.28	All	-	-	-	-	-
J4:1/2	J4:10/2 (Ahead)	1057	0	J4:7/1	0.28	All	-	-	-	-	-
				J4:7/2	0.28	All					
J4:2/1	J4:3/1 (U-Turn)	1205	0	J4:6/1	0.31	All	-	-	-	-	-
J4:2/2	J4:4/1 (Ahead)	1205	0	J4:6/1	0.31	All	-	-	-	-	-
J4:9/1	J4:5/1 (Ahead)	1215	0	J4:4/1	0.32	All	-	-	-	-	-
	J4:7/1 (Ahead)	1215	0	J4:4/1	0.32	All					
J4:9/2	J4:7/2 (Ahead)	1215	0	J4:4/1	0.32	All	-	-	-	-	-

Lane Input Data

Junction: J1: Baynards Green												
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)
J1:1/1 (A43 North)	O		2	3	60.0	Inf	-	-	-	-	-	-
J1:1/2 (A43 North)	O		2	3	60.0	Inf	-	-	-	-	-	-
J1:2/1	U		2	3	10.1	Inf	-	-	-	-	-	-
J1:2/2	U		2	3	10.1	Inf	-	-	-	-	-	-
J1:3/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:4/1 (B4100 East)	O		2	3	60.0	Inf	-	-	-	-	-	-
J1:4/2 (B4100 East)	O		2	3	5.0	Inf	-	-	-	-	-	-
J1:5/1	U		2	3	17.4	User	2000	-	-	-	-	-
J1:5/2	U		2	3	17.4	Inf	-	-	-	-	-	-
J1:6/1	U		2	3	7.0	Inf	-	-	-	-	-	-
J1:6/2	U		2	3	7.0	Inf	-	-	-	-	-	-
J1:7/1 (A43 South)	O		2	3	104.3	Inf	-	-	-	-	-	-
J1:7/2 (A43 South)	O		2	3	104.3	Inf	-	-	-	-	-	-
J1:8/1	U		2	3	8.2	Inf	-	-	-	-	-	-
J1:8/2	U		2	3	8.2	Inf	-	-	-	-	-	-
J1:9/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:10/1 (B4100 West)	O		2	3	60.0	Inf	-	-	-	-	-	-
J1:10/2 (B4100 West)	O		2	3	3.5	Inf	-	-	-	-	-	-
J1:11/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:11/2	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:12/1	U		2	3	7.8	Inf	-	-	-	-	-	-
J1:12/2	U		2	3	7.8	Inf	-	-	-	-	-	-

Junction: J2: Padbury Roundabout												
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)**
J2:1/1 (A43 north)	U	B	2	3	95.7	Geom	-	3.65	0.00	Y	Arm J2:2 Ahead	50.00
J2:1/2 (A43 north)	U	B	2	3	95.7	Geom	-	3.65	0.00	N	Arm J2:2 Ahead	50.00
J2:2/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:2/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:3/1 (A43 south)	U	C	2	3	52.2	Geom	-	3.65	0.00	Y	Arm J2:4 Ahead	30.00
J2:3/2 (A43 south)	U	C	2	3	52.2	Geom	-	3.65	0.00	N	Arm J2:4 Ahead	30.00
J2:4/1	U		2	3	13.0	Inf	-	-	-	-	-	-
J2:4/2	U		2	3	13.0	Inf	-	-	-	-	-	-
J2:5/1 (Junction 10 s'bound offslip)	U	D	2	3	10.8	Geom	-	3.65	0.00	Y	Arm J2:4 Left	40.00
J2:5/2 (Junction 10 s'bound offslip)	U	D	2	3	95.7	Geom	-	3.65	0.00	N	Arm J2:4 Left	50.00
											Arm J2:6 Ahead	50.00
J2:5/3 (Junction 10 s'bound offslip)	U	D	2	3	95.7	Geom	-	3.65	0.00	N	Arm J2:6 Ahead	50.00
J2:6/1	U	A	2	3	8.7	Geom	-	3.65	0.00	Y	Arm J2:2 Right	Inf
J2:6/2	U	A	2	3	8.7	Geom	-	3.65	0.00	N	Arm J2:2 Right	Inf

Junction: J3: Cherwell												
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)**
J3:1/1 (A43)	U	A	2	3	52.2	Geom	-	3.65	0.00	Y	Arm J3:4 Left	Inf
											Arm J3:10 Ahead	Inf
J3:1/2 (A43)	U	A	2	3	52.2	Geom	-	3.65	0.00	Y	Arm J3:10 Ahead	Inf
J3:1/3 (A43)	U	A	2	3	12.2	Geom	-	3.65	0.00	Y	Arm J3:10 Ahead	Inf
J3:2/1 (A43)	U		2	3	41.7	Inf	-	-	-	-	-	-
J3:2/2 (A43)	O		2	3	41.7	Inf	-	-	-	-	-	-
J3:3/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J3:3/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J3:4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J3:5/1 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm J3:11 Left	30.00
J3:5/2 (MSA)	U	C	2	3	60.0	Geom	-	3.50	0.00	N	Arm J3:6 Left	40.00
											Arm J3:9 Ahead	Inf
J3:6/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J3:6/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J3:7/1	U		2	3	7.0	Inf	-	-	-	-	-	-
J3:7/2	U		2	3	7.0	Inf	-	-	-	-	-	-
J3:8/1	U	B	2	3	5.2	User	1850	-	-	-	-	-
J3:9/1	U		2	3	7.8	Inf	-	-	-	-	-	-
J3:10/1	U	D	2	3	8.7	Geom	-	3.65	0.00	Y	Arm J3:11 Ahead	Inf
J3:10/2	U	D	2	3	8.7	Geom	-	3.65	0.00	N	Arm J3:11 Ahead	Inf
J3:10/3	U	D	2	3	8.7	Geom	-	3.65	0.00	N	Arm J3:6 Ahead	Inf
J3:11/1 (M40 SB onslip)	U		2	3	87.0	Inf	-	-	-	-	-	-
J3:11/2 (M40 SB onslip)	U		2	3	87.0	Inf	-	-	-	-	-	-
J3:12/1	U		2	3	173.9	Inf	-	-	-	-	-	-

Junction: J4: Unnamed Junction												
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)
J4:1/1	O		2	3	165.2	Inf	-	-	-	-	-	-
J4:1/2	O		2	3	8.7	Inf	-	-	-	-	-	-
J4:2/1	O		2	3	41.7	Inf	-	-	-	-	-	-
J4:2/2	O		2	3	41.7	Inf	-	-	-	-	-	-
J4:3/1	U		2	3	173.9	Inf	-	-	-	-	-	-
J4:4/1	U		2	3	9.6	Inf	-	-	-	-	-	-
J4:5/1	U		2	3	173.9	Inf	-	-	-	-	-	-
J4:6/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J4:7/1	U		2	3	7.8	Inf	-	-	-	-	-	-
J4:7/2	U		2	3	7.8	Inf	-	-	-	-	-	-
J4:8/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J4:8/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J4:9/1	O		2	3	173.9	Inf	-	-	-	-	-	-
J4:9/2	O		2	3	173.9	Inf	-	-	-	-	-	-
J4:10/1	U		2	3	8.7	Inf	-	-	-	-	-	-
J4:10/2	U		2	3	8.7	Inf	-	-	-	-	-	-
J4:11/1	U		2	3	104.3	Inf	-	-	-	-	-	-
J4:12/1	U		2	3	8.7	Inf	-	-	-	-	-	-
J4:13/1	U		2	3	87.0	Inf	-	-	-	-	-	-
J4:14/1	U		2	3	87.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2031 ref case - AM'	08:00	09:00	01:00	
2: '2031 ref case - PM'	17:00	18:00	01:00	

Scenario 1: '2031 reference case - AM Peak' (FG1: '2031 ref case - AM', Plan 1: 'Network Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination							
		A	B	C	D	E	F	G	Tot.
Origin	A	0	169	63	1541	351	0	15	2139
	B	252	0	0	2	16	193	294	757
	C	74	0	0	259	70	184	0	587
	D	1189	2	242	0	20	0	6	1459
	E	136	16	0	2	0	225	21	400
	F	0	317	232	0	199	0	29	777
	G	70	467	0	108	1	0	0	646
	Tot.	1721	971	537	1912	657	602	365	6765

Traffic Lane Flows

Lane	Scenario 1: 2031 reference case - AM Peak
Junction: J1: Baynards Green	
J1:1/1	1088
J1:1/2	1051
J1:2/1	1028
J1:2/2	1051
J1:3/1	971
J1:4/1 (with short)	757(In) 505(Out)
J1:4/2 (short)	252
J1:5/1	1239
J1:5/2	1036
J1:6/1	309
J1:6/2	252
J1:7/1	836
J1:7/2	954
J1:8/1	906
J1:8/2	1080
J1:9/1	365
J1:10/1 (with short)	646(In) 537(Out)
J1:10/2 (short)	109
J1:11/1	976
J1:11/2	745
J1:12/1	802
J1:12/2	109
Junction: J2: Padbury Roundabout	
J2:1/1	1239
J2:1/2	1036
J2:2/1	1468
J2:2/2	1238
J2:3/1	807
J2:3/2	637
J2:4/1	1083
J2:4/2	707
J2:5/1 (short)	276
J2:5/2 (with short)	575(In) 299(Out)
J2:5/3	202
J2:6/1	229
J2:6/2	202
Junction: J3: Cherwell	
J3:1/1	1006

J3:1/2 (with short)	1700(In) 940(Out)
J3:1/3 (short)	760
J3:2/1	1133
J3:2/2	481
J3:3/1	1133
J3:3/2	311
J3:4/1	537
J3:5/1	259
J3:5/2	328
J3:6/1	377
J3:6/2	637
J3:7/1	1133
J3:7/2	555
J3:8/1	244
J3:9/1	74
J3:10/1	711
J3:10/2	942
J3:10/3	760
J3:11/1	970
J3:11/2	942
J3:12/1	1912
Junction: J4: Unnamed Junction	
J4:1/1 (with short)	400(In) 173(Out)
J4:1/2 (short)	227
J4:2/1	377
J4:2/2	637
J4:3/1	602
J4:4/1	637
J4:5/1	657
J4:6/1	225
J4:7/1	826
J4:7/2	613
J4:8/1	999
J4:8/2	615
J4:9/1	846
J4:9/2	613
J4:10/1	999
J4:10/2	840
J4:11/1	1459
J4:12/1	400
J4:13/1	400
J4:14/1	657

Lane Saturation Flows

Junction: J1: Baynards Green								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (A43 North Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:1/2 (A43 North Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:2/1	Infinite Saturation Flow						Inf	Inf
J1:2/2	Infinite Saturation Flow						Inf	Inf
J1:3/1	Infinite Saturation Flow						Inf	Inf
J1:4/1 (B4100 East Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:4/2 (B4100 East Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:5/1	This lane uses a directly entered Saturation Flow						2000	2000
J1:5/2	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:6/2	Infinite Saturation Flow						Inf	Inf
J1:7/1 (A43 South Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:7/2 (A43 South Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:8/1	Infinite Saturation Flow						Inf	Inf
J1:8/2	Infinite Saturation Flow						Inf	Inf
J1:9/1	Infinite Saturation Flow						Inf	Inf
J1:10/1 (B4100 West Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:10/2 (B4100 West Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:11/1	Infinite Saturation Flow						Inf	Inf
J1:11/2	Infinite Saturation Flow						Inf	Inf
J1:12/1	Infinite Saturation Flow						Inf	Inf
J1:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J2: Padbury Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (A43 north)	3.65	0.00	Y	Arm J2:2 Ahead	50.00	100.0 %	1922	1922
J2:1/2 (A43 north)	3.65	0.00	N	Arm J2:2 Ahead	50.00	100.0 %	2058	2058
J2:2/1	Infinite Saturation Flow						Inf	Inf
J2:2/2	Infinite Saturation Flow						Inf	Inf
J2:3/1 (A43 south)	3.65	0.00	Y	Arm J2:4 Ahead	30.00	100.0 %	1886	1886
J2:3/2 (A43 south)	3.65	0.00	N	Arm J2:4 Ahead	30.00	100.0 %	2019	2019
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm J2:4 Left	40.00	100.0 %	1908	1908
J2:5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J2:4 Left	50.00	23.4 %	2058	2058
				Arm J2:6 Ahead	50.00	76.6 %		
J2:5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J2:6 Ahead	50.00	100.0 %	2058	2058
J2:6/1	3.65	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1980	1980
J2:6/2	3.65	0.00	N	Arm J2:2 Right	Inf	100.0 %	2120	2120

Junction: J3: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1 (A43)	3.65	0.00	Y	Arm J3:4 Left	Inf	29.3 %	1980	1980
				Arm J3:10 Ahead	Inf	70.7 %		
J3:1/2 (A43)	3.65	0.00	Y	Arm J3:10 Ahead	Inf	100.0 %	1980	1980
J3:1/3 (A43)	3.65	0.00	Y	Arm J3:10 Ahead	Inf	100.0 %	1980	1980
J3:2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:3/1	Infinite Saturation Flow						Inf	Inf
J3:3/2	Infinite Saturation Flow						Inf	Inf
J3:4/1	Infinite Saturation Flow						Inf	Inf
J3:5/1 (MSA)	3.50	0.00	Y	Arm J3:11 Left	30.00	100.0 %	1871	1871
J3:5/2 (MSA)	3.50	0.00	N	Arm J3:6 Left	40.00	77.4 %	2046	2046
				Arm J3:9 Ahead	Inf	22.6 %		
J3:6/1	Infinite Saturation Flow						Inf	Inf
J3:6/2	Infinite Saturation Flow						Inf	Inf
J3:7/1	Infinite Saturation Flow						Inf	Inf
J3:7/2	Infinite Saturation Flow						Inf	Inf
J3:8/1	This lane uses a directly entered Saturation Flow						1850	1850
J3:9/1	Infinite Saturation Flow						Inf	Inf
J3:10/1	3.65	0.00	Y	Arm J3:11 Ahead	Inf	100.0 %	1980	1980
J3:10/2	3.65	0.00	N	Arm J3:11 Ahead	Inf	100.0 %	2120	2120
J3:10/3	3.65	0.00	N	Arm J3:6 Ahead	Inf	100.0 %	2120	2120
J3:11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf

Junction: J4: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J4:1/1	Infinite Saturation Flow						Inf	Inf
J4:1/2	Infinite Saturation Flow						Inf	Inf
J4:2/1	Infinite Saturation Flow						Inf	Inf
J4:2/2	Infinite Saturation Flow						Inf	Inf
J4:3/1	Infinite Saturation Flow						Inf	Inf
J4:4/1	Infinite Saturation Flow						Inf	Inf
J4:5/1	Infinite Saturation Flow						Inf	Inf
J4:6/1	Infinite Saturation Flow						Inf	Inf
J4:7/1	Infinite Saturation Flow						Inf	Inf
J4:7/2	Infinite Saturation Flow						Inf	Inf
J4:8/1	Infinite Saturation Flow						Inf	Inf
J4:8/2	Infinite Saturation Flow						Inf	Inf
J4:9/1	Infinite Saturation Flow						Inf	Inf
J4:9/2	Infinite Saturation Flow						Inf	Inf
J4:10/1	Infinite Saturation Flow						Inf	Inf
J4:10/2	Infinite Saturation Flow						Inf	Inf
J4:11/1	Infinite Saturation Flow						Inf	Inf
J4:12/1	Infinite Saturation Flow						Inf	Inf
J4:13/1	Infinite Saturation Flow						Inf	Inf
J4:14/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2031 reference case - PM Peak' (FG2: '2031 ref case - PM', Plan 1: 'Network Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination							
		A	B	C	D	E	F	G	Tot.
Origin	A	0	280	111	1316	119	0	58	1884
	B	372	0	0	7	9	235	303	926
	C	99	0	0	301	0	210	0	610
	D	1806	1	264	0	29	0	0	2100
	E	146	2	0	2	0	217	0	367
	F	0	168	234	0	162	0	0	564
	G	55	284	0	43	1	0	0	383
	Tot.	2478	735	609	1669	320	662	361	6834

Traffic Lane Flows

Lane	Scenario 2: 2031 reference case - PM Peak
Junction: J1: Baynards Green	
J1:1/1	934
J1:1/2	950
J1:2/1	698
J1:2/2	950
J1:3/1	735
J1:4/1 (with short)	926(In) 554(Out)
J1:4/2 (short)	372
J1:5/1	949
J1:5/2	892
J1:6/1	361
J1:6/2	372
J1:7/1	1108
J1:7/2	1114
J1:8/1	1294
J1:8/2	1300
J1:9/1	361
J1:10/1 (with short)	383(In) 339(Out)
J1:10/2 (short)	44
J1:11/1	1349
J1:11/2	1129
J1:12/1	455
J1:12/2	44
Junction: J2: Padbury Roundabout	
J2:1/1	949
J2:1/2	892
J2:2/1	1158
J2:2/2	1079
J2:3/1	1108
J2:3/2	946
J2:4/1	1235
J2:4/2	987
J2:5/1 (short)	127
J2:5/2 (with short)	377(In) 250(Out)
J2:5/3	187
J2:6/1	209
J2:6/2	187
Junction: J3: Cherwell	
J3:1/1	848

J3:1/2 (with short)	1389(In) 863(Out)
J3:1/3 (short)	526
J3:2/1	1681
J3:2/2	540
J3:3/1	1681
J3:3/2	373
J3:4/1	609
J3:5/1	301
J3:5/2	309
J3:6/1	445
J3:6/2	291
J3:7/1	1681
J3:7/2	639
J3:8/1	266
J3:9/1	99
J3:10/1	504
J3:10/2	864
J3:10/3	526
J3:11/1	805
J3:11/2	864
J3:12/1	1669
Junction: J4: Unnamed Junction	
J4:1/1 (with short)	367(In) 148(Out)
J4:1/2 (short)	219
J4:2/1	445
J4:2/2	291
J4:3/1	662
J4:4/1	291
J4:5/1	320
J4:6/1	217
J4:7/1	1034
J4:7/2	1037
J4:8/1	1182
J4:8/2	1039
J4:9/1	1063
J4:9/2	1037
J4:10/1	1182
J4:10/2	1256
J4:11/1	2100
J4:12/1	367
J4:13/1	367
J4:14/1	320

Lane Saturation Flows

Junction: J1: Baynards Green								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (A43 North Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:1/2 (A43 North Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:2/1	Infinite Saturation Flow						Inf	Inf
J1:2/2	Infinite Saturation Flow						Inf	Inf
J1:3/1	Infinite Saturation Flow						Inf	Inf
J1:4/1 (B4100 East Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:4/2 (B4100 East Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:5/1	This lane uses a directly entered Saturation Flow						2000	2000
J1:5/2	Infinite Saturation Flow						Inf	Inf
J1:6/1	Infinite Saturation Flow						Inf	Inf
J1:6/2	Infinite Saturation Flow						Inf	Inf
J1:7/1 (A43 South Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:7/2 (A43 South Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:8/1	Infinite Saturation Flow						Inf	Inf
J1:8/2	Infinite Saturation Flow						Inf	Inf
J1:9/1	Infinite Saturation Flow						Inf	Inf
J1:10/1 (B4100 West Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:10/2 (B4100 West Lane 2)	Infinite Saturation Flow						Inf	Inf
J1:11/1	Infinite Saturation Flow						Inf	Inf
J1:11/2	Infinite Saturation Flow						Inf	Inf
J1:12/1	Infinite Saturation Flow						Inf	Inf
J1:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J2: Padbury Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (A43 north)	3.65	0.00	Y	Arm J2:2 Ahead	50.00	100.0 %	1922	1922
J2:1/2 (A43 north)	3.65	0.00	N	Arm J2:2 Ahead	50.00	100.0 %	2058	2058
J2:2/1	Infinite Saturation Flow						Inf	Inf
J2:2/2	Infinite Saturation Flow						Inf	Inf
J2:3/1 (A43 south)	3.65	0.00	Y	Arm J2:4 Ahead	30.00	100.0 %	1886	1886
J2:3/2 (A43 south)	3.65	0.00	N	Arm J2:4 Ahead	30.00	100.0 %	2019	2019
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1 (Junction 10 s'bound offslip)	3.65	0.00	Y	Arm J2:4 Left	40.00	100.0 %	1908	1908
J2:5/2 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J2:4 Left	50.00	16.4 %	2058	2058
				Arm J2:6 Ahead	50.00	83.6 %		
J2:5/3 (Junction 10 s'bound offslip)	3.65	0.00	N	Arm J2:6 Ahead	50.00	100.0 %	2058	2058
J2:6/1	3.65	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1980	1980
J2:6/2	3.65	0.00	N	Arm J2:2 Right	Inf	100.0 %	2120	2120

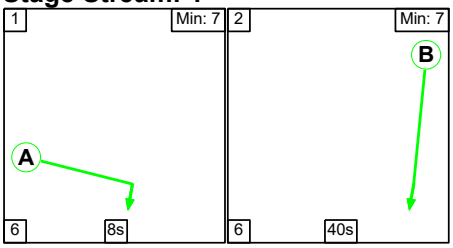
Junction: J3: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1 (A43)	3.65	0.00	Y	Arm J3:4 Left	Inf	40.7 %	1980	1980
				Arm J3:10 Ahead	Inf	59.3 %		
J3:1/2 (A43)	3.65	0.00	Y	Arm J3:10 Ahead	Inf	100.0 %	1980	1980
J3:1/3 (A43)	3.65	0.00	Y	Arm J3:10 Ahead	Inf	100.0 %	1980	1980
J3:2/1 (A43 Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:2/2 (A43 Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:3/1	Infinite Saturation Flow						Inf	Inf
J3:3/2	Infinite Saturation Flow						Inf	Inf
J3:4/1	Infinite Saturation Flow						Inf	Inf
J3:5/1 (MSA)	3.50	0.00	Y	Arm J3:11 Left	30.00	100.0 %	1871	1871
J3:5/2 (MSA)	3.50	0.00	N	Arm J3:6 Left	40.00	68.0 %	2053	2053
				Arm J3:9 Ahead	Inf	32.0 %		
J3:6/1	Infinite Saturation Flow						Inf	Inf
J3:6/2	Infinite Saturation Flow						Inf	Inf
J3:7/1	Infinite Saturation Flow						Inf	Inf
J3:7/2	Infinite Saturation Flow						Inf	Inf
J3:8/1	This lane uses a directly entered Saturation Flow						1850	1850
J3:9/1	Infinite Saturation Flow						Inf	Inf
J3:10/1	3.65	0.00	Y	Arm J3:11 Ahead	Inf	100.0 %	1980	1980
J3:10/2	3.65	0.00	N	Arm J3:11 Ahead	Inf	100.0 %	2120	2120
J3:10/3	3.65	0.00	N	Arm J3:6 Ahead	Inf	100.0 %	2120	2120
J3:11/1 (M40 SB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:11/2 (M40 SB onslip Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf

Junction: J4: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J4:1/1	Infinite Saturation Flow						Inf	Inf
J4:1/2	Infinite Saturation Flow						Inf	Inf
J4:2/1	Infinite Saturation Flow						Inf	Inf
J4:2/2	Infinite Saturation Flow						Inf	Inf
J4:3/1	Infinite Saturation Flow						Inf	Inf
J4:4/1	Infinite Saturation Flow						Inf	Inf
J4:5/1	Infinite Saturation Flow						Inf	Inf
J4:6/1	Infinite Saturation Flow						Inf	Inf
J4:7/1	Infinite Saturation Flow						Inf	Inf
J4:7/2	Infinite Saturation Flow						Inf	Inf
J4:8/1	Infinite Saturation Flow						Inf	Inf
J4:8/2	Infinite Saturation Flow						Inf	Inf
J4:9/1	Infinite Saturation Flow						Inf	Inf
J4:9/2	Infinite Saturation Flow						Inf	Inf
J4:10/1	Infinite Saturation Flow						Inf	Inf
J4:10/2	Infinite Saturation Flow						Inf	Inf
J4:11/1	Infinite Saturation Flow						Inf	Inf
J4:12/1	Infinite Saturation Flow						Inf	Inf
J4:13/1	Infinite Saturation Flow						Inf	Inf
J4:14/1	Infinite Saturation Flow						Inf	Inf

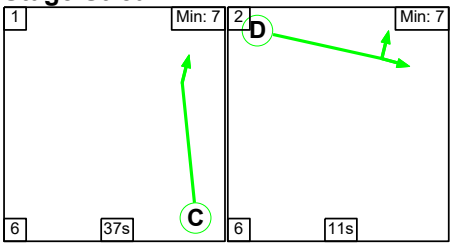
Scenario 1: '2031 reference case - AM Peak' (FG1: '2031 ref case - AM', Plan 1: 'Network Plan 1')
C1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

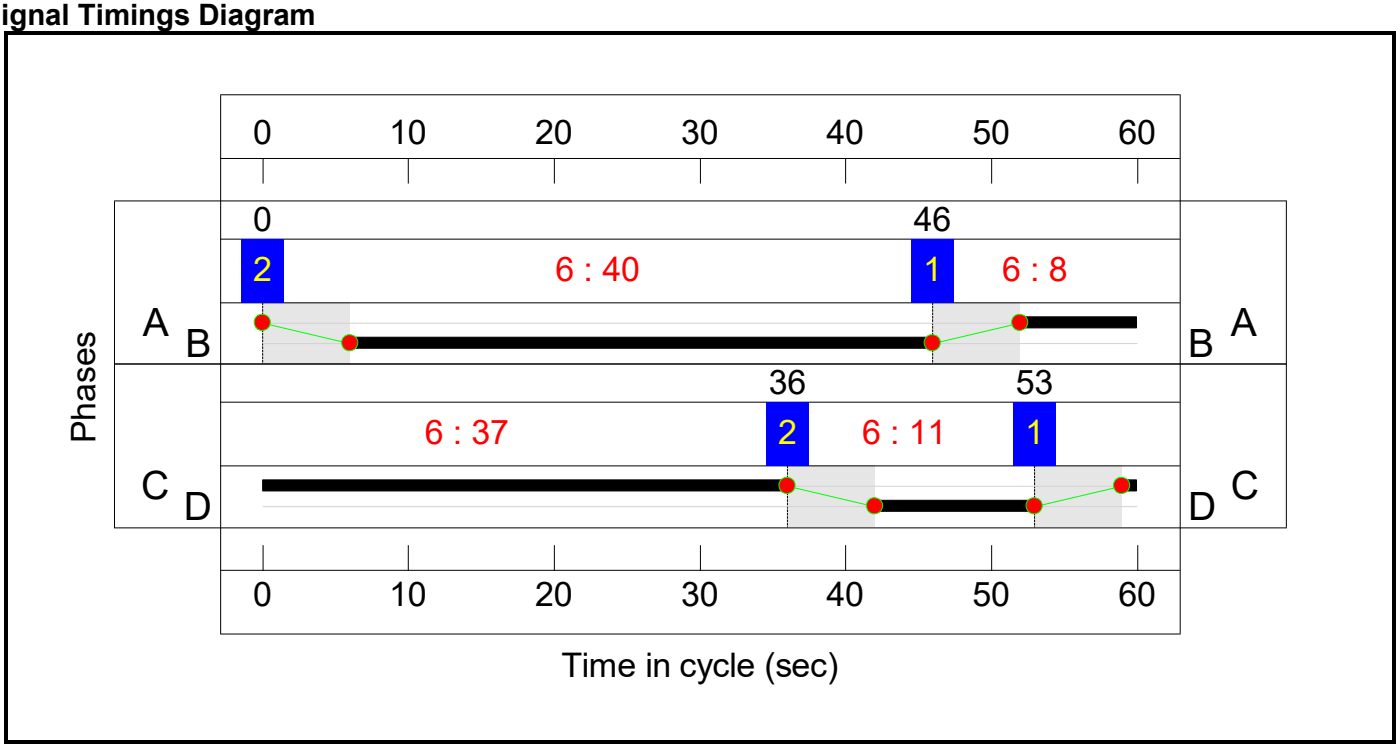
Stage Stream: 1

Stage	1	2
Duration	8	40
Change Point	46	0

Stage Stream: 2

Stage	1	2
Duration	37	11
Change Point	53	36

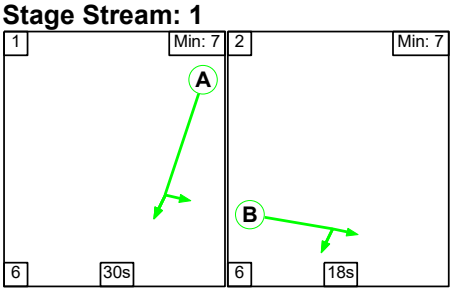
Signal Timings Diagram



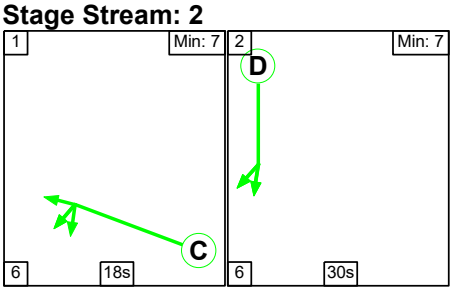
C2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

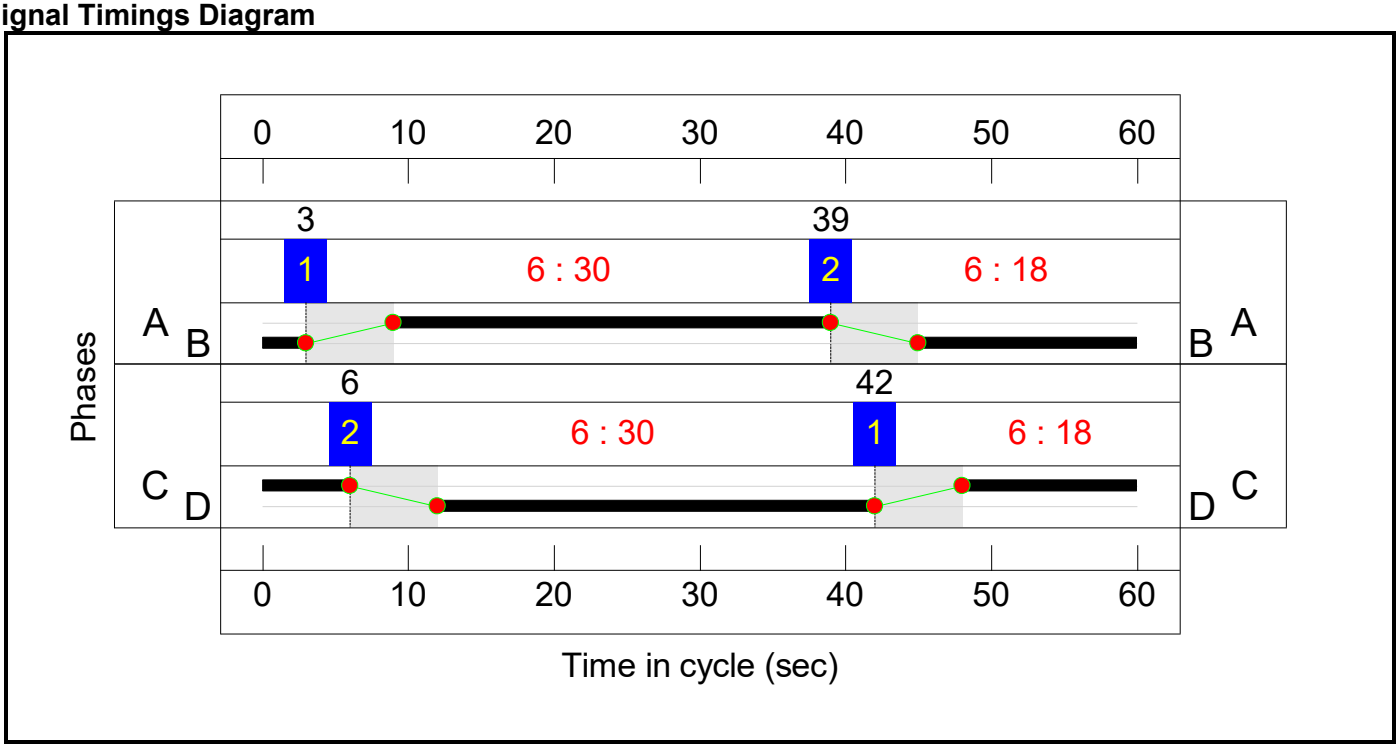
Stage Stream: 1

Stage	1	2
Duration	30	18
Change Point	3	39

Stage Stream: 2

Stage	1	2
Duration	18	30
Change Point	42	6

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: 2031 Reference Case Network Model	-	-	**N/A**	-	-		-	-	-	-	-	-	**148.5%**
J1: Baynards Green	-	-	**N/A**	-	-		-	-	-	-	-	-	**148.5%**
1/1	A43 North Ahead Left	O	N/A	N/A	-		-	-	-	1088	Inf	998	109.0%
1/2	A43 North Ahead	O	N/A	N/A	-		-	-	-	1051	Inf	960	109.5%
4/1+4/2	B4100 East Left Ahead	O	N/A	N/A	-		-	-	-	757	Inf : Inf	340+170	148.5 : 148.5%
5/1	Ahead	U	N/A	N/A	-		-	-	-	1239	2000	2000	53.6%
7/1	A43 South Ahead Ahead2	O	N/A	N/A	-		-	-	-	836	Inf	1159	72.2%
7/2	A43 South Ahead	O	N/A	N/A	-		-	-	-	954	Inf	1150	83.0%
10/1+10/2	B4100 West Left Ahead	O	N/A	N/A	-		-	-	-	646	Inf : Inf	430+87	124.9 : 124.9%
J2: Padbury Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**81.7%**
1/1	A43 north Ahead	U	1:1	N/A	C1:B		1	40	-	1239	1922	1313	81.7%
1/2	A43 north Ahead	U	1:1	N/A	C1:B		1	40	-	1036	2058	1406	67.3%
3/1	A43 south Ahead	U	1:2	N/A	C1:C		1	37	-	807	1886	1194	67.6%
3/2	A43 south Ahead	U	1:2	N/A	C1:C		1	37	-	637	2019	1279	49.8%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	1:2	N/A	C1:D		1	11	-	575	2058:1908	412+382	72.6 : 72.3%
5/3	Junction 10 s'bound offslip Ahead	U	1:2	N/A	C1:D		1	11	-	202	2058	412	49.1%
6/1	Right	U	1:1	N/A	C1:A		1	8	-	229	1980	297	77.1%
6/2	Right	U	1:1	N/A	C1:A		1	8	-	202	2120	318	63.5%
J3: Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**95.3%**
1/1	A43 Left Ahead	U	2:1	N/A	C2:A		1	30	-	1006	1980	1023	91.4%

1/2+1/3	A43 Ahead	U	2:1	N/A	C2:A		1	30	-	1700	1980:1980	894+723	95.3 : 89.9%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	481	Inf	994	48.4%
5/1	MSA Left	U	2:2	N/A	C2:C		1	18	-	259	1871	592	43.7%
5/2	MSA Left Ahead	U	2:2	N/A	C2:C		1	18	-	328	2046	648	50.6%
8/1	Ahead Right	U	2:1	N/A	C2:B		1	18	-	244	1850	586	41.7%
10/1	Ahead	U	2:2	N/A	C2:D		1	30	-	711	1980	1023	63.0%
10/2	Ahead	U	2:2	N/A	C2:D		1	30	-	942	2120	1095	78.0%
10/3	Ahead	U	2:2	N/A	C2:D		1	30	-	760	2120	1095	59.3%
J4: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**82.6%**
1/1+1/2	Ahead	O	N/A	N/A	-		-	-	-	400	Inf : Inf	498+654	34.7 : 34.7%
2/1	U-Turn	O	N/A	N/A	-		-	-	-	377	Inf	1135	27.0%
2/2	Ahead	O	N/A	N/A	-		-	-	-	637	Inf	1135	52.6%
9/1	Ahead Ahead2	O	N/A	N/A	-		-	-	-	846	Inf	1024	82.6%
9/2	Ahead	O	N/A	N/A	-		-	-	-	613	Inf	1024	59.9%

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: 2031 Reference Case Network Model	**-**	**-**	**9445**	**0**	**0**	**44.2**	**320.4**	**0.0**	**364.6**	**-**	**-**	**-**	**-**
J1: Baynards Green	**-**	**-**	**5801**	**0**	**0**	**20.4**	**297.4**	**0.0**	**317.8**	**-**	**-**	**-**	**-**
1/1	1088	998	998	0	0	3.8	50.3	-	54.1	179.0	48.1	50.3	98.4
1/2	1051	960	960	0	0	3.8	50.8	-	54.6	187.1	52.5	50.8	103.4
4/1+4/2	757	510	1019	0	0	7.9	125.2	-	133.1	633.0	22.0	125.2	147.2
5/1	1072	1072	-	-	-	0.0	0.6	-	0.6	1.9	0.0	0.6	0.6
7/1	836	836	836	0	0	0.3	1.3	-	1.6	7.0	10.6	1.3	11.9
7/2	954	954	954	0	0	0.1	2.4	-	2.5	9.5	7.0	2.4	9.4
10/1+10/2	646	517	1034	0	0	4.4	66.9	-	71.3	397.2	25.0	66.9	91.9
J2: Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**11.3**	**6.5**	**0.0**	**17.8**	**-**	**-**	**-**	**-**
1/1	1072	1072	-	-	-	2.0	2.2	-	4.2	13.9	11.9	2.2	14.1
1/2	946	946	-	-	-	1.5	1.0	-	2.5	9.5	9.2	1.0	10.2
3/1	807	807	-	-	-	1.4	1.0	-	2.4	10.9	8.0	1.0	9.0
3/2	637	637	-	-	-	1.0	0.5	-	1.5	8.5	5.3	0.5	5.8
5/2+5/1	575	575	-	-	-	3.6	1.3	-	4.9	30.6	4.7	1.3	6.0
5/3	202	202	-	-	-	1.2	0.5	-	1.7	29.9	3.0	0.5	3.5
6/1	229	229	-	-	-	0.3	0.0	-	0.3	5.1	3.8	0.0	3.8
6/2	202	202	-	-	-	0.3	0.0	-	0.3	5.6	3.3	0.0	3.3
J3: Cherwell	**-**	**-**	**481**	**0**	**0**	**12.4**	**12.4**	**0.0**	**24.8**	**-**	**-**	**-**	**-**
1/1	935	935	-	-	-	2.8	4.8	-	7.6	29.2	12.8	4.8	17.5
1/2+1/3	1501	1501	-	-	-	5.8	5.9	-	11.7	28.0	27.8	5.9	33.7
2/2	481	481	481	0	0	0.0	0.5	-	0.5	3.5	0.0	0.5	0.5
5/1	259	259	-	-	-	1.2	0.4	-	1.6	21.7	3.4	0.4	3.8
5/2	328	328	-	-	-	1.5	0.5	-	2.0	22.3	4.4	0.5	4.9
8/1	244	244	-	-	-	1.1	0.4	-	1.5	21.4	3.2	0.4	3.5
10/1	645	645	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

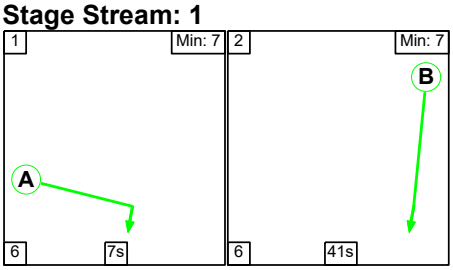
10/2	854	854	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/3	650	650	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J4: Unnamed Junction	**-**	**-**	**3163**	**0**	**0**	**0.1**	**4.1**	**0.0**	**4.2**	**-**	**-**	**-**	**-**
1/1+1/2	400	400	800	0	0	0.0	0.3	-	0.3	2.4	0.0	0.3	0.3
2/1	307	307	307	0	0	0.0	0.2	-	0.2	2.2	0.0	0.2	0.2
2/2	597	597	597	0	0	0.1	0.6	-	0.7	4.2	5.8	0.6	6.3
9/1	846	846	846	0	0	0.0	2.3	-	2.3	9.9	0.0	2.3	2.3
9/2	613	613	613	0	0	0.0	0.7	-	0.7	4.4	0.0	0.7	0.7

C1	Stream: 1	PRC for Signalled Lanes (%):	10.2	Total Delay for Signalled Lanes (pcuHr):	7.28	Cycle Time (s):	60	
C1	Stream: 2	PRC for Signalled Lanes (%):	23.9	Total Delay for Signalled Lanes (pcuHr):	10.51	Cycle Time (s):	60	
C2	Stream: 1	PRC for Signalled Lanes (%):	-5.9	Total Delay for Signalled Lanes (pcuHr):	20.74	Cycle Time (s):	60	
C2	Stream: 2	PRC for Signalled Lanes (%):	15.4	Total Delay for Signalled Lanes (pcuHr):	3.60	Cycle Time (s):	60	
		PRC Over All Lanes (%):	-65.0	Total Delay Over All Lanes(pcuHr):	364.62			

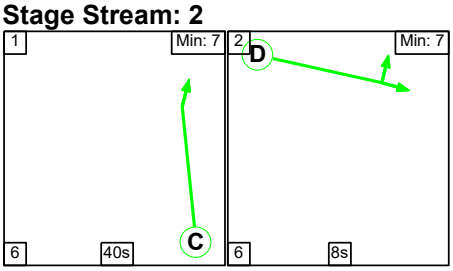
Scenario 2: '2031 reference case - PM Peak' (FG2: '2031 ref case - PM', Plan 1: 'Network Plan 1')
C1

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

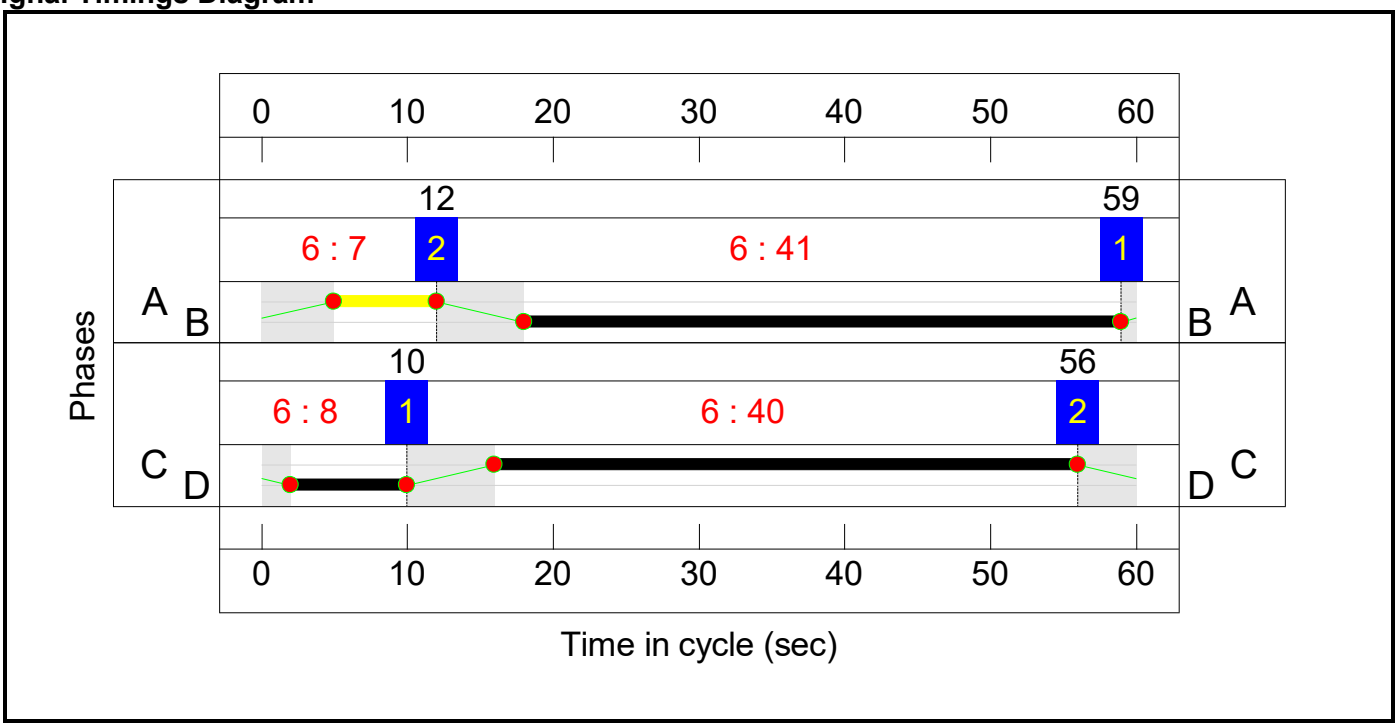
Stage Stream: 1

Stage	1	2
Duration	7	41
Change Point	59	12

Stage Stream: 2

Stage	1	2
Duration	40	8
Change Point	10	56

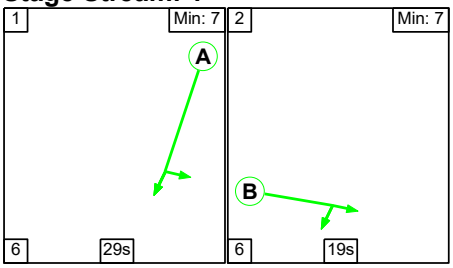
Signal Timings Diagram



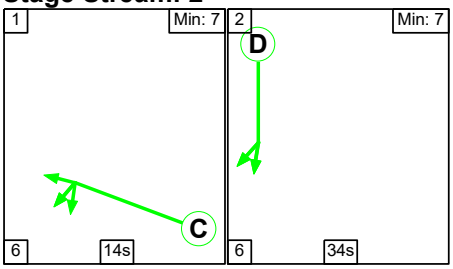
C2

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

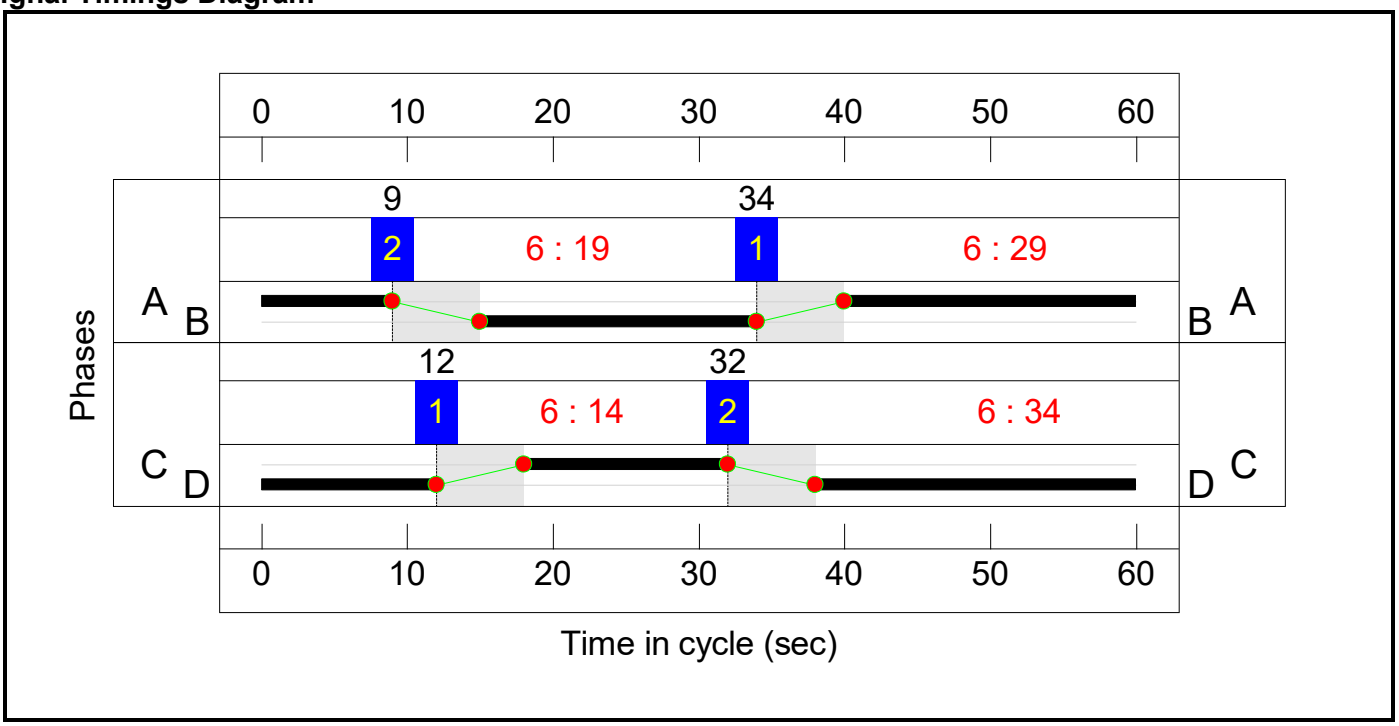
Stage Stream: 1

Stage	1	2
Duration	29	19
Change Point	34	9

Stage Stream: 2

Stage	1	2
Duration	14	34
Change Point	12	32

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: 2031 Reference Case Network Model	-	-	**N/A**	-	-		-	-	-	-	-	-	**135.6%**
J1: Baynards Green	-	-	**N/A**	-	-		-	-	-	-	-	-	**135.6%**
1/1	A43 North Ahead Left	O	N/A	N/A	-		-	-	-	934	Inf	1101	84.8%
1/2	A43 North Ahead	O	N/A	N/A	-		-	-	-	950	Inf	1083	87.7%
4/1+4/2	B4100 East Left Ahead	O	N/A	N/A	-		-	-	-	926	Inf : Inf	409+333	135.6 : 111.6%
5/1	Ahead	U	N/A	N/A	-		-	-	-	949	2000	2000	44.2%
7/1	A43 South Ahead Ahead2	O	N/A	N/A	-		-	-	-	1108	Inf	1077	102.9%
7/2	A43 South Ahead	O	N/A	N/A	-		-	-	-	1114	Inf	1077	103.4%
10/1+10/2	B4100 West Left Ahead	O	N/A	N/A	-		-	-	-	383	Inf : Inf	286+37	118.6 : 118.6%
J2: Padbury Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**86.0%**
1/1	A43 north Ahead	U	1:1	N/A	C1:B		1	41	-	949	1922	1345	65.6%
1/2	A43 north Ahead	U	1:1	N/A	C1:B		1	41	-	892	2058	1441	61.9%
3/1	A43 south Ahead	U	1:2	N/A	C1:C		1	40	-	1108	1886	1289	86.0%
3/2	A43 south Ahead	U	1:2	N/A	C1:C		1	40	-	946	2019	1380	68.6%
5/2+5/1	Junction 10 s'bound offslip Left Ahead	U	1:2	N/A	C1:D		1	8	-	377	2058:1908	309+222	81.0 : 57.1%
5/3	Junction 10 s'bound offslip Ahead	U	1:2	N/A	C1:D		1	8	-	187	2058	309	60.6%
6/1	Right	U	1:1	N/A	C1:A		1	7	-	209	1980	264	79.2%
6/2	Right	U	1:1	N/A	C1:A		1	7	-	187	2120	283	66.2%
J3: Cherwell	-	-	**N/A**	-	-		-	-	-	-	-	-	**96.5%**
1/1	A43 Left Ahead	U	2:1	N/A	C2:A		1	29	-	848	1980	990	85.6%

1/2+1/3	A43 Ahead	U	2:1	N/A	C2:A		1	29	-	1389	1980:1980	893+544	96.5 : 84.9%
2/2	A43 Ahead	O	N/A	N/A	-		-	-	-	540	Inf	982	55.0%
5/1	MSA Left	U	2:2	N/A	C2:C		1	14	-	301	1871	468	64.4%
5/2	MSA Left Ahead	U	2:2	N/A	C2:C		1	14	-	309	2053	513	60.2%
8/1	Ahead Right	U	2:1	N/A	C2:B		1	19	-	266	1850	617	43.1%
10/1	Ahead	U	2:2	N/A	C2:D		1	34	-	504	1980	1155	43.6%
10/2	Ahead	U	2:2	N/A	C2:D		1	34	-	864	2120	1237	69.8%
10/3	Ahead	U	2:2	N/A	C2:D		1	34	-	526	2120	1237	37.4%
J4: Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**94.7%**
1/1+1/2	Ahead	O	N/A	N/A	-		-	-	-	367	Inf : Inf	322+477	45.9 : 45.9%
2/1	U-Turn	O	N/A	N/A	-		-	-	-	445	Inf	1138	33.7%
2/2	Ahead	O	N/A	N/A	-		-	-	-	291	Inf	1138	25.4%
9/1	Ahead Ahead2	O	N/A	N/A	-		-	-	-	1063	Inf	1123	94.7%
9/2	Ahead	O	N/A	N/A	-		-	-	-	1037	Inf	1123	92.4%

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: 2031 Reference Case Network Model	**-**	**-**	**10229**	**0**	**0**	**36.5**	**220.0**	**0.0**	**256.5**	**-**	**-**	**-**	**-**
J1: Baynards Green	**-**	**-**	**6183**	**0**	**0**	**15.2**	**188.0**	**0.0**	**203.2**	**-**	**-**	**-**	**-**
1/1	934	934	934	0	0	0.0	2.7	-	2.7	10.4	1.8	2.7	4.5
1/2	950	950	950	0	0	0.0	3.4	-	3.4	12.8	0.0	3.4	3.4
4/1+4/2	926	742	1484	0	0	7.7	94.4	-	102.1	396.8	25.4	94.4	119.8
5/1	883	883	-	-	-	0.0	0.4	-	0.4	1.6	0.0	0.4	0.4
7/1	1108	1077	1077	0	0	2.9	26.0	-	28.9	93.9	39.6	26.0	65.6
7/2	1114	1077	1077	0	0	2.3	28.2	-	30.6	98.8	40.8	28.2	69.0
10/1+10/2	383	330	660	0	0	2.2	32.9	-	35.1	330.1	17.0	32.9	49.8
J2: Padbury Roundabout	**-**	**-**	**0**	**0**	**0**	**10.0**	**7.8**	**0.0**	**17.8**	**-**	**-**	**-**	**-**
1/1	883	883	-	-	-	1.2	1.0	-	2.2	8.9	8.1	1.0	9.0
1/2	892	892	-	-	-	1.2	0.8	-	2.0	8.0	7.7	0.8	8.5
3/1	1108	1108	-	-	-	2.0	3.0	-	5.0	16.2	13.1	3.0	16.1
3/2	946	946	-	-	-	1.4	1.1	-	2.4	9.3	8.7	1.1	9.8
5/2+5/1	377	377	-	-	-	2.5	1.2	-	3.7	35.7	4.0	1.2	5.2
5/3	187	187	-	-	-	1.2	0.8	-	2.0	38.5	2.9	0.8	3.7
6/1	209	209	-	-	-	0.3	0.0	-	0.3	5.2	0.6	0.0	0.6
6/2	187	187	-	-	-	0.2	0.0	-	0.2	3.0	0.2	0.0	0.2
J3: Cherwell	**-**	**-**	**540**	**0**	**0**	**11.1**	**10.8**	**0.0**	**21.9**	**-**	**-**	**-**	**-**
1/1	847	847	-	-	-	3.1	2.9	-	6.0	25.4	12.9	2.9	15.8
1/2+1/3	1324	1324	-	-	-	3.4	5.3	-	8.7	23.7	16.7	5.3	22.0
2/2	540	540	540	0	0	0.0	0.6	-	0.6	4.1	0.0	0.6	0.6
5/1	301	301	-	-	-	1.7	0.9	-	2.6	30.8	4.4	0.9	5.3
5/2	309	309	-	-	-	1.7	0.8	-	2.5	28.6	4.5	0.8	5.2
8/1	266	266	-	-	-	1.1	0.4	-	1.5	20.3	3.4	0.4	3.8
10/1	503	503	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

10/2	863	863	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/3	462	462	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J4: Unnamed Junction	**-**	**-**	**3506**	**0**	**0**	**0.3**	**13.4**	**0.0**	**13.7**	**-**	**-**	**-**	**-**
1/1+1/2	367	367	734	0	0	0.0	0.4	-	0.4	4.2	0.0	0.4	0.4
2/1	383	383	383	0	0	0.0	0.3	-	0.3	2.4	0.0	0.3	0.3
2/2	289	289	289	0	0	0.0	0.2	-	0.2	2.2	1.9	0.2	2.1
9/1	1063	1063	1063	0	0	0.2	7.2	-	7.4	25.0	10.3	7.2	17.5
9/2	1037	1037	1037	0	0	0.1	5.4	-	5.5	19.1	8.1	5.4	13.4

C1	Stream: 1 PRC for Signalled Lanes (%):	13.7	Total Delay for Signalled Lanes (pcuHr):	4.63	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	4.7	Total Delay for Signalled Lanes (pcuHr):	13.15	Cycle Time (s):	60
C2	Stream: 1 PRC for Signalled Lanes (%):	-7.2	Total Delay for Signalled Lanes (pcuHr):	16.20	Cycle Time (s):	60
C2	Stream: 2 PRC for Signalled Lanes (%):	29.0	Total Delay for Signalled Lanes (pcuHr):	5.04	Cycle Time (s):	60
	PRC Over All Lanes (%):	-50.6	Total Delay Over All Lanes(pcuHr):	256.52		

APPENDIX F

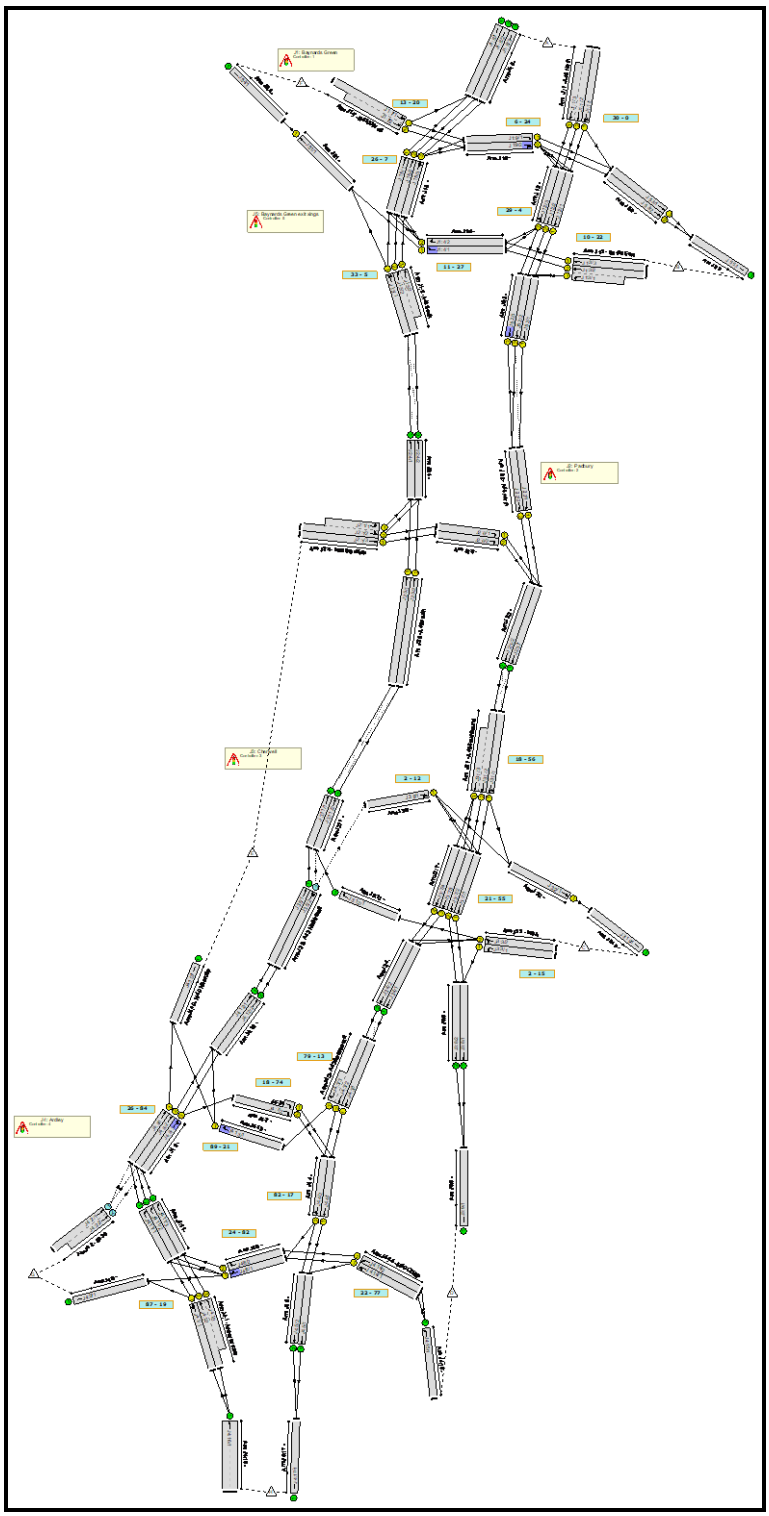
2031 DO SOMETHING PHASE 1 LINSIG MODEL

Full Input Data And Results

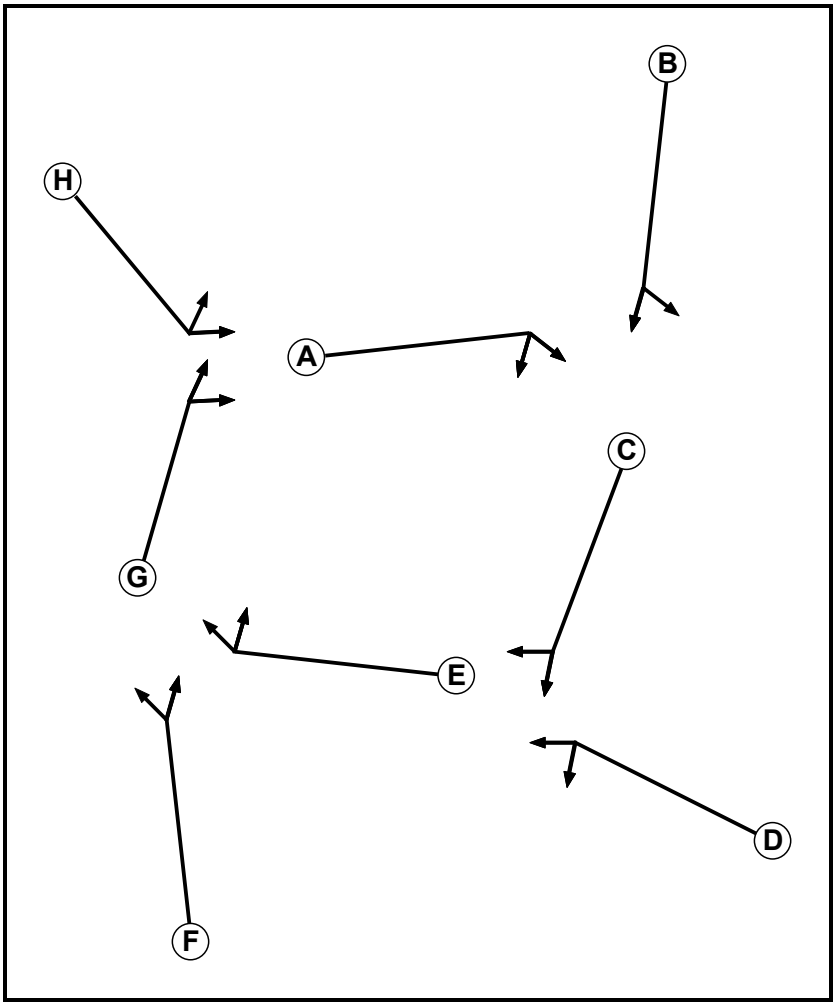
User and Project Details

Project:	**Oxfordshire SRFI**
Title:	**Option 28 Phase 1 Network Model**
Location:	M40 Junction 10 and Batnards Green complex
Additional detail:	
File name:	250130 Option 28 Phase 1 (with BG).lsg3x
Author:	[redacted]
Company:	ADC Infrastructure
Address:	Nottingham

Network Layout Diagram



C1 - Baynards Green
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
E	Traffic	3		7	7
F	Traffic	3		7	7
G	Traffic	4		7	7
H	Traffic	4		7	7

Phase Intergreens Matrix

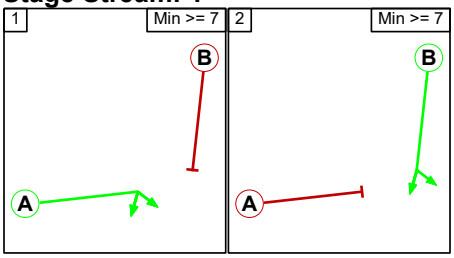
		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A		6	-	-	-	-	-	-
	B	6		-	-	-	-	-	-
	C	-	-		6	-	-	-	-
	D	-	-	7		-	-	-	-
	E	-	-	-	-		6	-	-
	F	-	-	-	-	6		-	-
	G	-	-	-	-	-	-		6
	H	-	-	-	-	-	-	6	

Phases in Stage

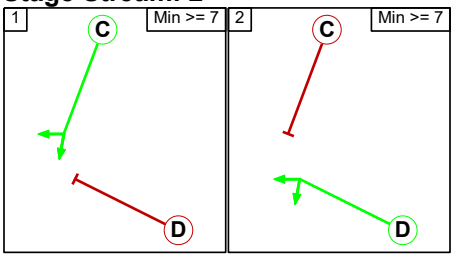
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F
4	1	G
4	2	H

Stage Diagram

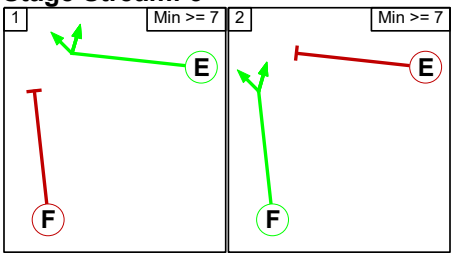
Stage Stream: 1



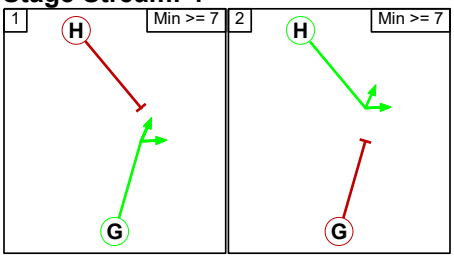
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Prohibited Stage Change

Stage Stream: 1

From Stage \ To Stage	1	2
1		6
2	6	

Stage Stream: 2

From Stage \ To Stage	1	2
1		6
2	7	

Stage Stream: 3

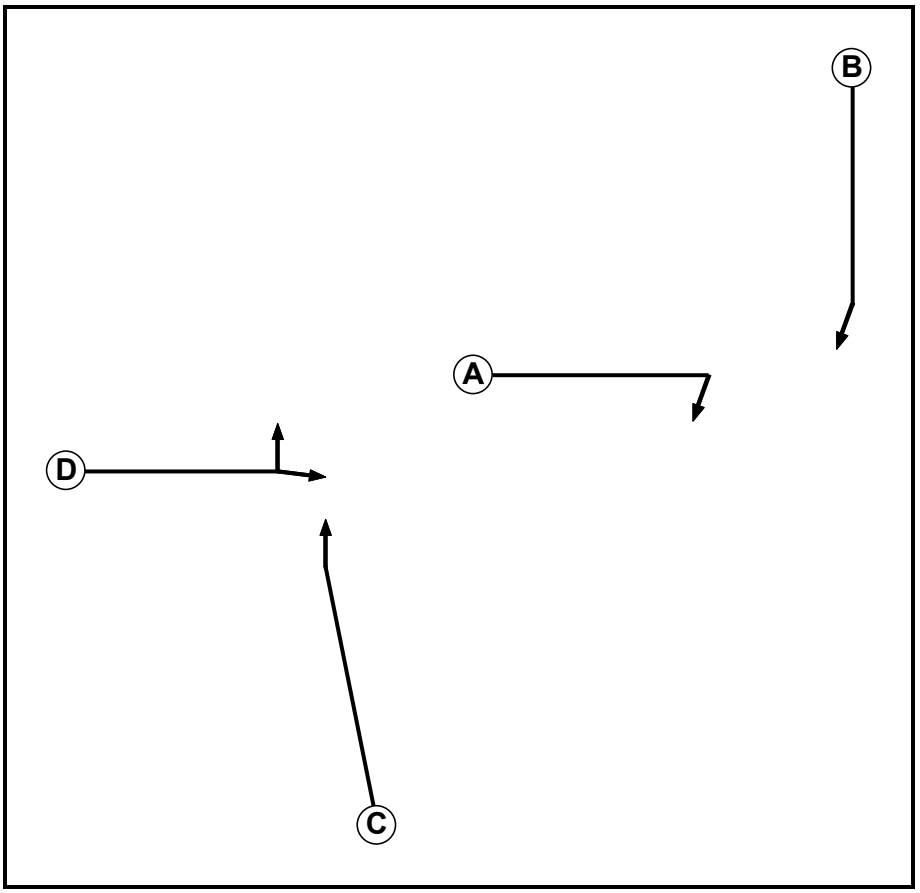
From Stage \ To Stage	1	2
1		6
2	6	

Stage Stream: 4

From Stage \ To Stage	1	2
1		6
2	6	

C2 - Padbury

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

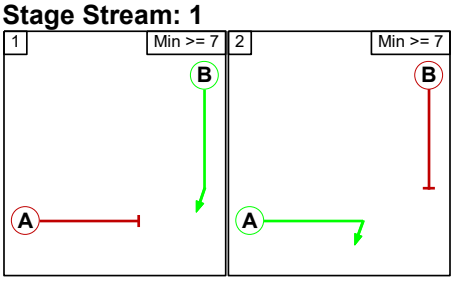
Terminating Phase	Starting Phase				
		A	B	C	D
A			6	-	-
B	6			-	-
C	-	-			6
D	-	-	6		

Phases in Stage

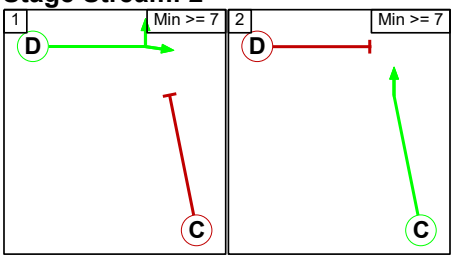
Stream	Stage No.	Phases in Stage
1	1	B
1	2	A
2	1	D
2	2	C

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Prohibited Stage Change

Stage Stream: 1

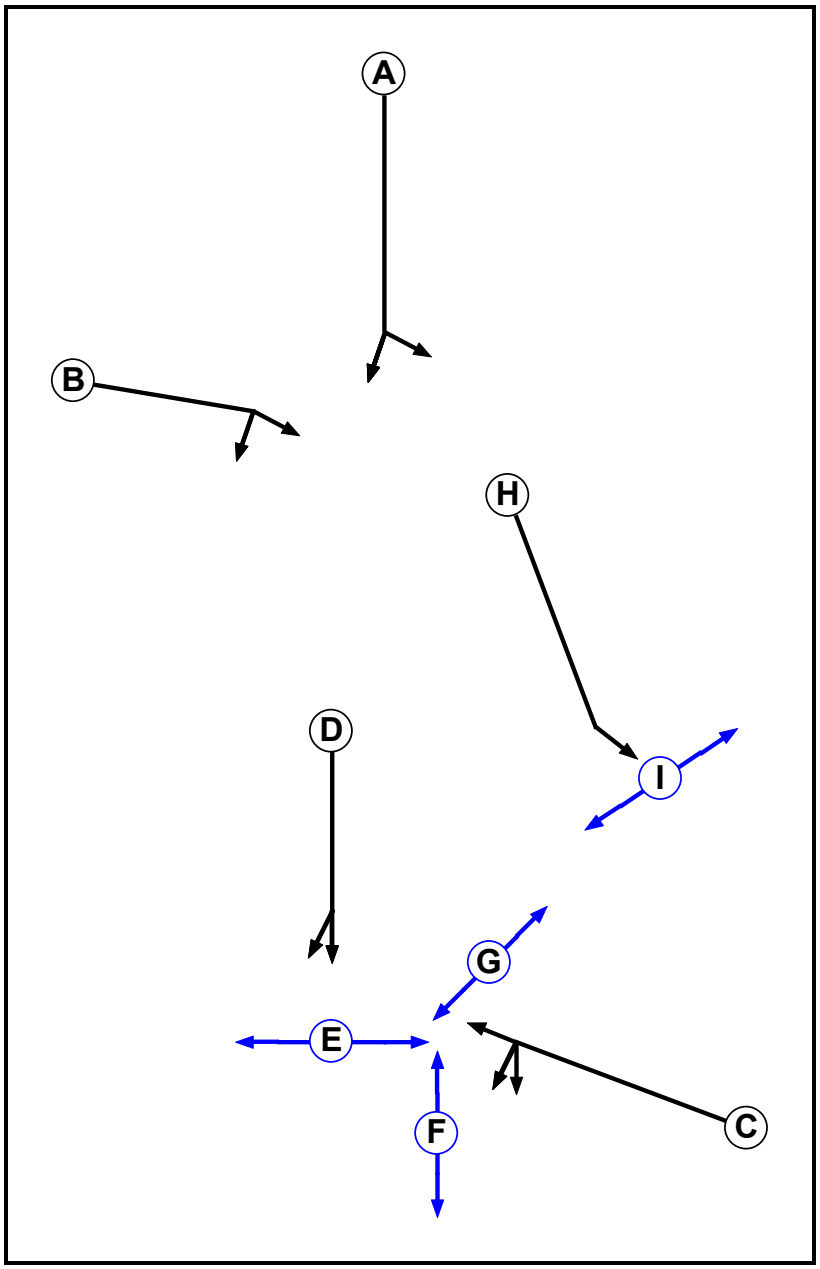
From Stage	To Stage 1	To Stage 2
1		6
2	6	

Stage Stream: 2

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

C3 - Cherwell

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
E	Pedestrian	2		5	5
F	Pedestrian	2		5	5
G	Pedestrian	2		5	5
H	Traffic	3		7	7
I	Pedestrian	3		5	5

Phase Intergreens Matrix

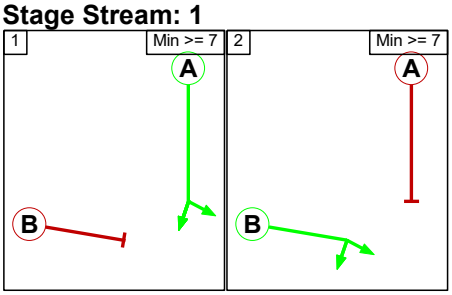
Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H	I
A		6	-	-	-	-	-	-	-
B	6		-	-	-	-	-	-	-
C	-	-		6	-	6	6	-	-
D	-	-	7		7	-	-	-	-
E	-	-	-	6		-	-	-	-
F	-	-	6	-	-		-	-	-
G	-	-	6	-	-	-		-	-
H	-	-	-	-	-	-	-		6
I	-	-	-	-	-	-	-	6	

Phases in Stage

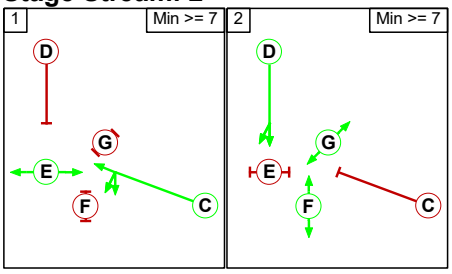
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C E
2	2	D F G
3	1	H
3	2	I

Stage Diagram

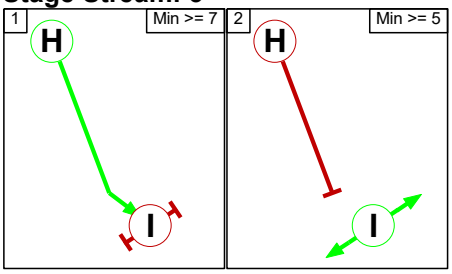
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Prohibited Stage Change

Stage Stream: 1

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

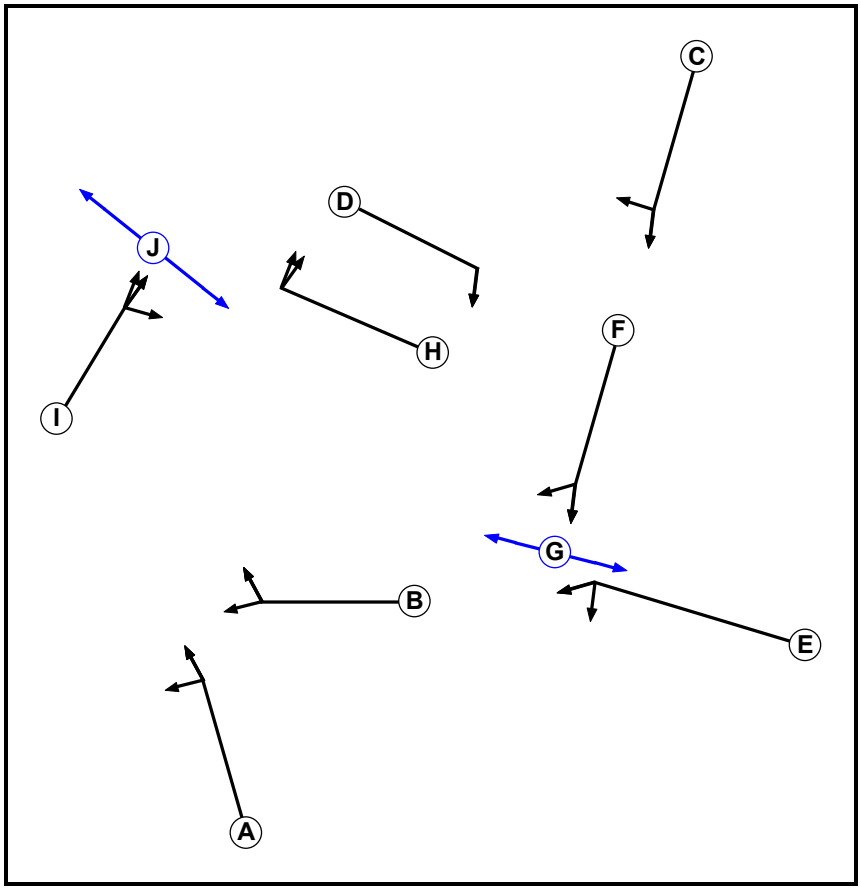
		To Stage	
		1	2
From Stage	1		6
	2	7	

Stage Stream: 3

		To Stage	
		1	2
From Stage	1		6
	2	6	

C4 - Ardley

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
E	Traffic	3		7	4
F	Traffic	3		7	7
G	Pedestrian	3		7	7
H	Traffic	4		7	4
I	Traffic	4		7	6
J	Pedestrian	4		7	7

Phase Intergreens Matrix

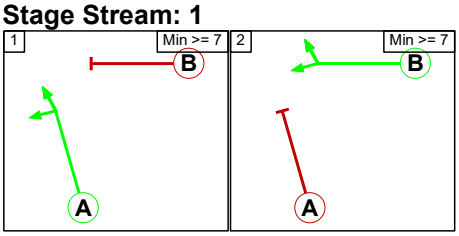
		Starting Phase									
		A	B	C	D	E	F	G	H	I	J
Terminating Phase	A		5	-	-	-	-	-	-	-	-
	B	5		-	-	-	-	-	-	-	-
	C	-	-		5	-	-	-	-	-	-
	D	-	-	5		-	-	-	-	-	-
	E	-	-	-	-		5	-	-	-	-
	F	-	-	-	-	5		5	-	-	-
	G	-	-	-	-	-	8		-	-	-
	H	-	-	-	-	-	-	-		5	-
	I	-	-	-	-	-	-	-	5		5
	J	-	-	-	-	-	-	-	-	8	

Phases in Stage

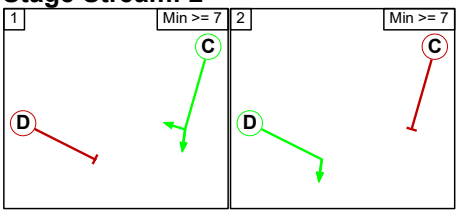
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E G
3	2	F
4	1	I
4	2	H J

Stage Diagram

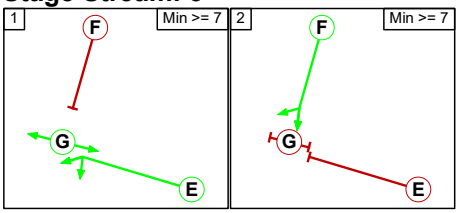
Stage Stream: 1



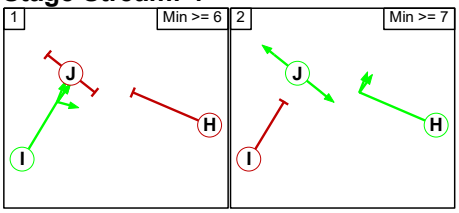
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Phase Delays

Stage Stream: 3

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	E	Losing	3	3

Stage Stream: 4

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	I	Losing	1	1
2	1	H	Losing	3	3

Prohibited Stage Change

Stage Stream: 1

		To Stage	
		1	2
From Stage	1		5
	2	5	

Stage Stream: 2

		To Stage	
		1	2
From Stage	1		5
	2	5	

Stage Stream: 3

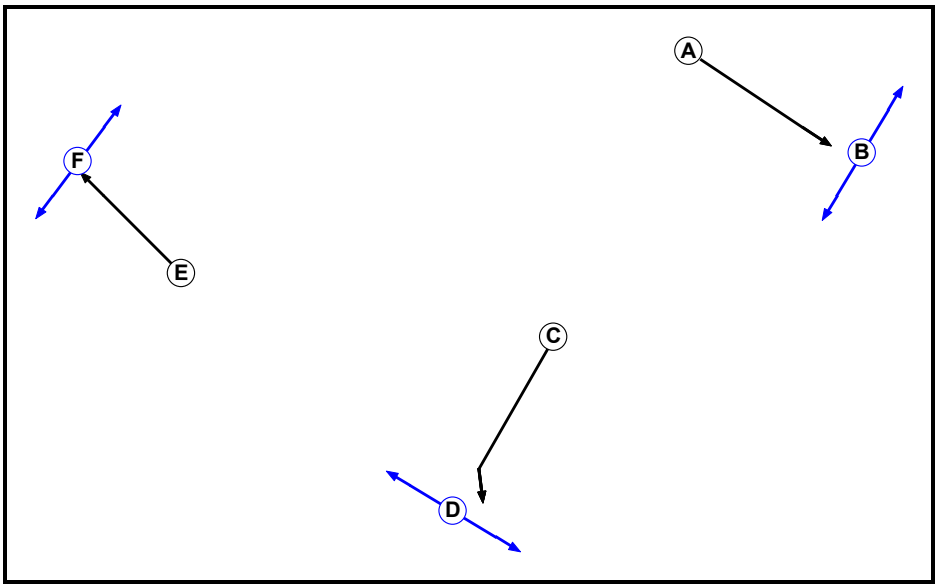
		To Stage	
		1	2
From Stage	1		8
	2	5	

Stage Stream: 4

From Stage	To Stage 1	To Stage 2
1		6
2	8	

C5 - Baynards Green exit xings

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Pedestrian	1		5	5
C	Traffic	2		7	7
D	Pedestrian	2		7	7
E	Traffic	3		7	7
F	Pedestrian	3		5	5

Phase Intergreens Matrix

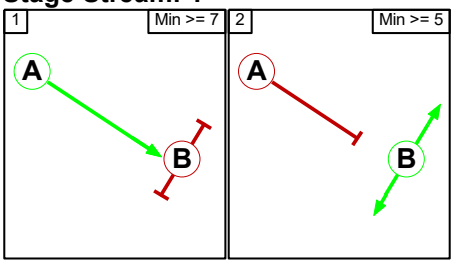
		Starting Phase					
		A	B	C	D	E	F
Terminating Phase	A		5	-	-	-	-
	B	6		-	-	-	-
	C	-	-		5	-	-
	D	-	-	7		-	-
	E	-	-	-	-		5
	F	-	-	-	-	5	

Phases in Stage

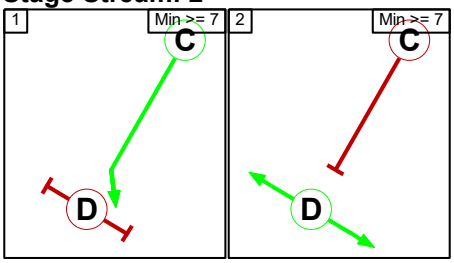
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F

Stage Diagram

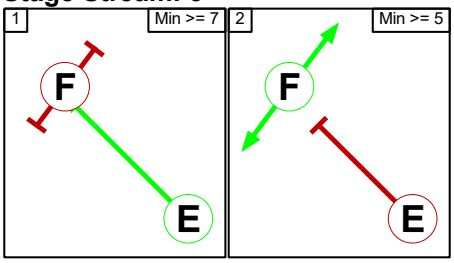
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Prohibited Stage Change

Stage Stream: 1

	To Stage		
From Stage		1	2
	1		5
	2	6	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		5
	2	7	

Stage Stream: 3

	To Stage		
From Stage		1	2
	1		5
	2	5	

Give-Way Lane Input Data

Junction: J1: Baynards Green
There are no Opposed Lanes in this Junction

Junction: J2: Padbury
There are no Opposed Lanes in this Junction

Junction: J3: Cherwell											
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)
J3:5/2 (A43 Northbound)	J3:6/1 (Right)	1268	0	J3:12/1	0.51	All	-	-	-	-	-
	J3:11/2 (Ahead)	1268	0	J3:12/1	0.51	All					

Junction: J4: Ardley											
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)
J4:2/1 (B430)	J4:8/1 (Ahead)	1000	0	J4:11/1	0.33	All	-	-	-	-	-
				J4:11/2	0.33	All					
	J4:8/2 (Ahead)	1000	0	J4:11/1	0.33	All					
				J4:11/2	0.33	All					
J4:2/2 (B430)	J4:8/3 (Ahead)	1000	0	J4:11/1	0.33	All	-	-	-	-	-
				J4:11/2	0.33	All					
				J4:11/3	0.33	All					

Junction: J5: Baynards Green exit xings
There are no Opposed Lanes in this Junction

Lane Input Data

Junction: J1: Baynards Green												
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)**
J1:1/1 (A43 North)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm J1:2 Ahead	45.00
											Arm J5:3 Left	45.00
J1:1/2 (A43 North)	U	B	2	3	60.0	Geom	-	3.65	0.00	N	Arm J1:2 Ahead	45.00
J1:1/3 (A43 North)	U	B	2	3	15.7	Geom	-	3.65	0.00	N	Arm J1:2 Ahead	45.00
J1:2/1	U	C	1	3	10.4	Geom	-	4.00	0.00	Y	Arm J5:2 Ahead	50.00
J1:2/2	U	C	1	3	10.4	Geom	-	4.00	0.00	N	Arm J5:2 Ahead	50.00
J1:2/3	U	C	1	3	10.4	Geom	-	4.00	0.00	N	Arm J1:4 Right	Inf
											Arm J5:2 Ahead	Inf
J1:3/1 (B4100 East)	U	D	2	3	10.4	Geom	-	3.65	0.00	Y	Arm J5:2 Left	30.00
J1:3/2 (B4100 East)	U	D	2	3	60.0	Geom	-	3.65	0.00	N	Arm J1:4 Ahead	50.00
J1:3/3 (B4100 East)	U	D	2	3	60.0	Geom	-	3.65	0.00	N	Arm J1:4 Ahead	50.00
J1:4/1	U	E	1	3	10.4	Geom	-	4.00	0.00	Y	Arm J5:1 Ahead	40.00
J1:4/2	U	E	1	3	10.4	Geom	-	4.00	0.00	N	Arm J1:6 Right	35.00
J1:5/1 (A43 South)	U	F	2	3	104.3	Geom	-	3.65	0.00	Y	Arm J1:6 Ahead	55.00
											Arm J5:1 Ahead	55.00
J1:5/2 (A43 South)	U	F	2	3	104.3	Geom	-	3.65	0.00	N	Arm J1:6 Ahead	50.00
J1:5/3 (A43 South)	U	F	2	3	13.9	Geom	-	3.65	0.00	N	Arm J1:6 Ahead	50.00
J1:6/1	U	G	1	3	10.4	Geom	-	4.00	0.00	Y	Arm J1:8 Ahead	35.00
J1:6/2	U	G	1	3	10.4	Geom	-	4.00	0.00	N	Arm J1:8 Ahead	35.00
J1:6/3	U	G	1	3	10.4	Geom	-	4.00	0.00	N	Arm J1:8 Ahead	35.00
											Arm J1:9 Right	30.00
J1:7/1 (B4100	U	H	2	3	60.0	Geom	-	3.65	0.00	Y	Arm J1:8 Left	30.00

West)											Arm J1:9 Ahead	40.00
J1:7/2 (B4100 West)	U	H	2	3	15.7	Geom	-	3.65	0.00	N	Arm J1:9 Ahead	40.00
J1:8/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:8/2	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:8/3	U		2	3	60.0	User	2000	-	-	-	-	-
J1:9/1	U	A	1	3	10.4	Geom	-	4.00	0.00	Y	Arm J5:3 Ahead	35.00
J1:9/2	U	A	1	3	10.4	Geom	-	4.00	0.00	N	Arm J1:2 Right	30.00
											Arm J5:3 Ahead	35.00

Junction: J2: Padbury

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)
J2:1/1 (M40 SB offslip)	U	D	2	3	10.8	Geom	-	3.65	0.00	Y	Arm J2:4 Left	40.00
J2:1/2 (M40 SB offslip)	U	D	2	3	95.7	Geom	-	3.65	0.00	N	Arm J2:4 Left	50.00
											Arm J2:6 Ahead	50.00
J2:1/3 (M40 SB offslip)	U	D	2	3	95.7	Geom	-	3.65	0.00	N	Arm J2:6 Ahead	50.00
J2:2/1 (A43 north)	U	B	2	3	109.6	Geom	-	3.65	0.00	Y	Arm J2:3 Ahead	Inf
J2:2/2 (A43 north)	U	B	2	3	109.6	Geom	-	3.65	0.00	N	Arm J2:3 Ahead	Inf
J2:3/1	U		2	3	0.9	Inf	-	-	-	-	-	-
J2:3/2	U		2	3	0.9	Inf	-	-	-	-	-	-
J2:4/1	U		2	3	13.0	Inf	-	-	-	-	-	-
J2:4/2	U		2	3	13.0	Inf	-	-	-	-	-	-
J2:5/1 (A43 south)	U	C	2	3	57.4	Geom	-	3.65	0.00	Y	Arm J2:4 Ahead	30.00
J2:5/2 (A43 south)	U	C	2	3	57.4	Geom	-	3.65	0.00	N	Arm J2:4 Ahead	30.00
J2:6/1	U	A	2	3	8.7	User	2080	-	-	-	-	-
J2:6/2	U	A	2	3	8.7	User	2080	-	-	-	-	-

Junction: J3: Cherwell												
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)**
J3:1/1 (A43 Southbound)	U	A	2	3	60.0	Geom	-	3.63	0.00	Y	Arm J3:2 Left	Inf
											Arm J3:7 Ahead	Inf
J3:1/2 (A43 Southbound)	U	A	2	3	52.2	Geom	-	3.65	0.00	N	Arm J3:7 Ahead	Inf
J3:1/3 (A43 Southbound)	U	A	2	3	13.9	Geom	-	3.65	0.00	Y	Arm J3:7 Ahead	Inf
J3:2/1	U	H	2	3	10.4	Geom	-	4.00	0.00	Y	Arm J3:10 Ahead	Inf
J3:3/1 (MSA)	U	C	2	3	60.0	Geom	-	4.00	0.00	Y	Arm J3:8 Left	15.00
J3:3/2 (MSA)	U	C	2	3	60.0	Geom	-	4.00	0.00	N	Arm J3:4 Left	30.00
											Arm J3:12 Ahead	Inf
J3:4/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J3:4/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J3:5/1 (A43 Northbound)	U		2	3	30.4	Inf	-	-	-	-	-	-
J3:5/2 (A43 Northbound)	O		2	3	30.4	Inf	-	-	-	-	-	-
J3:6/1	U	B	2	3	10.4	Geom	-	4.50	0.00	Y	Arm J3:2 Ahead	40.00
											Arm J3:7 Right	30.00
J3:7/1	U	D	0	3	8.7	Geom	-	4.00	0.00	Y	Arm J3:8 Ahead	Inf
J3:7/2	U	D	0	3	8.7	Geom	-	4.00	0.00	N	Arm J3:8 Ahead	Inf
J3:7/3	U	D	0	3	8.7	Geom	-	4.00	0.00	Y	Arm J3:4 Ahead	Inf
J3:7/4	U	D	0	3	8.7	Geom	-	4.00	0.00	N	Arm J3:4 Ahead	Inf
J3:8/1	U		2	3	87.0	Inf	-	-	-	-	-	-
J3:8/2	U		2	3	87.0	Inf	-	-	-	-	-	-
J3:9/1	U		2	3	173.9	Inf	-	-	-	-	-	-
J3:10/1	U		2	3	48.7	Inf	-	-	-	-	-	-
J3:11/1	U		2	3	9.6	Inf	-	-	-	-	-	-
J3:11/2	U		2	3	9.6	Inf	-	-	-	-	-	-
J3:12/1	U		2	3	7.8	Inf	-	-	-	-	-	-

Junction: J4: Ardley												
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)**
J4:1/1 (Ardley bypass)	U	A	2	3	87.0	Geom	-	3.65	0.00	Y	Arm J4:9 Left	30.00
											Arm J4:11 Ahead	30.00
J4:1/2 (Ardley bypass)	U	A	2	3	87.0	Geom	-	3.65	0.00	N	Arm J4:11 Ahead	30.00
J4:1/3 (Ardley bypass)	U	A	2	3	10.4	Geom	-	3.65	0.00	N	Arm J4:11 Ahead	30.00
J4:2/1 (B430)	O		2	3	60.0	Geom	-	3.50	0.00	Y	Arm J4:8 Ahead	40.00
J4:2/2 (B430)	O		2	3	10.4	Geom	-	3.50	0.00	N	Arm J4:8 Ahead	Inf
J4:3/1 (A43 Southbound)	U	C	2	3	26.1	Geom	-	3.65	0.00	Y	Arm J4:4 Ahead	30.00
J4:3/2 (A43 Southbound)	U	C	2	3	26.1	Geom	-	3.65	0.00	N	Arm J4:4 Ahead	30.00
J4:3/3 (A43 Southbound)	U	C	2	3	6.3	Geom	-	3.65	0.00	N	Arm J4:13 Right	50.00
J4:4/1	U	F	1	3	10.4	Geom	-	4.00	0.00	Y	Arm J4:5 Ahead	30.00
J4:4/2	U	F	1	3	10.4	Geom	-	4.00	0.00	N	Arm J4:5 Ahead	30.00
											Arm J4:6 Right	30.00
J4:5/1	U		2	3	87.0	Inf	-	-	-	-	-	-
J4:5/2	U		2	3	87.0	Inf	-	-	-	-	-	-
J4:6/1	U	B	1	3	10.4	User	2000	-	-	-	-	-
J4:6/2	U	B	1	3	10.4	User	2100	-	-	-	-	-
J4:7/1	U	D	2	3	2.1	Geom	-	4.00	0.00	Y	Arm J4:4 Right	40.00
J4:7/2	U	D	2	3	12.2	Geom	-	4.00	0.00	N	Arm J4:4 Right	40.00
J4:8/1	U	I	2	3	13.9	Geom	-	4.00	0.00	Y	Arm J4:10 Ahead	Inf
J4:8/2	U	I	2	3	13.9	Geom	-	4.00	0.00	N	Arm J4:12 Ahead	Inf
J4:8/3	U	I	2	3	13.9	Geom	-	4.00	0.00	N	Arm J4:7 Right	Inf
											Arm J4:12 Ahead	Inf
J4:9/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J4:10/1 (M40 NB onslip)	U		2	3	139.1	Inf	-	-	-	-	-	-
J4:11/1	U		2	3	13.9	Inf	-	-	-	-	-	-

J4:11/2	U		0	3	13.9	Inf	-	-	-	-	-	-
J4:11/3	U		0	3	13.9	Inf	-	-	-	-	-	-
J4:12/1	U		2	3	13.9	Inf	-	-	-	-	-	-
J4:12/2	U		2	3	13.9	Inf	-	-	-	-	-	-
J4:13/1	U	H	1	3	16.5	Geom	-	4.00	0.00	Y	Arm J4:10 Right Arm J4:12 Right	40.00 40.00
J4:14/1 (M40 Offslip)	U	E	2	3	173.9	Geom	-	3.65	0.00	Y	Arm J4:5 Left Arm J4:6 Ahead	30.00 Inf
J4:14/2 (M40 Offslip)	U	E	2	3	173.9	Geom	-	3.65	0.00	N	Arm J4:6 Ahead	30.00
J4:15/1	U		2	3	60.9	Inf	-	-	-	-	-	-
J4:16/1	U		2	3	173.9	Inf	-	-	-	-	-	-
J4:17/1	U		2	3	173.9	Inf	-	-	-	-	-	-

Junction: J5: Baynards Green exit xings

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)
J5:1/1	U	E	2	3	11.3	Geom	-	3.65	0.00	Y	Arm J5:4 Ahead	Inf
J5:2/1	U	C	2	3	8.7	Geom	-	3.65	0.00	Y	Arm J2:2 Ahead	Inf
J5:2/2	U	C	2	3	8.7	Geom	-	3.65	0.00	N	Arm J2:2 Ahead	Inf
J5:2/3	U	C	2	3	8.7	Geom	-	3.65	0.00	Y	Arm J2:2 Ahead	Inf
J5:3/1	U	A	2	3	11.3	Geom	-	3.60	0.00	Y	Arm J5:5 Ahead	Inf
J5:3/2	U	A	2	3	11.3	Geom	-	3.60	0.00	N	Arm J5:5 Ahead	Inf
J5:4/1	U		2	3	48.7	Inf	-	-	-	-	-	-
J5:5/1	U		2	3	48.7	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2034 do something - off-peak'	00:00	01:00	01:00	((F3+F4)/2)*0.26
2: '2034 do something - inter-peak '	12:00	13:00	01:00	((F3+F4)/2)*0.89
3: '2031 phase1 - AM'	08:00	09:00	01:00	
4: '2031 phase 1 - PM'	17:00	18:00	01:00	

Scenario 1: '2031 Phase 1 - AM peak' (FG3: '2031 phase1 - AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination								
		A	B	C	D	E	F	G	H	Tot.
Origin	A	0	169	63	1541	0	15	19	416	2223
	B	252	0	0	2	193	294	0	36	777
	C	74	0	0	264	184	0	0	70	592
	D	1189	2	242	0	0	6	18	64	1521
	E	0	317	232	0	0	29	54	210	842
	F	70	467	0	108	0	0	1	12	658
	G	17	1	0	2	109	9	0	243	381
	H	133	18	0	55	151	13	146	0	516
	Tot.	1735	974	537	1972	637	366	238	1051	7510

Traffic Lane Flows

Lane	Scenario 1: 2031 Phase 1 - AM peak
Junction: J1: Baynards Green	
J1:1/1	789
J1:1/2 (with short)	1434(In) 902(Out)
J1:1/3 (short)	532
J1:2/1	660
J1:2/2	964
J1:2/3	551
J1:3/1 (short)	231
J1:3/2 (with short)	525(In) 294(Out)
J1:3/3	252
J1:4/1	309
J1:4/2	252
J1:5/1	639
J1:5/2 (with short)	1169(In) 686(Out)
J1:5/3 (short)	483
J1:6/1	696
J1:6/2	811
J1:6/3	496
J1:7/1 (with short)	658(In) 323(Out)
J1:7/2 (short)	335
J1:8/1	766
J1:8/2	811
J1:8/3	158
J1:9/1	417
J1:9/2	509
Junction: J2: Padbury	
J2:1/1 (short)	195
J2:1/2 (with short)	593(In) 398(Out)
J2:1/3	249
J2:2/1	1151
J2:2/2	1240
J2:3/1	1398
J2:3/2	1489
J2:4/1	922
J2:4/2	886
J2:5/1	727
J2:5/2	735

J2:6/1	247
J2:6/2	249
Junction: J3: Cherwell	
J3:1/1	1086
J3:1/2 (with short)	1801(In) 860(Out)
J3:1/3 (short)	941
J3:2/1	537
J3:3/1	264
J3:3/2	328
J3:4/1	317
J3:4/2	878
J3:5/1	884
J3:5/2	803
J3:6/1	299
J3:7/1	799
J3:7/2	909
J3:7/3	293
J3:7/4	648
J3:8/1	1063
J3:8/2	909
J3:9/1	1972
J3:10/1	537
J3:11/1	884
J3:11/2	578
J3:12/1	74
Junction: J4: Ardley	
J4:1/1	297
J4:1/2 (with short)	219(In) 153(Out)
J4:1/3 (short)	66
J4:2/1 (with short)	381(In) 136(Out)
J4:2/2 (short)	245
J4:3/1	393
J4:3/2 (with short)	802(In) 425(Out)
J4:3/3 (short)	377
J4:4/1	510
J4:4/2	551
J4:5/1	574
J4:5/2	477
J4:6/1	796
J4:6/2	735
J4:7/1 (short)	117

J4:7/2 (with short)	243(In) 126(Out)
J4:8/1	260
J4:8/2	884
J4:8/3	1046
J4:9/1	238
J4:10/1	637
J4:11/1	151
J4:11/2	857
J4:11/3	801
J4:12/1	884
J4:12/2	803
J4:13/1	377
J4:14/1	786
J4:14/2	735
J4:15/1	1521
J4:16/1	516
J4:17/1	1051
Junction: J5: Baynards Green exit xings	
J5:1/1	366
J5:2/1	753
J5:2/2	1102
J5:2/3	536
J5:3/1	586
J5:3/2	388
J5:4/1	366
J5:5/1	974

Lane Saturation Flows

Junction: J1: Baynards Green								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (A43 North)	3.65	0.00	Y	Arm J1:2 Ahead	45.00	78.6 %	1916	1916
				Arm J5:3 Left	45.00	21.4 %		
J1:1/2 (A43 North)	3.65	0.00	N	Arm J1:2 Ahead	45.00	100.0 %	2052	2052
J1:1/3 (A43 North)	3.65	0.00	N	Arm J1:2 Ahead	45.00	100.0 %	2052	2052
J1:2/1	4.00	0.00	Y	Arm J5:2 Ahead	50.00	100.0 %	1956	1956
J1:2/2	4.00	0.00	N	Arm J5:2 Ahead	50.00	100.0 %	2092	2092
J1:2/3	4.00	0.00	N	Arm J1:4 Right	Inf	2.7 %	2155	2155
				Arm J5:2 Ahead	Inf	97.3 %		
J1:3/1 (B4100 East)	3.65	0.00	Y	Arm J5:2 Left	30.00	100.0 %	1886	1886
J1:3/2 (B4100 East)	3.65	0.00	N	Arm J1:4 Ahead	50.00	100.0 %	2058	2058
J1:3/3 (B4100 East)	3.65	0.00	N	Arm J1:4 Ahead	50.00	100.0 %	2058	2058
J1:4/1	4.00	0.00	Y	Arm J5:1 Ahead	40.00	100.0 %	1942	1942
J1:4/2	4.00	0.00	N	Arm J1:6 Right	35.00	100.0 %	2066	2066
J1:5/1 (A43 South)	3.65	0.00	Y	Arm J1:6 Ahead	55.00	91.1 %	1927	1927
				Arm J5:1 Ahead	55.00	8.9 %		
J1:5/2 (A43 South)	3.65	0.00	N	Arm J1:6 Ahead	50.00	100.0 %	2058	2058
J1:5/3 (A43 South)	3.65	0.00	N	Arm J1:6 Ahead	50.00	100.0 %	2058	2058
J1:6/1	4.00	0.00	Y	Arm J1:8 Ahead	35.00	100.0 %	1932	1932
J1:6/2	4.00	0.00	N	Arm J1:8 Ahead	35.00	100.0 %	2066	2066
J1:6/3	4.00	0.00	N	Arm J1:8 Ahead	35.00	31.9 %	2057	2057
				Arm J1:9 Right	30.00	68.1 %		
J1:7/1 (B4100 West)	3.65	0.00	Y	Arm J1:8 Left	30.00	21.7 %	1903	1903
				Arm J1:9 Ahead	40.00	78.3 %		
J1:7/2 (B4100 West)	3.65	0.00	N	Arm J1:9 Ahead	40.00	100.0 %	2043	2043
J1:8/1	Infinite Saturation Flow						Inf	Inf
J1:8/2	Infinite Saturation Flow						Inf	Inf
J1:8/3	This lane uses a directly entered Saturation Flow						2000	2000
J1:9/1	4.00	0.00	Y	Arm J5:3 Ahead	35.00	100.0 %	1932	1932
J1:9/2	4.00	0.00	N	Arm J1:2 Right	30.00	23.8 %	2063	2063
				Arm J5:3 Ahead	35.00	76.2 %		

Junction: J2: Padbury								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (M40 SB offslip)	3.65	0.00	Y	Arm J2:4 Left	40.00	100.0 %	1908	1908
J2:1/2 (M40 SB offslip)	3.65	0.00	N	Arm J2:4 Left	50.00	37.9 %	2058	2058
				Arm J2:6 Ahead	50.00	62.1 %		
J2:1/3 (M40 SB offslip)	3.65	0.00	N	Arm J2:6 Ahead	50.00	100.0 %	2058	2058
J2:2/1 (A43 north)	3.65	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1980	1980
J2:2/2 (A43 north)	3.65	0.00	N	Arm J2:3 Ahead	Inf	100.0 %	2120	2120
J2:3/1	Infinite Saturation Flow						Inf	Inf
J2:3/2	Infinite Saturation Flow						Inf	Inf
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1 (A43 south)	3.65	0.00	Y	Arm J2:4 Ahead	30.00	100.0 %	1886	1886
J2:5/2 (A43 south)	3.65	0.00	N	Arm J2:4 Ahead	30.00	100.0 %	2019	2019
J2:6/1	This lane uses a directly entered Saturation Flow						2080	2080
J2:6/2	This lane uses a directly entered Saturation Flow						2080	2080

Junction: J3: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1 (A43 Southbound)	3.63	0.00	Y	Arm J3:2 Left	Inf	27.2 %	1978	1978
				Arm J3:7 Ahead	Inf	72.8 %		
J3:1/2 (A43 Southbound)	3.65	0.00	N	Arm J3:7 Ahead	Inf	100.0 %	2120	2120
J3:1/3 (A43 Southbound)	3.65	0.00	Y	Arm J3:7 Ahead	Inf	100.0 %	1980	1980
J3:2/1	4.00	0.00	Y	Arm J3:10 Ahead	Inf	100.0 %	2015	2015
J3:3/1 (MSA)	4.00	0.00	Y	Arm J3:8 Left	15.00	100.0 %	1832	1832
J3:3/2 (MSA)	4.00	0.00	N	Arm J3:4 Left	30.00	77.4 %	2075	2075
				Arm J3:12 Ahead	Inf	22.6 %		
J3:4/1	Infinite Saturation Flow						Inf	Inf
J3:4/2	Infinite Saturation Flow						Inf	Inf
J3:5/1 (A43 Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:5/2 (A43 Northbound Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:6/1	4.50	0.00	Y	Arm J3:2 Ahead	40.00	80.9 %	1986	1986
				Arm J3:7 Right	30.00	19.1 %		
J3:7/1	4.00	0.00	Y	Arm J3:8 Ahead	Inf	100.0 %	2015	2015
J3:7/2	4.00	0.00	N	Arm J3:8 Ahead	Inf	100.0 %	2155	2155
J3:7/3	4.00	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	2015	2015
J3:7/4	4.00	0.00	N	Arm J3:4 Ahead	Inf	100.0 %	2155	2155
J3:8/1	Infinite Saturation Flow						Inf	Inf
J3:8/2	Infinite Saturation Flow						Inf	Inf
J3:9/1	Infinite Saturation Flow						Inf	Inf
J3:10/1	Infinite Saturation Flow						Inf	Inf
J3:11/1	Infinite Saturation Flow						Inf	Inf
J3:11/2	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf

Junction: J4: Ardley								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J4:1/1 (Ardley bypass)	3.65	0.00	Y	Arm J4:9 Left	30.00	49.2 %	1886	1886
				Arm J4:11 Ahead	30.00	50.8 %		
J4:1/2 (Ardley bypass)	3.65	0.00	N	Arm J4:11 Ahead	30.00	100.0 %	2019	2019
J4:1/3 (Ardley bypass)	3.65	0.00	N	Arm J4:11 Ahead	30.00	100.0 %	2019	2019
J4:2/1 (B430)	3.50	0.00	Y	Arm J4:8 Ahead	40.00	100.0 %	1894	1894
J4:2/2 (B430)	3.50	0.00	N	Arm J4:8 Ahead	Inf	100.0 %	2105	2105
J4:3/1 (A43 Southbound)	3.65	0.00	Y	Arm J4:4 Ahead	30.00	100.0 %	1886	1886
J4:3/2 (A43 Southbound)	3.65	0.00	N	Arm J4:4 Ahead	30.00	100.0 %	2019	2019
J4:3/3 (A43 Southbound)	3.65	0.00	N	Arm J4:13 Right	50.00	100.0 %	2058	2058
J4:4/1	4.00	0.00	Y	Arm J4:5 Ahead	30.00	100.0 %	1919	1919
J4:4/2	4.00	0.00	N	Arm J4:5 Ahead	30.00	86.6 %	2052	2052
				Arm J4:6 Right	30.00	13.4 %		
J4:5/1	Infinite Saturation Flow						Inf	Inf
J4:5/2	Infinite Saturation Flow						Inf	Inf
J4:6/1	This lane uses a directly entered Saturation Flow						2000	2000
J4:6/2	This lane uses a directly entered Saturation Flow						2100	2100
J4:7/1	4.00	0.00	Y	Arm J4:4 Right	40.00	100.0 %	1942	1942
J4:7/2	4.00	0.00	N	Arm J4:4 Right	40.00	100.0 %	2077	2077
J4:8/1	4.00	0.00	Y	Arm J4:10 Ahead	Inf	100.0 %	2015	2015
J4:8/2	4.00	0.00	N	Arm J4:12 Ahead	Inf	100.0 %	2155	2155
J4:8/3	4.00	0.00	N	Arm J4:7 Right	Inf	23.2 %	2155	2155
				Arm J4:12 Ahead	Inf	76.8 %		
J4:9/1	Infinite Saturation Flow						Inf	Inf
J4:10/1 (M40 NB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:11/1	Infinite Saturation Flow						Inf	Inf
J4:11/2	Infinite Saturation Flow						Inf	Inf
J4:11/3	Infinite Saturation Flow						Inf	Inf
J4:12/1	Infinite Saturation Flow						Inf	Inf
J4:12/2	Infinite Saturation Flow						Inf	Inf
J4:13/1	4.00	0.00	Y	Arm J4:10 Right	40.00	100.0 %	1942	1942
				Arm J4:12 Right	40.00	0.0 %		
J4:14/1 (M40 Offslip)	3.65	0.00	Y	Arm J4:5 Left	30.00	8.1 %	1972	1972
				Arm J4:6 Ahead	Inf	91.9 %		
J4:14/2 (M40 Offslip)	3.65	0.00	N	Arm J4:6 Ahead	30.00	100.0 %	2019	2019

J4:15/1	Infinite Saturation Flow	Inf	Inf
J4:16/1	Infinite Saturation Flow	Inf	Inf
J4:17/1	Infinite Saturation Flow	Inf	Inf

Junction: J5: Baynards Green exit xings

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J5:1/1	3.65	0.00	Y	Arm J5:4 Ahead	Inf	100.0 %	1980	1980
J5:2/1	3.65	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1980	1980
J5:2/2	3.65	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2120	2120
J5:2/3	3.65	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1980	1980
J5:3/1	3.60	0.00	Y	Arm J5:5 Ahead	Inf	100.0 %	1975	1975
J5:3/2	3.60	0.00	N	Arm J5:5 Ahead	Inf	100.0 %	2115	2115
J5:4/1	Infinite Saturation Flow						Inf	Inf
J5:5/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2031 Phase 1 - PM peak' (FG4: '2031 phase 1 - PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination								
		A	B	C	D	E	F	G	H	Tot.
Origin	A	0	280	111	1316	0	58	18	132	1915
	B	372	0	0	7	235	303	4	14	935
	C	99	0	0	306	210	0	0	0	615
	D	1806	1	264	0	0	0	23	60	2154
	E	0	168	234	0	0	0	68	132	602
	F	55	284	0	43	0	0	1	3	386
	G	8	0	0	2	99	0	0	46	155
	H	237	13	0	53	183	15	229	0	730
	Tot.	2577	746	609	1727	727	376	343	387	7492

Traffic Lane Flows

Lane	Scenario 2: 2031 Phase 1 - PM peak
Junction: J1: Baynards Green	
J1:1/1	636
J1:1/2 (with short)	1279(In) 779(Out)
J1:1/3 (short)	500
J1:2/1	396
J1:2/2	784
J1:2/3	502
J1:3/1 (short)	260
J1:3/2 (with short)	563(In) 303(Out)
J1:3/3	372
J1:4/1	361
J1:4/2	372
J1:5/1	778
J1:5/2 (with short)	1569(In) 842(Out)
J1:5/3 (short)	727
J1:6/1	874
J1:6/2	972
J1:6/3	858
J1:7/1 (with short)	386(In) 186(Out)
J1:7/2 (short)	200
J1:8/1	929
J1:8/2	972
J1:8/3	676
J1:9/1	186
J1:9/2	327
Junction: J2: Padbury	
J2:1/1 (short)	91
J2:1/2 (with short)	356(In) 265(Out)
J2:1/3	246
J2:2/1	894
J2:2/2	990
J2:3/1	1082
J2:3/2	1236
J2:4/1	1145
J2:4/2	1202
J2:5/1	1054
J2:5/2	1125

J2:6/1	188
J2:6/2	246
Junction: J3: Cherwell	
J3:1/1	722
J3:1/2 (with short)	1596(In) 989(Out)
J3:1/3 (short)	607
J3:2/1	609
J3:3/1	306
J3:3/2	309
J3:4/1	279
J3:4/2	538
J3:5/1	1210
J3:5/2	1189
J3:6/1	319
J3:7/1	404
J3:7/2	1017
J3:7/3	279
J3:7/4	328
J3:8/1	710
J3:8/2	1017
J3:9/1	1727
J3:10/1	609
J3:11/1	1210
J3:11/2	969
J3:12/1	99
Junction: J4: Ardley	
J4:1/1	412
J4:1/2 (with short)	318(In) 202(Out)
J4:1/3 (short)	116
J4:2/1 (with short)	155(In) 107(Out)
J4:2/2 (short)	48
J4:3/1	281
J4:3/2 (with short)	536(In) 91(Out)
J4:3/3 (short)	445
J4:4/1	297
J4:4/2	121
J4:5/1	357
J4:5/2	30
J4:6/1	1114
J4:6/2	1071
J4:7/1 (short)	16

J4:7/2 (with short)	46(In) 30(Out)
J4:8/1	282
J4:8/2	1210
J4:8/3	1235
J4:9/1	343
J4:10/1	727
J4:11/1	183
J4:11/2	1202
J4:11/3	1187
J4:12/1	1210
J4:12/2	1189
J4:13/1	445
J4:14/1	1083
J4:14/2	1071
J4:15/1	2154
J4:16/1	730
J4:17/1	387
Junction: J5: Baynards Green exit xings	
J5:1/1	376
J5:2/1	404
J5:2/2	1036
J5:2/3	444
J5:3/1	466
J5:3/2	280
J5:4/1	376
J5:5/1	746

Lane Saturation Flows

Junction: J1: Baynards Green								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J1:1/1 (A43 North)	3.65	0.00	Y	Arm J1:2 Ahead	45.00	56.0 %	1916	1916
				Arm J5:3 Left	45.00	44.0 %		
J1:1/2 (A43 North)	3.65	0.00	N	Arm J1:2 Ahead	45.00	100.0 %	2052	2052
J1:1/3 (A43 North)	3.65	0.00	N	Arm J1:2 Ahead	45.00	100.0 %	2052	2052
J1:2/1	4.00	0.00	Y	Arm J5:2 Ahead	50.00	100.0 %	1956	1956
J1:2/2	4.00	0.00	N	Arm J5:2 Ahead	50.00	100.0 %	2092	2092
J1:2/3	4.00	0.00	N	Arm J1:4 Right	Inf	11.6 %	2155	2155
				Arm J5:2 Ahead	Inf	88.4 %		
J1:3/1 (B4100 East)	3.65	0.00	Y	Arm J5:2 Left	30.00	100.0 %	1886	1886
J1:3/2 (B4100 East)	3.65	0.00	N	Arm J1:4 Ahead	50.00	100.0 %	2058	2058
J1:3/3 (B4100 East)	3.65	0.00	N	Arm J1:4 Ahead	50.00	100.0 %	2058	2058
J1:4/1	4.00	0.00	Y	Arm J5:1 Ahead	40.00	100.0 %	1942	1942
J1:4/2	4.00	0.00	N	Arm J1:6 Right	35.00	100.0 %	2066	2066
J1:5/1 (A43 South)	3.65	0.00	Y	Arm J1:6 Ahead	55.00	98.1 %	1927	1927
				Arm J5:1 Ahead	55.00	1.9 %		
J1:5/2 (A43 South)	3.65	0.00	N	Arm J1:6 Ahead	50.00	100.0 %	2058	2058
J1:5/3 (A43 South)	3.65	0.00	N	Arm J1:6 Ahead	50.00	100.0 %	2058	2058
J1:6/1	4.00	0.00	Y	Arm J1:8 Ahead	35.00	100.0 %	1932	1932
J1:6/2	4.00	0.00	N	Arm J1:8 Ahead	35.00	100.0 %	2066	2066
J1:6/3	4.00	0.00	N	Arm J1:8 Ahead	35.00	78.8 %	2063	2063
				Arm J1:9 Right	30.00	21.2 %		
J1:7/1 (B4100 West)	3.65	0.00	Y	Arm J1:8 Left	30.00	29.6 %	1902	1902
				Arm J1:9 Ahead	40.00	70.4 %		
J1:7/2 (B4100 West)	3.65	0.00	N	Arm J1:9 Ahead	40.00	100.0 %	2043	2043
J1:8/1	Infinite Saturation Flow						Inf	Inf
J1:8/2	Infinite Saturation Flow						Inf	Inf
J1:8/3	This lane uses a directly entered Saturation Flow						2000	2000
J1:9/1	4.00	0.00	Y	Arm J5:3 Ahead	35.00	100.0 %	1932	1932
J1:9/2	4.00	0.00	N	Arm J1:2 Right	30.00	14.4 %	2064	2064
				Arm J5:3 Ahead	35.00	85.6 %		

Junction: J2: Padbury								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (M40 SB offslip)	3.65	0.00	Y	Arm J2:4 Left	40.00	100.0 %	1908	1908
J2:1/2 (M40 SB offslip)	3.65	0.00	N	Arm J2:4 Left	50.00	29.1 %	2058	2058
				Arm J2:6 Ahead	50.00	70.9 %		
J2:1/3 (M40 SB offslip)	3.65	0.00	N	Arm J2:6 Ahead	50.00	100.0 %	2058	2058
J2:2/1 (A43 north)	3.65	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1980	1980
J2:2/2 (A43 north)	3.65	0.00	N	Arm J2:3 Ahead	Inf	100.0 %	2120	2120
J2:3/1	Infinite Saturation Flow						Inf	Inf
J2:3/2	Infinite Saturation Flow						Inf	Inf
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1 (A43 south)	3.65	0.00	Y	Arm J2:4 Ahead	30.00	100.0 %	1886	1886
J2:5/2 (A43 south)	3.65	0.00	N	Arm J2:4 Ahead	30.00	100.0 %	2019	2019
J2:6/1	This lane uses a directly entered Saturation Flow						2080	2080
J2:6/2	This lane uses a directly entered Saturation Flow						2080	2080

Junction: J3: Cherwell								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J3:1/1 (A43 Southbound)	3.63	0.00	Y	Arm J3:2 Left	Inf	47.8 %	1978	1978
				Arm J3:7 Ahead	Inf	52.2 %		
J3:1/2 (A43 Southbound)	3.65	0.00	N	Arm J3:7 Ahead	Inf	100.0 %	2120	2120
J3:1/3 (A43 Southbound)	3.65	0.00	Y	Arm J3:7 Ahead	Inf	100.0 %	1980	1980
J3:2/1	4.00	0.00	Y	Arm J3:10 Ahead	Inf	100.0 %	2015	2015
J3:3/1 (MSA)	4.00	0.00	Y	Arm J3:8 Left	15.00	100.0 %	1832	1832
J3:3/2 (MSA)	4.00	0.00	N	Arm J3:4 Left	30.00	68.0 %	2084	2084
				Arm J3:12 Ahead	Inf	32.0 %		
J3:4/1	Infinite Saturation Flow						Inf	Inf
J3:4/2	Infinite Saturation Flow						Inf	Inf
J3:5/1 (A43 Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
J3:5/2 (A43 Northbound Lane 2)	Infinite Saturation Flow						Inf	Inf
J3:6/1	4.50	0.00	Y	Arm J3:2 Ahead	40.00	82.8 %	1986	1986
				Arm J3:7 Right	30.00	17.2 %		
J3:7/1	4.00	0.00	Y	Arm J3:8 Ahead	Inf	100.0 %	2015	2015
J3:7/2	4.00	0.00	N	Arm J3:8 Ahead	Inf	100.0 %	2155	2155
J3:7/3	4.00	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	2015	2015
J3:7/4	4.00	0.00	N	Arm J3:4 Ahead	Inf	100.0 %	2155	2155
J3:8/1	Infinite Saturation Flow						Inf	Inf
J3:8/2	Infinite Saturation Flow						Inf	Inf
J3:9/1	Infinite Saturation Flow						Inf	Inf
J3:10/1	Infinite Saturation Flow						Inf	Inf
J3:11/1	Infinite Saturation Flow						Inf	Inf
J3:11/2	Infinite Saturation Flow						Inf	Inf
J3:12/1	Infinite Saturation Flow						Inf	Inf

Junction: J4: Ardley								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J4:1/1 (Ardley bypass)	3.65	0.00	Y	Arm J4:9 Left	30.00	55.6 %	1886	1886
				Arm J4:11 Ahead	30.00	44.4 %		
J4:1/2 (Ardley bypass)	3.65	0.00	N	Arm J4:11 Ahead	30.00	100.0 %	2019	2019
J4:1/3 (Ardley bypass)	3.65	0.00	N	Arm J4:11 Ahead	30.00	100.0 %	2019	2019
J4:2/1 (B430)	3.50	0.00	Y	Arm J4:8 Ahead	40.00	100.0 %	1894	1894
J4:2/2 (B430)	3.50	0.00	N	Arm J4:8 Ahead	Inf	100.0 %	2105	2105
J4:3/1 (A43 Southbound)	3.65	0.00	Y	Arm J4:4 Ahead	30.00	100.0 %	1886	1886
J4:3/2 (A43 Southbound)	3.65	0.00	N	Arm J4:4 Ahead	30.00	100.0 %	2019	2019
J4:3/3 (A43 Southbound)	3.65	0.00	N	Arm J4:13 Right	50.00	100.0 %	2058	2058
J4:4/1	4.00	0.00	Y	Arm J4:5 Ahead	30.00	100.0 %	1919	1919
J4:4/2	4.00	0.00	N	Arm J4:5 Ahead	30.00	24.8 %	2052	2052
				Arm J4:6 Right	30.00	75.2 %		
J4:5/1	Infinite Saturation Flow						Inf	Inf
J4:5/2	Infinite Saturation Flow						Inf	Inf
J4:6/1	This lane uses a directly entered Saturation Flow						2000	2000
J4:6/2	This lane uses a directly entered Saturation Flow						2100	2100
J4:7/1	4.00	0.00	Y	Arm J4:4 Right	40.00	100.0 %	1942	1942
J4:7/2	4.00	0.00	N	Arm J4:4 Right	40.00	100.0 %	2077	2077
J4:8/1	4.00	0.00	Y	Arm J4:10 Ahead	Inf	100.0 %	2015	2015
J4:8/2	4.00	0.00	N	Arm J4:12 Ahead	Inf	100.0 %	2155	2155
J4:8/3	4.00	0.00	N	Arm J4:7 Right	Inf	3.7 %	2155	2155
				Arm J4:12 Ahead	Inf	96.3 %		
J4:9/1	Infinite Saturation Flow						Inf	Inf
J4:10/1 (M40 NB onslip Lane 1)	Infinite Saturation Flow						Inf	Inf
J4:11/1	Infinite Saturation Flow						Inf	Inf
J4:11/2	Infinite Saturation Flow						Inf	Inf
J4:11/3	Infinite Saturation Flow						Inf	Inf
J4:12/1	Infinite Saturation Flow						Inf	Inf
J4:12/2	Infinite Saturation Flow						Inf	Inf
J4:13/1	4.00	0.00	Y	Arm J4:10 Right	40.00	100.0 %	1942	1942
				Arm J4:12 Right	40.00	0.0 %		
J4:14/1 (M40 Offslip)	3.65	0.00	Y	Arm J4:5 Left	30.00	5.5 %	1975	1975
				Arm J4:6 Ahead	Inf	94.5 %		
J4:14/2 (M40 Offslip)	3.65	0.00	N	Arm J4:6 Ahead	30.00	100.0 %	2019	2019

J4:15/1	Infinite Saturation Flow	Inf	Inf
J4:16/1	Infinite Saturation Flow	Inf	Inf
J4:17/1	Infinite Saturation Flow	Inf	Inf

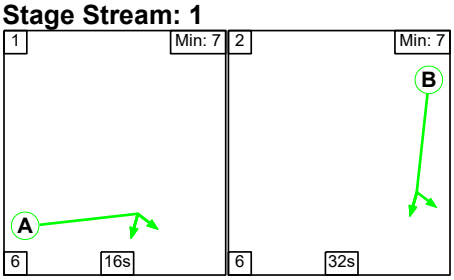
Junction: J5: Baynards Green exit xings

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J5:1/1	3.65	0.00	Y	Arm J5:4 Ahead	Inf	100.0 %	1980	1980
J5:2/1	3.65	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1980	1980
J5:2/2	3.65	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2120	2120
J5:2/3	3.65	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1980	1980
J5:3/1	3.60	0.00	Y	Arm J5:5 Ahead	Inf	100.0 %	1975	1975
J5:3/2	3.60	0.00	N	Arm J5:5 Ahead	Inf	100.0 %	2115	2115
J5:4/1	Infinite Saturation Flow						Inf	Inf
J5:5/1	Infinite Saturation Flow						Inf	Inf

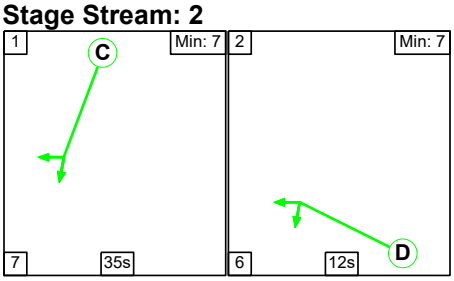
Scenario 1: '2031 Phase 1 - AM peak' (FG3: '2031 phase1 - AM', Plan 1: 'Network Control Plan 1')
C1 - Baynards Green

Stage Sequence Diagram

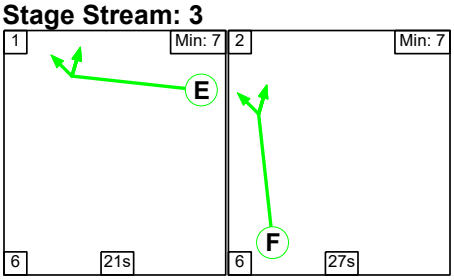
Stage Stream: 1



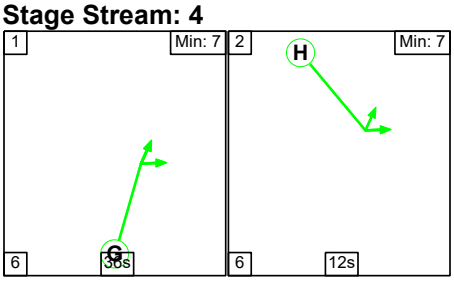
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	16	32
Change Point	57	19

Stage Stream: 2

Stage	1	2
Duration	35	12
Change Point	19	1

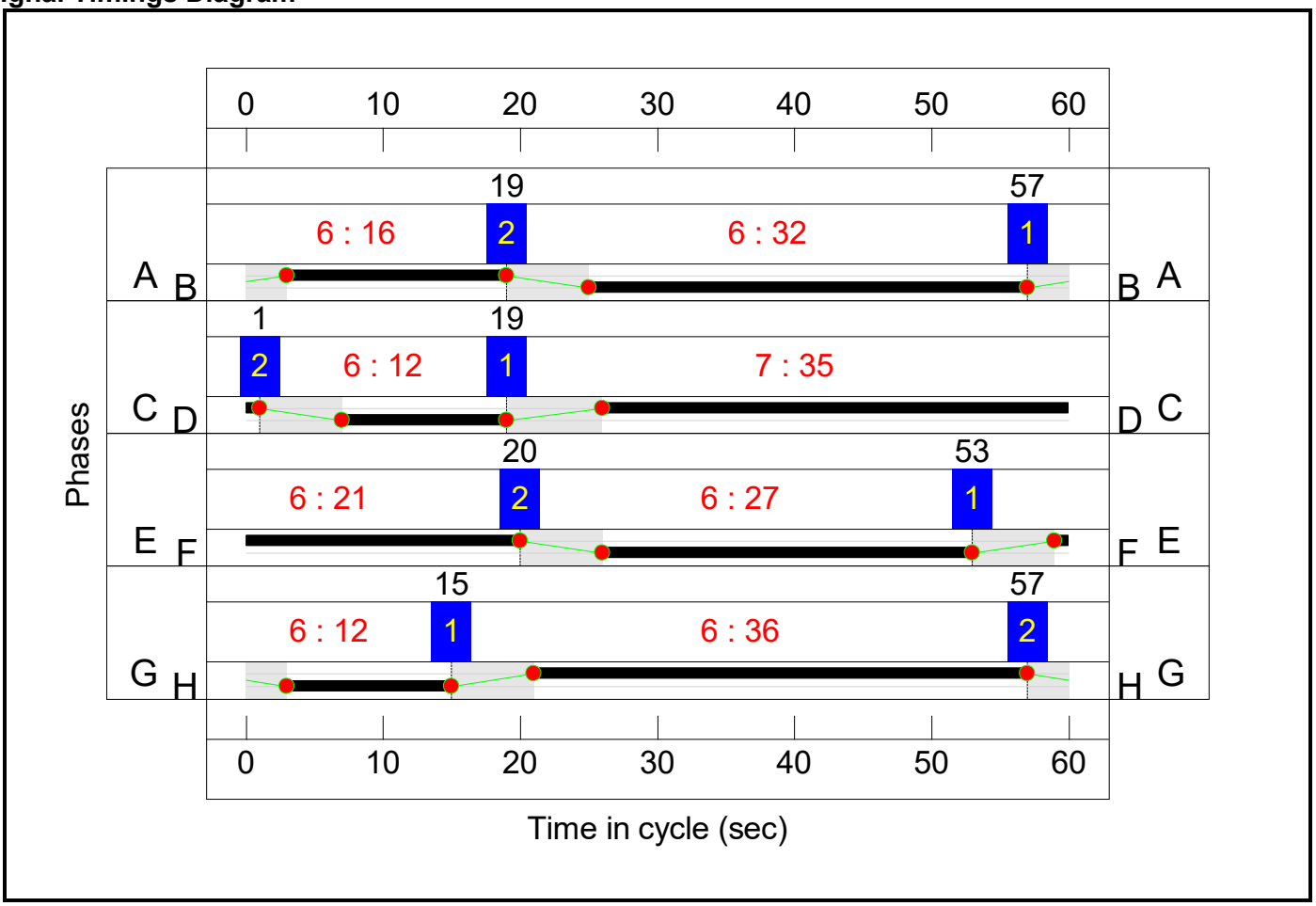
Stage Stream: 3

Stage	1	2
Duration	21	27
Change Point	53	20

Stage Stream: 4

Stage	1	2
Duration	36	12
Change Point	15	57

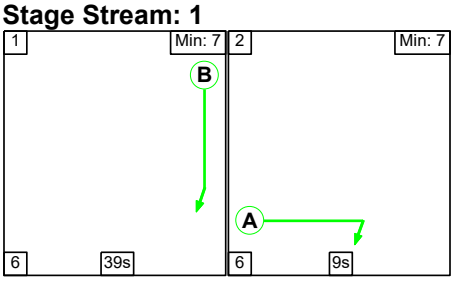
Signal Timings Diagram



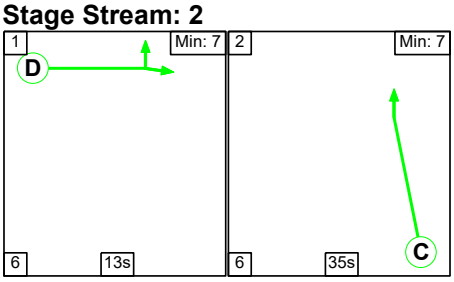
C2 - Padbury

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

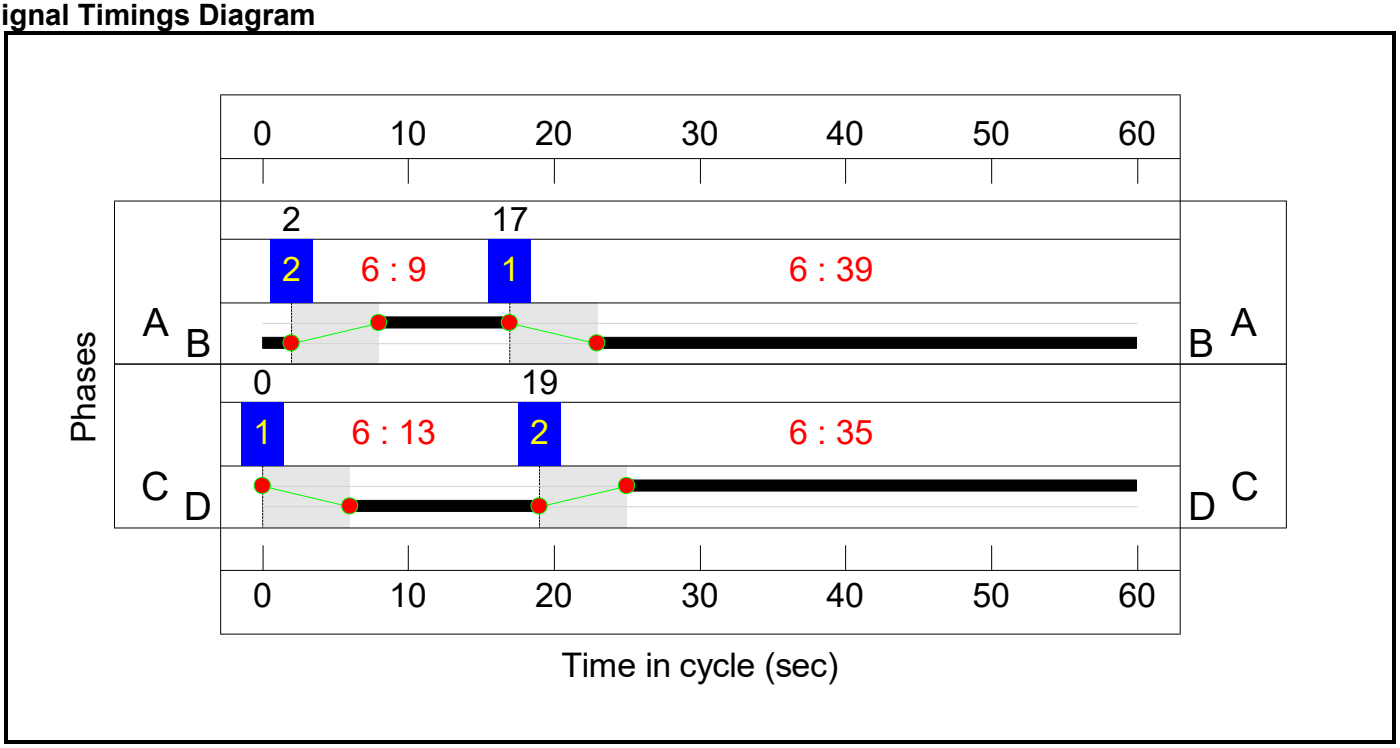
Stage Stream: 1

Stage	1	2
Duration	39	9
Change Point	17	2

Stage Stream: 2

Stage	1	2
Duration	13	35
Change Point	0	19

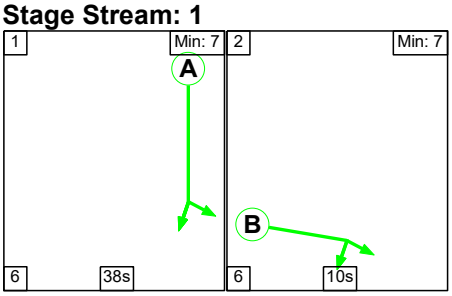
Signal Timings Diagram



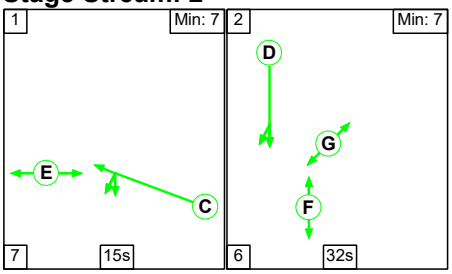
C3 - Cherwell

Stage Sequence Diagram

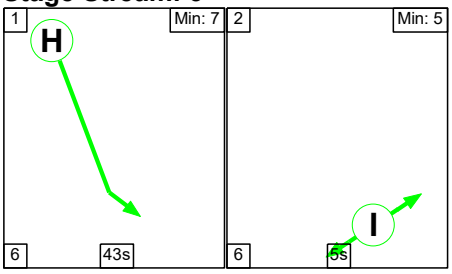
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	38	10
Change Point	48	32

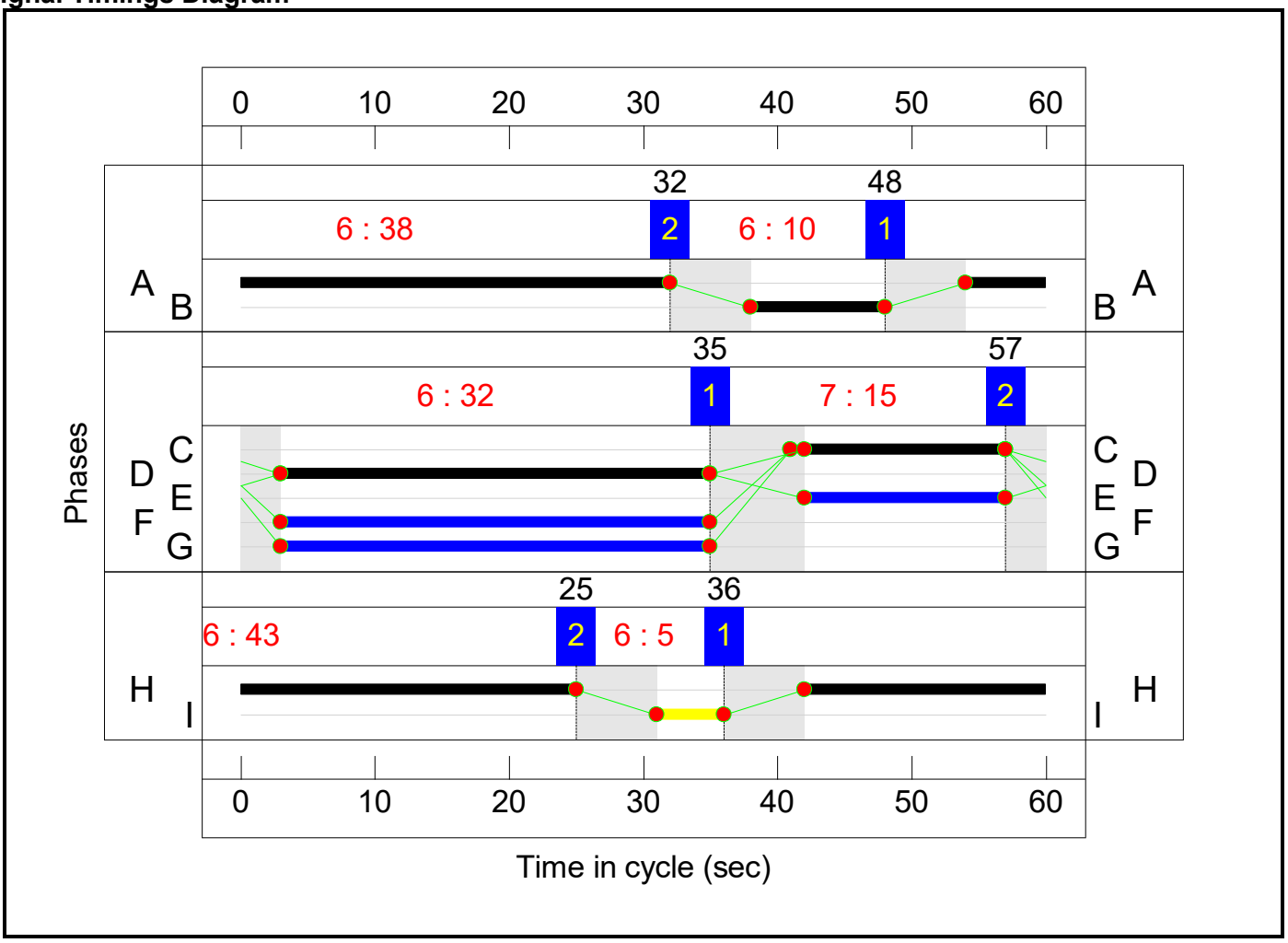
Stage Stream: 2

Stage	1	2
Duration	15	32
Change Point	35	57

Stage Stream: 3

Stage	1	2
Duration	43	5
Change Point	36	25

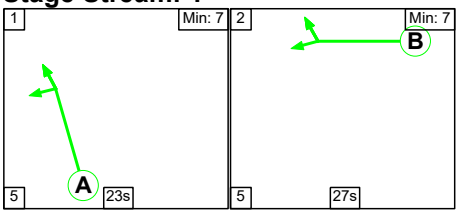
Signal Timings Diagram



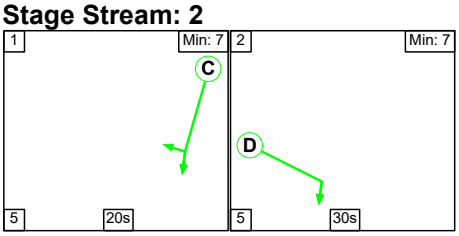
C4 - Ardley

Stage Sequence Diagram

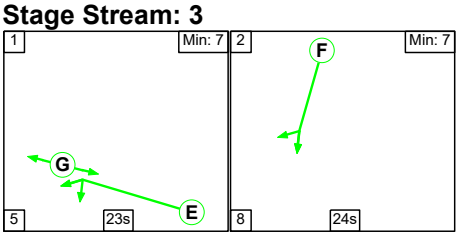
Stage Stream: 1



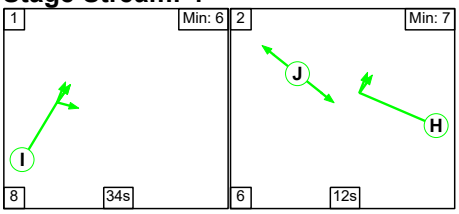
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	23	27
Change Point	35	3

Stage Stream: 2

Stage	1	2
Duration	20	30
Change Point	32	57

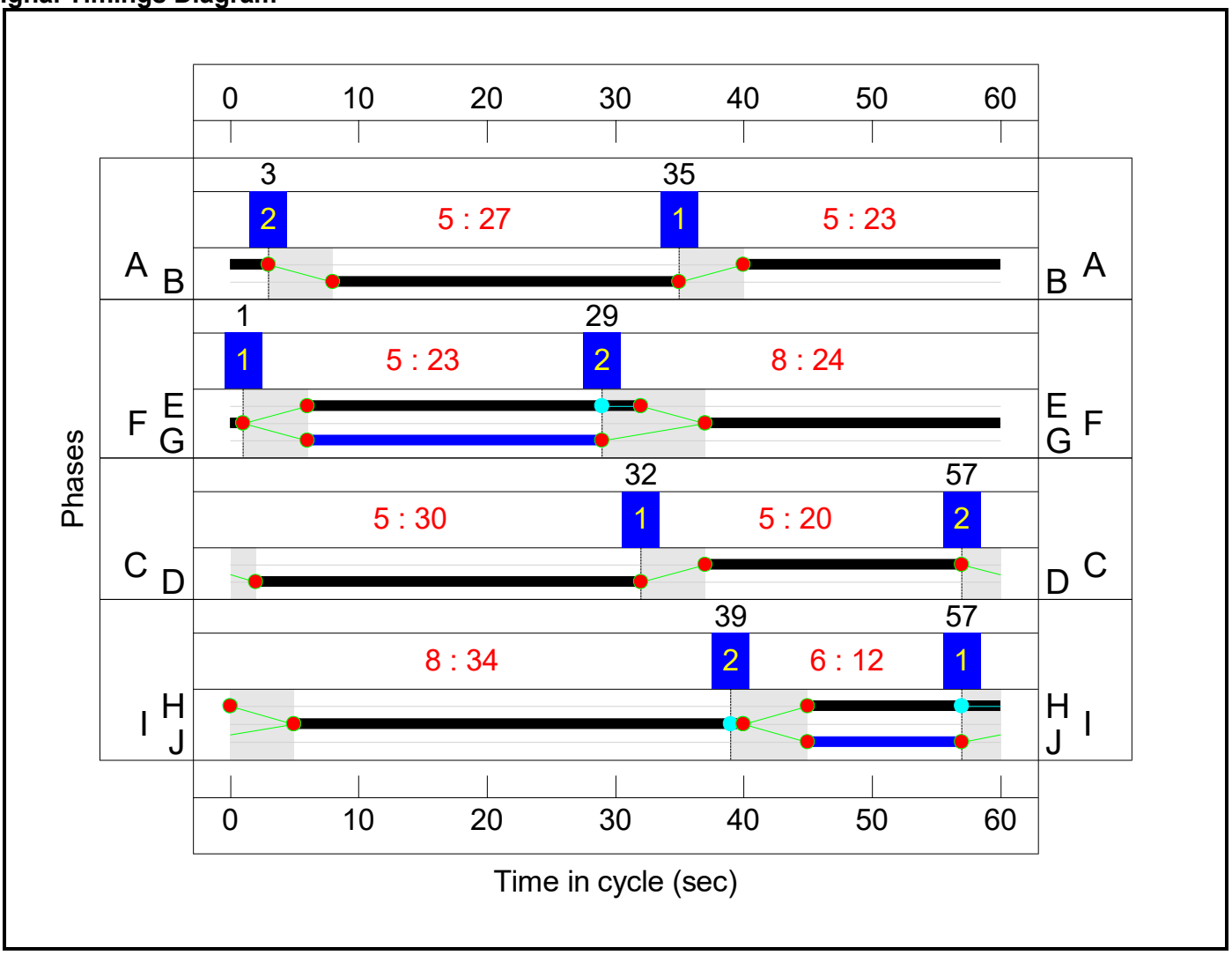
Stage Stream: 3

Stage	1	2
Duration	23	24
Change Point	1	29

Stage Stream: 4

Stage	1	2
Duration	34	12
Change Point	57	39

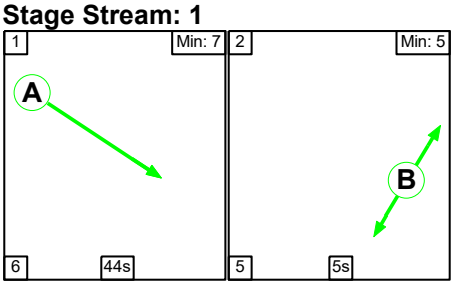
Signal Timings Diagram



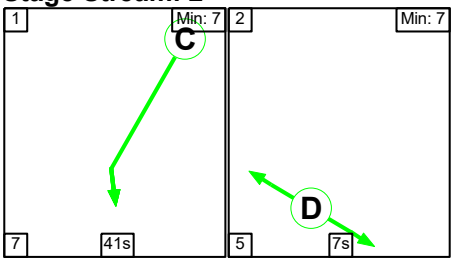
C5 - Baynards Green exit xings

Stage Sequence Diagram

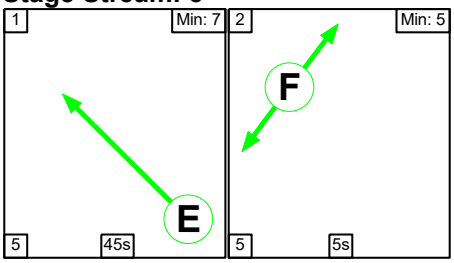
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	44	5
Change Point	59	49

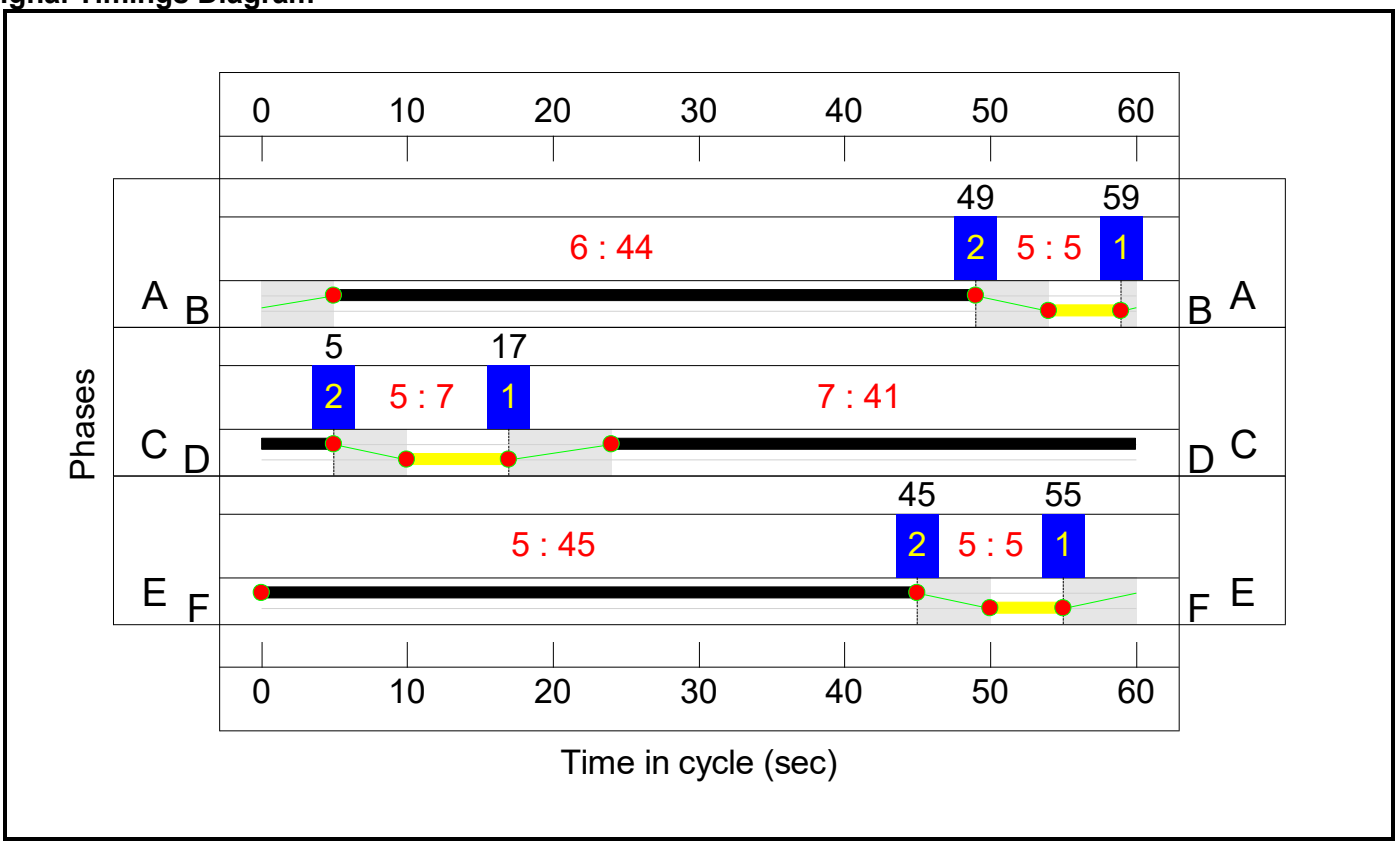
Stage Stream: 2

Stage	1	2
Duration	41	7
Change Point	17	5

Stage Stream: 3

Stage	1	2
Duration	45	5
Change Point	55	45

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: Option 28 Phase 1 Network Model	-	-	**N/A**	-	-		-	-	-	-	-	-	**88.6%**
J1: Baynards Green	-	-	**N/A**	-	-		-	-	-	-	-	-	**83.5%**
1/1	A43 North Ahead Left	U	1:1	N/A	C1:B		1	32	-	789	1916	1054	74.9%
1/2+1/3	A43 North Ahead	U	1:1	N/A	C1:B		1	32	-	1434	2052:2052	1080+637	83.5 : 83.5%
2/1	Ahead	U	1:2	N/A	C1:C		1	35	-	660	1956	1206	54.7%
2/2	Ahead	U	1:2	N/A	C1:C		1	35	-	964	2092	1290	74.7%
2/3	Right Ahead	U	1:2	N/A	C1:C		1	35	-	551	2155	1329	41.5%
3/2+3/1	B4100 East Ahead Left	U	1:2	N/A	C1:D		1	12	-	525	2058:1886	446+409	65.9 : 56.5%
3/3	B4100 East Ahead	U	1:2	N/A	C1:D		1	12	-	252	2058	446	56.5%
4/1	Ahead	U	1:3	N/A	C1:E		1	21	-	309	1942	744	41.5%
4/2	Right	U	1:3	N/A	C1:E		1	21	-	252	2066	792	31.8%
5/1	A43 South Ahead Ahead2	U	1:3	N/A	C1:F		1	27	-	639	1927	899	71.1%
5/2+5/3	A43 South Ahead	U	1:3	N/A	C1:F		1	27	-	1169	2058:2058	918+646	74.8 : 74.8%
6/1	Ahead	U	1:4	N/A	C1:G		1	36	-	696	1932	1224	56.9%
6/2	Ahead	U	1:4	N/A	C1:G		1	36	-	811	2066	1308	62.0%
6/3	Ahead Right	U	1:4	N/A	C1:G		1	36	-	496	2057	1303	38.1%
7/1+7/2	B4100 West Left Ahead	U	1:4	N/A	C1:H		1	12	-	658	1903:2043	412+443	78.3 : 75.7%
8/3		U	N/A	N/A	-		-	-	-	158	2000	2000	7.9%
9/1	Ahead	U	1:1	N/A	C1:A		1	16	-	417	1932	580	71.9%
9/2	Right Ahead	U	1:1	N/A	C1:A		1	16	-	509	2063	619	82.2%
J2: Padbury	-	-	**N/A**	-	-		-	-	-	-	-	-	**87.7%**
1/2+1/1	M40 SB offslip Left Ahead	U	2:2	N/A	C2:D		1	13	-	593	2058:1908	480+235	82.9 : 82.9%

1/3	M40 SB offslip Ahead	U	2:2	N/A	C2:D		1	13	-	249	2058	480	51.9%
2/1	A43 north Ahead	U	2:1	N/A	C2:B		1	39	-	1151	1980	1320	87.2%
2/2	A43 north Ahead	U	2:1	N/A	C2:B		1	39	-	1240	2120	1413	87.7%
5/1	A43 south Ahead	U	2:2	N/A	C2:C		1	35	-	727	1886	1132	64.2%
5/2	A43 south Ahead	U	2:2	N/A	C2:C		1	35	-	735	2019	1211	60.7%
6/1	Right	U	2:1	N/A	C2:A		1	9	-	247	2080	347	71.3%
6/2	Right	U	2:1	N/A	C2:A		1	9	-	249	2080	347	71.8%
J3: Cherwell	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.1%**
1/1	A43 Southbound Left Ahead	U	3:1	N/A	C3:A		1	38	-	1086	1978	1286	84.5%
1/2+1/3	A43 Southbound Ahead	U	3:1	N/A	C3:A		1	38	-	1801	2120:1980	976+1068	88.1 : 88.1%
2/1	Ahead	U	3:3	N/A	C3:H		1	43	-	537	2015	1478	36.3%
3/1	MSA Left	U	3:2	N/A	C3:C		1	15	-	264	1832	489	54.0%
3/2	MSA Left Ahead	U	3:2	N/A	C3:C		1	15	-	328	2075	553	59.3%
5/2	A43 Northbound Right Ahead	O	N/A	N/A	-		-	-	-	803	Inf	1230	65.3%
6/1	Ahead Right	U	3:1	N/A	C3:B		1	10	-	299	1986	364	82.1%
7/1	Ahead	U	3:2	N/A	C3:D		1	32	-	799	2015	1175	68.0%
7/2	Ahead	U	3:2	N/A	C3:D		1	32	-	909	2155	1257	72.3%
7/3	Ahead	U	3:2	N/A	C3:D		1	32	-	293	2015	1175	24.9%
7/4	Ahead	U	3:2	N/A	C3:D		1	32	-	648	2155	1257	51.5%
J4: Ardley	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.6%**
1/1	Ardley bypass Left Ahead	U	4:1	N/A	C4:A		1	23	-	297	1886	754	39.4%
1/2+1/3	Ardley bypass Ahead	U	4:1	N/A	C4:A		1	23	-	219	2019:2019	758+327	20.2 : 20.2%
2/1+2/2	B430 Ahead	O	N/A	N/A	-		-	-	-	381	1894:2105	274+494	49.6 : 49.6%

3/1	A43 Southbound Ahead	U	4:2	N/A	C4:C		1	20	-	393	1886	660	59.5%
3/2+3/3	A43 Southbound Ahead Right	U	4:2	N/A	C4:C		1	20	-	802	2019:2058	555+492	76.6 : 76.6%
4/1	Ahead	U	4:3	N/A	C4:F		1	24	-	510	1919	832	61.3%
4/2	Ahead Right	U	4:3	N/A	C4:F		1	24	-	551	2052	889	62.0%
6/1	Ahead Right	U	4:1	N/A	C4:B		1	27	-	796	2000	967	82.3%
6/2	Right	U	4:1	N/A	C4:B		1	27	-	735	2100	1015	72.4%
7/2+7/1	Right	U	4:2	N/A	C4:D		1	30	-	243	2077:1942	604+561	20.9 : 20.9%
8/1	Ahead	U	4:4	N/A	C4:I		1	35	-	260	2015	1209	21.5%
8/2	Ahead	U	4:4	N/A	C4:I		1	35	-	884	2155	1293	68.4%
8/3	Right Ahead	U	4:4	N/A	C4:I		1	35	-	1046	2155	1293	80.9%
13/1	Right Right2	U	4:4	N/A	C4:H		1	15	-	377	1942	550	68.5%
14/1	M40 Offslip Left Ahead	U	4:3	N/A	C4:E		1	26	-	786	1972	887	88.6%
14/2	M40 Offslip Ahead	U	4:3	N/A	C4:E		1	26	-	735	2019	909	80.9%
J5: Baynards Green exit xings	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**74.3%**
1/1	Ahead	U	5:3	N/A	C5:E		1	45	-	366	1980	1518	24.1%
2/1	Ahead	U	5:2	N/A	C5:C		1	41	-	753	1980	1386	54.3%
2/2	Ahead	U	5:2	N/A	C5:C		1	41	-	1102	2120	1484	74.3%
2/3	Ahead	U	5:2	N/A	C5:C		1	41	-	536	1980	1386	38.7%
3/1	Ahead	U	5:1	N/A	C5:A		1	44	-	586	1975	1481	39.6%
3/2	Ahead	U	5:1	N/A	C5:A		1	44	-	388	2115	1586	24.5%

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: Option 28 Phase 1 Network Model	**-**	**-**	**1565**	**0**	**0**	**82.9**	**41.3**	**0.0**	**124.1**	**-**	**-**	**-**	**-**
J1: Baynards Green	**-**	**-**	**0**	**0**	**0**	**25.9**	**9.8**	**0.0**	**35.7**	**-**	**-**	**-**	**-**
1/1	789	789	-	-	-	2.3	1.5	-	3.7	17.1	9.9	1.5	11.3
1/2+1/3	1434	1434	-	-	-	3.9	2.5	-	6.4	16.1	12.0	2.5	14.5
2/1	660	660	-	-	-	0.1	0.0	-	0.1	0.5	0.7	0.0	0.7
2/2	964	964	-	-	-	0.2	0.0	-	0.2	0.6	1.0	0.0	1.0
2/3	551	551	-	-	-	0.0	0.0	-	0.0	0.3	0.3	0.0	0.3
3/2+3/1	525	525	-	-	-	3.1	0.8	-	3.9	26.7	4.4	0.8	5.2
3/3	252	252	-	-	-	1.5	0.6	-	2.1	30.2	3.7	0.6	4.4
4/1	309	309	-	-	-	0.2	0.0	-	0.2	2.6	0.5	0.0	0.5
4/2	252	252	-	-	-	0.1	0.0	-	0.1	1.8	0.2	0.0	0.2
5/1	639	639	-	-	-	3.7	1.2	-	4.9	27.7	10.2	1.2	11.4
5/2+5/3	1169	1169	-	-	-	5.3	1.5	-	6.7	20.7	11.3	1.5	12.8
6/1	696	696	-	-	-	0.1	0.0	-	0.1	0.3	1.6	0.0	1.6
6/2	811	811	-	-	-	0.1	0.0	-	0.1	0.5	2.0	0.0	2.0
6/3	496	496	-	-	-	0.0	0.0	-	0.0	0.1	2.9	0.0	2.9
7/1+7/2	658	658	-	-	-	4.0	1.6	-	5.7	31.1	5.2	1.6	6.9
8/3	158	158	-	-	-	0.0	0.0	-	0.0	1.0	0.0	0.0	0.0
9/1	417	417	-	-	-	0.6	0.0	-	0.6	5.6	2.7	0.0	2.7
9/2	509	509	-	-	-	0.7	0.0	-	0.7	4.9	3.5	0.0	3.5
J2: Padbury	**-**	**-**	**0**	**0**	**0**	**19.9**	**11.3**	**0.0**	**31.2**	**-**	**-**	**-**	**-**
1/2+1/1	593	593	-	-	-	3.5	2.3	-	5.8	35.3	6.3	2.3	8.6
1/3	249	249	-	-	-	1.4	0.5	-	1.9	27.8	3.6	0.5	4.1
2/1	1151	1151	-	-	-	4.5	3.3	-	7.8	24.4	15.2	3.3	18.5
2/2	1240	1240	-	-	-	4.7	3.4	-	8.2	23.7	15.6	3.4	19.0
5/1	727	727	-	-	-	2.4	0.9	-	3.3	16.4	8.5	0.9	9.4
5/2	735	735	-	-	-	2.4	0.8	-	3.2	15.7	7.4	0.8	8.1

6/1	247	247	-	-	-	0.7	0.0	-	0.7	9.8	1.3	0.0	1.3
6/2	249	249	-	-	-	0.3	0.0	-	0.3	4.0	0.7	0.0	0.7
J3: Cherwell	**-**	**-**	**803**	**0**	**0**	**16.0**	**7.5**	**0.0**	**23.5**	**-**	**-**	**-**	**-**
1/1	1086	1086	-	-	-	2.9	2.6	-	5.5	18.2	14.6	2.6	17.2
1/2+1/3	1801	1801	-	-	-	4.3	3.6	-	7.9	15.8	27.5	3.6	31.0
2/1	537	537	-	-	-	0.9	0.0	-	0.9	6.0	7.1	0.0	7.1
3/1	264	264	-	-	-	1.4	0.6	-	2.0	26.8	3.7	0.6	4.3
3/2	328	328	-	-	-	1.7	0.7	-	2.5	27.1	4.7	0.7	5.5
5/2	803	803	803	0	0	0.8	0.0	-	0.8	3.7	10.0	0.0	10.0
6/1	299	299	-	-	-	2.0	0.0	-	2.0	24.6	4.6	0.0	4.6
7/1	799	799	-	-	-	0.4	0.0	-	0.4	1.7	12.9	0.0	12.9
7/2	909	909	-	-	-	1.4	0.0	-	1.4	5.4	15.1	0.0	15.1
7/3	293	293	-	-	-	0.0	0.0	-	0.0	0.4	0.8	0.0	0.8
7/4	648	648	-	-	-	0.1	0.0	-	0.1	0.8	3.8	0.0	3.8
J4: Ardley	**-**	**-**	**762**	**0**	**0**	**20.1**	**12.4**	**0.0**	**32.5**	**-**	**-**	**-**	**-**
1/1	297	297	-	-	-	1.1	0.3	-	1.4	16.8	3.5	0.3	3.8
1/2+1/3	219	219	-	-	-	0.7	0.1	-	0.8	13.6	1.6	0.1	1.7
2/1+2/2	381	381	762	0	0	0.4	0.5	-	0.9	8.5	2.4	0.5	2.9
3/1	393	393	-	-	-	1.7	0.7	-	2.4	21.9	6.0	0.7	6.8
3/2+3/3	802	802	-	-	-	4.1	1.6	-	5.7	25.6	6.9	1.6	8.5
4/1	510	510	-	-	-	0.5	0.0	-	0.5	3.3	2.0	0.0	2.0
4/2	551	551	-	-	-	0.5	0.0	-	0.5	3.3	2.1	0.0	2.1
6/1	796	796	-	-	-	0.4	0.0	-	0.4	1.8	1.4	0.0	1.4
6/2	735	735	-	-	-	0.2	0.0	-	0.2	1.0	0.4	0.0	0.4
7/2+7/1	243	243	-	-	-	0.0	0.1	-	0.1	2.0	0.0	0.1	0.1
8/1	260	260	-	-	-	0.7	0.1	-	0.8	11.0	3.2	0.1	3.4
8/2	884	884	-	-	-	1.3	1.1	-	2.4	9.8	4.4	1.1	5.5
8/3	1046	1046	-	-	-	1.5	2.1	-	3.6	12.4	5.7	2.1	7.7
13/1	377	377	-	-	-	0.9	0.0	-	0.9	8.4	1.7	0.0	1.7
14/1	786	786	-	-	-	3.3	3.6	-	6.9	31.7	11.8	3.6	15.4
14/2	735	735	-	-	-	2.9	2.1	-	5.0	24.4	10.4	2.1	12.5

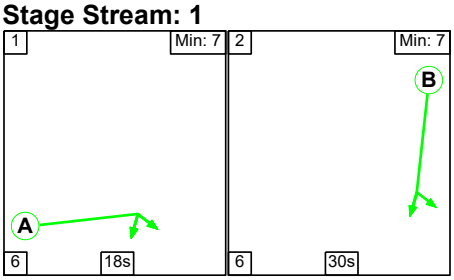
J5: Baynards Green exit xings	**-**	**-**	**0**	**0**	**0**	**1.0**	**0.3**	**0.0**	**1.3**	**-**	**-**	**-**	**-**
1/1	366	366	-	-	-	0.1	0.0	-	0.1	0.9	0.5	0.0	0.5
2/1	753	753	-	-	-	0.3	0.0	-	0.3	1.3	1.6	0.0	1.6
2/2	1102	1102	-	-	-	0.5	0.0	-	0.5	1.6	2.3	0.0	2.3
2/3	536	536	-	-	-	0.0	0.3	-	0.3	2.1	0.0	0.3	0.4
3/1	586	586	-	-	-	0.1	0.0	-	0.1	0.5	0.6	0.0	0.6
3/2	388	388	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 - Baynards Green	Stream: 1 PRC for Signalled Lanes (%):	7.7	Total Delay for Signalled Lanes (pcuHr):	11.50	Cycle Time (s):	60
C1 - Baynards Green	Stream: 2 PRC for Signalled Lanes (%):	20.4	Total Delay for Signalled Lanes (pcuHr):	6.30	Cycle Time (s):	60
C1 - Baynards Green	Stream: 3 PRC for Signalled Lanes (%):	20.4	Total Delay for Signalled Lanes (pcuHr):	12.00	Cycle Time (s):	60
C1 - Baynards Green	Stream: 4 PRC for Signalled Lanes (%):	14.9	Total Delay for Signalled Lanes (pcuHr):	5.87	Cycle Time (s):	60
C2 - Padbury	Stream: 1 PRC for Signalled Lanes (%):	2.6	Total Delay for Signalled Lanes (pcuHr):	16.91	Cycle Time (s):	60
C2 - Padbury	Stream: 2 PRC for Signalled Lanes (%):	8.6	Total Delay for Signalled Lanes (pcuHr):	14.25	Cycle Time (s):	60
C3 - Cherwell	Stream: 1 PRC for Signalled Lanes (%):	2.2	Total Delay for Signalled Lanes (pcuHr):	15.46	Cycle Time (s):	60
C3 - Cherwell	Stream: 2 PRC for Signalled Lanes (%):	24.5	Total Delay for Signalled Lanes (pcuHr):	6.34	Cycle Time (s):	60
C3 - Cherwell	Stream: 3 PRC for Signalled Lanes (%):	147.7	Total Delay for Signalled Lanes (pcuHr):	0.89	Cycle Time (s):	60
C4 - Ardley	Stream: 1 PRC for Signalled Lanes (%):	9.3	Total Delay for Signalled Lanes (pcuHr):	2.82	Cycle Time (s):	60
C4 - Ardley	Stream: 2 PRC for Signalled Lanes (%):	17.4	Total Delay for Signalled Lanes (pcuHr):	8.24	Cycle Time (s):	60
C4 - Ardley	Stream: 3 PRC for Signalled Lanes (%):	1.6	Total Delay for Signalled Lanes (pcuHr):	12.87	Cycle Time (s):	60
C4 - Ardley	Stream: 4 PRC for Signalled Lanes (%):	11.3	Total Delay for Signalled Lanes (pcuHr):	7.67	Cycle Time (s):	60
C5 - Baynards Green exit xings	Stream: 1 PRC for Signalled Lanes (%):	127.5	Total Delay for Signalled Lanes (pcuHr):	0.09	Cycle Time (s):	60
C5 - Baynards Green exit xings	Stream: 2 PRC for Signalled Lanes (%):	21.2	Total Delay for Signalled Lanes (pcuHr):	1.09	Cycle Time (s):	60
C5 - Baynards Green exit xings	Stream: 3 PRC for Signalled Lanes (%):	273.3	Total Delay for Signalled Lanes (pcuHr):	0.09	Cycle Time (s):	60
	PRC Over All Lanes (%):	1.6	Total Delay Over All Lanes(pcuHr):	124.15		

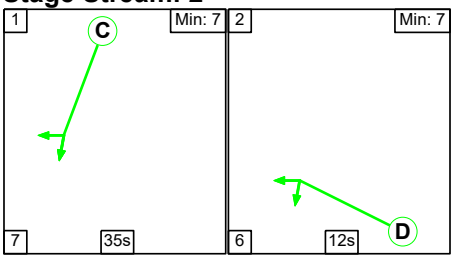
Scenario 2: '2031 Phase 1 - PM peak' (FG4: '2031 phase 1 - PM', Plan 1: 'Network Control Plan 1')
C1 - Baynards Green

Stage Sequence Diagram

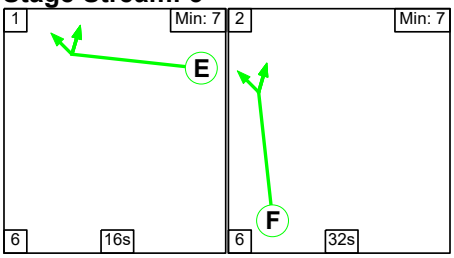
Stage Stream: 1



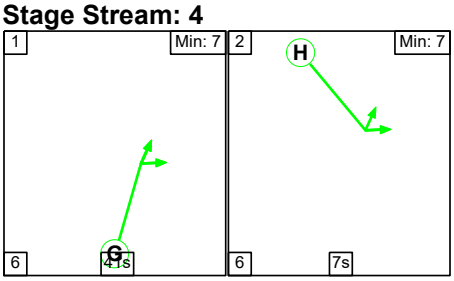
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	18	30
Change Point	0	24

Stage Stream: 2

Stage	1	2
Duration	35	12
Change Point	22	4

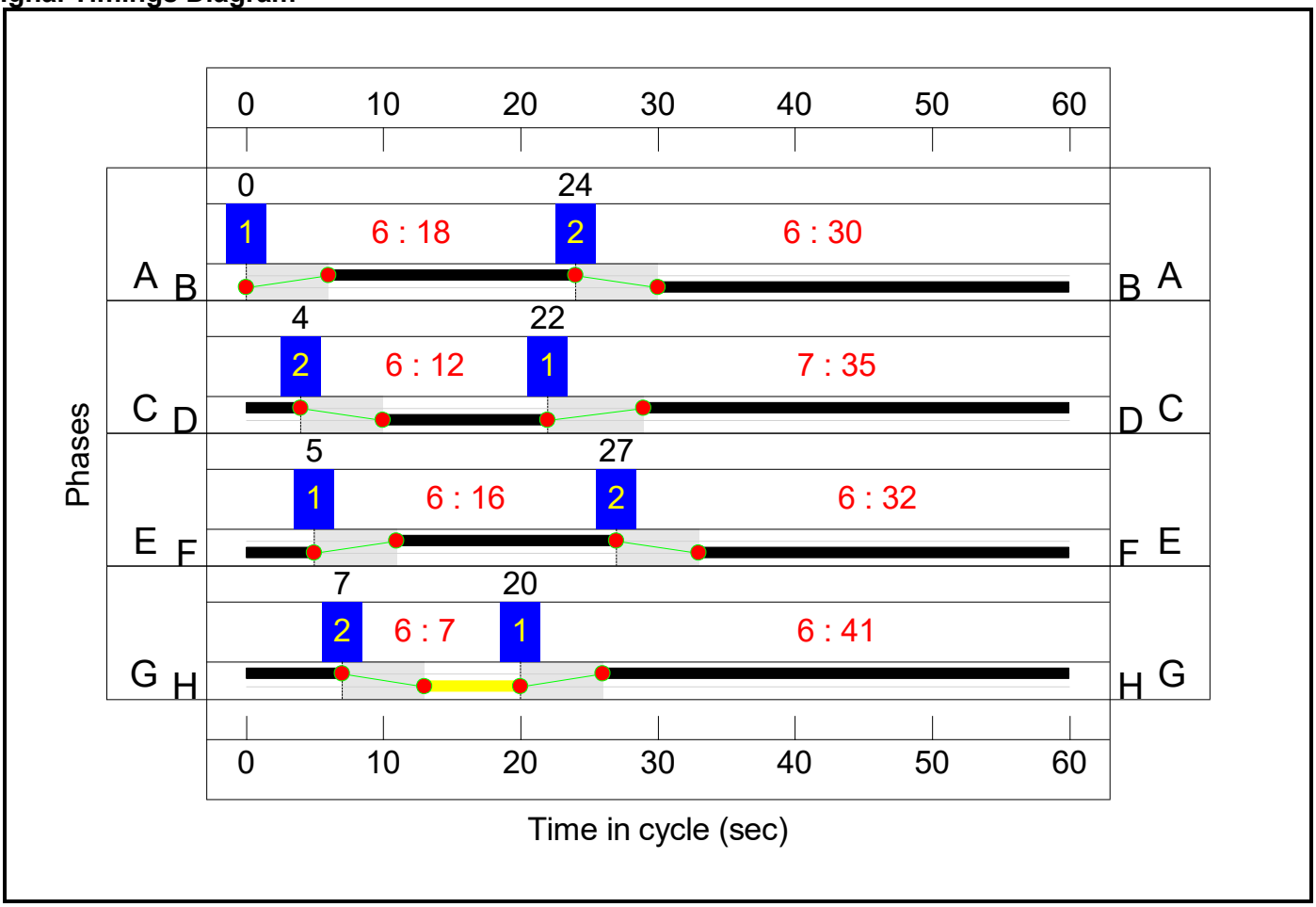
Stage Stream: 3

Stage	1	2
Duration	16	32
Change Point	5	27

Stage Stream: 4

Stage	1	2
Duration	41	7
Change Point	20	7

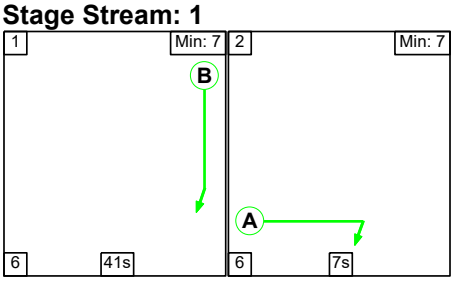
Signal Timings Diagram



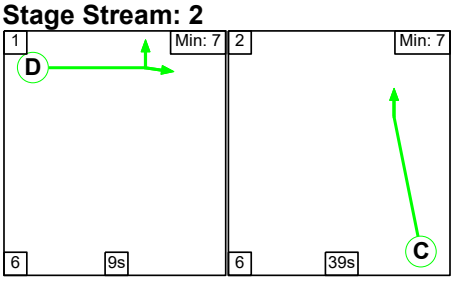
C2 - Padbury

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

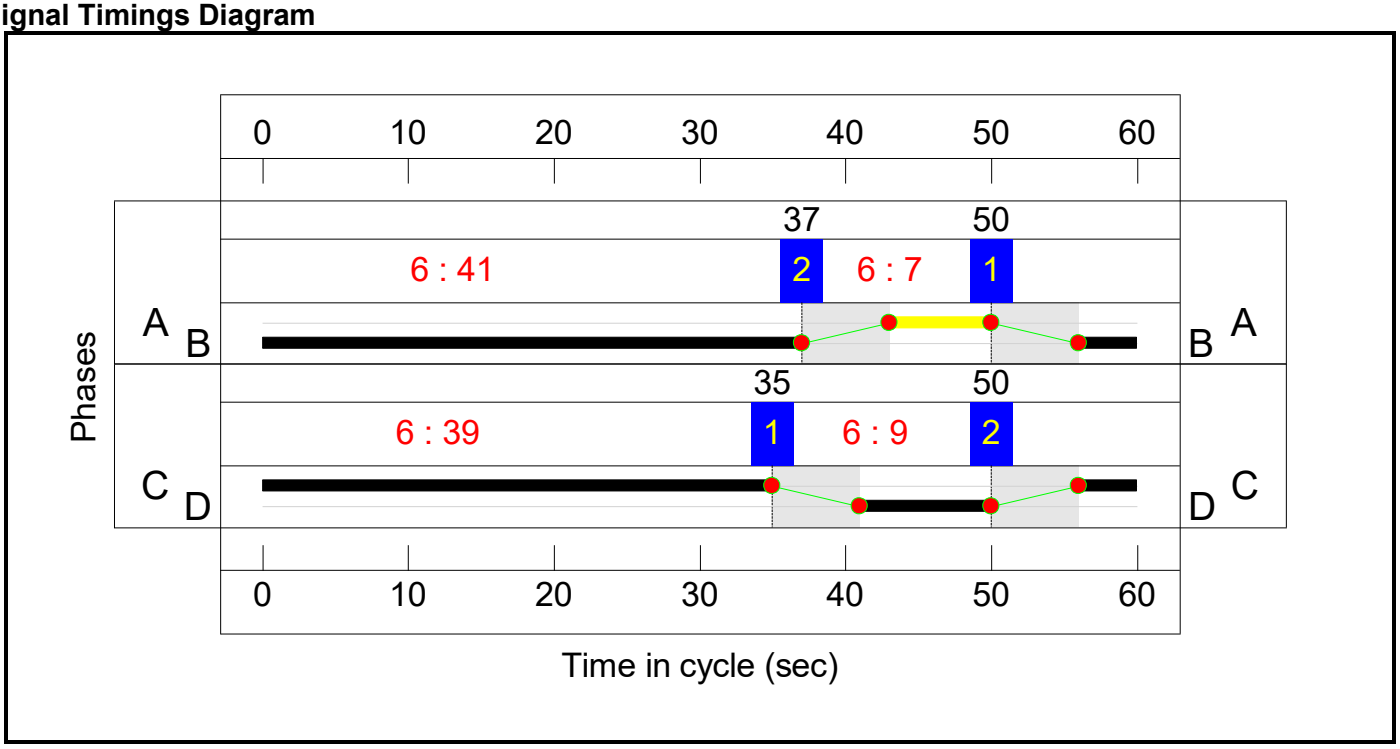
Stage Stream: 1

Stage	1	2
Duration	41	7
Change Point	50	37

Stage Stream: 2

Stage	1	2
Duration	9	39
Change Point	35	50

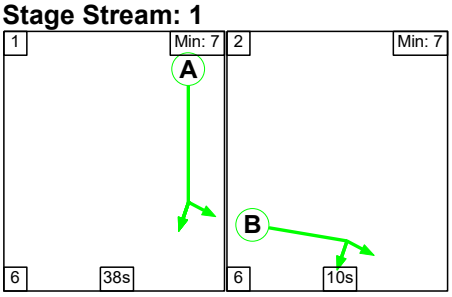
Signal Timings Diagram



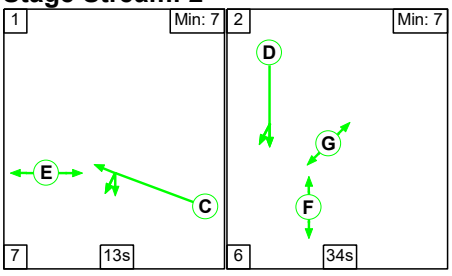
C3 - Cherwell

Stage Sequence Diagram

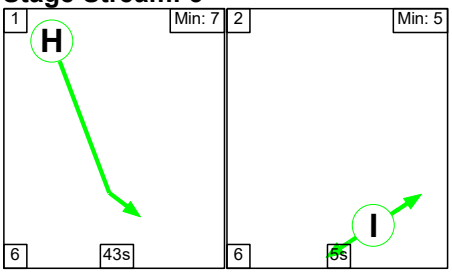
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	38	10
Change Point	12	56

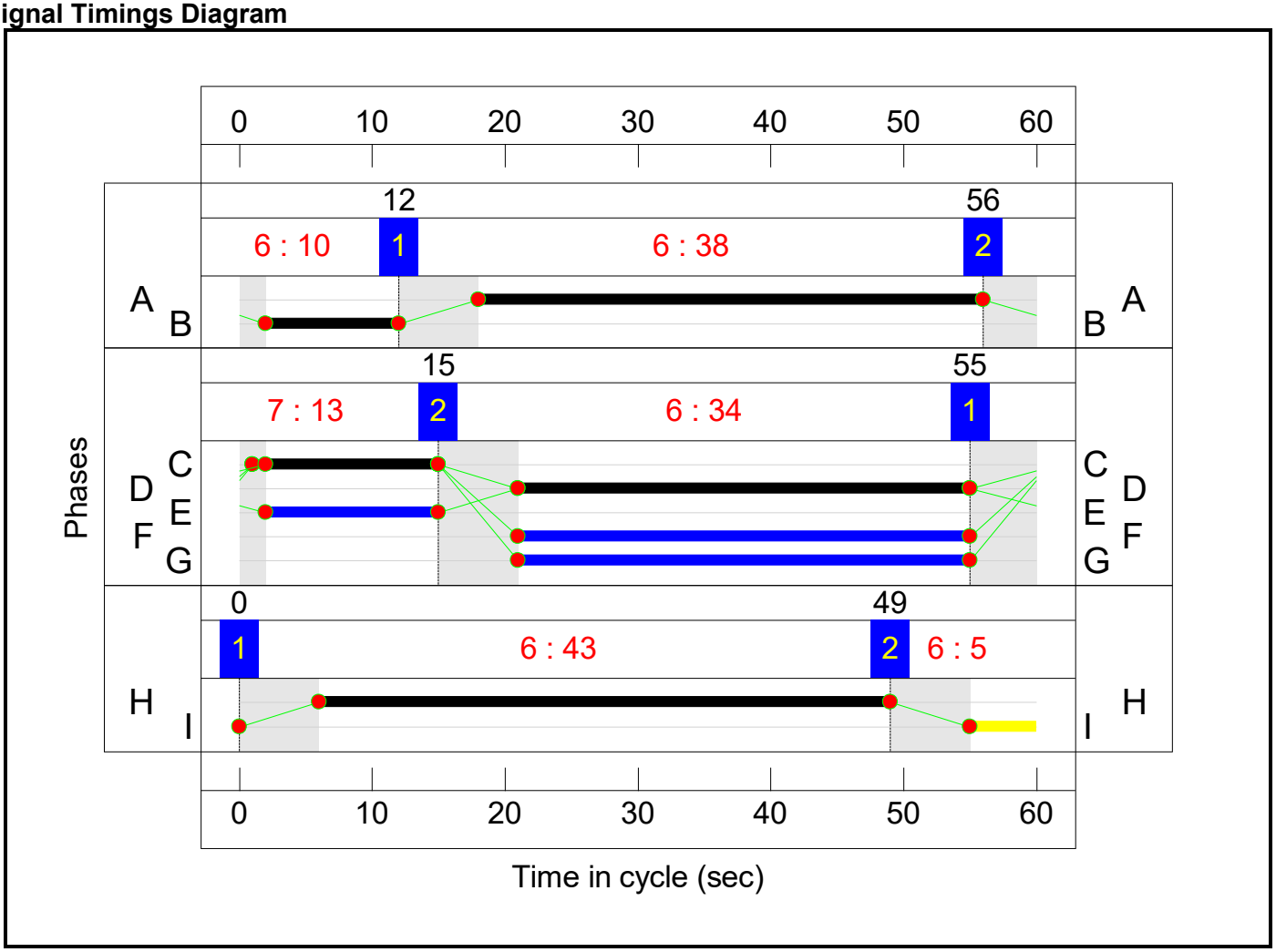
Stage Stream: 2

Stage	1	2
Duration	13	34
Change Point	55	15

Stage Stream: 3

Stage	1	2
Duration	43	5
Change Point	0	49

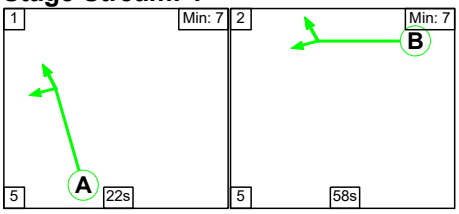
Signal Timings Diagram



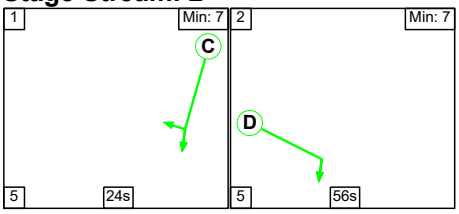
C4 - Ardley

Stage Sequence Diagram

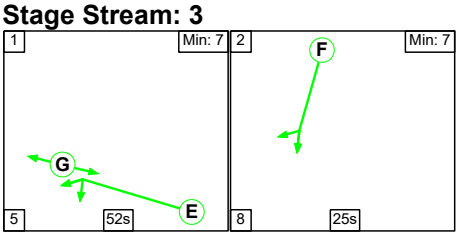
Stage Stream: 1



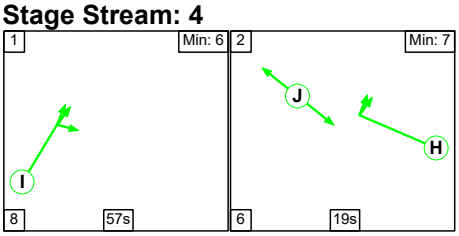
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	22	58
Change Point	82	19

Stage Stream: 2

Stage	1	2
Duration	24	56
Change Point	74	13

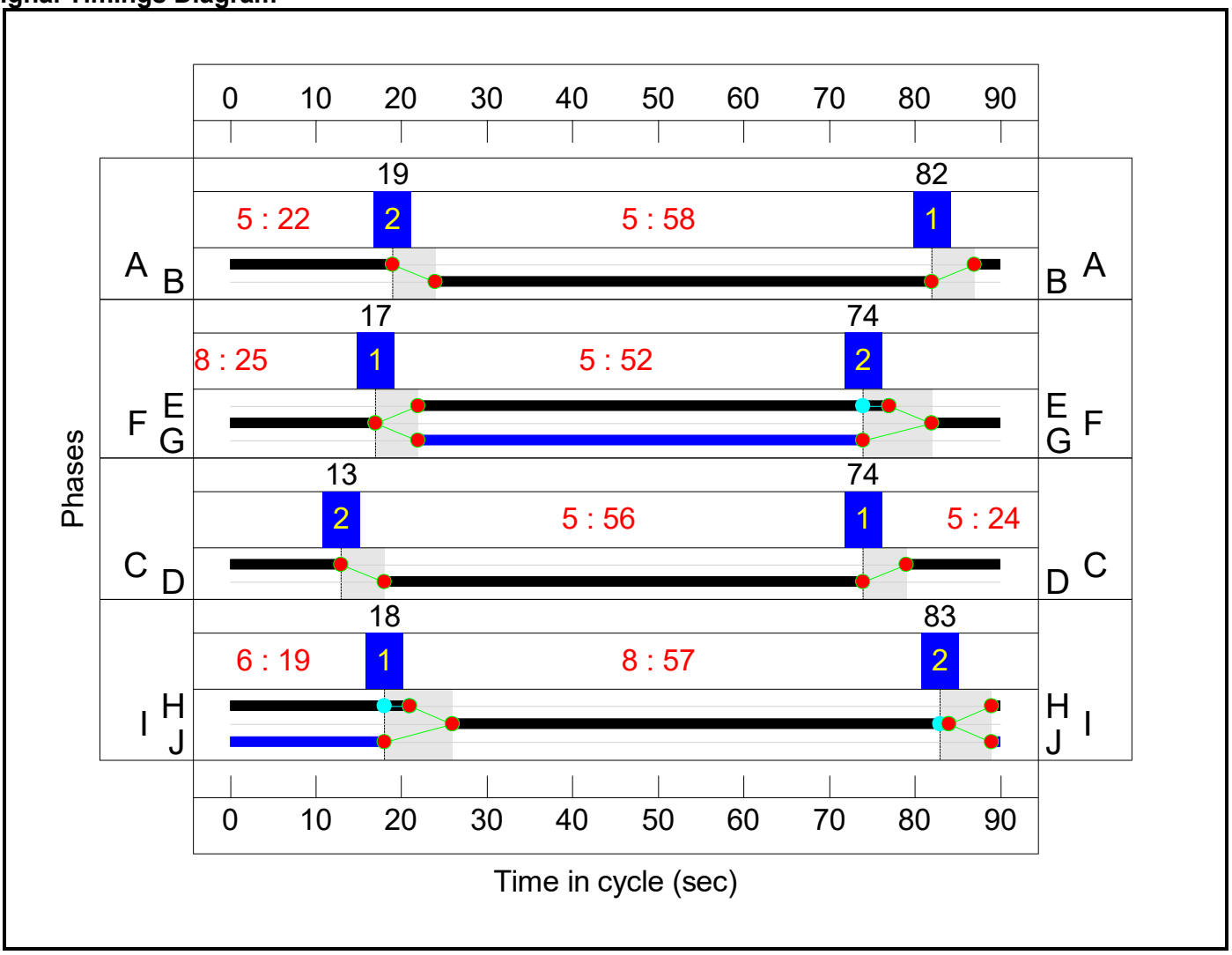
Stage Stream: 3

Stage	1	2
Duration	52	25
Change Point	17	74

Stage Stream: 4

Stage	1	2
Duration	57	19
Change Point	18	83

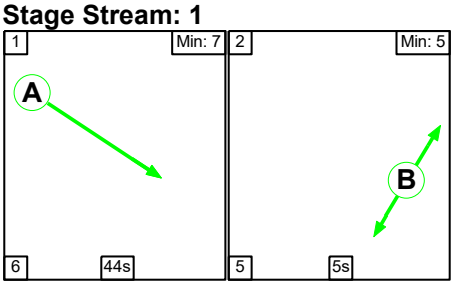
Signal Timings Diagram



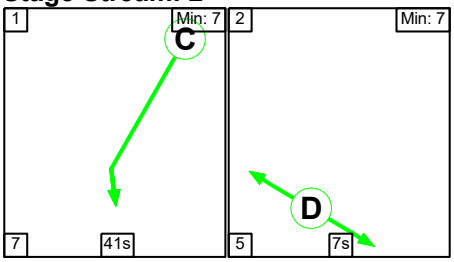
C5 - Baynards Green exit xings

Stage Sequence Diagram

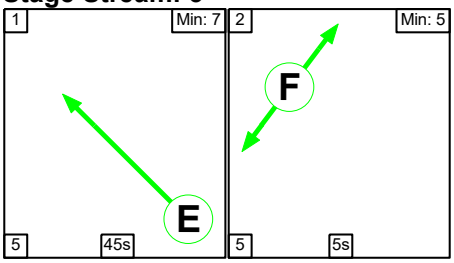
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	44	5
Change Point	5	55

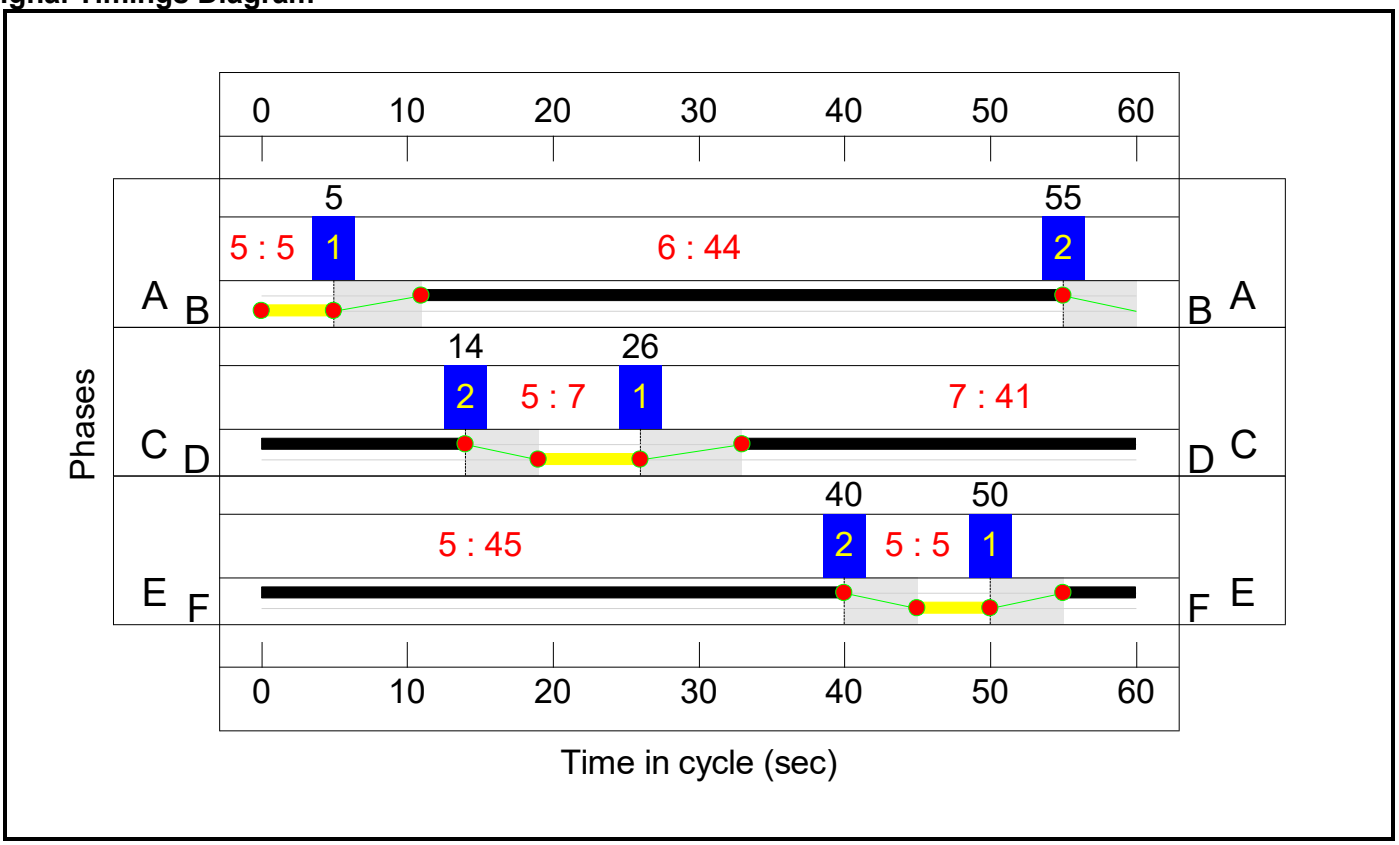
Stage Stream: 2

Stage	1	2
Duration	41	7
Change Point	26	14

Stage Stream: 3

Stage	1	2
Duration	45	5
Change Point	50	40

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: Option 28 Phase 1 Network Model	-	-	**N/A**	-	-		-	-	-	-	-	-	**97.7%**
J1: Baynards Green	-	-	**N/A**	-	-		-	-	-	-	-	-	**84.0%**
1/1	A43 North Ahead Left	U	1:1	N/A	C1:B		1	30	-	636	1916	990	64.2%
1/2+1/3	A43 North Ahead	U	1:1	N/A	C1:B		1	30	-	1279	2052:2052	1034+664	75.3 : 75.3%
2/1	Ahead	U	1:2	N/A	C1:C		1	35	-	396	1956	1206	32.8%
2/2	Ahead	U	1:2	N/A	C1:C		1	35	-	784	2092	1290	60.8%
2/3	Right Ahead	U	1:2	N/A	C1:C		1	35	-	502	2155	1329	37.8%
3/2+3/1	B4100 East Ahead Left	U	1:2	N/A	C1:D		1	12	-	563	2058:1886	446+409	68.0 : 63.6%
3/3	B4100 East Ahead	U	1:2	N/A	C1:D		1	12	-	372	2058	446	83.4%
4/1	Ahead	U	1:3	N/A	C1:E		1	16	-	361	1942	583	62.0%
4/2	Right	U	1:3	N/A	C1:E		1	16	-	372	2066	620	60.0%
5/1	A43 South Ahead Ahead2	U	1:3	N/A	C1:F		1	32	-	778	1927	1060	73.4%
5/2+5/3	A43 South Ahead	U	1:3	N/A	C1:F		1	32	-	1569	2058:2058	1003+866	84.0 : 84.0%
6/1	Ahead	U	1:4	N/A	C1:G		1	41	-	874	1932	1385	63.1%
6/2	Ahead	U	1:4	N/A	C1:G		1	41	-	972	2066	1481	65.6%
6/3	Ahead Right	U	1:4	N/A	C1:G		1	41	-	858	2063	1478	58.0%
7/1+7/2	B4100 West Left Ahead	U	1:4	N/A	C1:H		1	7	-	386	1902:2043	254+272	73.3 : 73.4%
8/3		U	N/A	N/A	-		-	-	-	676	2000	2000	33.8%
9/1	Ahead	U	1:1	N/A	C1:A		1	18	-	186	1932	644	28.9%
9/2	Right Ahead	U	1:1	N/A	C1:A		1	18	-	327	2064	688	47.5%
J2: Padbury	-	-	**N/A**	-	-		-	-	-	-	-	-	**88.7%**
1/2+1/1	M40 SB offslip Left Ahead	U	2:2	N/A	C2:D		1	9	-	356	2058:1908	343+118	77.3 : 77.3%

1/3	M40 SB offslip Ahead	U	2:2	N/A	C2:D		1	9	-	246	2058	343	71.7%
2/1	A43 north Ahead	U	2:1	N/A	C2:B		1	41	-	894	1980	1386	64.5%
2/2	A43 north Ahead	U	2:1	N/A	C2:B		1	41	-	990	2120	1484	66.7%
5/1	A43 south Ahead	U	2:2	N/A	C2:C		1	39	-	1054	1886	1257	83.8%
5/2	A43 south Ahead	U	2:2	N/A	C2:C		1	39	-	1125	2019	1346	83.6%
6/1	Right	U	2:1	N/A	C2:A		1	7	-	188	2080	277	67.8%
6/2	Right	U	2:1	N/A	C2:A		1	7	-	246	2080	277	88.7%
J3: Cherwell	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**97.7%**
1/1	A43 Southbound Left Ahead	U	3:1	N/A	C3:A		1	38	-	722	1978	1286	56.2%
1/2+1/3	A43 Southbound Ahead	U	3:1	N/A	C3:A		1	38	-	1596	2120:1980	1178+723	83.9 : 83.9%
2/1	Ahead	U	3:3	N/A	C3:H		1	43	-	609	2015	1478	41.2%
3/1	MSA Left	U	3:2	N/A	C3:C		1	13	-	306	1832	427	71.6%
3/2	MSA Left Ahead	U	3:2	N/A	C3:C		1	13	-	309	2084	486	63.5%
5/2	A43 Northbound Right Ahead	O	N/A	N/A	-		-	-	-	1189	Inf	1217	97.7%
6/1	Ahead Right	U	3:1	N/A	C3:B		1	10	-	319	1986	364	87.6%
7/1	Ahead	U	3:2	N/A	C3:D		1	34	-	404	2015	1243	32.5%
7/2	Ahead	U	3:2	N/A	C3:D		1	34	-	1017	2155	1329	76.5%
7/3	Ahead	U	3:2	N/A	C3:D		1	34	-	279	2015	1243	22.5%
7/4	Ahead	U	3:2	N/A	C3:D		1	34	-	328	2155	1329	24.7%
J4: Ardley	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.1%**
1/1	Ardley bypass Left Ahead	U	4:1	N/A	C4:A		1	22	-	412	1886	482	85.5%
1/2+1/3	Ardley bypass Ahead	U	4:1	N/A	C4:A		1	22	-	318	2019:2019	483+277	41.8 : 41.8%
2/1+2/2	B430 Ahead	O	N/A	N/A	-		-	-	-	155	1894:2105	543+243	19.7 : 19.7%

3/1	A43 Southbound Ahead	U	4:2	N/A	C4:C		1	24	-	281	1886	524	53.6%
3/2+3/3	A43 Southbound Ahead Right	U	4:2	N/A	C4:C		1	24	-	536	2019:2058	109+531	83.8 : 83.8%
4/1	Ahead	U	4:3	N/A	C4:F		1	25	-	297	1919	576	51.6%
4/2	Ahead Right	U	4:3	N/A	C4:F		1	25	-	121	2052	616	19.7%
6/1	Ahead Right	U	4:1	N/A	C4:B		1	58	-	1114	2000	1333	83.6%
6/2	Right	U	4:1	N/A	C4:B		1	58	-	1071	2100	1400	76.5%
7/2+7/1	Right	U	4:2	N/A	C4:D		1	56	-	46	2077:1942	877+468	3.4 : 3.4%
8/1	Ahead	U	4:4	N/A	C4:I		1	58	-	282	2015	1321	21.3%
8/2	Ahead	U	4:4	N/A	C4:I		1	58	-	1210	2155	1413	85.7%
8/3	Right Ahead	U	4:4	N/A	C4:I		1	58	-	1235	2155	1413	87.4%
13/1	Right Right2	U	4:4	N/A	C4:H		1	22	-	445	1942	518	85.9%
14/1	M40 Offslip Left Ahead	U	4:3	N/A	C4:E		1	55	-	1083	1975	1229	88.1%
14/2	M40 Offslip Ahead	U	4:3	N/A	C4:E		1	55	-	1071	2019	1256	85.3%
J5: Baynards Green exit xings	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**69.8%**
1/1	Ahead	U	5:3	N/A	C5:E		1	45	-	376	1980	1518	24.8%
2/1	Ahead	U	5:2	N/A	C5:C		1	41	-	404	1980	1386	29.1%
2/2	Ahead	U	5:2	N/A	C5:C		1	41	-	1036	2120	1484	69.8%
2/3	Ahead	U	5:2	N/A	C5:C		1	41	-	444	1980	1386	32.0%
3/1	Ahead	U	5:1	N/A	C5:A		1	44	-	466	1975	1481	31.5%
3/2	Ahead	U	5:1	N/A	C5:A		1	44	-	280	2115	1586	17.7%

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: Option 28 Phase 1 Network Model	**-**	**-**	**1499**	**0**	**0**	**67.6**	**45.6**	**0.0**	**113.3**	**-**	**-**	**-**	**-**
J1: Baynards Green	**-**	**-**	**0**	**0**	**0**	**19.7**	**11.3**	**0.0**	**31.0**	**-**	**-**	**-**	**-**
1/1	636	636	-	-	-	1.9	0.9	-	2.7	15.6	7.6	0.9	8.5
1/2+1/3	1279	1279	-	-	-	3.7	1.5	-	5.2	14.8	10.0	1.5	11.5
2/1	396	396	-	-	-	0.0	0.0	-	0.0	0.4	0.7	0.0	0.7
2/2	784	784	-	-	-	0.0	0.0	-	0.0	0.0	0.1	0.0	0.1
2/3	502	502	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2+3/1	563	563	-	-	-	3.4	1.0	-	4.3	27.6	4.6	1.0	5.6
3/3	372	372	-	-	-	2.3	2.4	-	4.7	45.4	5.9	2.4	8.3
4/1	361	361	-	-	-	0.4	0.0	-	0.4	3.7	1.0	0.0	1.0
4/2	372	372	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	778	778	-	-	-	0.9	1.4	-	2.3	10.6	8.1	1.4	9.5
5/2+5/3	1569	1569	-	-	-	2.7	2.6	-	5.3	12.1	26.5	2.6	29.1
6/1	874	874	-	-	-	0.2	0.0	-	0.2	0.7	1.7	0.0	1.7
6/2	972	972	-	-	-	0.3	0.0	-	0.3	1.0	2.6	0.0	2.6
6/3	858	858	-	-	-	0.2	0.0	-	0.2	1.0	2.4	0.0	2.4
7/1+7/2	386	386	-	-	-	2.7	1.4	-	4.0	37.6	3.2	1.4	4.5
8/3	676	676	-	-	-	0.0	0.3	-	0.3	1.4	2.3	0.3	2.5
9/1	186	186	-	-	-	0.3	0.0	-	0.3	5.5	0.9	0.0	0.9
9/2	327	327	-	-	-	0.7	0.0	-	0.7	8.0	2.1	0.0	2.1
J2: Padbury	**-**	**-**	**0**	**0**	**0**	**9.4**	**9.8**	**0.0**	**19.3**	**-**	**-**	**-**	**-**
1/2+1/1	356	356	-	-	-	2.3	1.6	-	4.0	40.1	4.2	1.6	5.8
1/3	246	246	-	-	-	1.6	1.2	-	2.9	41.8	3.8	1.2	5.1
2/1	894	894	-	-	-	0.3	0.9	-	1.2	4.7	1.7	0.9	2.6
2/2	990	990	-	-	-	0.3	1.0	-	1.3	4.8	1.8	1.0	2.8
5/1	1054	1054	-	-	-	2.1	2.5	-	4.6	15.8	12.2	2.5	14.7
5/2	1125	1125	-	-	-	2.3	2.5	-	4.8	15.4	13.5	2.5	16.0

6/1	188	188	-	-	-	0.3	0.0	-	0.3	4.9	0.3	0.0	0.3
6/2	246	246	-	-	-	0.3	0.0	-	0.3	3.9	0.6	0.0	0.6
J3: Cherwell	**-**	**-**	**1189**	**0**	**0**	**10.3**	**5.3**	**0.0**	**15.6**	**-**	**-**	**-**	**-**
1/1	722	722	-	-	-	1.5	0.6	-	2.1	10.5	7.9	0.6	8.5
1/2+1/3	1596	1596	-	-	-	2.6	2.6	-	5.2	11.7	23.4	2.6	26.0
2/1	609	609	-	-	-	0.1	0.0	-	0.1	0.4	0.4	0.0	0.4
3/1	306	306	-	-	-	1.8	1.2	-	3.0	35.7	4.7	1.2	5.9
3/2	309	309	-	-	-	1.8	0.9	-	2.6	30.8	4.6	0.9	5.5
5/2	1189	1189	1189	0	0	0.2	0.0	-	0.2	0.6	12.6	0.0	12.6
6/1	319	319	-	-	-	2.1	0.0	-	2.1	23.2	5.1	0.0	5.1
7/1	404	404	-	-	-	0.1	0.0	-	0.1	1.1	0.6	0.0	0.6
7/2	1017	1017	-	-	-	0.1	0.0	-	0.1	0.3	0.5	0.0	0.5
7/3	279	279	-	-	-	0.1	0.0	-	0.1	0.9	0.2	0.0	0.2
7/4	328	328	-	-	-	0.0	0.0	-	0.0	0.4	0.1	0.0	0.1
J4: Ardley	**-**	**-**	**310**	**0**	**0**	**27.1**	**19.0**	**0.0**	**46.1**	**-**	**-**	**-**	**-**
1/1	412	412	-	-	-	3.7	2.7	-	6.4	55.8	9.7	2.7	12.5
1/2+1/3	318	318	-	-	-	2.4	0.4	-	2.8	31.3	4.2	0.4	4.5
2/1+2/2	155	155	310	0	0	0.1	0.1	-	0.3	6.3	0.6	0.1	0.7
3/1	281	281	-	-	-	2.2	0.6	-	2.7	35.0	5.9	0.6	6.5
3/2+3/3	536	536	-	-	-	4.4	2.5	-	6.9	46.2	11.1	2.5	13.5
4/1	297	297	-	-	-	0.2	0.0	-	0.2	2.4	0.4	0.0	0.4
4/2	121	121	-	-	-	0.4	0.0	-	0.4	10.9	0.7	0.0	0.7
6/1	1114	1114	-	-	-	0.6	0.0	-	0.6	1.8	2.8	0.0	2.8
6/2	1071	1071	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2+7/1	46	46	-	-	-	0.1	0.0	-	0.1	7.0	0.2	0.0	0.2
8/1	282	282	-	-	-	0.9	0.1	-	1.0	13.4	5.7	0.1	5.8
8/2	1210	1210	-	-	-	1.9	2.9	-	4.8	14.4	8.4	2.9	11.3
8/3	1235	1235	-	-	-	1.8	3.3	-	5.1	14.9	6.4	3.3	9.7
13/1	445	445	-	-	-	0.2	0.0	-	0.2	1.4	1.0	0.0	1.0
14/1	1083	1083	-	-	-	4.3	3.5	-	7.8	26.0	22.6	3.5	26.1
14/2	1071	1071	-	-	-	4.1	2.8	-	6.9	23.1	21.4	2.8	24.2

J5: Baynards Green exit xings	-	-	0	0	0	1.0	0.2	0.0	1.3	-	-	-	-
1/1	376	376	-	-	-	0.0	0.0	-	0.0	0.2	0.1	0.0	0.1
2/1	404	404	-	-	-	0.0	0.0	-	0.0	0.4	0.8	0.0	0.8
2/2	1036	1036	-	-	-	0.8	0.0	-	0.8	2.7	2.8	0.0	2.8
2/3	444	444	-	-	-	0.0	0.2	-	0.2	1.9	0.0	0.2	0.3
3/1	466	466	-	-	-	0.2	0.0	-	0.2	1.3	1.6	0.0	1.6
3/2	280	280	-	-	-	0.0	0.0	-	0.0	0.4	2.1	0.0	2.1

C1 - Baynards Green	Stream: 1 PRC for Signalled Lanes (%):	19.5	Total Delay for Signalled Lanes (pcuHr):	9.01	Cycle Time (s):	60
C1 - Baynards Green	Stream: 2 PRC for Signalled Lanes (%):	7.9	Total Delay for Signalled Lanes (pcuHr):	9.06	Cycle Time (s):	60
C1 - Baynards Green	Stream: 3 PRC for Signalled Lanes (%):	7.2	Total Delay for Signalled Lanes (pcuHr):	7.95	Cycle Time (s):	60
C1 - Baynards Green	Stream: 4 PRC for Signalled Lanes (%):	22.6	Total Delay for Signalled Lanes (pcuHr):	4.71	Cycle Time (s):	60
C2 - Padbury	Stream: 1 PRC for Signalled Lanes (%):	1.5	Total Delay for Signalled Lanes (pcuHr):	3.00	Cycle Time (s):	60
C2 - Padbury	Stream: 2 PRC for Signalled Lanes (%):	7.4	Total Delay for Signalled Lanes (pcuHr):	16.25	Cycle Time (s):	60
C3 - Cherwell	Stream: 1 PRC for Signalled Lanes (%):	2.7	Total Delay for Signalled Lanes (pcuHr):	9.36	Cycle Time (s):	60
C3 - Cherwell	Stream: 2 PRC for Signalled Lanes (%):	17.6	Total Delay for Signalled Lanes (pcuHr):	5.99	Cycle Time (s):	60
C3 - Cherwell	Stream: 3 PRC for Signalled Lanes (%):	118.4	Total Delay for Signalled Lanes (pcuHr):	0.07	Cycle Time (s):	60
C4 - Ardley	Stream: 1 PRC for Signalled Lanes (%):	5.3	Total Delay for Signalled Lanes (pcuHr):	9.72	Cycle Time (s):	90
C4 - Ardley	Stream: 2 PRC for Signalled Lanes (%):	7.4	Total Delay for Signalled Lanes (pcuHr):	9.70	Cycle Time (s):	90
C4 - Ardley	Stream: 3 PRC for Signalled Lanes (%):	2.1	Total Delay for Signalled Lanes (pcuHr):	15.26	Cycle Time (s):	90
C4 - Ardley	Stream: 4 PRC for Signalled Lanes (%):	3.0	Total Delay for Signalled Lanes (pcuHr):	11.17	Cycle Time (s):	90
C5 - Baynards Green exit xings	Stream: 1 PRC for Signalled Lanes (%):	186.1	Total Delay for Signalled Lanes (pcuHr):	0.20	Cycle Time (s):	60
C5 - Baynards Green exit xings	Stream: 2 PRC for Signalled Lanes (%):	28.9	Total Delay for Signalled Lanes (pcuHr):	1.06	Cycle Time (s):	60
C5 - Baynards Green exit xings	Stream: 3 PRC for Signalled Lanes (%):	263.4	Total Delay for Signalled Lanes (pcuHr):	0.02	Cycle Time (s):	60
	PRC Over All Lanes (%):	-8.5	Total Delay Over All Lanes(pcuHr):	113.25		