The Cambridge South East Transport Order

Transport and Works Act 1992

Transport and Works (Applications and Objections Procedure) (England and Wales) Rules 2006

Transport Assessment Addendum

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TECHNICAL NOTE

Cambridge South East Transport

SUBJECT
Transport Assessment Addendum

PROJECT NO.
5229170

DATE
17 July 2026

AUTHOR
JL

DOCUMENT REFERENCE
CSET-TAA

Document history

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
1.0	Revised Travel Hub Design	LB	JL	CS	EK	29/06/26
1.1	Updated with Client Comments	EH	CS	CS	EK	17/07/26

Client signoff

Client	Greater Cambridge Partnership		
Project	Cambridge South East Transport	**Project No.**	5229170
Client signature / date			

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1. Introduction

This Technical Note has been prepared by AtkinsRéalis on behalf of the Greater Cambridge Partnership (GCP) as an addendum to the Transport Assessment for the CSET Order [CD1-18.01 – Transport Assessment]. This note has been produced to outline revisions required to the transport and access requirements of the scheme which have changed since the submission of the TWAO application in January 2025.

In September 2025, an additional constraint to the Travel Hub design was identified by National Gas Transmission (NGT), who raised concerns relating to the proximity to a pipeline which crosses the A1307 just to the north of the Travel Hub. There are currently existing protections for the gas main as it passes under the existing alignment of the A1307, however the proposed junction design that was submitted as part of the application would extend beyond this protected cross-section. Therefore, in consultation with NGT, the Travel Hub junction has been redesigned to reduce the footprint and avoid the need for any additional resilience or diversionary works to this NGT asset. The redesign has resulted in a more compact Traffic Signal junction layout, changed from a roundabout, as shown in drawing ***5212868-ATK-GEN-WHL_AL-DR-ZL-000015.pdf***. An extract of the redesigned layout is shown in Figure 1 along with an extract of the Proposed Site Plan **[CD1-12.06]** showing the roundabout design.

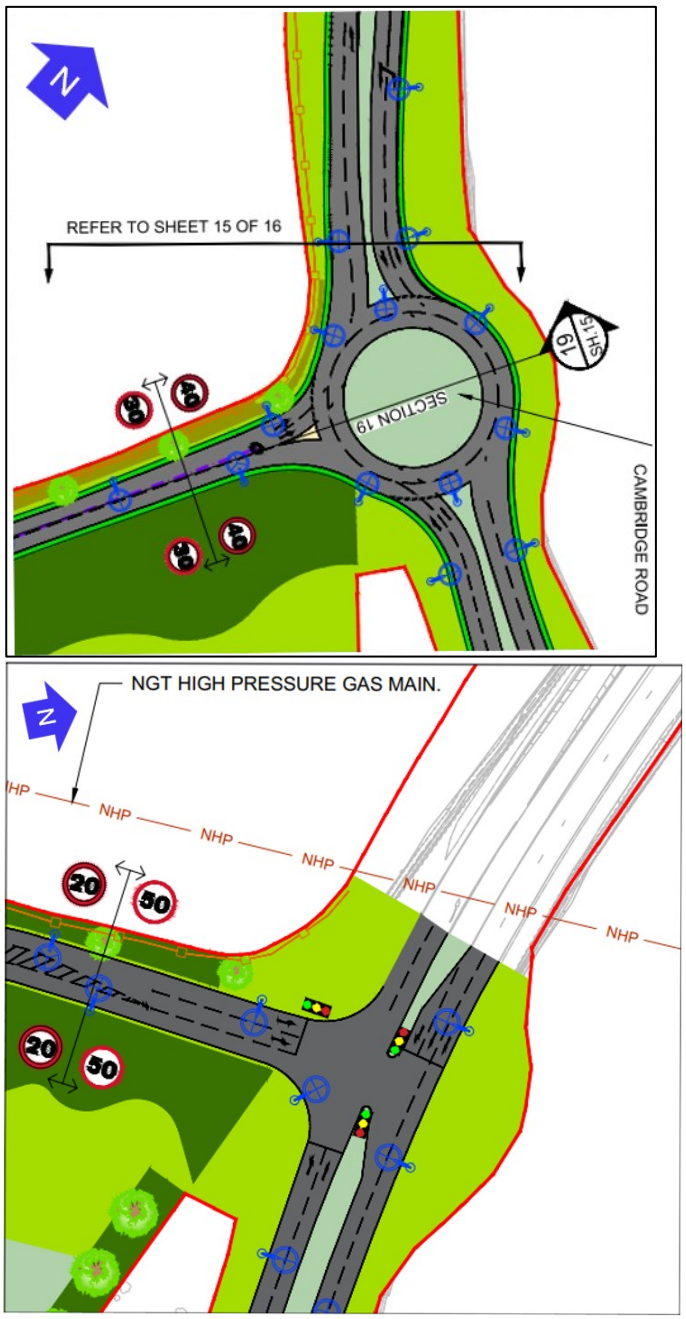

Figure 1 – A1307/Travel Hub Junction Layout – Application [Left] and Proposed [Right]

2. A1307 Travel Hub Traffic Signals

2.1 LINSIG Inputs

Local junction modelling was undertaken in LINSIG for the proposed junction layout at the A1307 junction with the Travel Hub, shown below in Figure 2 with the arms labelled.

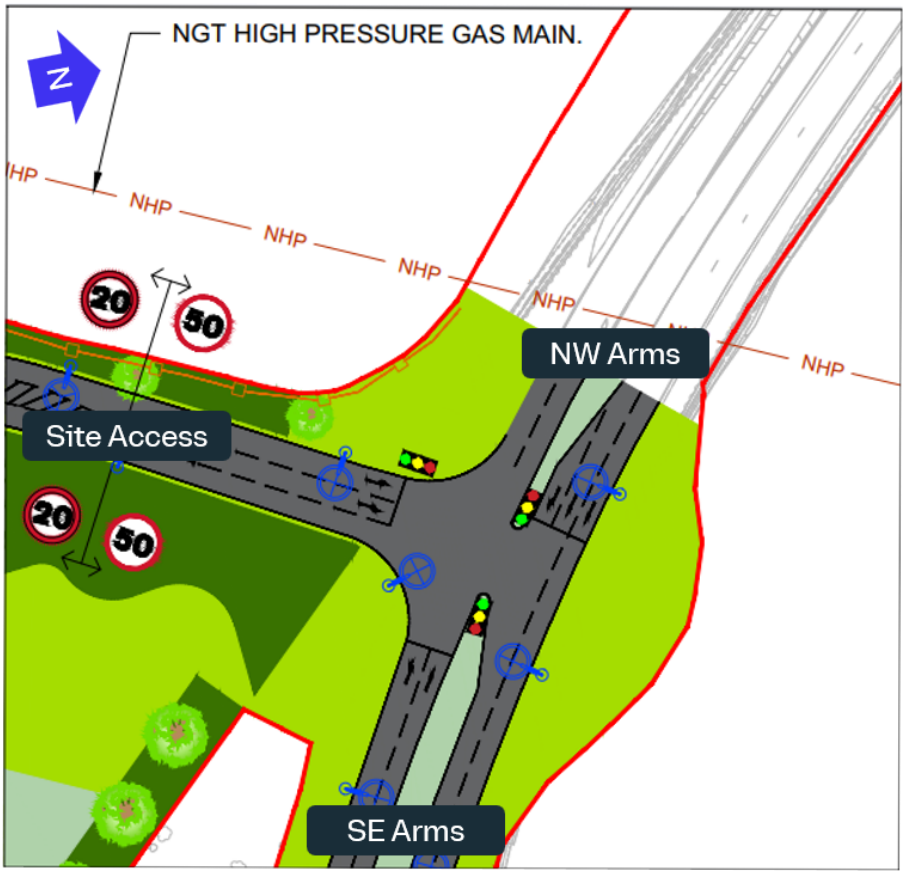

Figure 2 - Travel Hub Junction with Arms

A summary of results for the AM (0800-0900) and PM (1700-1800) peaks for the two forecast years of 2029 and 2041 are shown in Table 1 with the full LINSIG results presented in Appendix A.
Queues are measured in Passenger Car Units (PCU), referring to the impact that a road vehicle contributes to traffic compared to a single passenger car (e.g. HGVs are 2.3 PCU and Motorcycles are 0.4 PCU), 1 PCU length is equivalent to circa. 5.75m.

The Degree of Saturation (DoS) represents a ratio of demand to capacity for each traffic phase, with 90% indicating an arm is at practical capacity.

The Practical Reserve Capacity (PRC) is calculated from the maximum percent DoS and is a measure of how much additional traffic could pass through the junction (e.g. a 20% PRC means traffic could increase by 20% before the junction reaches capacity).

The mean maximum queue length (MMQ) provides an indication of the average maximum queue that occurs across the time period for each movement. This is presented in PCU's and hence, to calculate the total queue length in metres, this is multiplied by 5.75m per PCU, as noted above. This metric can also be used to see how close these queues stretch back towards adjacent junctions on the highway network, as discussed below.

2.2 LINSIG Results

Results of the signalised junction are presented on the following page.

Table 1 - LINSIG Summary Results

	AM			PM		
	Mean Max Queue (PCU)	**Delay (sec)**	**Degree of Saturation**	**Mean Max Queue (PCU)**	**Delay (sec)**	**Degree of Saturation**
2029						
A1307 Cambridge Rd SE Left turn	1.7	7.7	14.8%	0.4	11.5	3.7%
A1307 Cambridge Rd SE Straight	16.5	15.3	72.7%	8.8	16.3	50.4%
Site Access	0.4	49.6	10.0%	3.9	40.2	50.7%
A1307 Cambridge Road NW Straight	1.1	3.3	12.5%	6.0	8.2	39.8%
A1307 Cambridge Road NW Straight	1.0	3.3	11.0%	5.5	8.0	37.6%
A1307 Cambridge Road NW Right	0.7	52.4	17.8%	0.2	50.4	5.9%
Overall Junction Statistics	Practical reserve capacity		23.8%	Practical reserve capacity		77.5%
	Total Traffic Delay		5.9 PCU hrs	Total Traffic Delay		8.0 PCU hrs
2041						
A1307 Cambridge Rd SE Left Turn	1.7	7.7	14.5%	0.4	11.5	3.6%
A1307 Cambridge Rd SE Ahead	15.5	14.7	70.7%	8.7	16.2	49.8%
Site Access	0.4	49.6	10.0%	3.9	40.0	50.2%
A1307 Cambridge Road NW Ahead	1.1	3.3	12.3%	6.1	8.2	40.3%
A1307 Cambridge Road NW Ahead	0.9	3.3	10.8%	5.7	8.1	38.3%
A1307 Cambridge Road NW Right	0.7	52.4	17.8%	0.2	50.3	5.3%
Overall Junction Statistics	Practical reserve capacity		27.3%	Practical reserve capacity		79.4%
	Total Traffic Delay		5.6 PCU hrs	Total Traffic Delay		7.9 PCU hrs

2.3 Results Discussion

These results show that the layout of a signalised junction is anticipated to operate within the capacity of the current network traffic volumes in both peak periods and in both the opening and horizon year. A maximum Degree of Saturation of 50% has been identified on the A1307 approach from the NW Arm in the AM peak hour in both the 2029 and 2041 forecast years. This indicates that even at peak periods the junction will continue to operate smoothly within the existing road network.

The MMQ for the A1307 SE approach is forecast to be 16 PCUs, which is equivalent to about 92m in the AM peak – this would indicate a queue that would stretch about halfway to the A11/1307 interchange for short durations. In the PM peak the most noticeable queue would form on the A1307 NW approach, however due to the 2-lane approach this would only be about 6 PCU in length (about 35m). As the junction is below capacity, it is expected that these queues would dissipate between cycles and therefore not cause multiple phase queueing. By 2041, it is anticipated that the reserve capacity will increase resulting in a slight reduction in the queue length at the junction, this is the case for both peak periods and across all travel directions.

The overall modelling results demonstrate that the junction has reserve capacity in both the AM and PM peaks in years 2029 and 2041, and as such this amendment to the highway network does not have any substantial impacts to highway capacity and its continued operation with the junctions inserted into the existing highway network. Comparing the previous results from the modelling of the roundabout junction proposed at submission, assessed through the ARCADY software package and shown in Table 7-5 of the TA **[CD1-18.01, pg72]** demonstrates that the roundabout presented a similar RFC of around 50% for the Southeast Arm, which closely aligns with the findings of the LINSIG modelling, demonstrating that the changes to traffic flows between the two junction designs is insignificant and the conclusions of the TA will be unchanged.

Approach	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2029 DS								
Cambridge Rd SE Arm	1.1	3.28	0.52	A	0.4	2.13	0.27	A
Site access	0.0	2.82	0.01	A	0.2	2.68	0.14	A
Cambridge Rd NW Arm	0.3	2.18	0.21	A	1.4	4.27	0.58	A
2041 DS								
Cambridge Rd SE Arm	1.0	3.20	0.51	A	0.4	2.12	0.26	A
Site access	0.0	2.78	0.01	A	0.2	2.67	0.14	A
Cambridge Rd NW Arm	0.3	2.15	0.20	A	1.4	4.38	0.58	A

Table 2 - Insert of Transport Assessment Table 7-5- [CD1-18, pg72]

REFERENCES:

1) A Different Approach to Quantifying Junction Modelling, (Atkins & Thomas)

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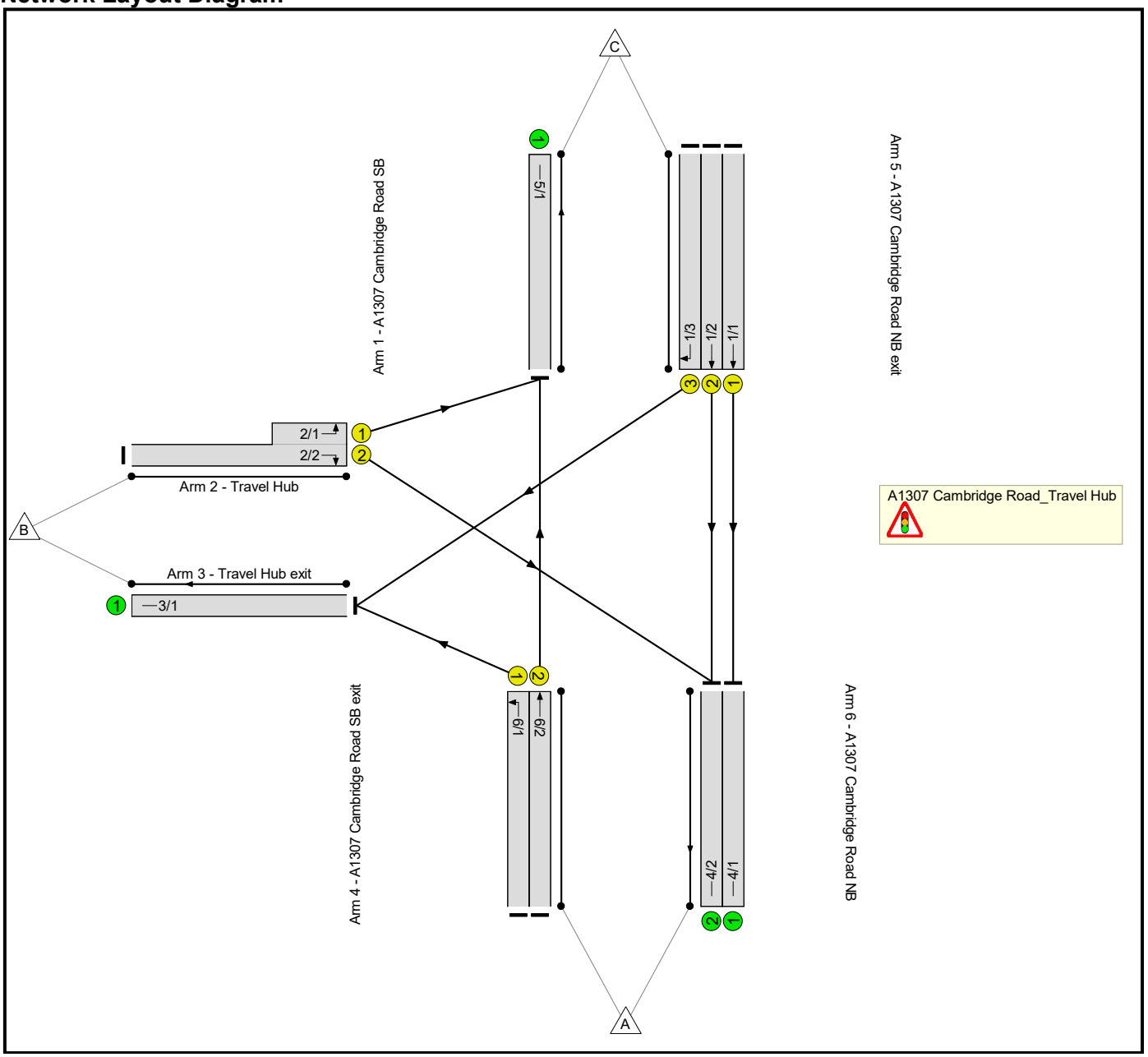
Appendix A

Detailed Input Data And Results

User and Project Details

Project:	
Title:	
Location:	
Additional detail:	
File name:	CSET 2_Signalised Option_90 sec CT v0.2a_v2.lsg3x
Author:	
Company:	
Address:	
Linsig Version:	3, 3, 0, 6

Network Layout Diagram



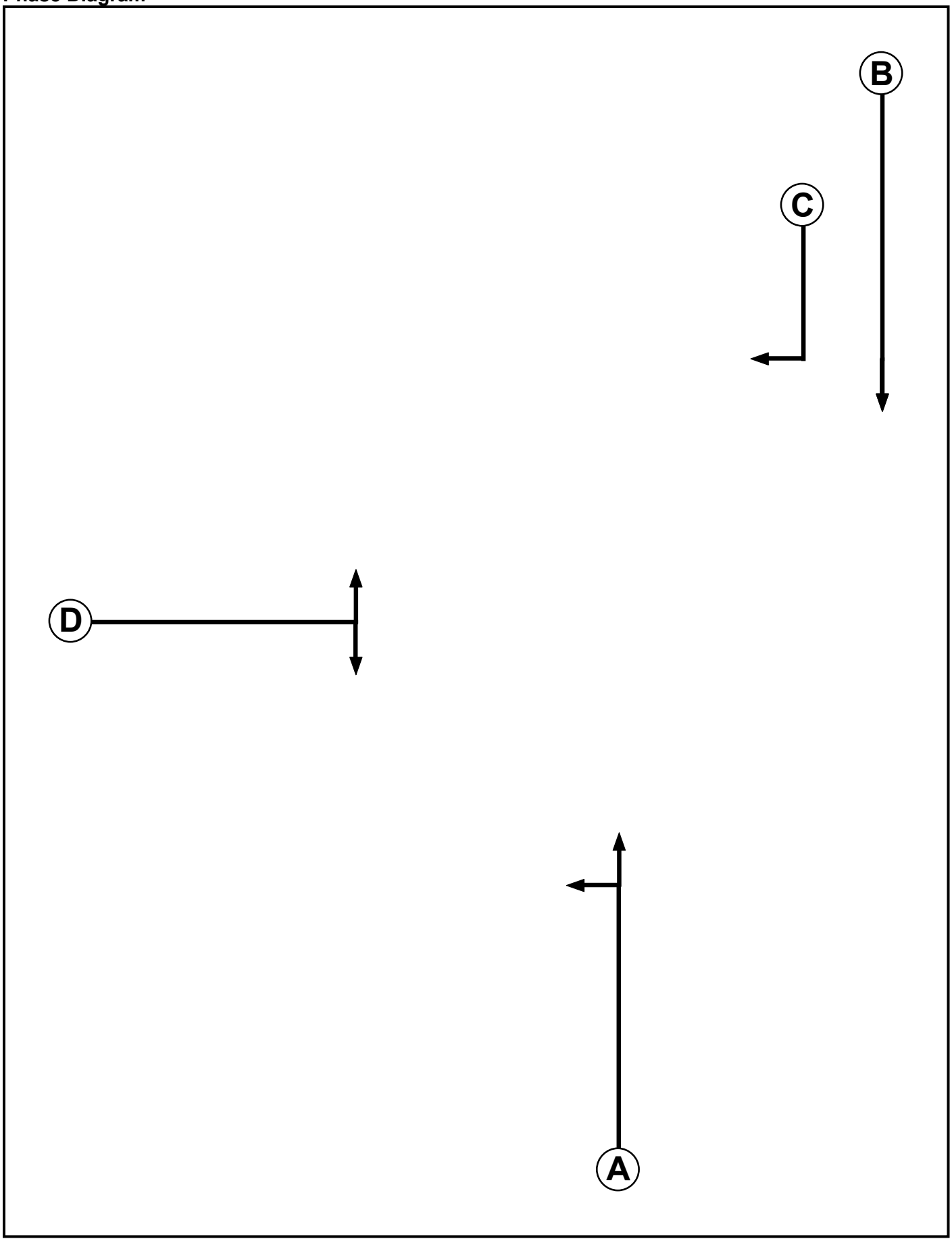
Scenarios

Number	Scenario Name	Flow Group	Network Control Plan	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	AM Peak 2029	AM Peak 2029	Network Control Plan 1	08:00 - 09:00	90	23.8	5.85
2	PM Peak 2029	PM Peak 2029	Network Control Plan 1	17:00 - 18:00	90	77.5	7.97
3	AM Peak 2041	AM Peak 2041	Network Control Plan 1	08:00 - 09:00	90	27.3	5.56
4	PM Peak 2041	PM Peak 2041	Network Control Plan 1	17:00 - 18:00	90	79.4	7.94

Controller Summary

Controller	Type	SCN	Stage Stream	Num Phases	Num Stages	Controls Junctions	Controller Notes
C1	Gen		Stage Stream 1	4	3	A1307 Cambridge Road_Travel Hub	

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min (s)	Cont Min (s)
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7

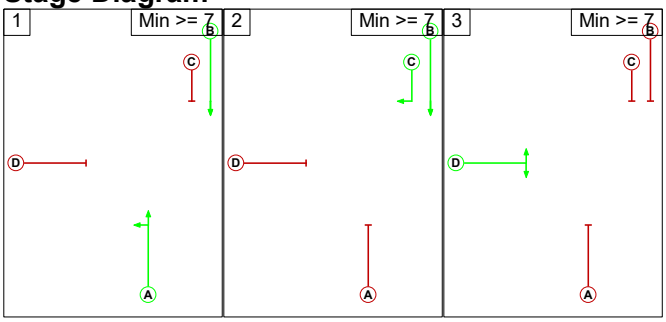
Phase Intergreens Matrix

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

Phases in Stage

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

Stage Diagram



Phase Delays

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

Prohibited Stage Change

		To Stage		
		1	2	3
From Stage	1		6	6
	2	6		6
	3	6	6	

Lane Input Data

Junction: A1307 Cambridge Road_Travel Hub

Lane	Lane Type	Phases	Start Disp. (s)	End Disp. (s)	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient (%)	Nearside Lane	Turns	Turning Radius (m)
1/1 (A1307 Cambridge Road SB)	U	B	2	3	60.0	Geom	-	3.60	0.00	Y	Arm 4 Ahead	Inf
1/2 (A1307 Cambridge Road SB)	U	B	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
1/3 (A1307 Cambridge Road SB)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 3 Right	10.00
2/1 (Travel Hub)	U	D	2	3	5.2	Geom	-	3.25	0.00	Y	Arm 5 Left	13.00
2/2 (Travel Hub)	U	D	2	3	26.1	Geom	-	3.25	0.00	Y	Arm 4 Right	10.00
3/1 (Travel Hub exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1 (A1307 Cambridge Road SB exit)	U		2	3	60.0	Geom	-	3.60	0.00	Y		
4/2 (A1307 Cambridge Road SB exit)	U		2	3	60.0	Geom	-	3.25	0.00	Y		
5/1 (A1307 Cambridge Road NB exit)	U		2	3	60.0	Geom	-	3.35	0.00	Y		
6/1 (A1307 Cambridge Road NB)	U	A	2	3	52.2	Geom	-	3.88	0.00	Y	Arm 3 Left	13.00
6/2 (A1307 Cambridge Road NB)	U	A	2	3	52.2	Geom	-	3.35	0.00	Y	Arm 5 Ahead	Inf

Give-Way Lane Input Data

Junction: A1307 Cambridge Road_Travel Hub
There are no Opposed Lanes in this Junction

Lane Connector Input Data

Junction: A1307 Cambridge Road_Travel Hub				
Org Lane	Dest Lane	Junction	Modelled Mean Cruise Time (s)	Platoon Dispersion
1/1	4/1	Internal	5	35
1/2	4/2	Internal	5	35
1/3	3/1	Internal	5	35
2/1	5/1	Internal	5	35
2/2	4/2	Internal	5	35
6/1	3/1	Internal	5	35
6/2	5/1	Internal	5	35

Scenario 1: 'AM Peak 2029' (FG1: 'AM Peak 2029', Plan 1: 'Network Control Plan 1')

Lane Saturation Flows

Junction: A1307 Cambridge Road_Travel Hub								
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 (A1307 Cambridge Road SB)	3.60	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1975	1975
1/2 (A1307 Cambridge Road SB)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (A1307 Cambridge Road SB)	3.50	0.00	Y	Arm 3 Right	10.00	100.0 %	1709	1709
2/1 (Travel Hub)	3.25	0.00	Y	Arm 5 Left	13.00	100.0 %	1739	1739
2/2 (Travel Hub)	3.25	0.00	Y	Arm 4 Right	10.00	100.0 %	1687	1687
3/1 (Travel Hub exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (A1307 Cambridge Road SB exit)	3.60	0.00	Y				1975	1975
4/2 (A1307 Cambridge Road SB exit)	3.25	0.00	Y				1940	1940
5/1 (A1307 Cambridge Road NB exit)	3.35	0.00	Y				1950	1950
6/1 (A1307 Cambridge Road NB)	3.88	0.00	Y	Arm 3 Left	13.00	100.0 %	1796	1796
6/2 (A1307 Cambridge Road NB)	3.35	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1950	1950

Bonus Green Times

No Bonus Greens are defined For Scenario 1

Scenario 2: 'PM Peak 2029' (FG2: 'PM Peak 2029', Plan 1: 'Network Control Plan 1')

Lane Saturation Flows

Junction: A1307 Cambridge Road_Travel Hub								
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 (A1307 Cambridge Road SB)	3.60	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1975	1975
1/2 (A1307 Cambridge Road SB)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (A1307 Cambridge Road SB)	3.50	0.00	Y	Arm 3 Right	10.00	100.0 %	1709	1709
2/1 (Travel Hub)	3.25	0.00	Y	Arm 5 Left	13.00	100.0 %	1739	1739
2/2 (Travel Hub)	3.25	0.00	Y	Arm 4 Right	10.00	100.0 %	1687	1687
3/1 (Travel Hub exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (A1307 Cambridge Road SB exit)	3.60	0.00	Y				1975	1975
4/2 (A1307 Cambridge Road SB exit)	3.25	0.00	Y				1940	1940
5/1 (A1307 Cambridge Road NB exit)	3.35	0.00	Y				1950	1950
6/1 (A1307 Cambridge Road NB)	3.88	0.00	Y	Arm 3 Left	13.00	100.0 %	1796	1796
6/2 (A1307 Cambridge Road NB)	3.35	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1950	1950

Bonus Green Times

No Bonus Greens are defined For Scenario 2

Scenario 3: 'AM Peak 2041' (FG3: 'AM Peak 2041', Plan 1: 'Network Control Plan 1')

Lane Saturation Flows

Junction: A1307 Cambridge Road_Travel Hub								
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 (A1307 Cambridge Road SB)	3.60	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1975	1975
1/2 (A1307 Cambridge Road SB)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (A1307 Cambridge Road SB)	3.50	0.00	Y	Arm 3 Right	10.00	100.0 %	1709	1709
2/1 (Travel Hub)	3.25	0.00	Y	Arm 5 Left	13.00	100.0 %	1739	1739
2/2 (Travel Hub)	3.25	0.00	Y	Arm 4 Right	10.00	100.0 %	1687	1687
3/1 (Travel Hub exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (A1307 Cambridge Road SB exit)	3.60	0.00	Y				1975	1975
4/2 (A1307 Cambridge Road SB exit)	3.25	0.00	Y				1940	1940
5/1 (A1307 Cambridge Road NB exit)	3.35	0.00	Y				1950	1950
6/1 (A1307 Cambridge Road NB)	3.88	0.00	Y	Arm 3 Left	13.00	100.0 %	1796	1796
6/2 (A1307 Cambridge Road NB)	3.35	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1950	1950

Bonus Green Times
No Bonus Greens are defined For Scenario 3

Scenario 4: 'PM Peak 2041' (FG4: 'PM Peak 2041', Plan 1: 'Network Control Plan 1')

Lane Saturation Flows

Junction: A1307 Cambridge Road_Travel Hub								
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 (A1307 Cambridge Road SB)	3.60	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1975	1975
1/2 (A1307 Cambridge Road SB)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (A1307 Cambridge Road SB)	3.50	0.00	Y	Arm 3 Right	10.00	100.0 %	1709	1709
2/1 (Travel Hub)	3.25	0.00	Y	Arm 5 Left	13.00	100.0 %	1739	1739
2/2 (Travel Hub)	3.25	0.00	Y	Arm 4 Right	10.00	100.0 %	1687	1687
3/1 (Travel Hub exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (A1307 Cambridge Road SB exit)	3.60	0.00	Y				1975	1975
4/2 (A1307 Cambridge Road SB exit)	3.25	0.00	Y				1940	1940
5/1 (A1307 Cambridge Road NB exit)	3.35	0.00	Y				1950	1950
6/1 (A1307 Cambridge Road NB)	3.88	0.00	Y	Arm 3 Left	13.00	100.0 %	1796	1796
6/2 (A1307 Cambridge Road NB)	3.35	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1950	1950

Bonus Green Times
No Bonus Greens are defined For Scenario 4

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'AM Peak 2029'	08:00	09:00	01:00	
2: 'PM Peak 2029'	17:00	18:00	01:00	
3: 'AM Peak 2041'	08:00	09:00	01:00	
4: 'PM Peak 2041'	17:00	18:00	01:00	

Traffic Flows, Desired

FG1: 'AM Peak 2029'

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	174	929	1103
	B	15	0	2	17
	C	367	27	0	394
	Tot.	382	201	931	1514

FG2: 'PM Peak 2029'

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	36	535	571
	B	155	0	50	205
	C	1044	9	0	1053
	Tot.	1199	45	585	1829

FG3: 'AM Peak 2041'

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	171	904	1075
	B	15	0	2	17
	C	361	27	0	388
	Tot.	376	198	906	1480

FG4: 'PM Peak 2041'

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	35	529	564
	B	153	0	51	204
	C	1060	8	0	1068
	Tot.	1213	43	580	1836

Scenario 1: 'AM Peak 2029' (FG1: 'AM Peak 2029', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	174	929	1103
	B	15	0	2	17
	C	367	27	0	394
	Tot.	382	201	931	1514

Traffic Flows, Difference

Difference :

		Destination			
		A	B	C	Tot.
Origin	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	Tot.	0	0	0	0

Scenario 2: 'PM Peak 2029' (FG2: 'PM Peak 2029', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	36	535	571
	B	155	0	50	205
	C	1044	9	0	1053
	Tot.	1199	45	585	1829

Traffic Flows, Difference

Difference :

		Destination			
		A	B	C	Tot.
Origin	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	Tot.	0	0	0	0

Scenario 3: 'AM Peak 2041' (FG3: 'AM Peak 2041', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	171	904	1075
	B	15	0	2	17
	C	361	27	0	388
	Tot.	376	198	906	1480

Traffic Flows, Difference

Difference :

		Destination			
		A	B	C	Tot.
Origin	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	Tot.	0	0	0	0

Scenario 4: 'PM Peak 2041' (FG4: 'PM Peak 2041', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	35	529	564
	B	153	0	51	204
	C	1060	8	0	1068
	Tot.	1213	43	580	1836

Traffic Flows, Difference

Difference :

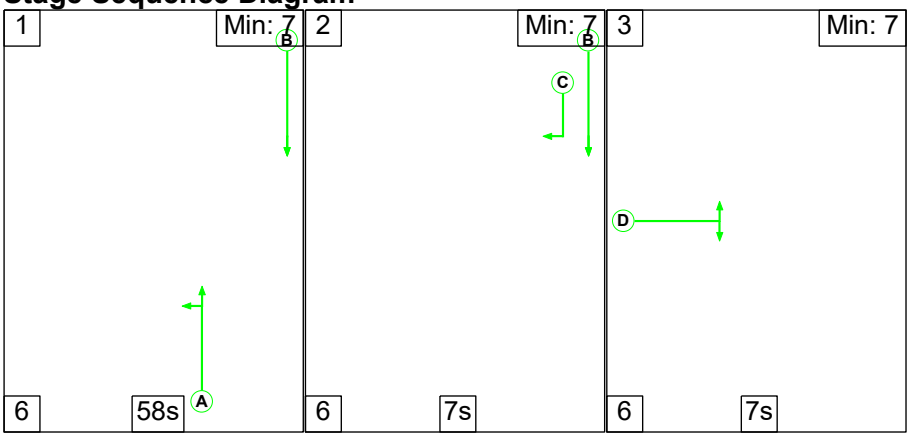
		Destination			
		A	B	C	Tot.
Origin	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	Tot.	0	0	0	0

Traffic Lane Flows

Lane	Scenario 1: AM Peak 2029	Scenario 2: PM Peak 2029	Scenario 3: AM Peak 2041	Scenario 4: PM Peak 2041
Junction: A1307 Cambridge Road_Travel Hub				
1/1	197	541	194	548
1/2	170	503	167	512
1/3	27	9	27	8
2/1 (short)	2	50	2	51
2/2 (with short)	17(In) 15(Out)	205(In) 155(Out)	17(In) 15(Out)	204(In) 153(Out)
3/1	201	45	198	43
4/1	197	541	194	548
4/2	185	658	182	665
5/1	931	585	906	580
6/1	174	36	171	35
6/2	929	535	904	529

Scenario 1: 'AM Peak 2029' (FG1: 'AM Peak 2029', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram



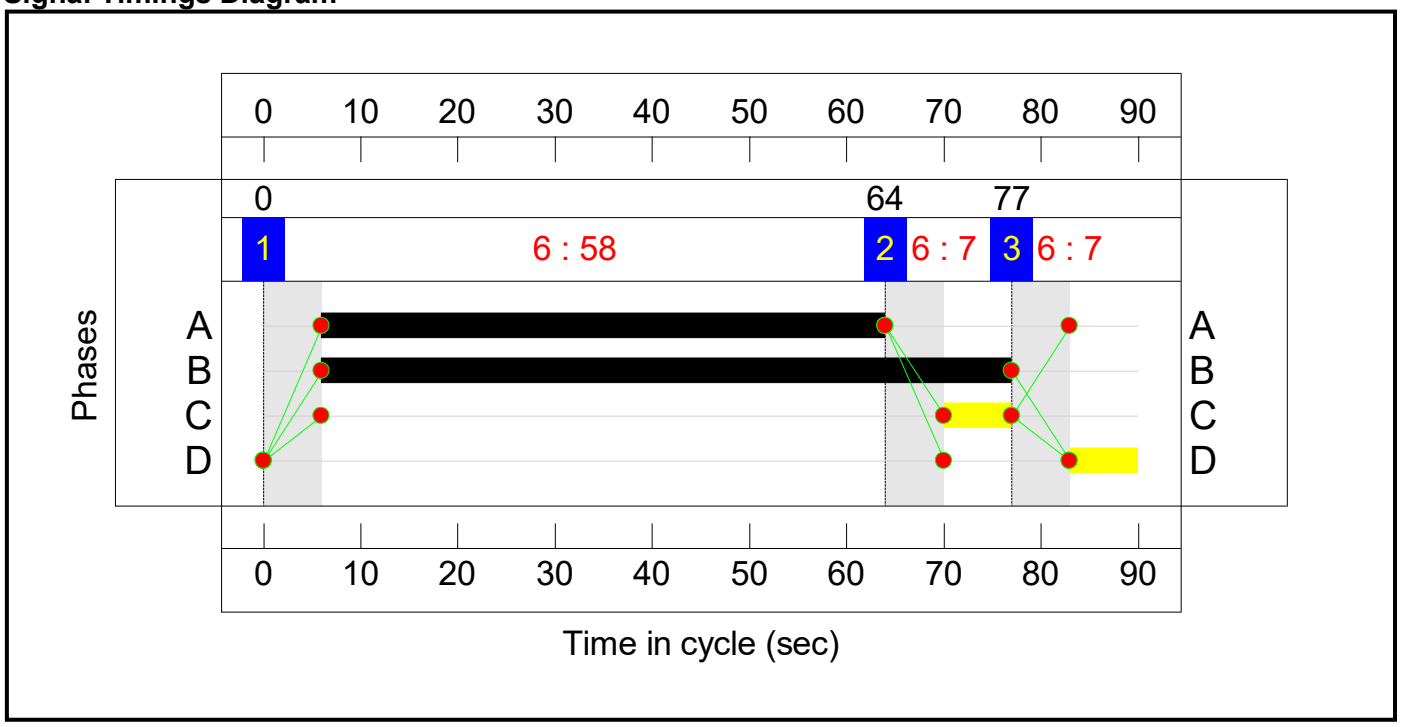
Stage Timings

Stage	1	2	3
Duration	58	7	7
Change Point	0	64	77

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	A1307 Cambridge Road NB Left Ahead	Traffic	58	6	64
B	A1307 Cambridge Road SB Ahead	Traffic	71	6	77
C	A1307 Cambridge Road SB Right	Traffic	7	70	77
D	Travel Hub Right Left	Traffic	7	83	0

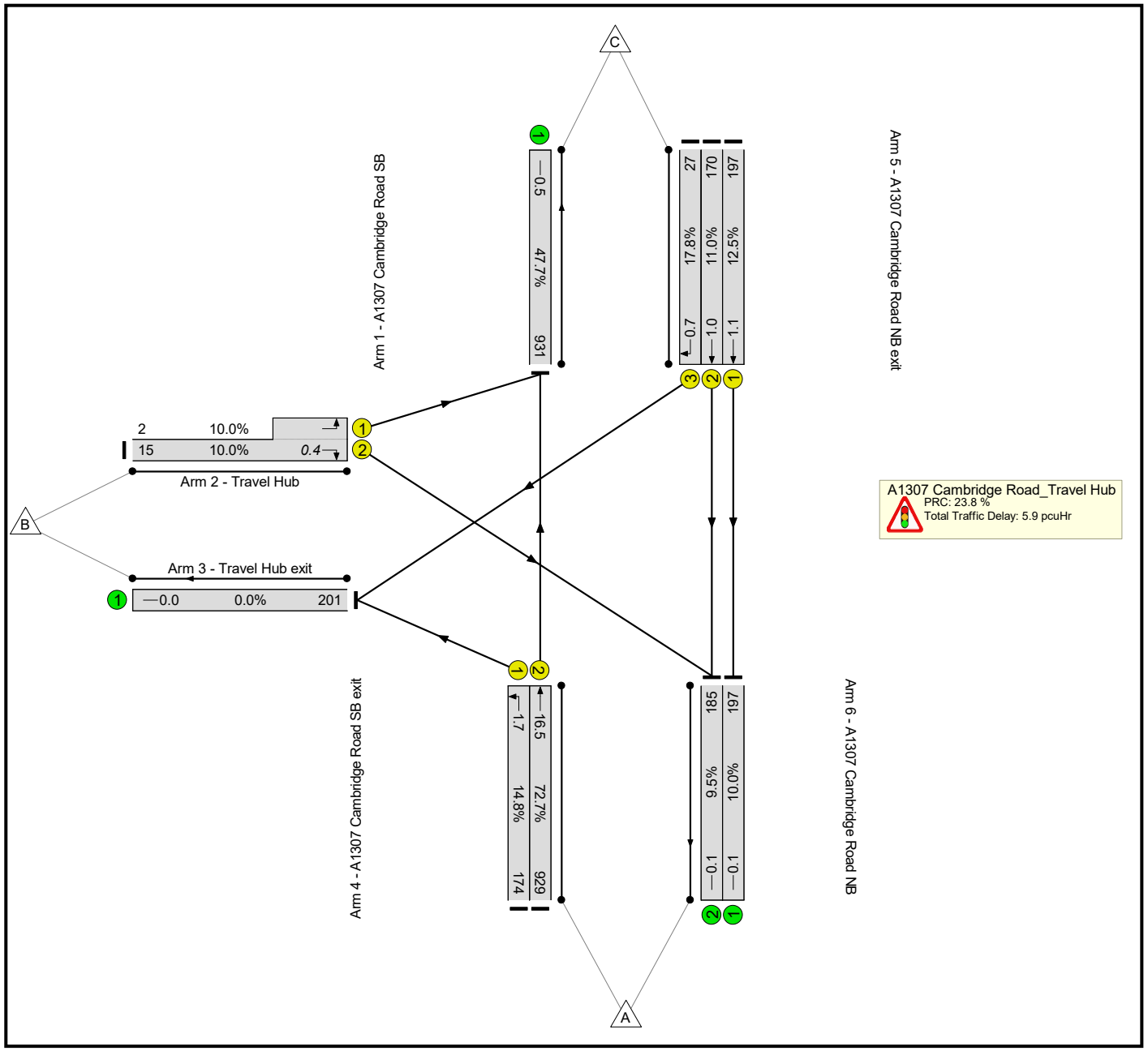
Signal Timings Diagram



Lane Green Times

Junction: A1307 Cambridge Road_Travel Hub					
Lane	Description	Type	Phases	Start Green	End Green
1/1	A1307 Cambridge Road SB Ahead	U	B	6	77
1/2	A1307 Cambridge Road SB Ahead	U	B	6	77
1/3	A1307 Cambridge Road SB Right	U	C	70	77
2/1	Travel Hub Left	U	D	83	0
2/2	Travel Hub Right	U	D	83	0
6/1	A1307 Cambridge Road NB Left	U	A	6	64
6/2	A1307 Cambridge Road NB Ahead	U	A	6	64

Network Layout Diagram


C
A
B
Arm 1 - A1307 Cambridge Road SB
1
0.5
47.7%
931
Arm 5 - A1307 Cambridge Road NB exit
27
17.8%
0.7
170
11.0%
1.0
197
12.5%
1.1
3
2
1
2
10.0%
15
10.0%
0.4
1
2
Arm 2 - Travel Hub
Arm 3 - Travel Hub exit
1
0.0
0.0%
201
A1307 Cambridge Road_Travel Hub
PRC: 23.8 %
Total Traffic Delay: 5.9 pcuHr
1
2
Arm 4 - A1307 Cambridge Road SB exit
1.7
14.8%
174
16.5
72.7%
929
Arm 6 - A1307 Cambridge Road NB
185
9.5%
0.1
167
10.0%
0.1
2
1

Network Results

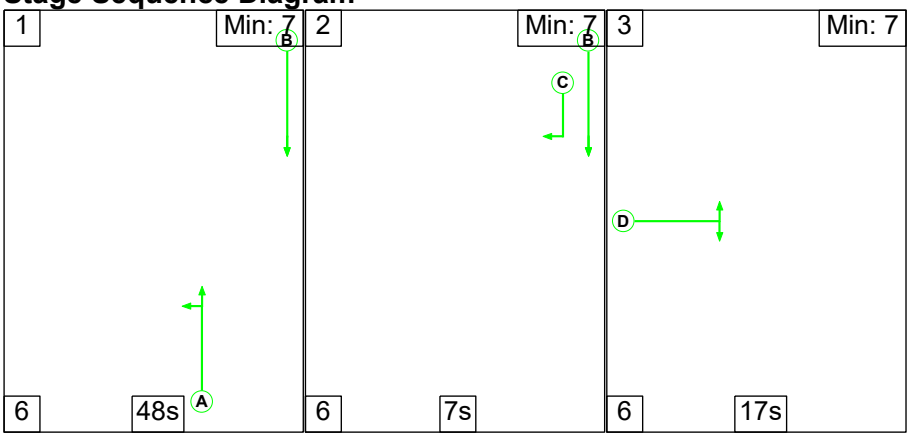
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**72.7%**
A1307 Cambridge Road_Travel Hub	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**72.7%**
1/1	A1307 Cambridge Road SB Ahead	U	N/A	N/A	B		1	71	-	-	197	1975	1580	12.5%
1/2	A1307 Cambridge Road SB Ahead	U	N/A	N/A	B		1	71	-	-	170	1940	1552	11.0%
1/3	A1307 Cambridge Road SB Right	U	N/A	N/A	C		1	7	-	-	27	1709	152	17.8%
2/2+2/1	Travel Hub Right Left	U	N/A	N/A	D		1	7	-	-	17	1687:1739	150+20	10.0 : 10.0%
3/1	Travel Hub exit	U	N/A	N/A	-		-	-	-	-	201	Inf	Inf	0.0%
4/1	A1307 Cambridge Road SB exit	U	N/A	N/A	-		-	-	-	-	197	1975	1975	10.0%
4/2	A1307 Cambridge Road SB exit	U	N/A	N/A	-		-	-	-	-	185	1940	1940	9.5%
5/1	A1307 Cambridge Road NB exit	U	N/A	N/A	-		-	-	-	-	931	1950	1950	47.7%
6/1	A1307 Cambridge Road NB Left	U	N/A	N/A	A		1	58	-	-	174	1796	1177	14.8%
6/2	A1307 Cambridge Road NB Ahead	U	N/A	N/A	A		1	58	-	-	929	1950	1278	72.7%

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	**-**	**-**	**0**	**0**	**0**	**3.6**	**2.3**	**0.0**	**5.9**	**-**	**-**	**-**	**-**	
A1307 Cambridge Road_Travel Hub	**-**	**-**	**0**	**0**	**0**	**3.6**	**2.3**	**0.0**	**5.9**	**-**	**-**	**-**	**-**	
1/1	197	197	-	-	-	0.1	0.1	-	0.2	3.3	1.0	0.1	1.1	
1/2	170	170	-	-	-	0.1	0.1	-	0.2	3.3	0.9	0.1	1.0	
1/3	27	27	-	-	-	0.3	0.1	-	0.4	52.4	0.6	0.1	0.7	
2/2+2/1	17	17	-	-	-	0.2	0.1	-	0.2	49.6	0.3	0.1	0.4	
3/1	201	201	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
4/1	197	197	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.1	0.1	
4/2	185	185	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.1	0.1	
5/1	931	931	-	-	-	0.0	0.5	-	0.5	1.8	0.0	0.5	0.5	
6/1	174	174	-	-	-	0.3	0.1	-	0.4	7.7	1.6	0.1	1.7	
6/2	929	929	-	-	-	2.6	1.3	-	4.0	15.3	15.2	1.3	16.5	

C1 PRC for Signalled Lanes (%): 23.8 Total Delay for Signalled Lanes (pcuHr): 5.29 Cycle Time (s): 90
PRC Over All Lanes (%): 23.8 Total Delay Over All Lanes(pcuHr): 5.85

Scenario 2: 'PM Peak 2029' (FG2: 'PM Peak 2029', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram



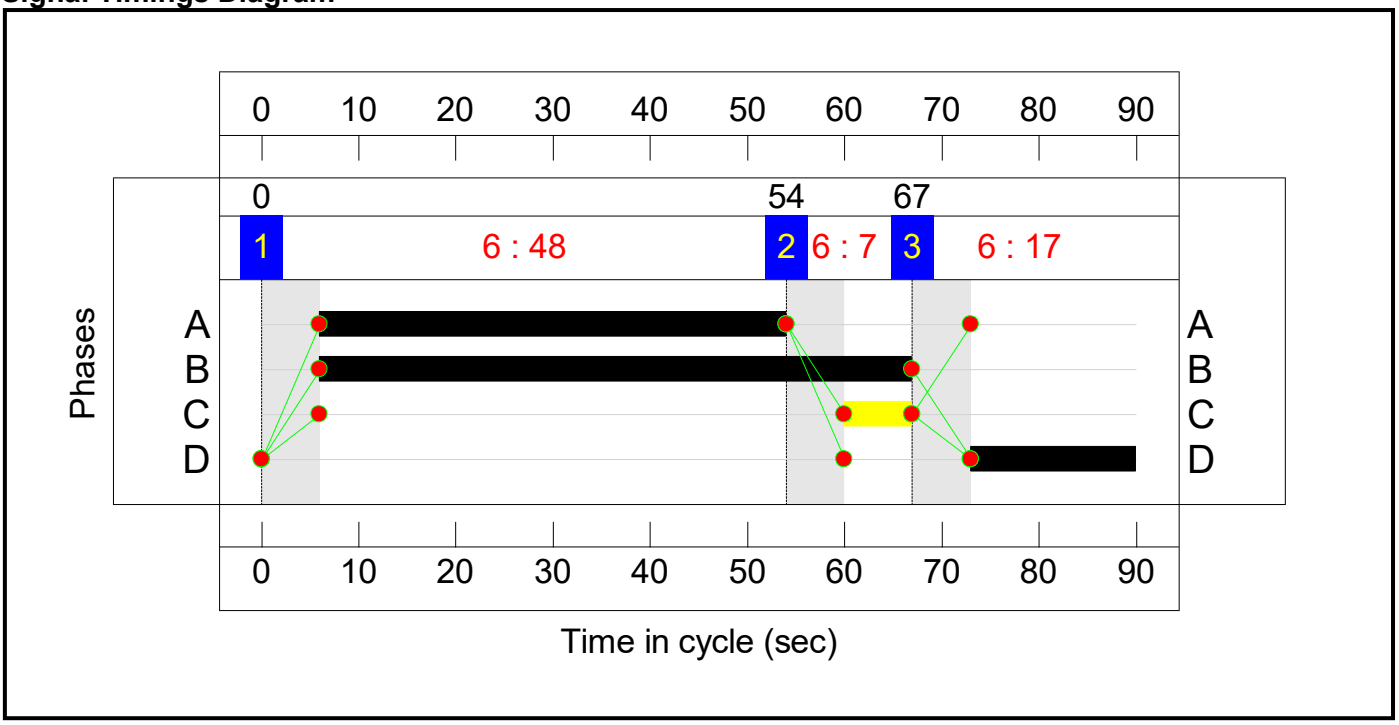
Stage Timings

Stage	1	2	3
Duration	48	7	17
Change Point	0	54	67

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	A1307 Cambridge Road NB Left Ahead	Traffic	48	6	54
B	A1307 Cambridge Road SB Ahead	Traffic	61	6	67
C	A1307 Cambridge Road SB Right	Traffic	7	60	67
D	Travel Hub Right Left	Traffic	17	73	0

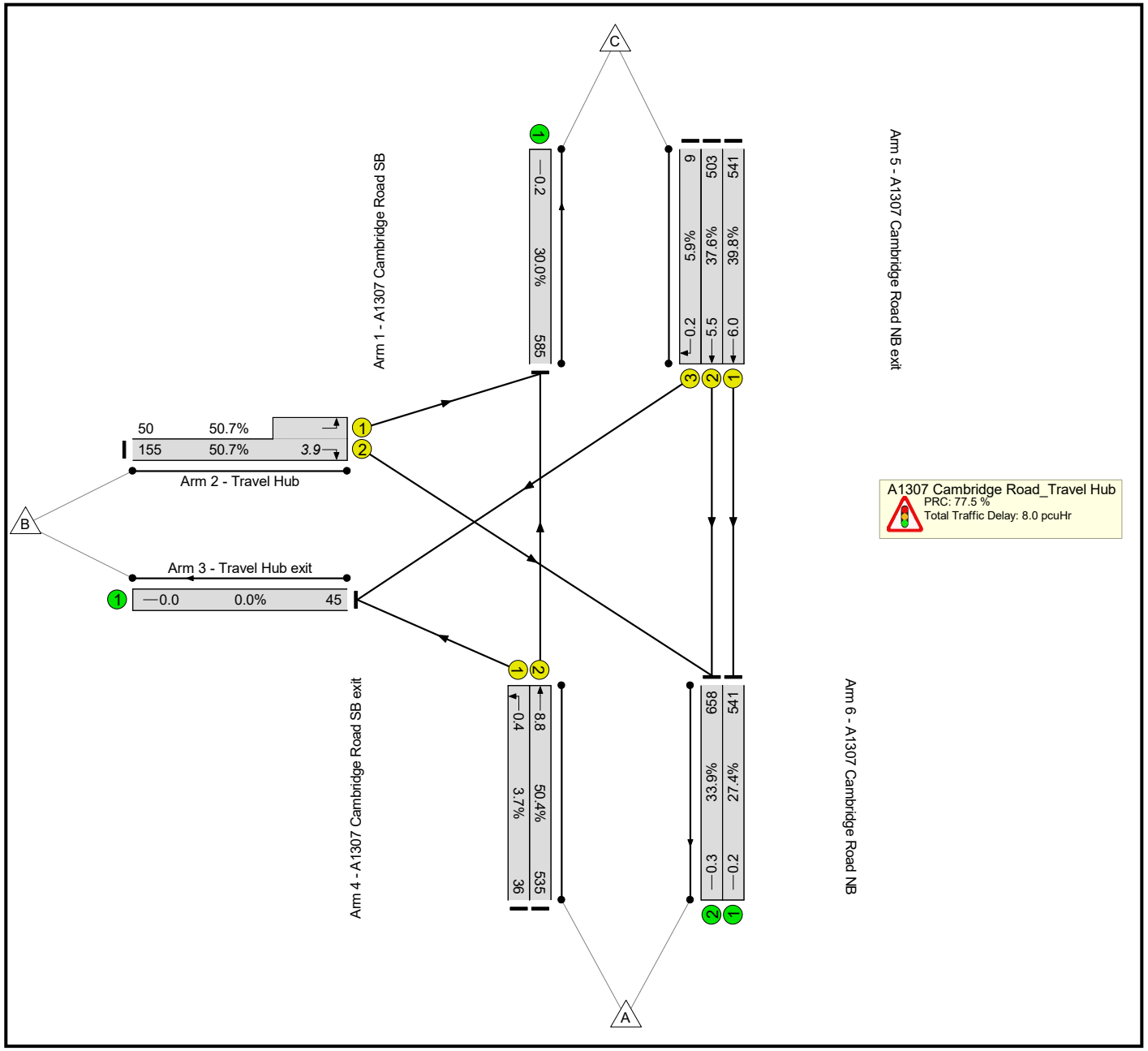
Signal Timings Diagram



Lane Green Times

Junction: A1307 Cambridge Road_Travel Hub					
Lane	**Description**	**Type**	**Phases**	**Start Green**	**End Green**
1/1	A1307 Cambridge Road SB Ahead	U	B	6	67
1/2	A1307 Cambridge Road SB Ahead	U	B	6	67
1/3	A1307 Cambridge Road SB Right	U	C	60	67
2/1	Travel Hub Left	U	D	73	0
2/2	Travel Hub Right	U	D	73	0
6/1	A1307 Cambridge Road NB Left	U	A	6	54
6/2	A1307 Cambridge Road NB Ahead	U	A	6	54

Network Layout Diagram


C
Arm 1 - A1307 Cambridge Road SB
1
0.2
30.0%
585
Arm 5 - A1307 Cambridge Road NB exit
9
503
541
5.9%
37.6%
39.8%
0.2
5.5
6.0
3
2
1
50
50.7%
155
50.7%
3.9
1
2
Arm 2 - Travel Hub
B
Arm 3 - Travel Hub exit
1
0.0
0.0%
45
A1307 Cambridge Road_Travel Hub
PRC: 77.5 %
Total Traffic Delay: 8.0 pcuHr
1
2
Arm 4 - A1307 Cambridge Road SB exit
0.4
8.8
3.7%
50.4%
36
535
Arm 6 - A1307 Cambridge Road NB
658
541
0.3
33.9%
27.4%
0.2
2
1
A

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)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**50.7%**
A1307 Cambridge Road_Travel Hub	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**50.7%**
1/1	A1307 Cambridge Road SB Ahead	U	N/A	N/A	B		1	61	-	-	541	1975	1361	39.8%
1/2	A1307 Cambridge Road SB Ahead	U	N/A	N/A	B		1	61	-	-	503	1940	1336	37.6%
1/3	A1307 Cambridge Road SB Right	U	N/A	N/A	C		1	7	-	-	9	1709	152	5.9%
2/2+2/1	Travel Hub Right Left	U	N/A	N/A	D		1	17	-	-	205	1687:1739	306+99	50.7 : 50.7%
3/1	Travel Hub exit	U	N/A	N/A	-		-	-	-	-	45	Inf	Inf	0.0%
4/1	A1307 Cambridge Road SB exit	U	N/A	N/A	-		-	-	-	-	541	1975	1975	27.4%
4/2	A1307 Cambridge Road SB exit	U	N/A	N/A	-		-	-	-	-	658	1940	1940	33.9%
5/1	A1307 Cambridge Road NB exit	U	N/A	N/A	-		-	-	-	-	585	1950	1950	30.0%
6/1	A1307 Cambridge Road NB Left	U	N/A	N/A	A		1	48	-	-	36	1796	978	3.7%
6/2	A1307 Cambridge Road NB Ahead	U	N/A	N/A	A		1	48	-	-	535	1950	1062	50.4%

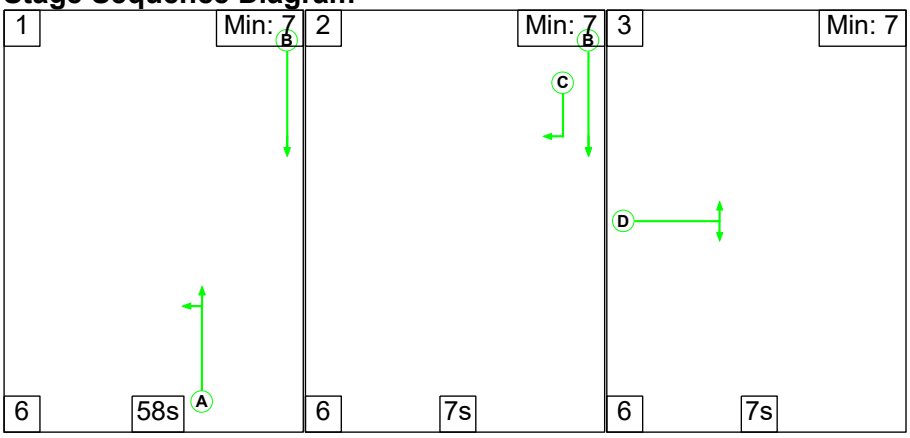
Detailed Input Data And Results

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	**-**	**-**	**0**	**0**	**0**	**5.6**	**2.4**	**0.0**	**8.0**	**-**	**-**	**-**	**-**	
A1307 Cambridge Road_Travel Hub	**-**	**-**	**0**	**0**	**0**	**5.6**	**2.4**	**0.0**	**8.0**	**-**	**-**	**-**	**-**	
1/1	541	541	-	-	-	0.9	0.3	-	1.2	8.2	5.7	0.3	6.0	
1/2	503	503	-	-	-	0.8	0.3	-	1.1	8.0	5.2	0.3	5.5	
1/3	9	9	-	-	-	0.1	0.0	-	0.1	50.4	0.2	0.0	0.2	
2/2+2/1	205	205	-	-	-	1.8	0.5	-	2.3	40.2	3.4	0.5	3.9	
3/1	45	45	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
4/1	541	541	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2	
4/2	658	658	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.3	0.3	
5/1	585	585	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2	
6/1	36	36	-	-	-	0.1	0.0	-	0.1	11.5	0.4	0.0	0.4	
6/2	535	535	-	-	-	1.9	0.5	-	2.4	16.3	8.3	0.5	8.8	

C1 PRC for Signalled Lanes (%): 77.5 Total Delay for Signalled Lanes (pcuHr): 7.31 Cycle Time (s): 90
PRC Over All Lanes (%): 77.5 Total Delay Over All Lanes(pcuHr): 7.97

Scenario 3: 'AM Peak 2041' (FG3: 'AM Peak 2041', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram



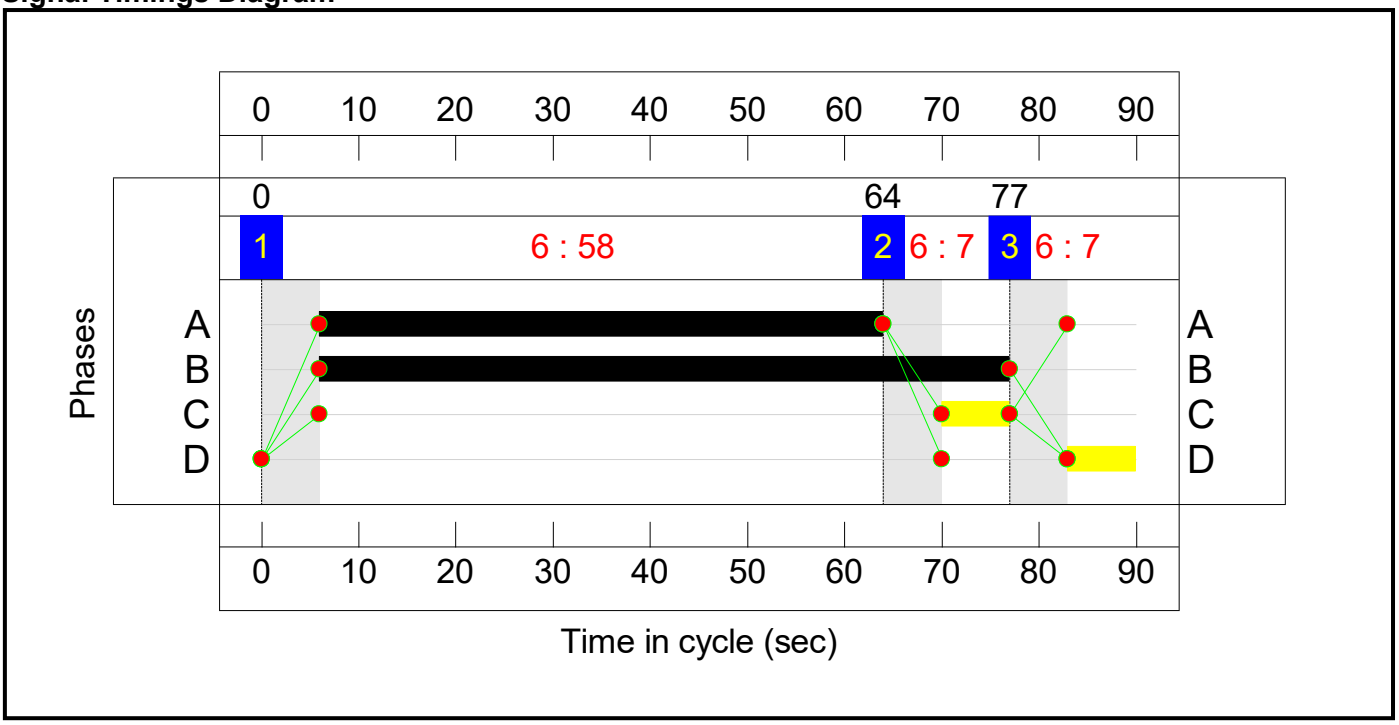
Stage Timings

Stage	1	2	3
Duration	58	7	7
Change Point	0	64	77

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	A1307 Cambridge Road NB Left Ahead	Traffic	58	6	64
B	A1307 Cambridge Road SB Ahead	Traffic	71	6	77
C	A1307 Cambridge Road SB Right	Traffic	7	70	77
D	Travel Hub Right Left	Traffic	7	83	0

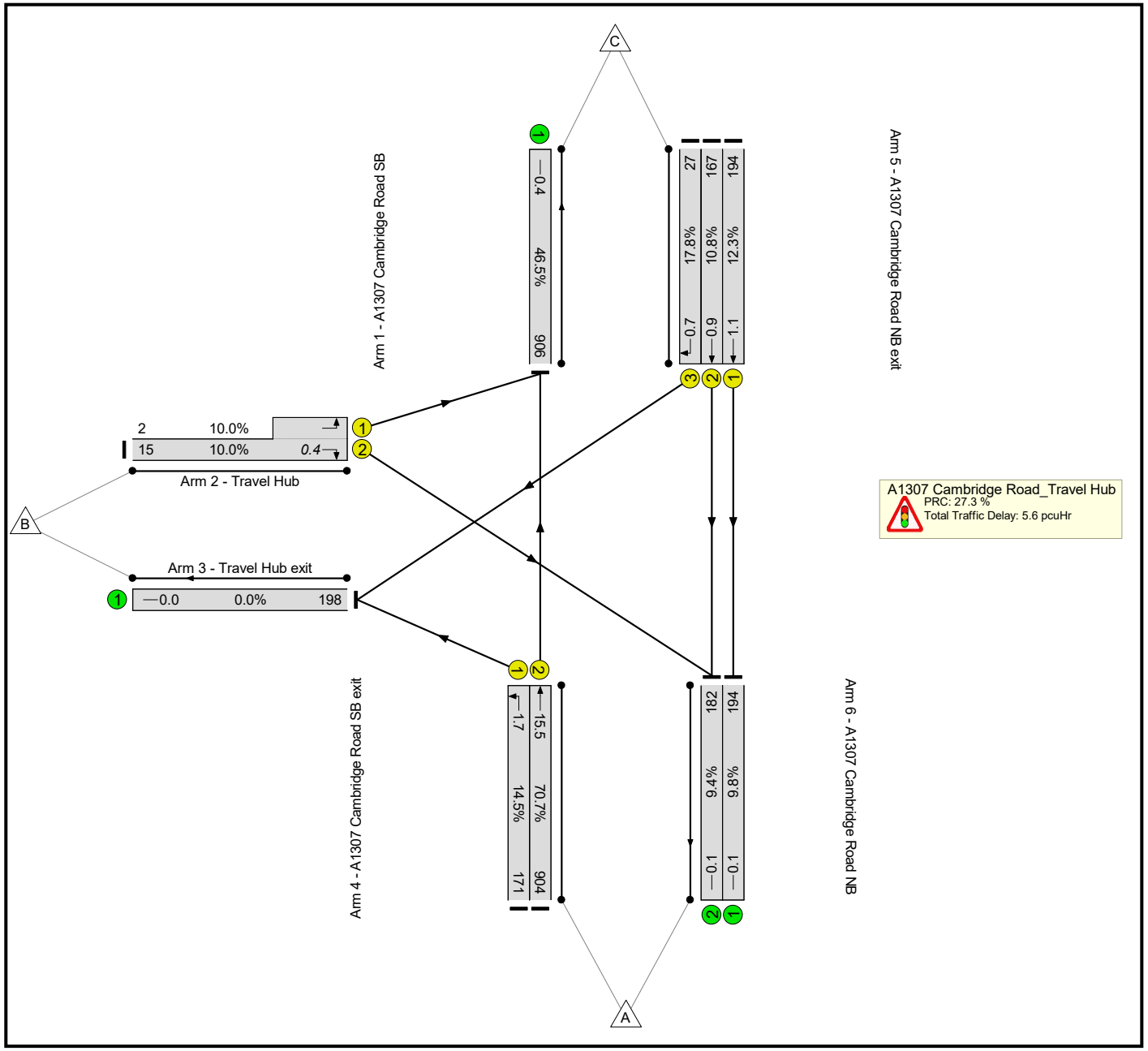
Signal Timings Diagram



Lane Green Times

Junction: A1307 Cambridge Road_Travel Hub					
Lane	**Description**	**Type**	**Phases**	**Start Green**	**End Green**
1/1	A1307 Cambridge Road SB Ahead	U	B	6	77
1/2	A1307 Cambridge Road SB Ahead	U	B	6	77
1/3	A1307 Cambridge Road SB Right	U	C	70	77
2/1	Travel Hub Left	U	D	83	0
2/2	Travel Hub Right	U	D	83	0
6/1	A1307 Cambridge Road NB Left	U	A	6	64
6/2	A1307 Cambridge Road NB Ahead	U	A	6	64

Network Layout Diagram


C
A
B
Arm 1 - A1307 Cambridge Road SB
Arm 5 - A1307 Cambridge Road NB exit
Arm 2 - Travel Hub
Arm 3 - Travel Hub exit
Arm 4 - A1307 Cambridge Road SB exit
Arm 6 - A1307 Cambridge Road NB
A1307 Cambridge Road_Travel Hub
PRC: 27.3 %
Total Traffic Delay: 5.6 pcuHr

Network Results

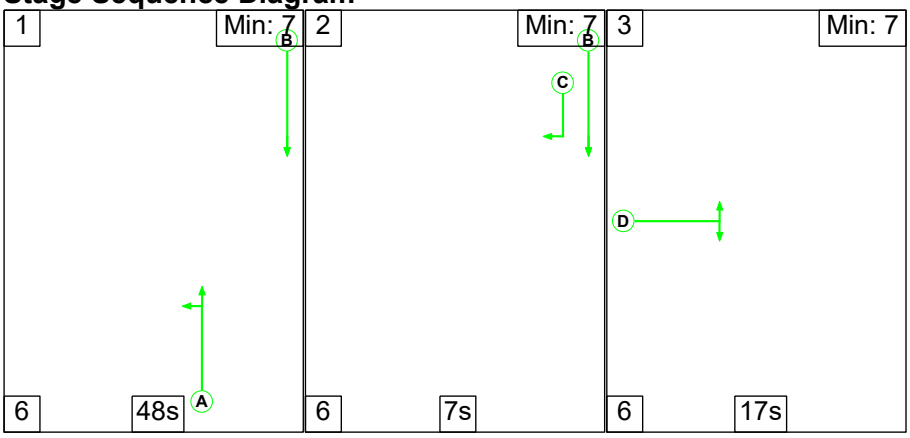
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**70.7%**
A1307 Cambridge Road_Travel Hub	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**70.7%**
1/1	A1307 Cambridge Road SB Ahead	U	N/A	N/A	B		1	71	-	-	194	1975	1580	12.3%
1/2	A1307 Cambridge Road SB Ahead	U	N/A	N/A	B		1	71	-	-	167	1940	1552	10.8%
1/3	A1307 Cambridge Road SB Right	U	N/A	N/A	C		1	7	-	-	27	1709	152	17.8%
2/2+2/1	Travel Hub Right Left	U	N/A	N/A	D		1	7	-	-	17	1687:1739	150+20	10.0 : 10.0%
3/1	Travel Hub exit	U	N/A	N/A	-		-	-	-	-	198	Inf	Inf	0.0%
4/1	A1307 Cambridge Road SB exit	U	N/A	N/A	-		-	-	-	-	194	1975	1975	9.8%
4/2	A1307 Cambridge Road SB exit	U	N/A	N/A	-		-	-	-	-	182	1940	1940	9.4%
5/1	A1307 Cambridge Road NB exit	U	N/A	N/A	-		-	-	-	-	906	1950	1950	46.5%
6/1	A1307 Cambridge Road NB Left	U	N/A	N/A	A		1	58	-	-	171	1796	1177	14.5%
6/2	A1307 Cambridge Road NB Ahead	U	N/A	N/A	A		1	58	-	-	904	1950	1278	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	**-**	**-**	**0**	**0**	**0**	**3.4**	**2.1**	**0.0**	**5.6**	**-**	**-**	**-**	**-**	
A1307 Cambridge Road_Travel Hub	**-**	**-**	**0**	**0**	**0**	**3.4**	**2.1**	**0.0**	**5.6**	**-**	**-**	**-**	**-**	
1/1	194	194	-	-	-	0.1	0.1	-	0.2	3.3	1.0	0.1	1.1	
1/2	167	167	-	-	-	0.1	0.1	-	0.2	3.3	0.9	0.1	0.9	
1/3	27	27	-	-	-	0.3	0.1	-	0.4	52.4	0.6	0.1	0.7	
2/2+2/1	17	17	-	-	-	0.2	0.1	-	0.2	49.6	0.3	0.1	0.4	
3/1	198	198	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
4/1	194	194	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.1	0.1	
4/2	182	182	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.1	0.1	
5/1	906	906	-	-	-	0.0	0.4	-	0.4	1.7	0.0	0.4	0.4	
6/1	171	171	-	-	-	0.3	0.1	-	0.4	7.7	1.6	0.1	1.7	
6/2	904	904	-	-	-	2.5	1.2	-	3.7	14.7	14.3	1.2	15.5	

C1 PRC for Signalled Lanes (%): 27.3 Total Delay for Signalled Lanes (pcuHr): 5.02 Cycle Time (s): 90
PRC Over All Lanes (%): 27.3 Total Delay Over All Lanes(pcuHr): 5.56

Scenario 4: 'PM Peak 2041' (FG4: 'PM Peak 2041', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram



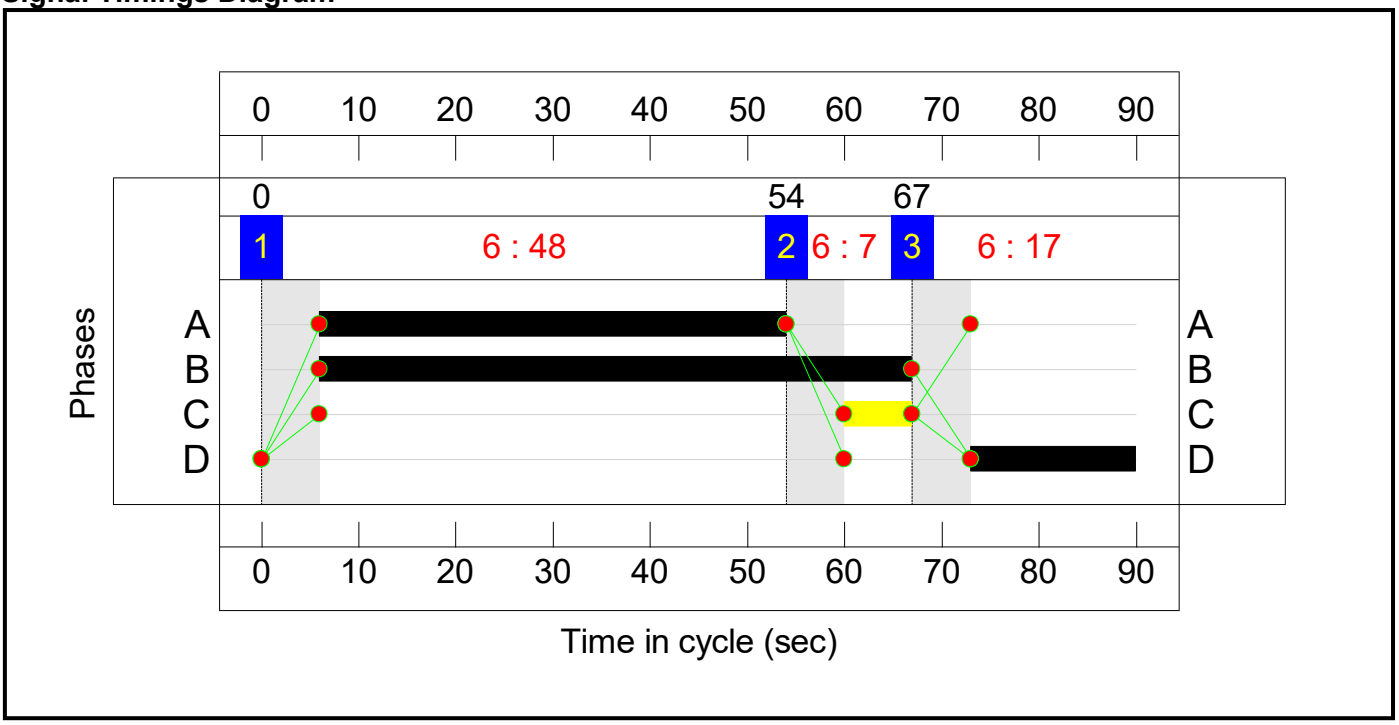
Stage Timings

Stage	1	2	3
Duration	48	7	17
Change Point	0	54	67

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	A1307 Cambridge Road NB Left Ahead	Traffic	48	6	54
B	A1307 Cambridge Road SB Ahead	Traffic	61	6	67
C	A1307 Cambridge Road SB Right	Traffic	7	60	67
D	Travel Hub Right Left	Traffic	17	73	0

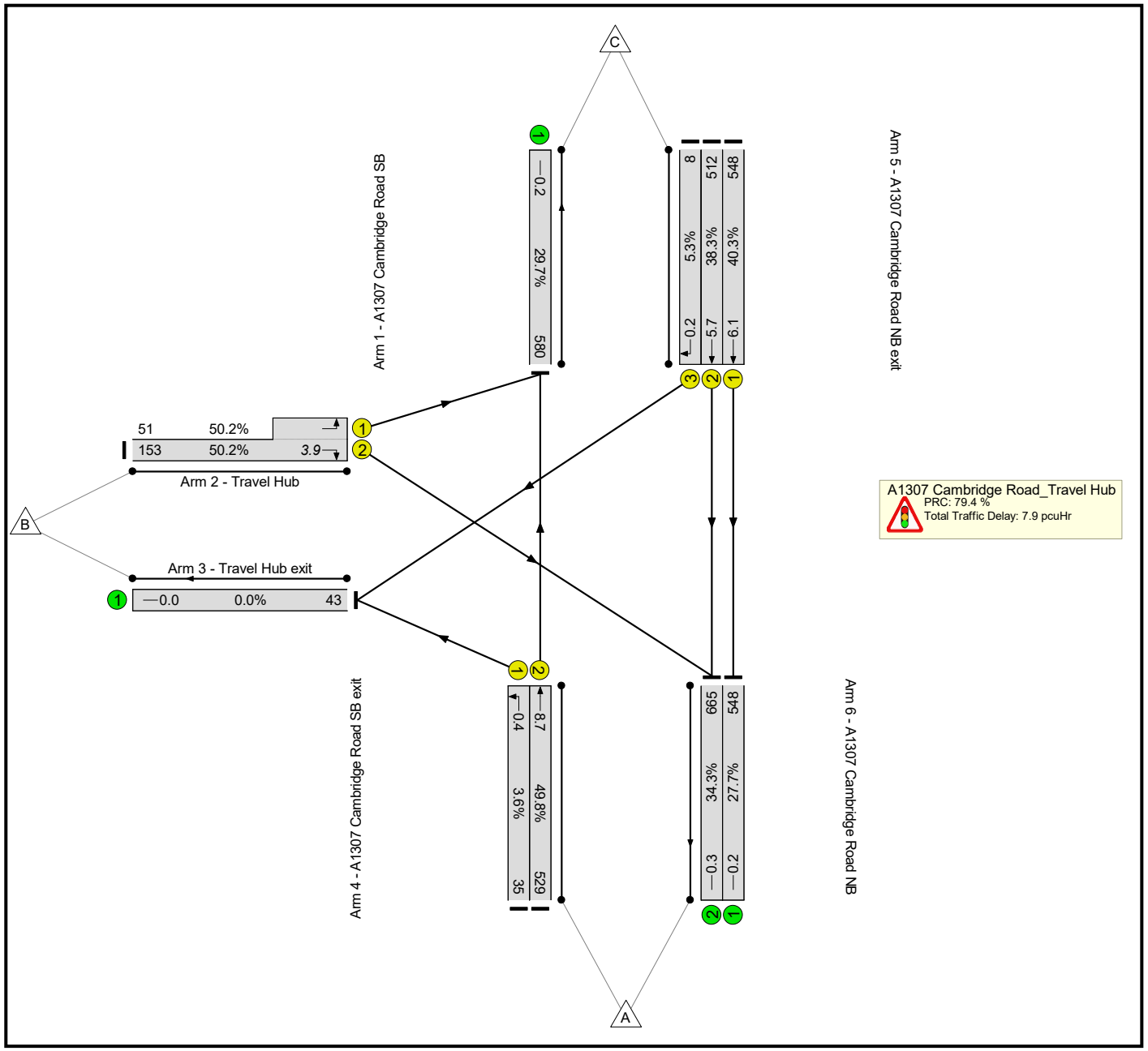
Signal Timings Diagram



Lane Green Times

Junction: A1307 Cambridge Road_Travel Hub					
Lane	**Description**	**Type**	**Phases**	**Start Green**	**End Green**
1/1	A1307 Cambridge Road SB Ahead	U	B	6	67
1/2	A1307 Cambridge Road SB Ahead	U	B	6	67
1/3	A1307 Cambridge Road SB Right	U	C	60	67
2/1	Travel Hub Left	U	D	73	0
2/2	Travel Hub Right	U	D	73	0
6/1	A1307 Cambridge Road NB Left	U	A	6	54
6/2	A1307 Cambridge Road NB Ahead	U	A	6	54

Network Layout Diagram


C
B
A
Arm 1 - A1307 Cambridge Road SB
Arm 2 - Travel Hub
Arm 3 - Travel Hub exit
Arm 4 - A1307 Cambridge Road SB exit
Arm 5 - A1307 Cambridge Road NB exit
Arm 6 - A1307 Cambridge Road NB
51 50.2%
153 50.2% 3.9
0.0 0.0% 43
0.2 29.7% 580
8 5.3% 0.2
512 38.3% 5.7
548 40.3% 6.1
0.4 3.6% 35
8.7 49.8% 529
0.3 34.3% 665
0.2 27.7% 548
A1307 Cambridge Road_Travel Hub
PRC: 79.4 %
Total Traffic Delay: 7.9 pcuHr

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)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**50.2%**
A1307 Cambridge Road_Travel Hub	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**50.2%**
1/1	A1307 Cambridge Road SB Ahead	U	N/A	N/A	B		1	61	-	-	548	1975	1361	40.3%
1/2	A1307 Cambridge Road SB Ahead	U	N/A	N/A	B		1	61	-	-	512	1940	1336	38.3%
1/3	A1307 Cambridge Road SB Right	U	N/A	N/A	C		1	7	-	-	8	1709	152	5.3%
2/2+2/1	Travel Hub Right Left	U	N/A	N/A	D		1	17	-	-	204	1687:1739	305+102	50.2 : 50.2%
3/1	Travel Hub exit	U	N/A	N/A	-		-	-	-	-	43	Inf	Inf	0.0%
4/1	A1307 Cambridge Road SB exit	U	N/A	N/A	-		-	-	-	-	548	1975	1975	27.7%
4/2	A1307 Cambridge Road SB exit	U	N/A	N/A	-		-	-	-	-	665	1940	1940	34.3%
5/1	A1307 Cambridge Road NB exit	U	N/A	N/A	-		-	-	-	-	580	1950	1950	29.7%
6/1	A1307 Cambridge Road NB Left	U	N/A	N/A	A		1	48	-	-	35	1796	978	3.6%
6/2	A1307 Cambridge Road NB Ahead	U	N/A	N/A	A		1	48	-	-	529	1950	1062	49.8%

Detailed 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	**-**	**-**	**0**	**0**	**0**	**5.6**	**2.4**	**0.0**	**7.9**	**-**	**-**	**-**	**-**	
A1307 Cambridge Road_Travel Hub	**-**	**-**	**0**	**0**	**0**	**5.6**	**2.4**	**0.0**	**7.9**	**-**	**-**	**-**	**-**	
1/1	548	548	-	-	-	0.9	0.3	-	1.3	8.2	5.8	0.3	6.1	
1/2	512	512	-	-	-	0.8	0.3	-	1.2	8.1	5.4	0.3	5.7	
1/3	8	8	-	-	-	0.1	0.0	-	0.1	50.3	0.2	0.0	0.2	
2/2+2/1	204	204	-	-	-	1.8	0.5	-	2.3	40.0	3.4	0.5	3.9	
3/1	43	43	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
4/1	548	548	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2	
4/2	665	665	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.3	0.3	
5/1	580	580	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2	
6/1	35	35	-	-	-	0.1	0.0	-	0.1	11.5	0.4	0.0	0.4	
6/2	529	529	-	-	-	1.9	0.5	-	2.4	16.2	8.2	0.5	8.7	

C1 PRC for Signalled Lanes (%): 79.4 Total Delay for Signalled Lanes (pcuHr): 7.28 Cycle Time (s): 90
PRC Over All Lanes (%): 79.4 Total Delay Over All Lanes(pcuHr): 7.94