

TECHNICAL NOTE

Project:	Hulbert Road, Havant	Office:	Southampton
Project No:	A096474	Prepared by:	GS
Client:	Trustees of the GHM Jackson 1972 Settlement	Approved by:	NW
Date:	March 2021	Status:	For Information

1 INTRODUCTION

- 1.1 This Technical Note (TN) has been produced in support of the proposed development on land at Hulbert Road, Havant. A planning application (ref. APP/20/00441) was submitted in June 2020 and validated in August 2020. In response to the application, Hampshire County Council (HCC), as the local highway authority, have provided comments on the Transport Assessment submitted with the application. This Technical Note relates to the outstanding issues still to be agreed with HCC.

2 ROAD SAFETY AUDIT

- 2.1 A Stage 1 Road Safety Audit (RSA) was undertaken by The Safety Forum in February 2021. The audit and designer's response are included as **Appendix A**.

3 JUNCTION CAPACITY ASSESSMENT

- 3.1 HCC have requested an assessment of the capacity of the Pulbrook Way/Hulbert Road signalised roundabout junction to the south of the site.
- 3.2 Using the base model provided by HCC, a future 2026 Base and a 2026 Base + Development scenario have been run to determine the impact of the development on the operation of the junction. Development traffic flows at the junction were assigned in the same proportions as the existing movements.
- 3.3 Table 3.1 and Table 3.2 below set out the results of the modelling. The full outputs are included as **Appendix B**.

Table 3.1 – Summary of AM Peak Hour Results

Arm	2026 AM Peak			2026 AM Peak + Dev		
	Deg Sat (%)	Mean Max Queue (pcu)	Av. Delay Per PCU (s/pcu)	Deg Sat (%)	Mean Max Queue (pcu)	Av. Delay Per PCU (s/pcu)
1/1	50.4%	1.3	4.6	52.6%	1.7	4.9
1/3+1/2	56.1%	3.4	5.7	58.2%	3.8	6.0

2/1	57.3%	7.2	17.1	57.8%	7.3	17.2
2/2	61.8%	8.0	18.0	62.1%	8.0	18.0
3/1	67.1%	3.2	17.6	68.5%	3.3	18.5
3/2	69.1%	3.5	18.6	70.3%	3.5	19.5
4/1	28.6%	1.0	5.8	28.8%	1.0	5.9
4/2	27.1%	1.0	5.4	27.5%	1.0	5.5
5/2+5/1	72.8%	9.8	19.4	72.9%	9.8	19.4
5/3	40.5%	4.5	14.5	40.5%	4.5	14.5
6/1	35.1%	0.3	1.5	35.1%	0.3	1.5
6/2	20.8%	0.1	1.2	20.8%	0.1	1.2
7/1	52.3%	5.7	19.8	53.2%	5.9	19.9
7/2	58.2%	5.7	21.0	58.8%	5.8	21.0
7/3	24.7%	2.6	15.4	25.8%	2.7	15.4
8/1	41.3%	0.4	1.6	41.9%	0.4	1.6
8/2	39.0%	0.3	1.6	39.6%	0.3	1.6
9/1	29.8%	0.2	1.3	30.2%	0.2	1.4
9/2	53.4%	0.6	2.0	54.1%	0.6	2.1
10/1	52.5%	3.4	13.7	53.2%	3.5	13.8
10/2	38.1%	3.7	16.9	38.9%	3.7	16.9
10/3	4.5%	0.4	14.3	4.5%	0.4	14.3
11/1	0.0%	0.0	0.0	0.0%	0.0	0.0
11/2	10.5%	0.1	1.1	10.8%	0.1	1.1
12/1	0.0%	0.0	0.0	0.0%	0.0	0.0
13/1	22.4%	0.1	1.2	22.8%	0.1	1.2
13/2	0.0%	0.0	0.0	0.0%	0.0	0.0
14/1	25.5%	0.2	1.3	25.8%	0.2	1.3
15/1	38.4%	0.3	1.5	38.8%	0.3	1.5
15/2	0.0%	0.0	0.0	0.0%	0.0	0.0

Table 3.2 – Summary of PM Peak Hour Results

Arm	2026 PM Peak			2026 PM Peak + Dev		
	Deg Sat (%)	Mean Max Queue (pcu)	Av. Delay Per PCU (s/pcu)	Deg Sat (%)	Mean Max Queue (pcu)	Av. Delay Per PCU (s/pcu)
1/1	62.0%	3.4	6.8	63.4%	3.6	7.1
1/3+1/2	52.4%	3.4	7.6	53.1%	3.5	7.7
2/1	53.8%	7.5	16.4	54.9%	7.7	16.6
2/2	60.2%	8.9	17.6	61.2%	9.0	17.8
3/1	67.9%	3.1	19.6	70.4%	3.4	21.4
3/2	69.6%	3.3	20.6	71.5%	3.6	22.1
4/1	67.3%	4.9	12.7	68.3%	5.0	13.4
4/2	55.9%	4.0	8.3	56.8%	4.2	8.7
5/2+5/1	90.2%	16.2	41.9	90.4%	16.3	42.3
5/3	61.9%	7.9	24.9	61.9%	7.9	24.9
6/1	45.2%	0.4	1.7	45.2%	0.4	1.7
6/2	27.5%	0.2	1.3	27.5%	0.2	1.3
7/1	52.8%	5.9	23.1	53.2%	5.9	23.3
7/2	64.2%	5.4	20.7	64.3%	5.4	20.8
7/3	18.3%	2.3	20.7	18.7%	2.3	20.7
8/1	49.9%	0.5	1.9	50.6%	0.5	1.9
8/2	37.2%	0.3	1.5	37.8%	0.3	1.5
9/1	22.4%	0.1	1.2	23.3%	0.2	1.2
9/2	50.2%	0.5	1.9	51.0%	0.5	1.9
10/1	60.0%	5.9	14.9	60.9%	6.1	15.1
10/2	47.4%	6.6	17.3	49.4%	7.0	17.7
10/3	8.4%	1.0	14.1	8.4%	1.0	14.4
11/1	0.0%	0.0	0.0	0.0%	0.0	0.0
11/2	10.3%	0.1	1.1	11.3%	0.1	1.1
12/1	0.0%	0.0	0.0	0.0%	0.0	0.0
13/1	22.2%	0.1	1.2	22.3%	0.1	1.2

13/2	0.0%	0.0	0.0	0.0%	0.0	0.0
14/1	40.2%	0.3	1.6	40.3%	0.3	1.6
15/1	38.2%	0.3	1.5	39.0%	0.3	1.6
15/2	0.0%	0.0	0.0	0.0%	0.0	0.0

- 3.4 Table 3.1 and Table 3.2 show that there is a negligible difference in the performance of the junction with the addition of the development traffic, with degrees of saturation, mean maximum queues and average delays showing very minor increases across the junction.

4 LAND OWNERSHIPS

- 4.1 Land ownership plans at **Appendix C** show that the proposed footway works lie within developer and highway land, and do not rely on any third party land.

APPENDIX A – ROAD SAFETY AUDIT

DESIGNERS RESPONSE TO ROAD SAFETY AUDIT

Project:	Hulbert Road, Havant	Office:	Southampton
Project No:	A096474	Prepared by:	GS
Client:	Trustees of the GHM Jackson 1972 Settlement	Approved by:	NW
Date:	March 2021	Status:	For Information

1 INTRODUCTION

- 1.1 This Technical Note (TN) has been produced in support of the proposed development on land at Hulbert Road, Havant. A planning application (ref. APP/20/00441) was submitted in June 2020 and validated in August 2020. In response to the application, Hampshire County Council (HCC), as the local highway authority, have provided comments on the Transport Assessment submitted with the application. This Technical Note relates to the outstanding issues still to be agreed with HCC.
- 1.2 A Stage 1 Road Safety Audit (RSA) was undertaken by The Safety Forum in February 2021. The audit is included as **Appendix A**. This report sets out the designer's response to the issues raised in the audit.

2 RESPONSE TO ISSUES RAISED IN ROAD SAFETY AUDIT

2.1 RSA Issue 3 .1

LOCATION: Footway at Dunsbury Roundabout.

SUMMARY: Lack of connection to wider pedestrian network.

The northern end of the proposed footway ends at Dunsbury Roundabout. There is no connection to the wider pedestrian network. Any pedestrians following this route would therefore continue on the verge or in the carriageway with potential risk of conflict with traffic.

RECOMMENDATION

Ensure that the new footway connects safely and coherently with the wider pedestrian network.

Designer's Response

It is understood that pedestrian links at the Dunsbury Roundabout will be brought forward as part of a Portsmouth City Council scheme, and will be designed to connect into the footway provided as part of the development.

2.2 RSA Issue 3.2

LOCATION: Proposed site access junction.

SUMMARY: Junction will be in isolation and traffic may have poor awareness of it.

The proposed access junction is on an undeveloped stretch of carriageway that is unlit and surrounded by woodland. This stretch of Hulbert Road has roundabout junctions to the north and south. The Audit Team are concerned that road users may have poor awareness of the junction which could increase the risk of collision associated with junction movements such as shunt type collisions or those involving vehicles turning into or from the access.

RECOMMENDATION

Install measures that would improve awareness of the development access. This may include street lighting and traffic signing and could also include measures such as a junction form that is more prominent than a simple priority T-junction such as ghost island right turn.

Designer's Response

Consideration has been given to the provision of a ghost island right turn; however, after discussions with HCC, this was not deemed to be suitable for the level of traffic generated by the site, and therefore a simple priority junction will be provided.

Additional signage and traffic calming will be provided to draw attention to the junction.

2.3 RSA Issue 3.3

LOCATION: Proposed site access junction.

SUMMARY: Possible restricted visibility for southbound vehicles turning right.

Visibility between a southbound vehicle waiting to turn right into the access and northbound traffic is limited by the carriageway alignment to the south. Should this visibility be measured along the centre line (in order to accommodate traffic moving southbound ahead of a turning vehicle) this visibility is reduced to approximately 115m. Depending upon the speed of northbound traffic this could be below the desirable minimum visibility required (on this 40mph speed limit road) and could result in vehicles turning right into the development access over the path of northbound traffic.

RECOMMENDATION

Ensure that unobstructed and sufficient visibility (for the speed of traffic) is provided between southbound vehicles waiting to turn right into the development and northbound traffic approaching the access.

Designer's Response

Forward visibility of 120m is achievable to the edge of the carriageway for vehicles waiting to turn right into the site, as shown on **Drawing A096474-SK05 at Appendix B**.

2.4 RSA Issue 3.4

LOCATION: At site access.

SUMMARY: Slope towards carriageway.

The existing site access slopes towards the carriageway. Should the new site access do the same there is a risk of vehicles failing to stop at the give-way line during wet or freezing conditions. This could result in failure to give-way conflicts.

RECOMMENDATION

Provide a sufficient flat dwell area behind the give-way line.

Designer's Response

This will be incorporated into the design at the detailed design stage, to ensure that a flat dwell area is provided on the approach to the junction.

APPENDIX A – STAGE 1 ROAD SAFETY AUDIT

LAND WEST OF HULBERT ROAD, HAVANT

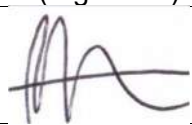
PROPOSED RESIDENTIAL DEVELOPMENT ACCESS ARRANGEMENTS AND OFFSITE WORKS

Stage 1 Road Safety Audit

February 2021

RW-MC-21-3307-RSA1

Report title:	Land West of Hulbert Road, Havant. RSA 1
Date:	8 February 2021
Document reference and revision:	RW-MC-21-3307-RSA1
Prepared by:	The Safety Forum
On behalf of:	Hampshire County Council

Revision Status	Prepared by: (Name)	Checked by: (Name)	Approved by: (Signature)	Date Approved:
Original	R Westhead	M Chamberlain		08/02/21
Designer's Response				
Authority's Response				
Audit Response				

Client:	
Tetra Tech	The Safety Forum Ltd
The Pavilion Botleigh Grange Office Campus, Hedge End, Southampton SO30 2AF	PO Box 831 Godalming Surrey GU7 9HT
Date: 08/02/21	

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APPENDIX A Location Plan

1.0 INTRODUCTION

- 1.1 This report results from a Stage 1 Road Safety Audit (RSA) carried out on the proposed access arrangements and off-site highway works associated with a proposed residential development of 120 units on land to the west of Hulbert Road, Havant.
- 1.2 The highway proposals include: a new access junction in the approximate location of an existing site access on the western side of Hulbert Road; new footway connecting the site access to the roundabout junctions to the north and south.
- 1.3 The Stage 1 RSA was carried out at the request of Tetra Tech on behalf of Hampshire County Council.
- 1.4 The Road Safety Audit Brief was supplied by Tetra Tech. The overseeing organisation is Hampshire County Council. The RSA Brief was accepted by the Audit Team as adequate to complete the RSA.
- 1.5 The Audit was carried out on 4th February 2021 by consultants working on behalf of The Safety Forum Limited. The Audit Team, which is established from The Safety Forum Ltd and independent of the project design team, has had no involvement with the project.

The Auditors were:

Audit Team Leader: R Westhead MSoRSA, HE Cert Competency RSA

Audit Team Member: M Chamberlain BSc (Hons) MCIHT MSoRSA FIHE HE Cert Competency RSA

- 1.6 The report has been prepared in accordance with General Principles and Scheme Governance General Information, GG 119, Road Safety Audit (Formerly HD 19/15).
- 1.7 The Audit consisted of a desktop study and a site visit. The site visit was carried out on 4th February 2021, between 11:15 and 12:00 hours by all members of the Audit Team together. The weather was raining, and the road surface was wet. Traffic conditions were moderate with free-flowing traffic.
- 1.8 Issues relating to the health & safety of operatives constructing, operating or maintaining the highway are not covered by Road Safety Audit. Only issues relating to the design and construction of facilities for highway maintenance that may potentially contribute to a Road Safety Matter are considered by the Road Safety Audit process.

Road Safety Audit is not a technical check that the design conforms to Standards and/or best practice guidance. Design Organisations are responsible for ensuring that their designs have been subjected to the appropriate design reviews (including, where applicable, Walking, Cycling & Horse Riding Assessment & Review) prior to Road Safety Audit.

Road Safety Audit is not a check that the scheme has been constructed in accordance with the design.

Whilst reference is made to certain design standards, where safety may be compromised by a reduction in standard, this report is not intended to provide a design check. The Auditors have only reported on matters that might have an adverse effect on road safety in the context of the chosen design. No attempt has been made to comment on the justification of the scheme or the appropriateness of the design. Consequently, the Auditors accept no responsibility for the design or construction of the scheme.

- 1.9 The recommendations in this report are aimed at addressing the road safety problems; however there may be other alternative acceptable ways to overcome a specific problem, when other practical issues are considered. The recommendations contained herein do not absolve the Designer of his/her responsibilities.
- 1.10 The Auditors would be pleased to discuss the acceptability of alternative solutions to problems identified during the Audit, and would encourage the Designer to consult them on this matter.
- 1.11 The Overseeing Organisation response to the RSA should be formally recorded and reported to the Designer and the RSA Team so that a record of the Audit process is contained in the *As Built* design pack to be provided and retained by the Overseeing Organisation on final completion.
- 1.12 All problems identified in this Road Safety Audit Report are indicated on a location plan in Appendix A

2.0 ITEMS CONSIDERED

2.1 The Road Safety Audit was undertaken on the scheme detailed in the following documentation.

Drawing No.	Rev	Title
-	-	Road Safety Audit Brief
		Collision data
A096474-SK04		Swept path analysis
A096474-SK01	B	Proposed Site Access
A096474-SK02	C	Proposed Footway
A096474-SK03	A	Proposed Footway
-	-	Traffic Flow Data
CMP-01	C	Concept Masterplan 01

2.2 No departure from standards or other information was submitted to the Audit Team.

3.0 MATTERS ARISING FROM THIS STAGE 1 AUDIT.

3.1 PROBLEM

LOCATION: Footway at Dunsbury Roundabout.

SUMMARY: Lack of connection to wider pedestrian network.

The northern end of the proposed footway ends at Dunsbury Roundabout. There is no connection to the wider pedestrian network. Any pedestrians following this route would therefore continue on the verge or in the carriageway with potential risk of conflict with traffic.

RECOMMENDATION

Ensure that the new footway connects safely and coherently with the wider pedestrian network.

3.2 PROBLEM

LOCATION: Proposed site access junction.

SUMMARY: Junction will be in isolation and traffic may have poor awareness of it.

The proposed access junction is on an undeveloped stretch of carriageway that is unlit and surrounded by woodland. This stretch of Hulbert Road has roundabout junctions to the north and south. The Audit Team are concerned that road users may have poor awareness of the junction which could increase the risk of collision associated with junction movements such as shunt type collisions or those involving vehicles turning into or from the access.

RECOMMENDATION

Install measures that would improve awareness of the development access. This may include street lighting and traffic signing and could also include measures such as a junction form that is more prominent than a simple priority T-junction such as ghost island right turn.

3.3 PROBLEM

LOCATION: Proposed site access junction.

SUMMARY: Possible restricted visibility for southbound vehicles turning right.

Visibility between a southbound vehicle waiting to turn right into the access and northbound traffic is limited by the carriageway alignment to the south. Should this

visibility be measured along the centre line (in order to accommodate traffic moving southbound ahead of a turning vehicle) this visibility is reduced to approximately 115m. Depending upon the speed of northbound traffic this could be below the desirable minimum visibility required (on this 40mph speed limit road) and could result in vehicles turning right into the development access over the path of northbound traffic.

RECOMMENDATION

Ensure that unobstructed and sufficient visibility (for the speed of traffic) is provided between southbound vehicles waiting to turn right into the development and northbound traffic approaching the access.

3.4 PROBLEM

LOCATION: At site access.

SUMMARY: Slope towards carriageway.

The existing site access slopes towards the carriageway. Should the new site access do the same there is a risk of vehicles failing to stop at the give-way line during wet or freezing conditions. This could result in failure to give-way conflicts.

RECOMMENDATION

Provide a sufficient flat dwell area behind the give-way line.

4.0 AUDIT TEAM STATEMENT

4.1 We certify that this audit has been carried out in accordance with GG 119.

AUDIT TEAM LEADER

Name: R Westhead
Position: Audit Team Leader
The Safety Forum Ltd
PO Box 831
Godalming
Surrey
GU7 9HT

Signed: 

Date: 8 February 2021

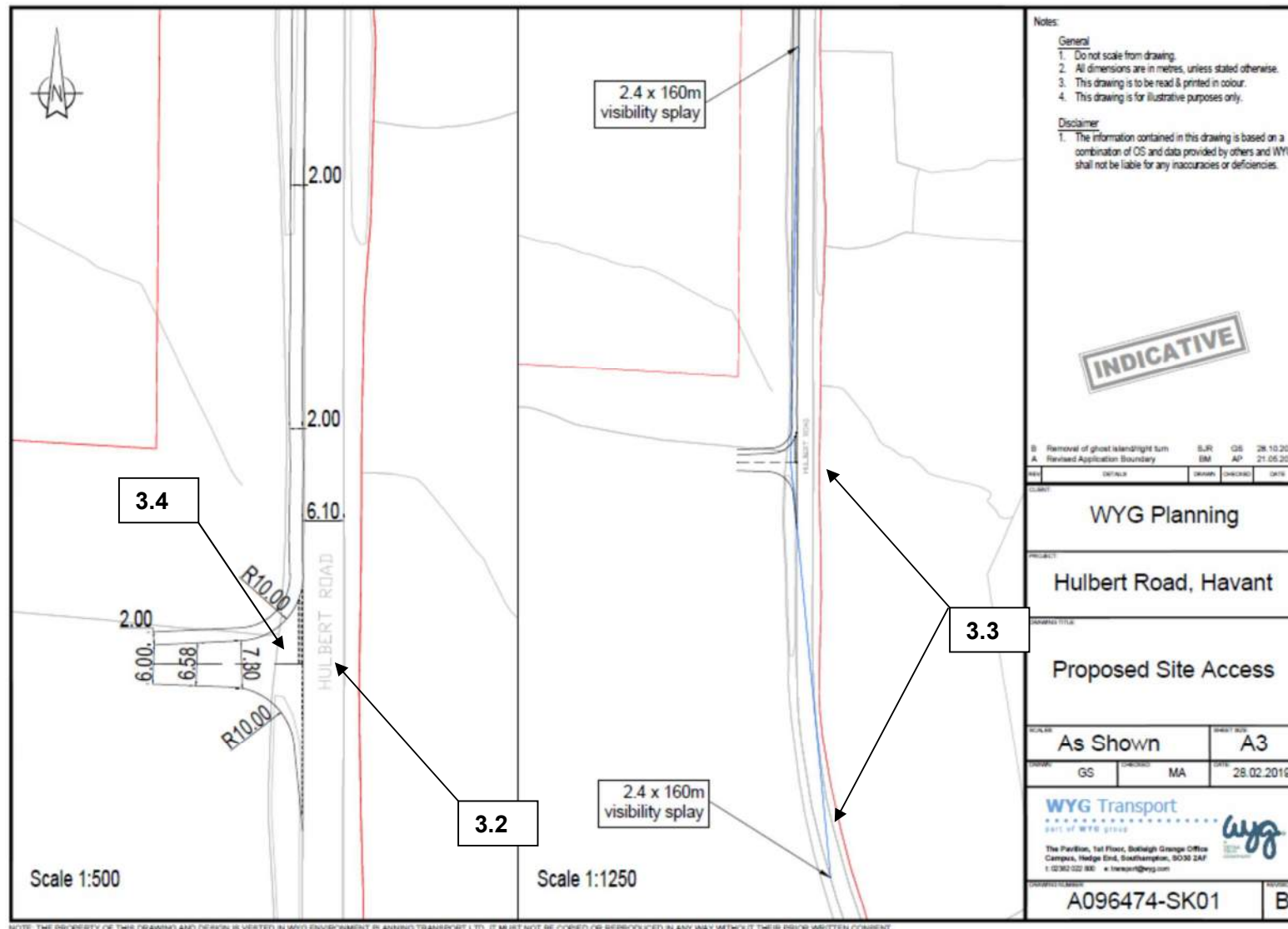
AUDIT TEAM MEMBER

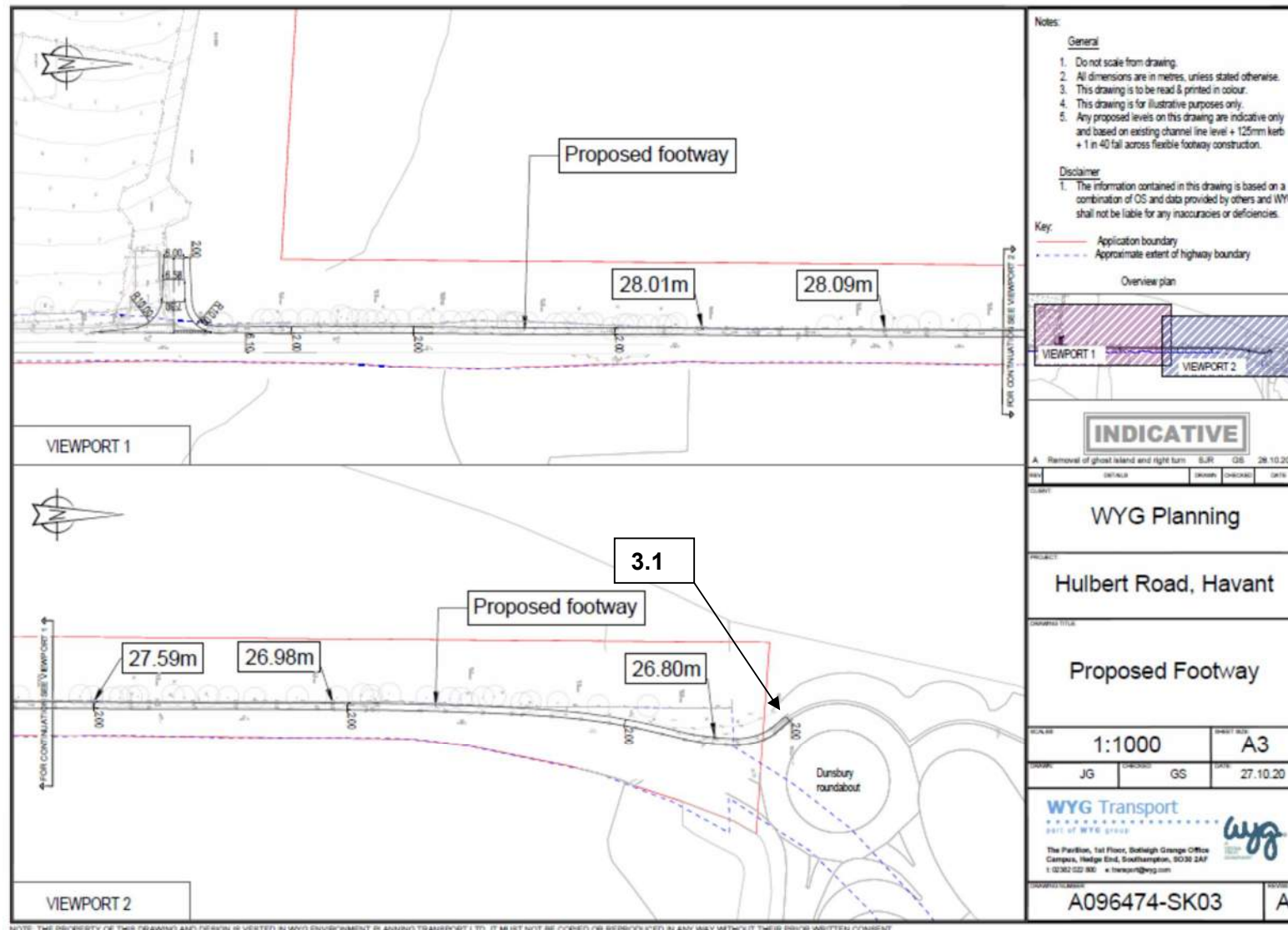
Name: M Chamberlain
Position: Audit Team Member
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PO Box 831
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Surrey
GU7 9HT

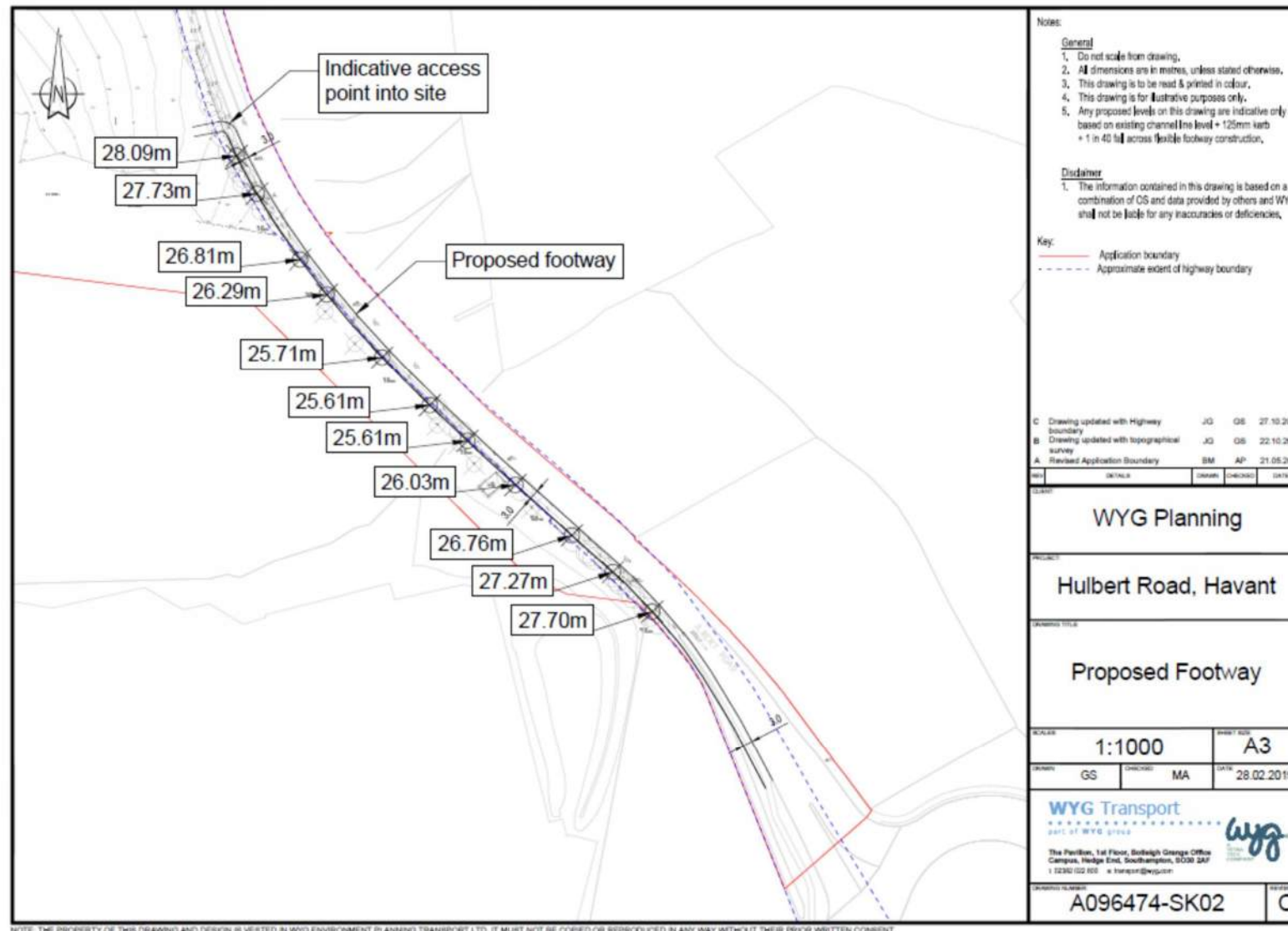
Signed: 

Date: 8 February 2021

APPENDIX A: LOCATION PLAN





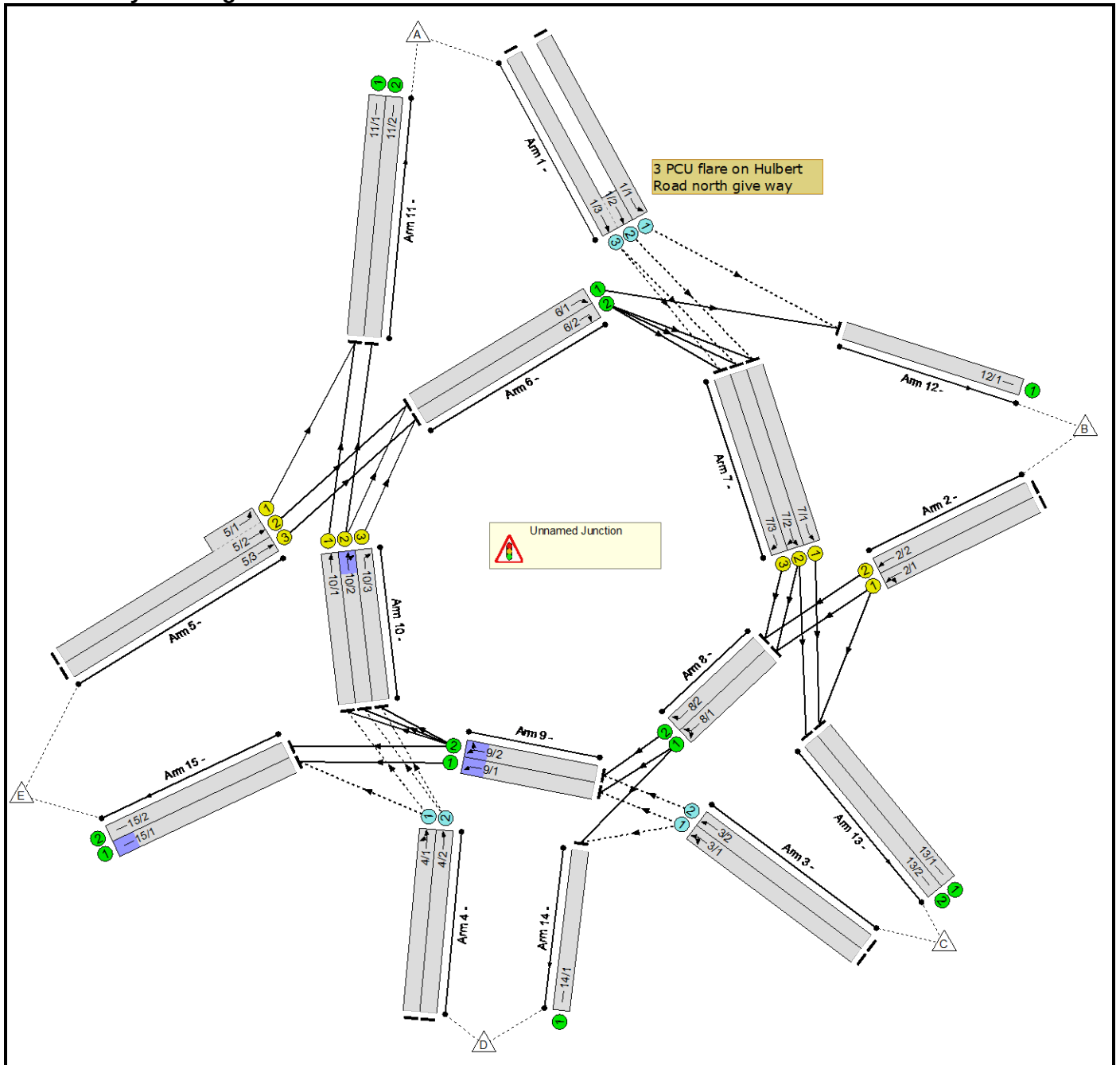


APPENDIX B – LINSIG MODELLING OUTPUTS

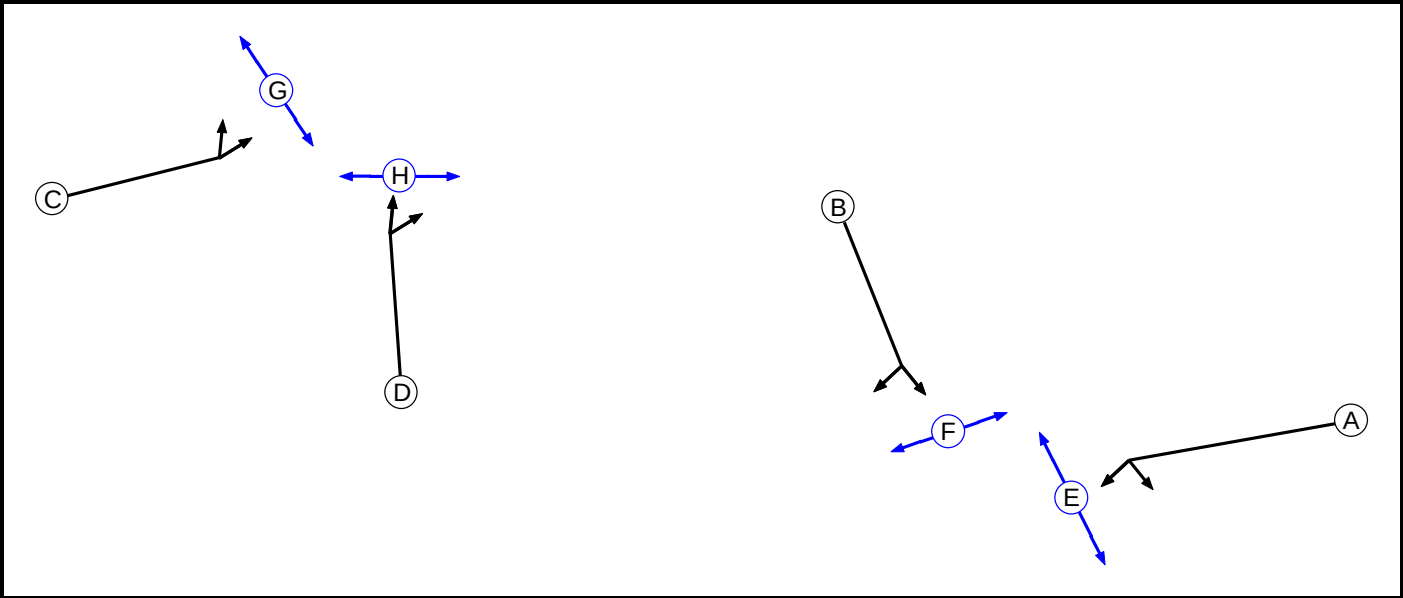
Full Input Data And Results**User and Project Details**

Project:	Asda roundabout Leigh Park
Title:	HCC revised 2026 traffic flows
Location:	
Additional detail:	2026 flows comprise - 1. 2026 flow component based 2011 surveyed turning count + TEMPRO Low growth rate to 2026 (originate from final Atkins Asda rdbt technical report v4 2013). 2. DHF (Dunsbury Hill Farm) based on original turning distribution at rdbt (from DHF TA). Original flows (40% B1; 40% B2; 20% B8 + hotel) reduced to take account of pending planning re-application (100% B8 + hotel). 3. McDonalds flows from final Atkins Asda rdbt technical report v4 (table 2)
File name:	Leigh Park Asda rdbt Purbrook Way REVISED FLOWS Hulbert Rd 3 lane flare single lane exit 3 lane flare entry fiveEntry_Sig2_Elongated v2.lsg3x
Author:	Jonathan Mundy
Company:	ITS Group
Address:	Hampshire County Council

Network Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	2		-9999	7
B	Traffic	2		-9999	7
C	Traffic	1		-9999	7
D	Traffic	1		-9999	7
E	Pedestrian	2		-9999	6
F	Pedestrian	2		-9999	6
G	Pedestrian	1		-9999	6
H	Pedestrian	1		-9999	6

Full Input Data And Results

Phase Intergreens Matrix

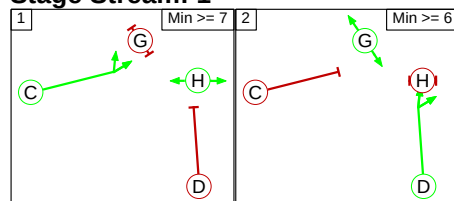
Terminating Phase	Starting Phase								
		A	B	C	D	E	F	G	H
	A		5	-	-	6	-	-	-
	B	5		-	-	-	5	-	-
	C	-	-		5	-	-	6	-
	D	-	-	5		-	-	-	5
	E	6	-	-	-		-	-	-
	F	-	6	-	-	-		-	-
	G	-	-	6	-	-	-		-
	H	-	-	-	6	-	-	-	

Phases in Stage

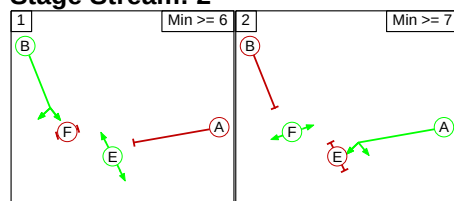
Stream	Stage No.	Phases in Stage
1	1	C H
1	2	D G
2	1	B E
2	2	A F

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Phase Delays

Stage Stream: 1

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	C	Losing	1	1
2	1	D	Losing	1	1

Stage Stream: 2

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	B	Losing	1	1
2	1	A	Losing	1	1

Prohibited Stage Change

Stage Stream: 1

	To Stage		
From Stage		1	2
	1		7
	2	6	

Stage Stream: 2

	To Stage		
From Stage		1	2
	1		6
	2	7	

Full Input Data And Results

Give-Way Lane Input Data

Junction: 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)
1/1	12/1 (Ahead)	1000	0	6/1	0.33	All	-	-	-	-	-
1/2	7/1 (Ahead)	1000	0	6/1	0.33	All	-	-	-	-	-
				6/2	0.33	All					
1/3	7/2 (Ahead)	1000	0	6/1	0.33	All	-	-	-	-	-
				6/2	0.33	All					
	7/3 (Ahead)	1000	0	6/1	0.33	All					
				6/2	0.33	All					
3/1	9/1 (Ahead)	839	0	8/1	0.33	All	-	-	-	-	-
				8/2	0.33	All					
	14/1 (Left)	839	0	8/1	0.33	All					
				8/2	0.33	All					
3/2	9/2 (Ahead)	839	0	8/1	0.33	All	-	-	-	-	-
				8/2	0.33	All					
4/1	10/1 (Ahead)	880	0	9/1	0.33	All	-	-	-	-	-
				9/2	0.33	All					
	15/1 (Left)	880	0	9/1	0.33	All					
4/2	10/2 (Ahead)	1400	0	9/1	0.33	All	-	-	-	-	-
				9/2	0.33	All					
	10/3 (Ahead)	880	0	9/1	0.33	All					
				9/2	0.33	All					

Full Input Data And Results

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	O		2	3	60.0	User	1900	-	-	-	-	-
1/2	O		2	3	3.0	User	1900	-	-	-	-	-
1/3	O		2	3	60.0	User	1900	-	-	-	-	-
2/1	U	A	2	3	60.0	User	1900	-	-	-	-	-
2/2	U	A	2	3	60.0	User	1900	-	-	-	-	-
3/1	O		2	3	60.0	User	1900	-	-	-	-	-
3/2	O		2	3	60.0	User	1900	-	-	-	-	-
4/1	O		2	3	60.0	User	1900	-	-	-	-	-
4/2	O		2	3	60.0	User	1900	-	-	-	-	-
5/1	U	C	2	3	3.0	User	1900	-	-	-	-	-
5/2	U	C	2	3	60.0	User	1900	-	-	-	-	-
5/3	U	C	2	3	60.0	User	1900	-	-	-	-	-
6/1	U		2	3	60.0	User	1900	-	-	-	-	-
6/2	U		2	3	60.0	User	1900	-	-	-	-	-
7/1	U	B	2	3	60.0	User	1900	-	-	-	-	-
7/2	U	B	2	3	60.0	User	1900	-	-	-	-	-
7/3	U	B	2	3	60.0	User	1900	-	-	-	-	-
8/1	U		2	3	60.0	User	1900	-	-	-	-	-
8/2	U		2	3	60.0	User	1900	-	-	-	-	-
9/1	U		2	3	60.0	User	1900	-	-	-	-	-
9/2	U		2	3	60.0	User	1900	-	-	-	-	-
10/1	U	D	2	3	60.0	User	1900	-	-	-	-	-
10/2	U	D	2	3	60.0	User	1900	-	-	-	-	-
10/3	U	D	2	3	60.0	User	1900	-	-	-	-	-
11/1	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2	U		2	3	60.0	User	1900	-	-	-	-	-
12/1	U		2	3	60.0	Inf	-	-	-	-	-	-
13/1	U		2	3	60.0	User	1900	-	-	-	-	-
13/2	U		2	3	60.0	Inf	-	-	-	-	-	-
14/1	U		2	3	60.0	User	1900	-	-	-	-	-
15/1	U		2	3	60.0	User	1900	-	-	-	-	-
15/2	U		2	3	60.0	Inf	-	-	-	-	-	-

Full Input Data And Results

Junction: Unnamed Junction								
Lane	Custom Occupancy per Flow Group (PCU)							
	AM Peak	PM Peak	AM peak 2026+B8 DHF+McDonalds	PM peak 2026+B8 DHF+McDonalds	AM Peak Development	PM Peak Development	AM Peak + Hulbert Road Dev	PM Peak + Hulbert Road Dev
1/2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
5/1	2.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'AM Peak'	08:00	09:00	01:00	
2: 'PM Peak'	17:00	18:00	01:00	
3: 'AM peak 2026+B8 DHF+McDonalds'	08:00	09:00	01:00	
4: 'PM peak 2026+B8 DHF+McDonalds'	17:00	18:00	01:00	
7: 'AM Peak + Hulbert Road Dev'	08:00	09:00	01:00	F3+F5
8: 'PM Peak + Hulbert Road Dev'	17:00	18:00	01:00	F4+F6

Scenario 1: 'AM Peak' (FG1: 'AM Peak', Plan 1: 'Staging Plan No. 1')

Traffic Flows, Desired

Desired Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	0	114	37	49	54	254
	B	532	0	0	59	843	1434
	C	201	0	0	142	148	491
	D	46	49	101	0	59	255
	E	145	707	124	168	0	1144
	Tot.	924	870	262	418	1104	3578

Traffic Lane Flows

Lane	Scenario 1: AM Peak
Junction: Unnamed Junction	
1/1	114
1/2 (short)	35
1/3 (with short)	140(In) 105(Out)
2/1	675
2/2	759
3/1	243
3/2	248
4/1	105
4/2	150
5/1 (short)	145
5/2 (with short)	852(In) 707(Out)
5/3	292
6/1	756
6/2	393
7/1	234
7/2	245
7/3	54
8/1	892
8/2	813
9/1	717
9/2	1061
10/1	454
10/2	374
10/3	101
11/1	599
11/2	325
12/1	870
13/1	234
13/2	28
14/1	418
15/1	776
15/2	328

Full Input Data And Results

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	This lane uses a directly entered Saturation Flow						1900	1900
1/2	This lane uses a directly entered Saturation Flow						1900	1900
1/3	This lane uses a directly entered Saturation Flow						1900	1900
2/1	This lane uses a directly entered Saturation Flow						1900	1900
2/2	This lane uses a directly entered Saturation Flow						1900	1900
3/1	This lane uses a directly entered Saturation Flow						1900	1900
3/2	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
5/1	This lane uses a directly entered Saturation Flow						1900	1900
5/2	This lane uses a directly entered Saturation Flow						1900	1900
5/3	This lane uses a directly entered Saturation Flow						1900	1900
6/1	This lane uses a directly entered Saturation Flow						1900	1900
6/2	This lane uses a directly entered Saturation Flow						1900	1900
7/1	This lane uses a directly entered Saturation Flow						1900	1900
7/2	This lane uses a directly entered Saturation Flow						1900	1900
7/3	This lane uses a directly entered Saturation Flow						1900	1900
8/1	This lane uses a directly entered Saturation Flow						1900	1900
8/2	This lane uses a directly entered Saturation Flow						1900	1900
9/1	This lane uses a directly entered Saturation Flow						1900	1900
9/2	This lane uses a directly entered Saturation Flow						1900	1900
10/1	This lane uses a directly entered Saturation Flow						1900	1900
10/2	This lane uses a directly entered Saturation Flow						1900	1900
10/3	This lane uses a directly entered Saturation Flow						1900	1900
11/1	Infinite Saturation Flow						Inf	Inf
11/2	This lane uses a directly entered Saturation Flow						1900	1900
12/1	Infinite Saturation Flow						Inf	Inf
13/1	This lane uses a directly entered Saturation Flow						1900	1900
13/2	Infinite Saturation Flow						Inf	Inf
14/1	This lane uses a directly entered Saturation Flow						1900	1900
15/1	This lane uses a directly entered Saturation Flow						1900	1900
15/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 2: 'PM Peak' (FG2: 'PM Peak', Plan 1: 'Staging Plan No. 1')

Traffic Flows, Desired

Desired Flow :

	Destination						
Origin		A	B	C	D	E	Tot.
	A	0	562	157	63	143	925
	B	540	0	0	36	693	1269
	C	216	0	0	116	109	441
	D	76	59	146	0	125	406
	E	70	632	86	99	0	887
	Tot.	902	1253	389	314	1070	3928

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: PM Peak
Junction: Unnamed Junction	
1/1	562
1/2 (short)	111
1/3 (with short)	363(In) 252(Out)
2/1	593
2/2	676
3/1	215
3/2	226
4/1	200
4/2	206
5/1 (short)	70
5/2 (with short)	702(In) 632(Out)
5/3	185
6/1	691
6/2	331
7/1	271
7/2	280
7/3	143
8/1	755
8/2	819
9/1	656
9/2	1045
10/1	509
10/2	382
10/3	146
11/1	579
11/2	323
12/1	1253
13/1	271
13/2	118
14/1	314
15/1	781
15/2	289

Full Input Data And Results

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	This lane uses a directly entered Saturation Flow						1900	1900
1/2	This lane uses a directly entered Saturation Flow						1900	1900
1/3	This lane uses a directly entered Saturation Flow						1900	1900
2/1	This lane uses a directly entered Saturation Flow						1900	1900
2/2	This lane uses a directly entered Saturation Flow						1900	1900
3/1	This lane uses a directly entered Saturation Flow						1900	1900
3/2	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
5/1	This lane uses a directly entered Saturation Flow						1900	1900
5/2	This lane uses a directly entered Saturation Flow						1900	1900
5/3	This lane uses a directly entered Saturation Flow						1900	1900
6/1	This lane uses a directly entered Saturation Flow						1900	1900
6/2	This lane uses a directly entered Saturation Flow						1900	1900
7/1	This lane uses a directly entered Saturation Flow						1900	1900
7/2	This lane uses a directly entered Saturation Flow						1900	1900
7/3	This lane uses a directly entered Saturation Flow						1900	1900
8/1	This lane uses a directly entered Saturation Flow						1900	1900
8/2	This lane uses a directly entered Saturation Flow						1900	1900
9/1	This lane uses a directly entered Saturation Flow						1900	1900
9/2	This lane uses a directly entered Saturation Flow						1900	1900
10/1	This lane uses a directly entered Saturation Flow						1900	1900
10/2	This lane uses a directly entered Saturation Flow						1900	1900
10/3	This lane uses a directly entered Saturation Flow						1900	1900
11/1	Infinite Saturation Flow						Inf	Inf
11/2	This lane uses a directly entered Saturation Flow						1900	1900
12/1	Infinite Saturation Flow						Inf	Inf
13/1	This lane uses a directly entered Saturation Flow						1900	1900
13/2	Infinite Saturation Flow						Inf	Inf
14/1	This lane uses a directly entered Saturation Flow						1900	1900
15/1	This lane uses a directly entered Saturation Flow						1900	1900
15/2	Infinite Saturation Flow						Inf	Inf

Scenario 3: 'AM 2026 revised flows' (FG3: 'AM peak 2026+B8 DHF+McDonalds', Plan 1: 'Staging Plan No. 1')

Traffic Flows, Desired

Desired Flow :

	Destination						
Origin		A	B	C	D	E	Tot.
	A	0	393	347	110	191	1041
	B	347	0	22	111	580	1060
	C	172	29	0	77	262	540
	D	86	65	35	0	164	350
	E	135	572	175	186	0	1068
	Tot.	740	1059	579	484	1197	4059

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 3: AM 2026 revised flows
Junction: Unnamed Junction	
1/1	393
1/2 (short)	275
1/3 (with short)	648(In) 373(Out)
2/1	510
2/2	550
3/1	266
3/2	274
4/1	170
4/2	180
5/1 (short)	135
5/2 (with short)	707(In) 572(Out)
5/3	361
6/1	666
6/2	396
7/1	404
7/2	449
7/3	191
8/1	784
8/2	741
9/1	566
9/2	1015
10/1	405
10/2	294
10/3	35
11/1	540
11/2	200
12/1	1059
13/1	426
13/2	153
14/1	484
15/1	730
15/2	467

Full Input Data And Results

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	This lane uses a directly entered Saturation Flow						1900	1900
1/2	This lane uses a directly entered Saturation Flow						1900	1900
1/3	This lane uses a directly entered Saturation Flow						1900	1900
2/1	This lane uses a directly entered Saturation Flow						1900	1900
2/2	This lane uses a directly entered Saturation Flow						1900	1900
3/1	This lane uses a directly entered Saturation Flow						1900	1900
3/2	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
5/1	This lane uses a directly entered Saturation Flow						1900	1900
5/2	This lane uses a directly entered Saturation Flow						1900	1900
5/3	This lane uses a directly entered Saturation Flow						1900	1900
6/1	This lane uses a directly entered Saturation Flow						1900	1900
6/2	This lane uses a directly entered Saturation Flow						1900	1900
7/1	This lane uses a directly entered Saturation Flow						1900	1900
7/2	This lane uses a directly entered Saturation Flow						1900	1900
7/3	This lane uses a directly entered Saturation Flow						1900	1900
8/1	This lane uses a directly entered Saturation Flow						1900	1900
8/2	This lane uses a directly entered Saturation Flow						1900	1900
9/1	This lane uses a directly entered Saturation Flow						1900	1900
9/2	This lane uses a directly entered Saturation Flow						1900	1900
10/1	This lane uses a directly entered Saturation Flow						1900	1900
10/2	This lane uses a directly entered Saturation Flow						1900	1900
10/3	This lane uses a directly entered Saturation Flow						1900	1900
11/1	Infinite Saturation Flow						Inf	Inf
11/2	This lane uses a directly entered Saturation Flow						1900	1900
12/1	Infinite Saturation Flow						Inf	Inf
13/1	This lane uses a directly entered Saturation Flow						1900	1900
13/2	Infinite Saturation Flow						Inf	Inf
14/1	This lane uses a directly entered Saturation Flow						1900	1900
15/1	This lane uses a directly entered Saturation Flow						1900	1900
15/2	Infinite Saturation Flow						Inf	Inf

Scenario 4: 'PM 2026 revised flows' (FG4: 'PM peak 2026+B8 DHF+McDonalds', Plan 1: 'Staging Plan No. 1')

Traffic Flows, Desired

Desired Flow :

	Destination						
Origin		A	B	C	D	E	Tot.
	A	0	444	174	167	135	920
	B	406	0	31	170	476	1083
	C	199	34	0	125	130	488
	D	176	234	82	0	299	791
	E	103	590	139	302	0	1134
	Tot.	884	1302	426	764	1040	4416

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 4: PM 2026 revised flows
Junction: Unnamed Junction	
1/1	444
1/2 (short)	174
1/3 (with short)	476(In) 302(Out)
2/1	511
2/2	572
3/1	241
3/2	247
4/1	387
4/2	404
5/1 (short)	103
5/2 (with short)	693(In) 590(Out)
5/3	441
6/1	858
6/2	523
7/1	390
7/2	474
7/3	135
8/1	949
8/2	707
9/1	426
9/2	954
10/1	586
10/2	463
10/3	82
11/1	689
11/2	195
12/1	1302
13/1	421
13/2	5
14/1	764
15/1	725
15/2	315

Full Input Data And Results

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	This lane uses a directly entered Saturation Flow						1900	1900
1/2	This lane uses a directly entered Saturation Flow						1900	1900
1/3	This lane uses a directly entered Saturation Flow						1900	1900
2/1	This lane uses a directly entered Saturation Flow						1900	1900
2/2	This lane uses a directly entered Saturation Flow						1900	1900
3/1	This lane uses a directly entered Saturation Flow						1900	1900
3/2	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
5/1	This lane uses a directly entered Saturation Flow						1900	1900
5/2	This lane uses a directly entered Saturation Flow						1900	1900
5/3	This lane uses a directly entered Saturation Flow						1900	1900
6/1	This lane uses a directly entered Saturation Flow						1900	1900
6/2	This lane uses a directly entered Saturation Flow						1900	1900
7/1	This lane uses a directly entered Saturation Flow						1900	1900
7/2	This lane uses a directly entered Saturation Flow						1900	1900
7/3	This lane uses a directly entered Saturation Flow						1900	1900
8/1	This lane uses a directly entered Saturation Flow						1900	1900
8/2	This lane uses a directly entered Saturation Flow						1900	1900
9/1	This lane uses a directly entered Saturation Flow						1900	1900
9/2	This lane uses a directly entered Saturation Flow						1900	1900
10/1	This lane uses a directly entered Saturation Flow						1900	1900
10/2	This lane uses a directly entered Saturation Flow						1900	1900
10/3	This lane uses a directly entered Saturation Flow						1900	1900
11/1	Infinite Saturation Flow						Inf	Inf
11/2	This lane uses a directly entered Saturation Flow						1900	1900
12/1	Infinite Saturation Flow						Inf	Inf
13/1	This lane uses a directly entered Saturation Flow						1900	1900
13/2	Infinite Saturation Flow						Inf	Inf
14/1	This lane uses a directly entered Saturation Flow						1900	1900
15/1	This lane uses a directly entered Saturation Flow						1900	1900
15/2	Infinite Saturation Flow						Inf	Inf

Scenario 5: 'Copy of AM 2026 revised flows' (FG7: 'AM Peak + Hulbert Road Dev', Plan 1: 'Staging Plan No. 1')
Traffic Flows, Desired
Desired Flow :

	Destination						
Origin	A	0	410	352	117	199	1078
	B	355	0	22	111	580	1068
	C	175	29	0	77	262	543
	D	87	65	35	0	164	351
	E	137	572	175	186	0	1070
	Tot.	754	1076	584	491	1205	4110

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 5: Copy of AM 2026 revised flows
Junction: Unnamed Junction	
1/1	410
1/2 (short)	281
1/3 (with short)	668(In) 387(Out)
2/1	515
2/2	553
3/1	268
3/2	275
4/1	170
4/2	181
5/1 (short)	137
5/2 (with short)	709(In) 572(Out)
5/3	361
6/1	666
6/2	396
7/1	411
7/2	454
7/3	199
8/1	796
8/2	752
9/1	573
9/2	1027
10/1	411
10/2	300
10/3	35
11/1	548
11/2	206
12/1	1076
13/1	433
13/2	151
14/1	491
15/1	737
15/2	468

Full Input Data And Results

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	This lane uses a directly entered Saturation Flow						1900	1900
1/2	This lane uses a directly entered Saturation Flow						1900	1900
1/3	This lane uses a directly entered Saturation Flow						1900	1900
2/1	This lane uses a directly entered Saturation Flow						1900	1900
2/2	This lane uses a directly entered Saturation Flow						1900	1900
3/1	This lane uses a directly entered Saturation Flow						1900	1900
3/2	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
5/1	This lane uses a directly entered Saturation Flow						1900	1900
5/2	This lane uses a directly entered Saturation Flow						1900	1900
5/3	This lane uses a directly entered Saturation Flow						1900	1900
6/1	This lane uses a directly entered Saturation Flow						1900	1900
6/2	This lane uses a directly entered Saturation Flow						1900	1900
7/1	This lane uses a directly entered Saturation Flow						1900	1900
7/2	This lane uses a directly entered Saturation Flow						1900	1900
7/3	This lane uses a directly entered Saturation Flow						1900	1900
8/1	This lane uses a directly entered Saturation Flow						1900	1900
8/2	This lane uses a directly entered Saturation Flow						1900	1900
9/1	This lane uses a directly entered Saturation Flow						1900	1900
9/2	This lane uses a directly entered Saturation Flow						1900	1900
10/1	This lane uses a directly entered Saturation Flow						1900	1900
10/2	This lane uses a directly entered Saturation Flow						1900	1900
10/3	This lane uses a directly entered Saturation Flow						1900	1900
11/1	Infinite Saturation Flow						Inf	Inf
11/2	This lane uses a directly entered Saturation Flow						1900	1900
12/1	Infinite Saturation Flow						Inf	Inf
13/1	This lane uses a directly entered Saturation Flow						1900	1900
13/2	Infinite Saturation Flow						Inf	Inf
14/1	This lane uses a directly entered Saturation Flow						1900	1900
15/1	This lane uses a directly entered Saturation Flow						1900	1900
15/2	Infinite Saturation Flow						Inf	Inf

Scenario 6: 'Copy of PM 2026 revised flows' (FG8: 'PM Peak + Hulbert Road Dev', Plan 1: 'Staging Plan No. 1')
Traffic Flows, Desired
Desired Flow :

	Destination						
Origin	A	0	454	177	168	138	937
	B	426	0	31	170	476	1103
	C	207	34	0	125	130	496
	D	179	234	82	0	299	794
	E	106	590	139	302	0	1137
	Tot.	918	1312	429	765	1043	4467

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 6: Copy of PM 2026 revised flows
Junction: Unnamed Junction	
1/1	454
1/2 (short)	177
1/3 (with short)	483(In) 306(Out)
2/1	522
2/2	581
3/1	246
3/2	250
4/1	387
4/2	404
5/1 (short)	106
5/2 (with short)	696(In) 590(Out)
5/3	441
6/1	858
6/2	523
7/1	393
7/2	475
7/3	138
8/1	961
8/2	719
9/1	442
9/2	969
10/1	595
10/2	482
10/3	82
11/1	701
11/2	214
12/1	1312
13/1	424
13/2	5
14/1	765
15/1	741
15/2	302

Full Input Data And Results

Lane Saturation Flows

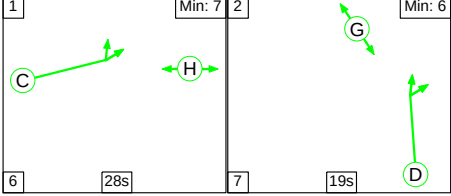
Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1	This lane uses a directly entered Saturation Flow						1900	1900
1/2	This lane uses a directly entered Saturation Flow						1900	1900
1/3	This lane uses a directly entered Saturation Flow						1900	1900
2/1	This lane uses a directly entered Saturation Flow						1900	1900
2/2	This lane uses a directly entered Saturation Flow						1900	1900
3/1	This lane uses a directly entered Saturation Flow						1900	1900
3/2	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
5/1	This lane uses a directly entered Saturation Flow						1900	1900
5/2	This lane uses a directly entered Saturation Flow						1900	1900
5/3	This lane uses a directly entered Saturation Flow						1900	1900
6/1	This lane uses a directly entered Saturation Flow						1900	1900
6/2	This lane uses a directly entered Saturation Flow						1900	1900
7/1	This lane uses a directly entered Saturation Flow						1900	1900
7/2	This lane uses a directly entered Saturation Flow						1900	1900
7/3	This lane uses a directly entered Saturation Flow						1900	1900
8/1	This lane uses a directly entered Saturation Flow						1900	1900
8/2	This lane uses a directly entered Saturation Flow						1900	1900
9/1	This lane uses a directly entered Saturation Flow						1900	1900
9/2	This lane uses a directly entered Saturation Flow						1900	1900
10/1	This lane uses a directly entered Saturation Flow						1900	1900
10/2	This lane uses a directly entered Saturation Flow						1900	1900
10/3	This lane uses a directly entered Saturation Flow						1900	1900
11/1	Infinite Saturation Flow						Inf	Inf
11/2	This lane uses a directly entered Saturation Flow						1900	1900
12/1	Infinite Saturation Flow						Inf	Inf
13/1	This lane uses a directly entered Saturation Flow						1900	1900
13/2	Infinite Saturation Flow						Inf	Inf
14/1	This lane uses a directly entered Saturation Flow						1900	1900
15/1	This lane uses a directly entered Saturation Flow						1900	1900
15/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

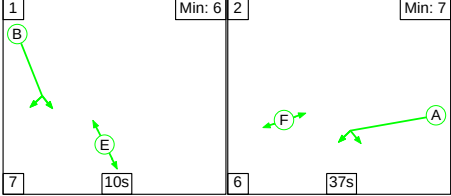
Scenario 1: 'AM Peak' (FG1: 'AM Peak', Plan 1: 'Staging Plan No. 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

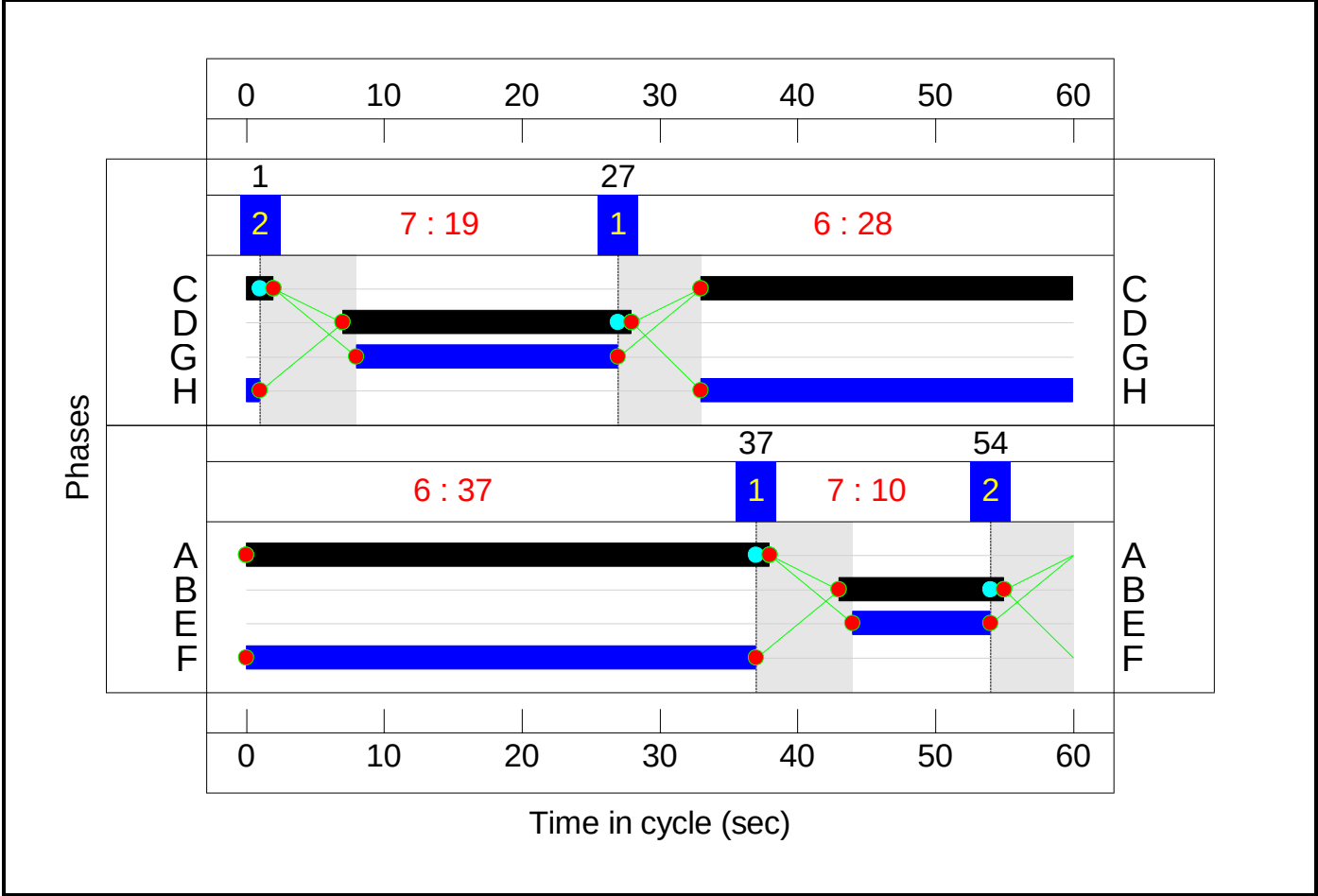
Stage Stream: 1

Stage	1	2
Duration	28	19
Change Point	27	1

Stage Stream: 2

Stage	1	2
Duration	10	37
Change Point	37	54

Signal Timings Diagram



Full Input Data And Results

Network Layout 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: HCC revised 2026 traffic flows	-	-	N/A	-	-		-	-	-	-	-	-	88.0%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	88.0%
1/1	Ahead	O	N/A	N/A	-		-	-	-	114	1900	750	15.2%
1/3+1/2	Ahead	O	N/A	N/A	-		-	-	-	140	1900:1900	831	16.9%
2/1	Ahead Left	U	2	N/A	A		1	38	-	675	1900	1235	54.7%
2/2	Ahead	U	2	N/A	A		1	38	-	759	1900	1235	61.5%
3/1	Ahead Left	O	N/A	N/A	-		-	-	-	243	1900	340	71.5%
3/2	Ahead	O	N/A	N/A	-		-	-	-	248	1900	340	73.0%
4/1	Ahead Left	O	N/A	N/A	-		-	-	-	105	1900	427	24.6%
4/2	Ahead	O	N/A	N/A	-		-	-	-	150	1900	413	36.3%
5/2+5/1	Ahead Left	U	1	N/A	C		1	29	-	852	1900:1900	968	88.0%
5/3	Ahead	U	1	N/A	C		1	29	-	292	1900	950	30.7%
6/1	Right	U	N/A	N/A	-		-	-	-	756	1900	1900	39.8%
6/2	Right	U	N/A	N/A	-		-	-	-	393	1900	1900	20.7%
7/1	Ahead	U	2	N/A	B		1	12	-	234	1900	412	56.8%
7/2	Right Ahead	U	2	N/A	B		1	12	-	245	1900	412	59.5%
7/3	Right	U	2	N/A	B		1	12	-	54	1900	412	13.1%
8/1	Right Ahead	U	N/A	N/A	-		-	-	-	892	1900	1900	46.9%
8/2	Right	U	N/A	N/A	-		-	-	-	813	1900	1900	42.8%
9/1	Ahead	U	N/A	N/A	-		-	-	-	717	1900	1900	37.7%
9/2	Right Ahead	U	N/A	N/A	-		-	-	-	1061	1900	1900	55.8%
10/1	Ahead	U	1	N/A	D		1	21	-	454	1900	697	65.2%
10/2	Right Ahead	U	1	N/A	D		1	21	-	374	1900	697	53.7%
10/3	Right	U	1	N/A	D		1	21	-	101	1900	697	14.5%
11/1		U	N/A	N/A	-		-	-	-	599	Inf	Inf	0.0%

Full Input Data And Results

11/2		U	N/A	N/A	-		-	-	-	325	1900	1900	17.1%
12/1		U	N/A	N/A	-		-	-	-	870	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	234	1900	1900	12.3%
13/2		U	N/A	N/A	-		-	-	-	28	Inf	Inf	0.0%
14/1		U	N/A	N/A	-		-	-	-	418	1900	1900	22.0%
15/1		U	N/A	N/A	-		-	-	-	776	1900	1900	40.8%
15/2		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: HCC revised 2026 traffic flows	-	-	1140	0	0	13.7	14.2	0.0	27.9	-	-	-	-
Unnamed Junction	-	-	1140	0	0	13.7	14.2	0.0	27.9	-	-	-	-
1/1	114	114	114	0	0	0.0	0.1	-	0.1	2.8	0.0	0.1	0.1
1/3+1/2	140	140	280	0	0	0.0	0.1	-	0.1	2.8	0.2	0.1	0.3
2/1	675	675	-	-	-	1.1	0.6	-	1.7	8.9	6.0	0.6	6.6
2/2	759	759	-	-	-	1.3	0.8	-	2.1	9.9	7.2	0.8	8.0
3/1	243	243	243	0	0	0.4	1.2	-	1.6	23.5	2.7	1.2	3.9
3/2	248	248	248	0	0	0.4	1.3	-	1.7	24.6	2.8	1.3	4.1
4/1	105	105	105	0	0	0.1	0.2	-	0.2	7.5	0.5	0.2	0.7
4/2	150	150	150	0	0	0.1	0.3	-	0.4	9.2	0.9	0.3	1.2
5/2+5/1	852	852	-	-	-	3.1	3.5	-	6.6	27.7	12.1	3.5	15.6
5/3	292	292	-	-	-	0.7	0.2	-	0.9	11.6	2.8	0.2	3.1
6/1	756	756	-	-	-	0.0	0.3	-	0.3	1.6	0.0	0.3	0.3
6/2	393	393	-	-	-	0.0	0.1	-	0.1	1.2	0.0	0.1	0.1
7/1	234	234	-	-	-	1.2	0.7	-	1.9	28.9	3.0	0.7	3.7
7/2	245	245	-	-	-	1.2	0.7	-	1.9	27.9	2.6	0.7	3.4
7/3	54	54	-	-	-	0.3	0.1	-	0.4	25.3	0.7	0.1	0.8
8/1	892	892	-	-	-	0.0	0.4	-	0.4	1.8	0.0	0.4	0.4
8/2	813	813	-	-	-	0.0	0.4	-	0.4	1.7	0.0	0.4	0.4
9/1	717	717	-	-	-	0.0	0.3	-	0.3	1.5	0.0	0.3	0.3
9/2	1061	1061	-	-	-	0.0	0.6	-	0.6	2.1	0.0	0.6	0.6
10/1	454	454	-	-	-	1.8	0.9	-	2.8	21.8	4.9	0.9	5.8
10/2	374	374	-	-	-	1.6	0.6	-	2.2	20.9	4.3	0.6	4.9
10/3	101	101	-	-	-	0.5	0.1	-	0.6	22.6	1.4	0.1	1.5
11/1	599	599	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

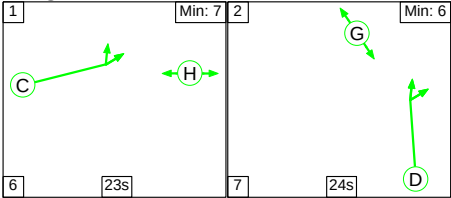
Full Input Data And Results

11/2	325	325	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1
12/1	870	870	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	234	234	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1
13/2	28	28	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	418	418	-	-	-	0.0	0.1	-	0.1	1.2	0.0	0.1	0.1
15/1	776	776	-	-	-	0.0	0.3	-	0.3	1.6	0.0	0.3	0.3
15/2	328	328	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
		C1 Stream: 1 PRC for Signalled Lanes (%): C1 Stream: 2 PRC for Signalled Lanes (%): PRC Over All Lanes (%) :	2.2 46.4 2.2	Total Delay for Signalled Lanes (pcuHr): Total Delay for Signalled Lanes (pcuHr): Total Delay Over All Lanes(pcuHr):				13.05 7.91 27.92	Cycle Time (s): Cycle Time (s):		60 60		

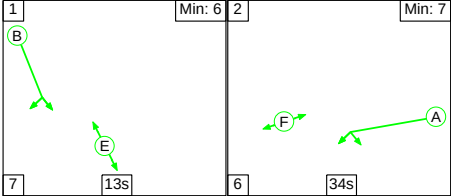
Full Input Data And Results
Scenario 2: 'PM Peak' (FG2: 'PM Peak', Plan 1: 'Staging Plan No. 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

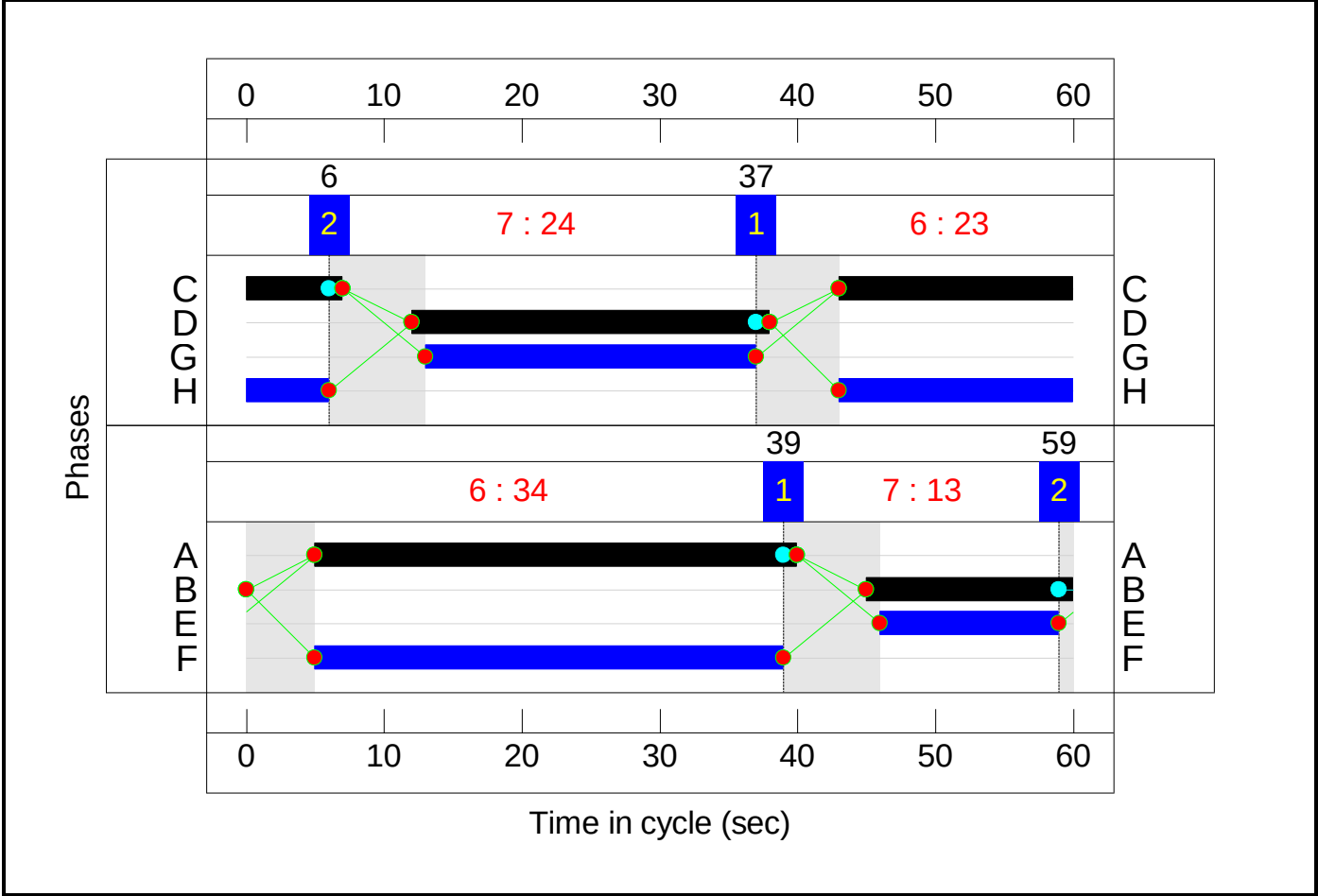
Stage Stream: 1

Stage	1	2
Duration	23	24
Change Point	37	6

Stage Stream: 2

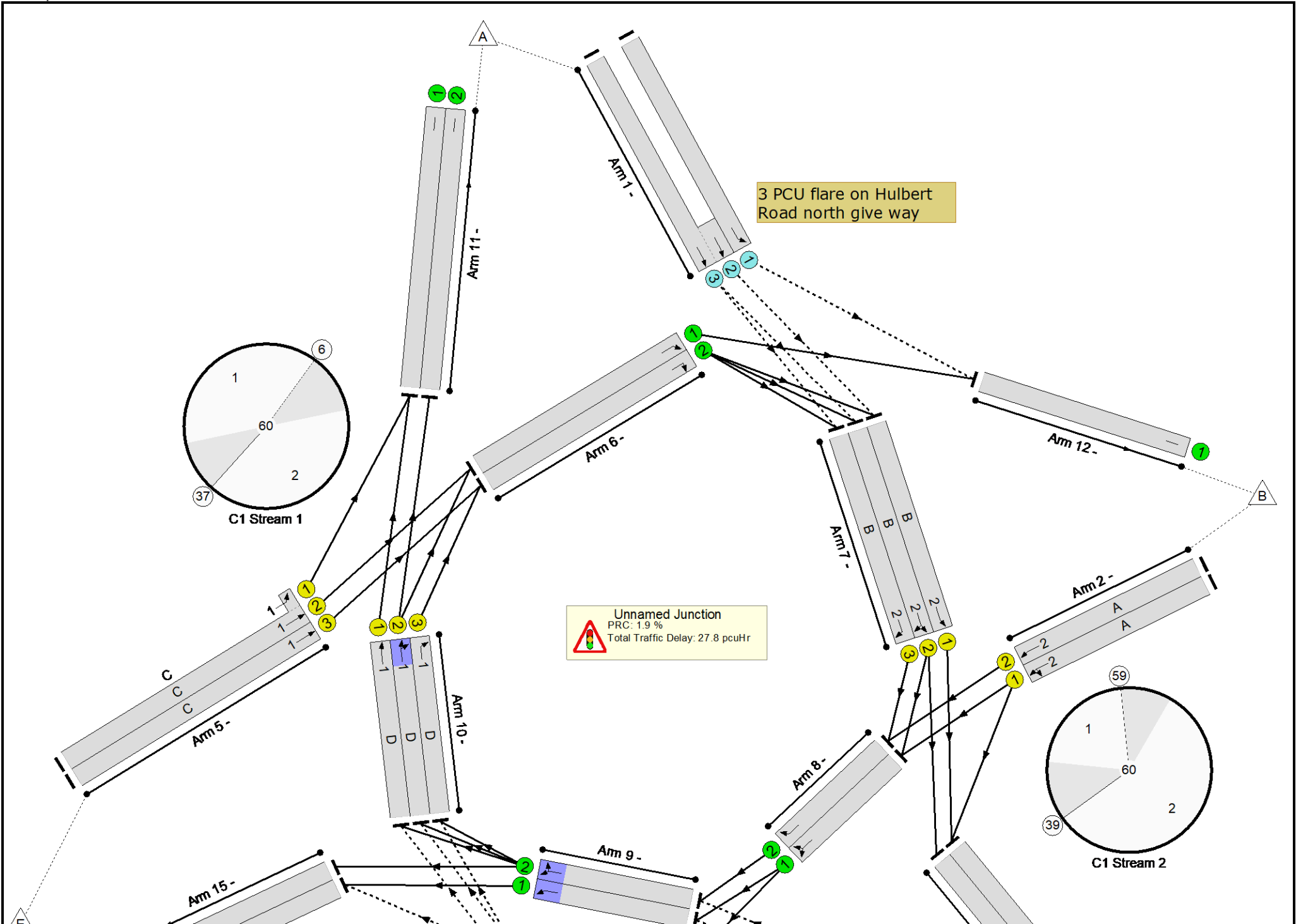
Stage	1	2
Duration	13	34
Change Point	39	59

Signal Timings Diagram



Full Input Data And Results

Network Layout 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: HCC revised 2026 traffic flows	-	-	N/A	-	-		-	-	-	-	-	-	88.3%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	88.3%
1/1	Ahead	O	N/A	N/A	-		-	-	-	562	1900	772	72.8%
1/3+1/2	Ahead	O	N/A	N/A	-		-	-	-	363	1900:1900	954	38.0%
2/1	Ahead Left	U	2	N/A	A		1	35	-	593	1900	1140	52.0%
2/2	Ahead	U	2	N/A	A		1	35	-	676	1900	1140	59.3%
3/1	Ahead Left	O	N/A	N/A	-		-	-	-	215	1900	378	56.9%
3/2	Ahead	O	N/A	N/A	-		-	-	-	226	1900	378	59.8%
4/1	Ahead Left	O	N/A	N/A	-		-	-	-	200	1900	469	42.7%
4/2	Ahead	O	N/A	N/A	-		-	-	-	206	1900	430	47.9%
5/2+5/1	Ahead Left	U	1	N/A	C		1	24	-	702	1900:1900	795	88.3%
5/3	Ahead	U	1	N/A	C		1	24	-	185	1900	792	23.4%
6/1	Right	U	N/A	N/A	-		-	-	-	691	1900	1900	36.4%
6/2	Right	U	N/A	N/A	-		-	-	-	331	1900	1900	17.4%
7/1	Ahead	U	2	N/A	B		1	15	-	271	1900	507	53.5%
7/2	Right Ahead	U	2	N/A	B		1	15	-	280	1900	507	55.3%
7/3	Right	U	2	N/A	B		1	15	-	143	1900	507	28.2%
8/1	Right Ahead	U	N/A	N/A	-		-	-	-	755	1900	1900	39.7%
8/2	Right	U	N/A	N/A	-		-	-	-	819	1900	1900	43.1%
9/1	Ahead	U	N/A	N/A	-		-	-	-	656	1900	1900	34.5%
9/2	Right Ahead	U	N/A	N/A	-		-	-	-	1045	1900	1900	55.0%
10/1	Ahead	U	1	N/A	D		1	26	-	509	1900	855	59.5%
10/2	Right Ahead	U	1	N/A	D		1	26	-	382	1900	855	44.7%
10/3	Right	U	1	N/A	D		1	26	-	146	1900	855	17.1%
11/1		U	N/A	N/A	-		-	-	-	579	Inf	Inf	0.0%

Full Input Data And Results

11/2		U	N/A	N/A	-		-	-	-	323	1900	1900	17.0%
12/1		U	N/A	N/A	-		-	-	-	1253	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	271	1900	1900	14.3%
13/2		U	N/A	N/A	-		-	-	-	118	Inf	Inf	0.0%
14/1		U	N/A	N/A	-		-	-	-	314	1900	1900	16.5%
15/1		U	N/A	N/A	-		-	-	-	781	1900	1900	41.1%
15/2		U	N/A	N/A	-		-	-	-	289	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: HCC revised 2026 traffic flows	-	-	2135	0	0	13.8	14.0	0.0	27.8	-	-	-	-
Unnamed Junction	-	-	2135	0	0	13.8	14.0	0.0	27.8	-	-	-	-
1/1	562	562	562	0	0	0.1	1.3	-	1.5	9.3	4.2	1.3	5.5
1/3+1/2	363	363	726	0	0	0.0	0.3	-	0.3	3.3	0.8	0.3	1.1
2/1	593	593	-	-	-	1.1	0.5	-	1.7	10.3	5.6	0.5	6.1
2/2	676	676	-	-	-	1.4	0.7	-	2.1	11.3	6.9	0.7	7.7
3/1	215	215	215	0	0	0.2	0.7	-	0.9	14.4	1.7	0.7	2.3
3/2	226	226	226	0	0	0.2	0.7	-	1.0	15.4	1.9	0.7	2.6
4/1	200	200	200	0	0	0.1	0.4	-	0.5	8.8	1.1	0.4	1.5
4/2	206	206	206	0	0	0.2	0.5	-	0.6	10.6	1.5	0.5	1.9
5/2+5/1	702	702	-	-	-	3.1	3.5	-	6.6	34.1	10.6	3.5	14.1
5/3	185	185	-	-	-	0.6	0.2	-	0.7	14.3	2.0	0.2	2.1
6/1	691	691	-	-	-	0.0	0.3	-	0.3	1.5	0.0	0.3	0.3
6/2	331	331	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1
7/1	271	271	-	-	-	1.4	0.6	-	1.9	25.7	3.7	0.6	4.3
7/2	280	280	-	-	-	1.5	0.6	-	2.1	26.8	3.3	0.6	3.9
7/3	143	143	-	-	-	0.7	0.2	-	0.9	22.8	1.9	0.2	2.1
8/1	755	755	-	-	-	0.0	0.3	-	0.3	1.6	0.0	0.3	0.3
8/2	819	819	-	-	-	0.0	0.4	-	0.4	1.7	0.0	0.4	0.4
9/1	656	656	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.3	0.3
9/2	1045	1045	-	-	-	0.0	0.6	-	0.6	2.1	0.0	0.6	0.6
10/1	509	509	-	-	-	1.3	0.7	-	2.0	14.4	3.8	0.7	4.5
10/2	382	382	-	-	-	1.3	0.4	-	1.7	15.9	3.9	0.4	4.3
10/3	146	146	-	-	-	0.5	0.1	-	0.6	15.6	1.7	0.1	1.8
11/1	579	579	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

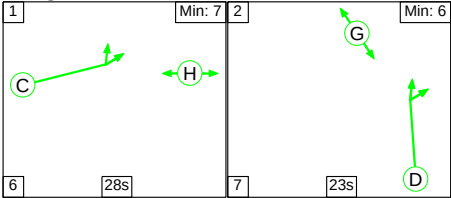
Full Input Data And Results

11/2	323	323	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1
12/1	1253	1253	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	271	271	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1
13/2	118	118	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	314	314	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1
15/1	781	781	-	-	-	0.0	0.3	-	0.3	1.6	0.0	0.3	0.3
15/2	289	289	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 Stream: 1 PRC for Signalled Lanes (%): 1.9 C1 Stream: 2 PRC for Signalled Lanes (%): 51.8 PRC Over All Lanes (%): 1.9 Total Delay for Signalled Lanes (pcuHr): 11.74 Total Delay for Signalled Lanes (pcuHr): 8.74 Total Delay Over All Lanes(pcuHr): 27.79 Cycle Time (s): 60 Cycle Time (s): 60													

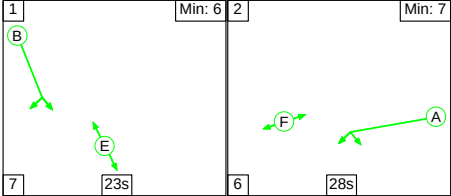
Full Input Data And Results
Scenario 3: 'AM 2026 revised flows' (FG3: 'AM peak 2026+B8 DHF+McDonalds', Plan 1: 'Staging Plan No. 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

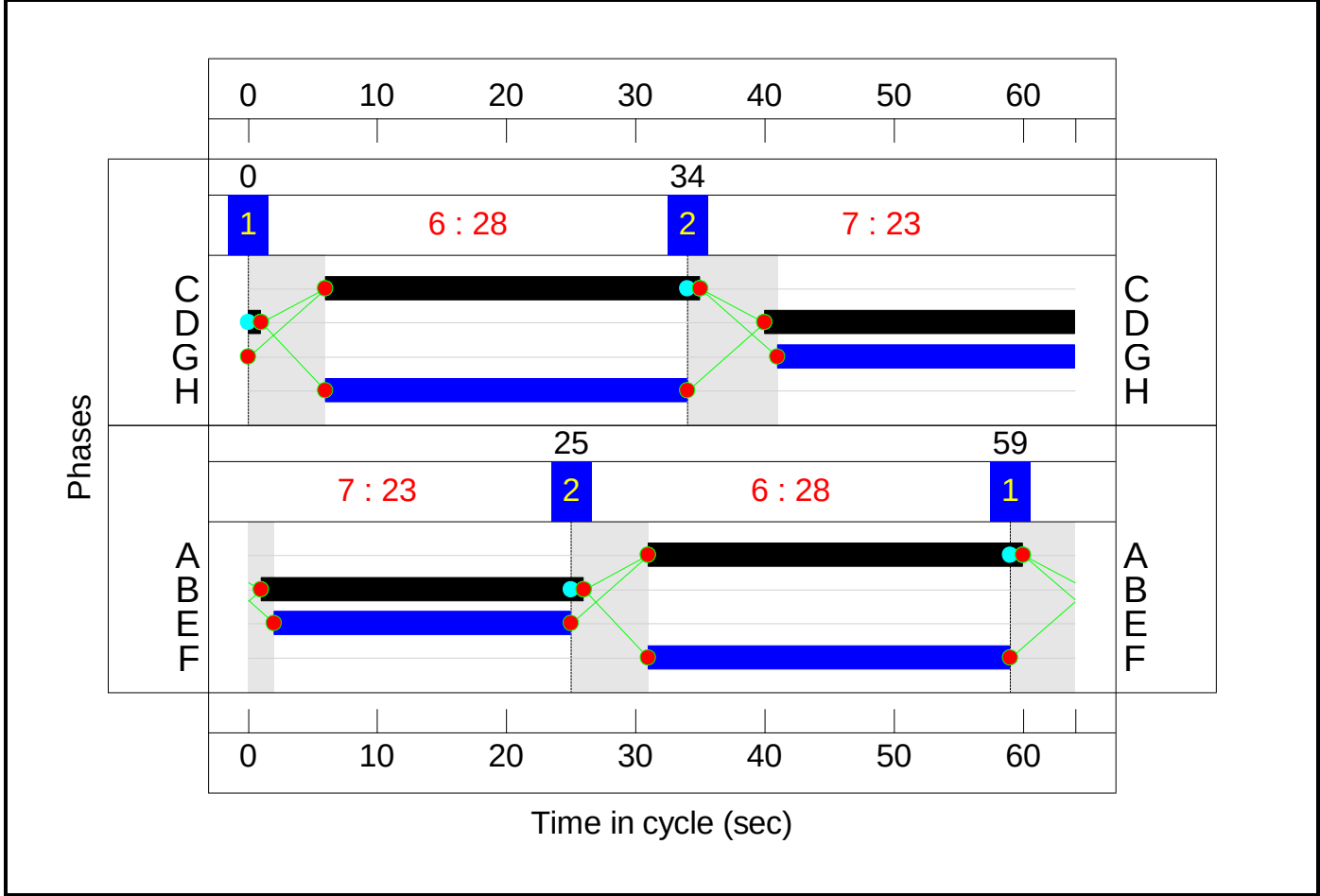
Stage Stream: 1

Stage	1	2
Duration	28	23
Change Point	0	34

Stage Stream: 2

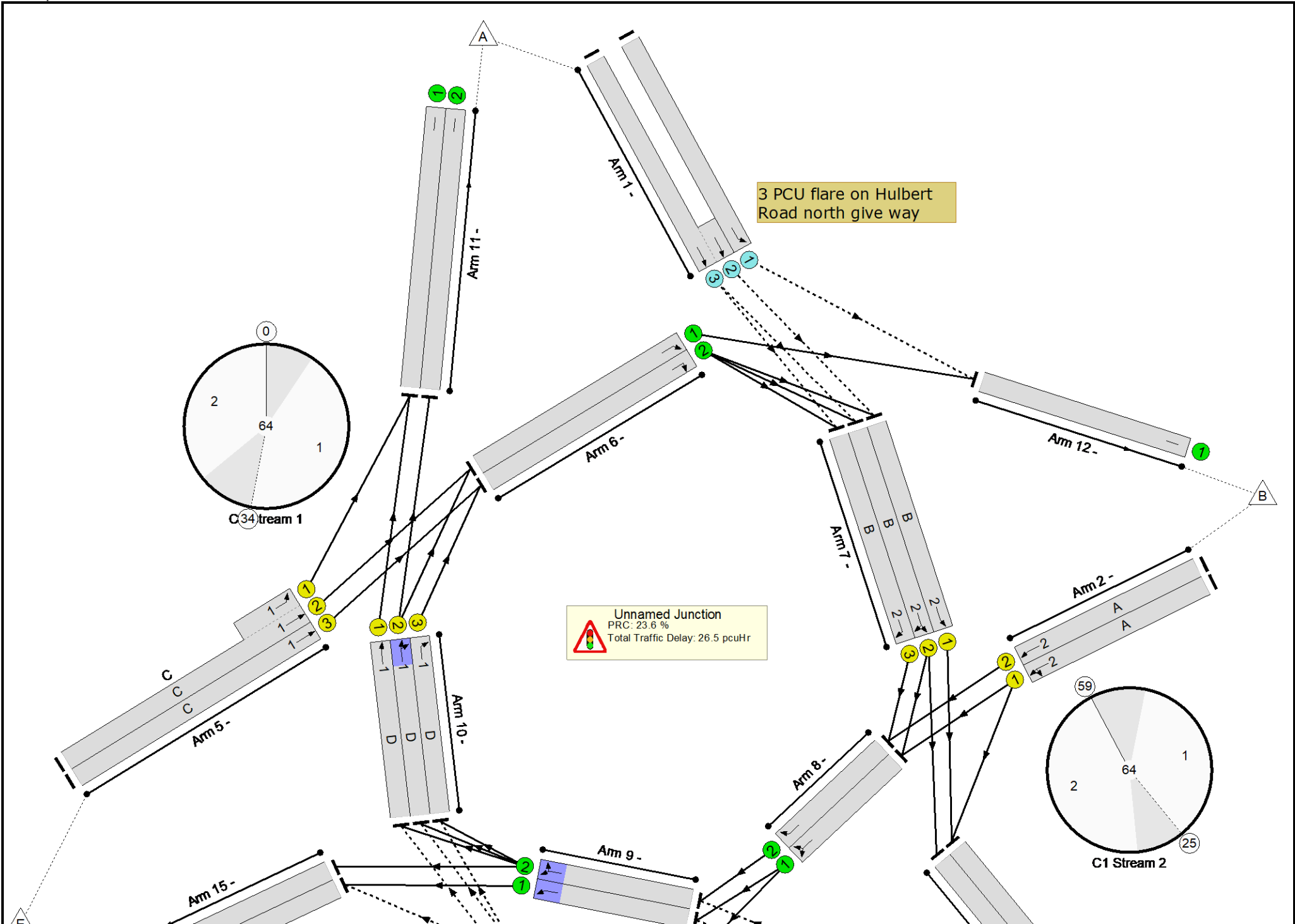
Stage	1	2
Duration	23	28
Change Point	59	25

Signal Timings Diagram



Full Input Data And Results

Network Layout 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: HCC revised 2026 traffic flows	-	-	N/A	-	-		-	-	-	-	-	-	72.8%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	72.8%
1/1	Ahead	O	N/A	N/A	-		-	-	-	393	1900	780	50.4%
1/3+1/2	Ahead	O	N/A	N/A	-		-	-	-	648	1900:1900	1155	56.1%
2/1	Ahead Left	U	2	N/A	A		1	29	-	510	1900	891	57.3%
2/2	Ahead	U	2	N/A	A		1	29	-	550	1900	891	61.8%
3/1	Ahead Left	O	N/A	N/A	-		-	-	-	266	1900	396	67.1%
3/2	Ahead	O	N/A	N/A	-		-	-	-	274	1900	396	69.1%
4/1	Ahead Left	O	N/A	N/A	-		-	-	-	170	1900	594	28.6%
4/2	Ahead	O	N/A	N/A	-		-	-	-	180	1900	664	27.1%
5/2+5/1	Ahead Left	U	1	N/A	C		1	29	-	707	1900:1900	971	72.8%
5/3	Ahead	U	1	N/A	C		1	29	-	361	1900	891	40.5%
6/1	Right	U	N/A	N/A	-		-	-	-	666	1900	1900	35.1%
6/2	Right	U	N/A	N/A	-		-	-	-	396	1900	1900	20.8%
7/1	Ahead	U	2	N/A	B		1	25	-	404	1900	772	52.3%
7/2	Right Ahead	U	2	N/A	B		1	25	-	449	1900	772	58.2%
7/3	Right	U	2	N/A	B		1	25	-	191	1900	772	24.7%
8/1	Right Ahead	U	N/A	N/A	-		-	-	-	784	1900	1900	41.3%
8/2	Right	U	N/A	N/A	-		-	-	-	741	1900	1900	39.0%
9/1	Ahead	U	N/A	N/A	-		-	-	-	566	1900	1900	29.8%
9/2	Right Ahead	U	N/A	N/A	-		-	-	-	1015	1900	1900	53.4%
10/1	Ahead	U	1	N/A	D		1	25	-	405	1900	772	52.5%
10/2	Right Ahead	U	1	N/A	D		1	25	-	294	1900	772	38.1%
10/3	Right	U	1	N/A	D		1	25	-	35	1900	772	4.5%
11/1		U	N/A	N/A	-		-	-	-	540	Inf	Inf	0.0%

Full Input Data And Results

11/2		U	N/A	N/A	-		-	-	-	200	1900	1900	10.5%
12/1		U	N/A	N/A	-		-	-	-	1059	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	426	1900	1900	22.4%
13/2		U	N/A	N/A	-		-	-	-	153	Inf	Inf	0.0%
14/1		U	N/A	N/A	-		-	-	-	484	1900	1900	25.5%
15/1		U	N/A	N/A	-		-	-	-	730	1900	1900	38.4%
15/2		U	N/A	N/A	-		-	-	-	467	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: HCC revised 2026 traffic flows	-	-	2579	0	0	14.9	11.6	0.0	26.5	-	-	-	-
Unnamed Junction	-	-	2579	0	0	14.9	11.6	0.0	26.5	-	-	-	-
1/1	393	393	393	0	0	0.0	0.5	-	0.5	4.6	0.8	0.5	1.3
1/3+1/2	648	648	1296	0	0	0.4	0.6	-	1.0	5.7	2.8	0.6	3.4
2/1	510	510	-	-	-	1.7	0.7	-	2.4	17.1	6.5	0.7	7.2
2/2	550	550	-	-	-	1.9	0.8	-	2.7	18.0	7.2	0.8	8.0
3/1	266	266	266	0	0	0.3	1.0	-	1.3	17.6	2.2	1.0	3.2
3/2	274	274	274	0	0	0.3	1.1	-	1.4	18.6	2.4	1.1	3.5
4/1	170	170	170	0	0	0.1	0.2	-	0.3	5.8	0.8	0.2	1.0
4/2	180	180	180	0	0	0.1	0.2	-	0.3	5.4	0.8	0.2	1.0
5/2+5/1	707	707	-	-	-	2.5	1.3	-	3.8	19.4	8.4	1.3	9.8
5/3	361	361	-	-	-	1.1	0.3	-	1.5	14.5	4.1	0.3	4.5
6/1	666	666	-	-	-	0.0	0.3	-	0.3	1.5	0.0	0.3	0.3
6/2	396	396	-	-	-	0.0	0.1	-	0.1	1.2	0.0	0.1	0.1
7/1	404	404	-	-	-	1.7	0.5	-	2.2	19.8	5.1	0.5	5.7
7/2	449	449	-	-	-	1.9	0.7	-	2.6	21.0	5.0	0.7	5.7
7/3	191	191	-	-	-	0.7	0.2	-	0.8	15.4	2.4	0.2	2.6
8/1	784	784	-	-	-	0.0	0.4	-	0.4	1.6	0.0	0.4	0.4
8/2	741	741	-	-	-	0.0	0.3	-	0.3	1.6	0.0	0.3	0.3
9/1	566	566	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2
9/2	1015	1015	-	-	-	0.0	0.6	-	0.6	2.0	0.0	0.6	0.6
10/1	405	405	-	-	-	1.0	0.6	-	1.5	13.7	2.9	0.6	3.4
10/2	294	294	-	-	-	1.1	0.3	-	1.4	16.9	3.4	0.3	3.7
10/3	35	35	-	-	-	0.1	0.0	-	0.1	14.3	0.4	0.0	0.4
11/1	540	540	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

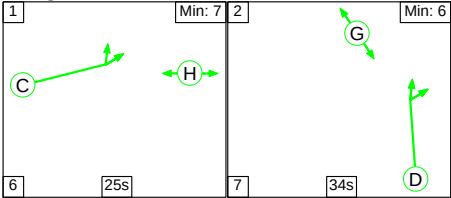
Full Input Data And Results

11/2	200	200	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1
12/1	1059	1059	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	426	426	-	-	-	0.0	0.1	-	0.1	1.2	0.0	0.1	0.1
13/2	153	153	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	484	484	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2
15/1	730	730	-	-	-	0.0	0.3	-	0.3	1.5	0.0	0.3	0.3
15/2	467	467	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 Stream: 1 PRC for Signalled Lanes (%): 23.6 C1 Stream: 2 PRC for Signalled Lanes (%): 45.7 PRC Over All Lanes (%): 23.6 Total Delay for Signalled Lanes (pcuHr): 8.33 Total Delay for Signalled Lanes (pcuHr): 10.82 Total Delay Over All Lanes(pcuHr): 26.49 Cycle Time (s): 64 Cycle Time (s): 64													

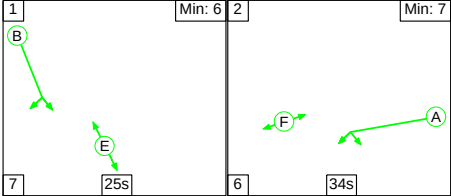
Full Input Data And Results
Scenario 4: 'PM 2026 revised flows' (FG4: 'PM peak 2026+B8 DHF+McDonalds', Plan 1: 'Staging Plan No. 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

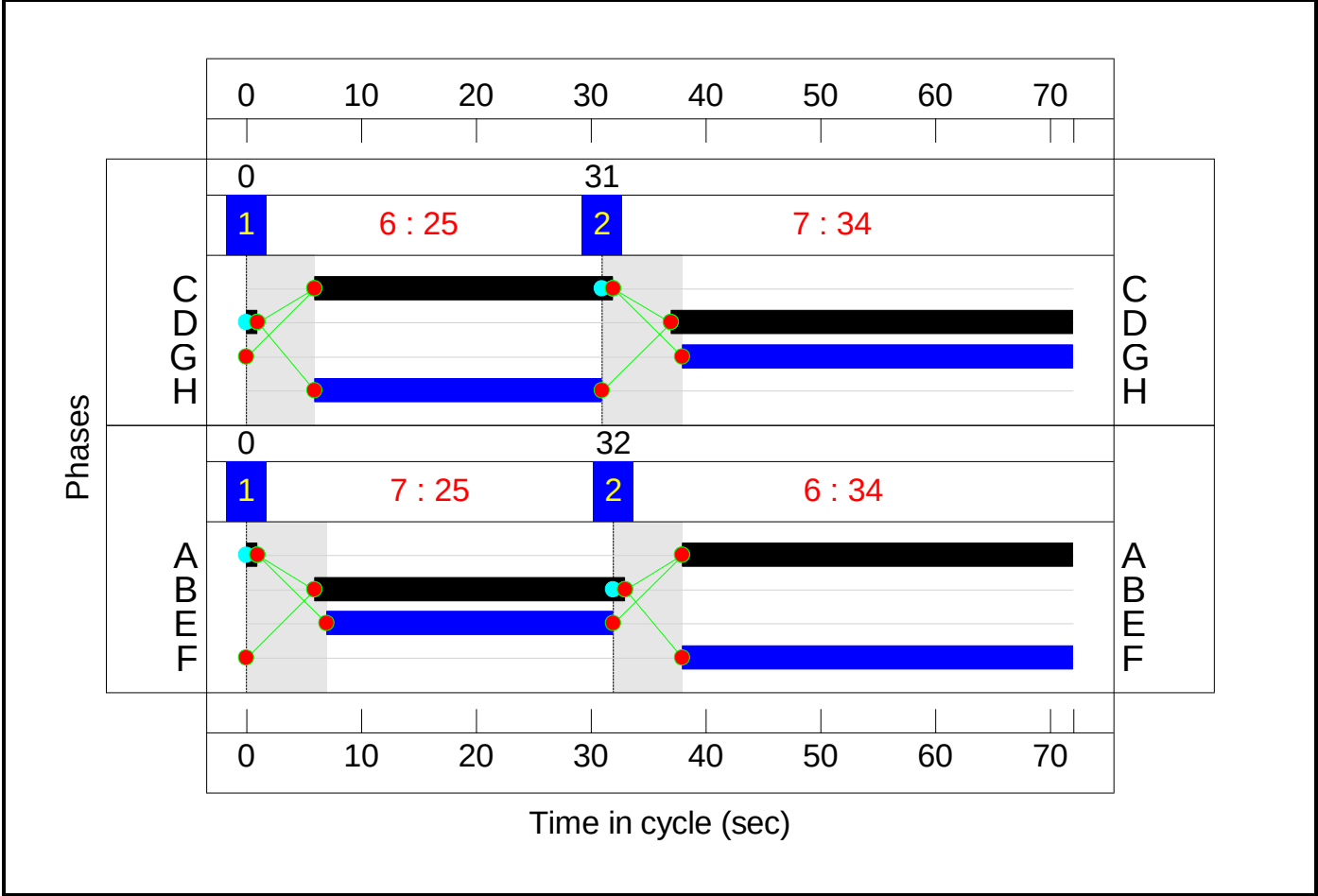
Stage Stream: 1

Stage	1	2
Duration	25	34
Change Point	0	31

Stage Stream: 2

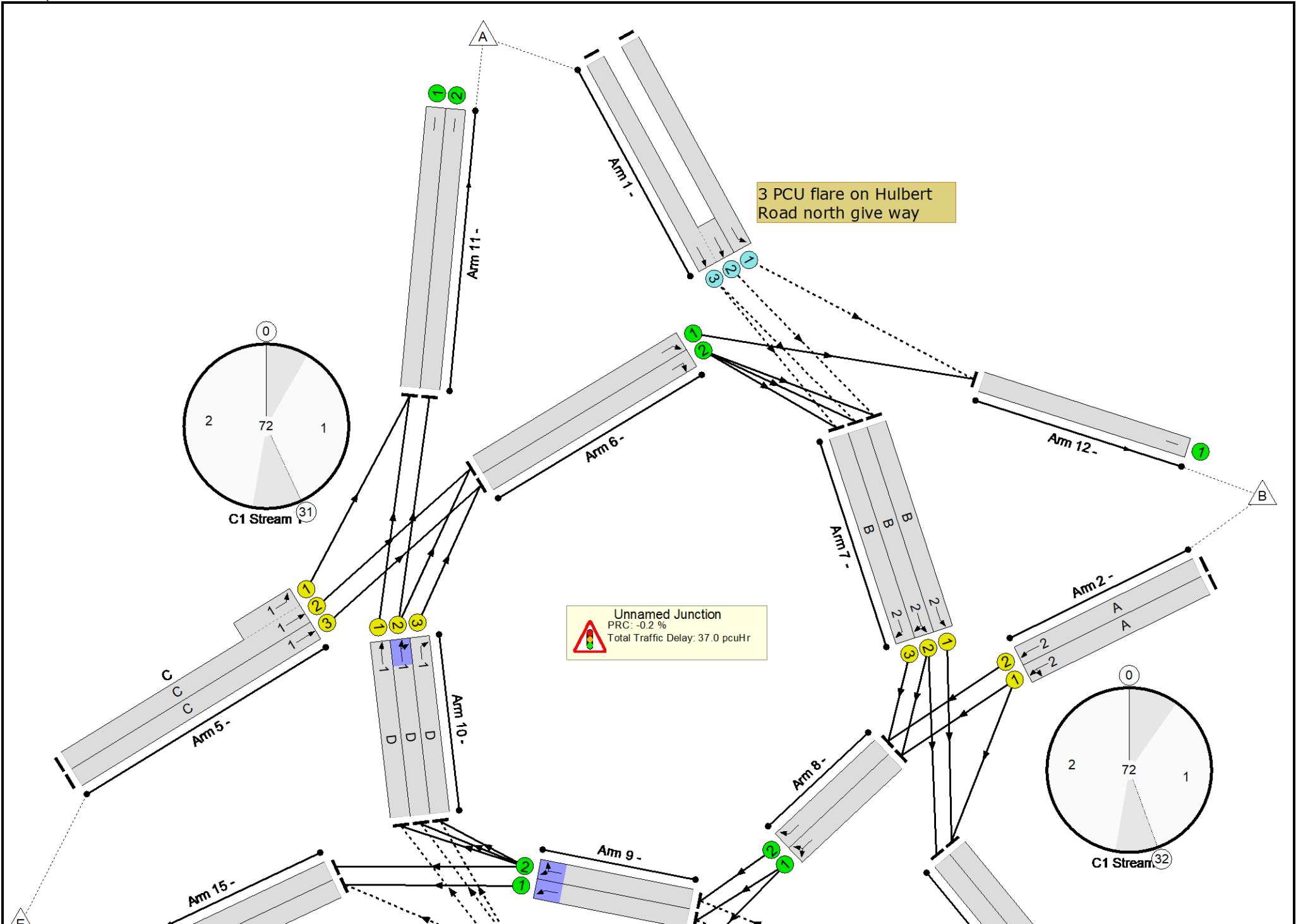
Stage	1	2
Duration	25	34
Change Point	0	32

Signal Timings Diagram



Full Input Data And Results

Network Layout 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: HCC revised 2026 traffic flows	-	-	N/A	-	-		-	-	-	-	-	-	90.2%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	90.2%
1/1	Ahead	O	N/A	N/A	-		-	-	-	444	1900	717	62.0%
1/3+1/2	Ahead	O	N/A	N/A	-		-	-	-	476	1900:1900	908	52.4%
2/1	Ahead Left	U	2	N/A	A		1	35	-	511	1900	950	53.8%
2/2	Ahead	U	2	N/A	A		1	35	-	572	1900	950	60.2%
3/1	Ahead Left	O	N/A	N/A	-		-	-	-	241	1900	355	67.9%
3/2	Ahead	O	N/A	N/A	-		-	-	-	247	1900	355	69.6%
4/1	Ahead Left	O	N/A	N/A	-		-	-	-	387	1900	575	67.3%
4/2	Ahead	O	N/A	N/A	-		-	-	-	404	1900	722	55.9%
5/2+5/1	Ahead Left	U	1	N/A	C		1	26	-	693	1900:1900	769	90.2%
5/3	Ahead	U	1	N/A	C		1	26	-	441	1900	713	61.9%
6/1	Right	U	N/A	N/A	-		-	-	-	858	1900	1900	45.2%
6/2	Right	U	N/A	N/A	-		-	-	-	523	1900	1900	27.5%
7/1	Ahead	U	2	N/A	B		1	27	-	390	1900	739	52.8%
7/2	Right Ahead	U	2	N/A	B		1	27	-	474	1900	739	64.2%
7/3	Right	U	2	N/A	B		1	27	-	135	1900	739	18.3%
8/1	Right Ahead	U	N/A	N/A	-		-	-	-	949	1900	1900	49.9%
8/2	Right	U	N/A	N/A	-		-	-	-	707	1900	1900	37.2%
9/1	Ahead	U	N/A	N/A	-		-	-	-	426	1900	1900	22.4%
9/2	Right Ahead	U	N/A	N/A	-		-	-	-	954	1900	1900	50.2%
10/1	Ahead	U	1	N/A	D		1	36	-	586	1900	976	60.0%
10/2	Right Ahead	U	1	N/A	D		1	36	-	463	1900	976	47.4%
10/3	Right	U	1	N/A	D		1	36	-	82	1900	976	8.4%
11/1		U	N/A	N/A	-		-	-	-	689	Inf	Inf	0.0%

Full Input Data And Results

11/2		U	N/A	N/A	-		-	-	-	195	1900	1900	10.3%
12/1		U	N/A	N/A	-		-	-	-	1302	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	421	1900	1900	22.2%
13/2		U	N/A	N/A	-		-	-	-	5	Inf	Inf	0.0%
14/1		U	N/A	N/A	-		-	-	-	764	1900	1900	40.2%
15/1		U	N/A	N/A	-		-	-	-	725	1900	1900	38.2%
15/2		U	N/A	N/A	-		-	-	-	315	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: HCC revised 2026 traffic flows	-	-	2675	0	0	19.8	17.1	0.0	37.0	-	-	-	-
Unnamed Junction	-	-	2675	0	0	19.8	17.1	0.0	37.0	-	-	-	-
1/1	444	444	444	0	0	0.0	0.8	-	0.8	6.8	2.6	0.8	3.4
1/3+1/2	476	476	952	0	0	0.5	0.5	-	1.0	7.6	2.9	0.5	3.4
2/1	511	511	-	-	-	1.7	0.6	-	2.3	16.4	7.0	0.6	7.5
2/2	572	572	-	-	-	2.0	0.8	-	2.8	17.6	8.1	0.8	8.9
3/1	241	241	241	0	0	0.3	1.0	-	1.3	19.6	2.1	1.0	3.1
3/2	247	247	247	0	0	0.3	1.1	-	1.4	20.6	2.2	1.1	3.3
4/1	387	387	387	0	0	0.3	1.0	-	1.4	12.7	3.9	1.0	4.9
4/2	404	404	404	0	0	0.3	0.6	-	0.9	8.3	3.4	0.6	4.0
5/2+5/1	693	693	-	-	-	3.9	4.1	-	8.1	41.9	12.0	4.1	16.2
5/3	441	441	-	-	-	2.2	0.8	-	3.1	24.9	7.1	0.8	7.9
6/1	858	858	-	-	-	0.0	0.4	-	0.4	1.7	0.0	0.4	0.4
6/2	523	523	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2
7/1	390	390	-	-	-	1.9	0.6	-	2.5	23.1	5.3	0.6	5.9
7/2	474	474	-	-	-	1.8	0.9	-	2.7	20.7	4.5	0.9	5.4
7/3	135	135	-	-	-	0.7	0.1	-	0.8	20.7	2.2	0.1	2.3
8/1	949	949	-	-	-	0.0	0.5	-	0.5	1.9	0.0	0.5	0.5
8/2	707	707	-	-	-	0.0	0.3	-	0.3	1.5	0.0	0.3	0.3
9/1	426	426	-	-	-	0.0	0.1	-	0.1	1.2	0.0	0.1	0.1
9/2	954	954	-	-	-	0.0	0.5	-	0.5	1.9	0.0	0.5	0.5
10/1	586	586	-	-	-	1.7	0.7	-	2.4	14.9	5.2	0.7	5.9
10/2	463	463	-	-	-	1.8	0.5	-	2.2	17.3	6.1	0.5	6.6
10/3	82	82	-	-	-	0.3	0.0	-	0.3	14.1	1.0	0.0	1.0
11/1	689	689	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

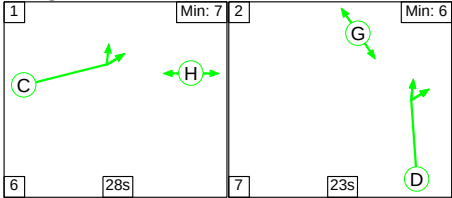
11/2	195	195	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1
12/1	1302	1302	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	421	421	-	-	-	0.0	0.1	-	0.1	1.2	0.0	0.1	0.1
13/2	5	5	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	764	764	-	-	-	0.0	0.3	-	0.3	1.6	0.0	0.3	0.3
15/1	725	725	-	-	-	0.0	0.3	-	0.3	1.5	0.0	0.3	0.3
15/2	315	315	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
			C1 Stream: 1 PRC for Signalled Lanes (%):	-0.2	Total Delay for Signalled Lanes (pcuHr):			16.08	Cycle Time (s):		72		
			C1 Stream: 2 PRC for Signalled Lanes (%):	40.3	Total Delay for Signalled Lanes (pcuHr):			11.14	Cycle Time (s):		72		
			PRC Over All Lanes (%):	-0.2	Total Delay Over All Lanes(pcuHr):			36.97					

Full Input Data And Results

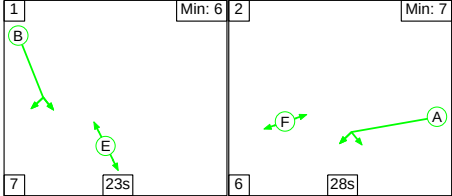
Scenario 5: 'Copy of AM 2026 revised flows' (FG7: 'AM Peak + Hulbert Road Dev', Plan 1: 'Staging Plan No. 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

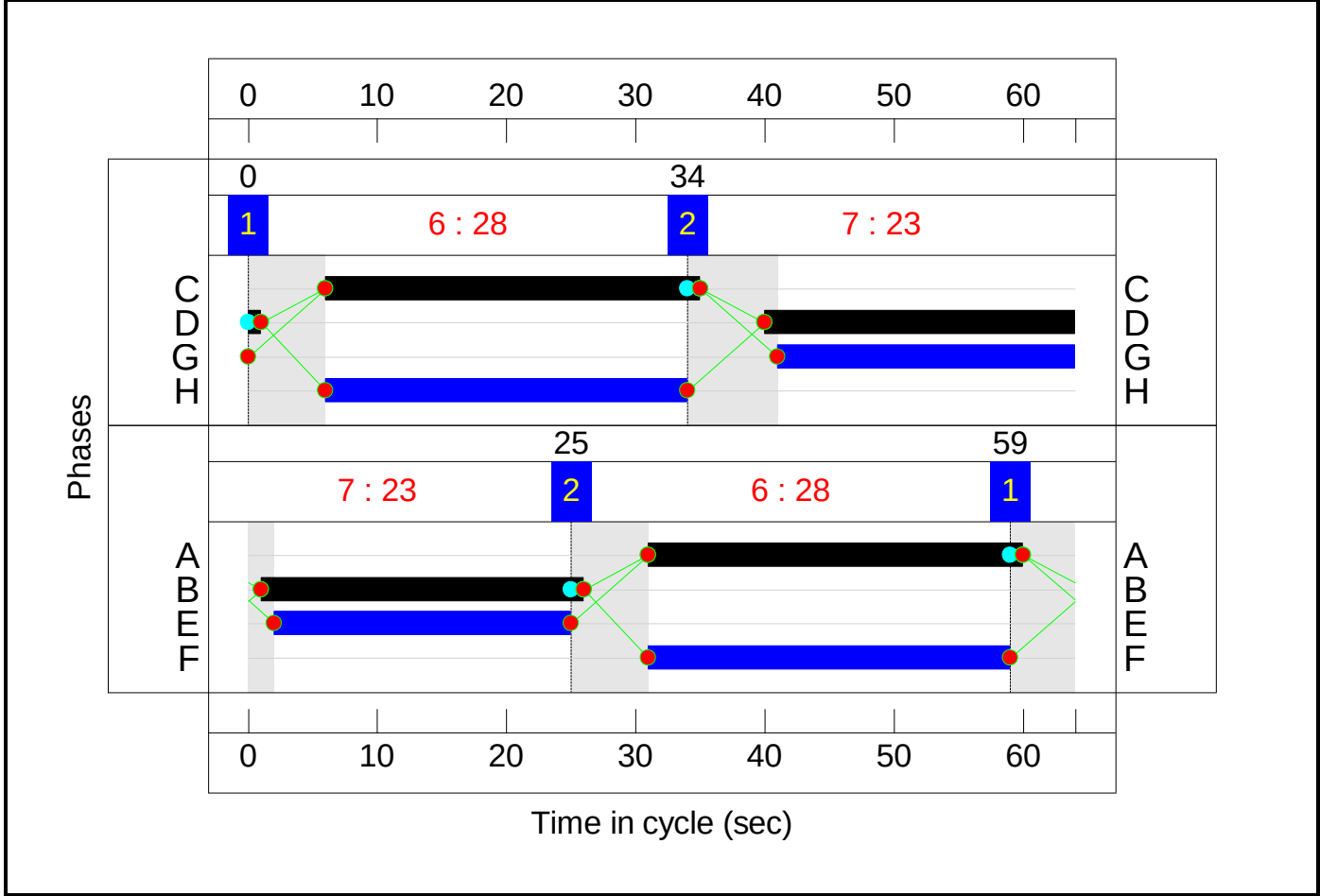
Stage Stream: 1

Stage	1	2
Duration	28	23
Change Point	0	34

Stage Stream: 2

Stage	1	2
Duration	23	28
Change Point	59	25

Signal Timings Diagram



Full Input Data And Results

Network Layout 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: HCC revised 2026 traffic flows	-	-	N/A	-	-		-	-	-	-	-	-	72.9%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	72.9%
1/1	Ahead	O	N/A	N/A	-		-	-	-	410	1900	780	52.6%
1/3+1/2	Ahead	O	N/A	N/A	-		-	-	-	668	1900:1900	1147	58.2%
2/1	Ahead Left	U	2	N/A	A		1	29	-	515	1900	891	57.8%
2/2	Ahead	U	2	N/A	A		1	29	-	553	1900	891	62.1%
3/1	Ahead Left	O	N/A	N/A	-		-	-	-	268	1900	391	68.5%
3/2	Ahead	O	N/A	N/A	-		-	-	-	275	1900	391	70.3%
4/1	Ahead Left	O	N/A	N/A	-		-	-	-	170	1900	591	28.8%
4/2	Ahead	O	N/A	N/A	-		-	-	-	181	1900	657	27.5%
5/2+5/1	Ahead Left	U	1	N/A	C		1	29	-	709	1900:1900	972	72.9%
5/3	Ahead	U	1	N/A	C		1	29	-	361	1900	891	40.5%
6/1	Right	U	N/A	N/A	-		-	-	-	666	1900	1900	35.1%
6/2	Right	U	N/A	N/A	-		-	-	-	396	1900	1900	20.8%
7/1	Ahead	U	2	N/A	B		1	25	-	411	1900	772	53.2%
7/2	Right Ahead	U	2	N/A	B		1	25	-	454	1900	772	58.8%
7/3	Right	U	2	N/A	B		1	25	-	199	1900	772	25.8%
8/1	Right Ahead	U	N/A	N/A	-		-	-	-	796	1900	1900	41.9%
8/2	Right	U	N/A	N/A	-		-	-	-	752	1900	1900	39.6%
9/1	Ahead	U	N/A	N/A	-		-	-	-	573	1900	1900	30.2%
9/2	Right Ahead	U	N/A	N/A	-		-	-	-	1027	1900	1900	54.1%
10/1	Ahead	U	1	N/A	D		1	25	-	411	1900	772	53.2%
10/2	Right Ahead	U	1	N/A	D		1	25	-	300	1900	772	38.9%
10/3	Right	U	1	N/A	D		1	25	-	35	1900	772	4.5%
11/1		U	N/A	N/A	-		-	-	-	548	Inf	Inf	0.0%

Full Input Data And Results

11/2		U	N/A	N/A	-		-	-	-	206	1900	1900	10.8%
12/1		U	N/A	N/A	-		-	-	-	1076	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	433	1900	1900	22.8%
13/2		U	N/A	N/A	-		-	-	-	151	Inf	Inf	0.0%
14/1		U	N/A	N/A	-		-	-	-	491	1900	1900	25.8%
15/1		U	N/A	N/A	-		-	-	-	737	1900	1900	38.8%
15/2		U	N/A	N/A	-		-	-	-	468	Inf	Inf	0.0%

Full Input Data And Results

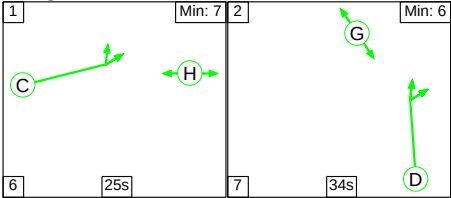
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: HCC revised 2026 traffic flows	-	-	2640	0	0	15.1	12.0	0.0	27.1	-	-	-	-
Unnamed Junction	-	-	2640	0	0	15.1	12.0	0.0	27.1	-	-	-	-
1/1	410	410	410	0	0	0.0	0.6	-	0.6	4.9	1.1	0.6	1.7
1/3+1/2	668	668	1336	0	0	0.4	0.7	-	1.1	6.0	3.1	0.7	3.8
2/1	515	515	-	-	-	1.8	0.7	-	2.5	17.2	6.6	0.7	7.3
2/2	553	553	-	-	-	2.0	0.8	-	2.8	18.0	7.2	0.8	8.0
3/1	268	268	268	0	0	0.3	1.1	-	1.4	18.5	2.2	1.1	3.3
3/2	275	275	275	0	0	0.3	1.2	-	1.5	19.5	2.4	1.2	3.5
4/1	170	170	170	0	0	0.1	0.2	-	0.3	5.9	0.8	0.2	1.0
4/2	181	181	181	0	0	0.1	0.2	-	0.3	5.5	0.9	0.2	1.0
5/2+5/1	709	709	-	-	-	2.5	1.3	-	3.8	19.4	8.5	1.3	9.8
5/3	361	361	-	-	-	1.1	0.3	-	1.5	14.5	4.1	0.3	4.5
6/1	666	666	-	-	-	0.0	0.3	-	0.3	1.5	0.0	0.3	0.3
6/2	396	396	-	-	-	0.0	0.1	-	0.1	1.2	0.0	0.1	0.1
7/1	411	411	-	-	-	1.7	0.6	-	2.3	19.9	5.3	0.6	5.9
7/2	454	454	-	-	-	1.9	0.7	-	2.7	21.0	5.1	0.7	5.8
7/3	199	199	-	-	-	0.7	0.2	-	0.9	15.4	2.5	0.2	2.7
8/1	796	796	-	-	-	0.0	0.4	-	0.4	1.6	0.0	0.4	0.4
8/2	752	752	-	-	-	0.0	0.3	-	0.3	1.6	0.0	0.3	0.3
9/1	573	573	-	-	-	0.0	0.2	-	0.2	1.4	0.0	0.2	0.2
9/2	1027	1027	-	-	-	0.0	0.6	-	0.6	2.1	0.0	0.6	0.6
10/1	411	411	-	-	-	1.0	0.6	-	1.6	13.8	2.9	0.6	3.5
10/2	300	300	-	-	-	1.1	0.3	-	1.4	16.9	3.4	0.3	3.7
10/3	35	35	-	-	-	0.1	0.0	-	0.1	14.3	0.4	0.0	0.4
11/1	548	548	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

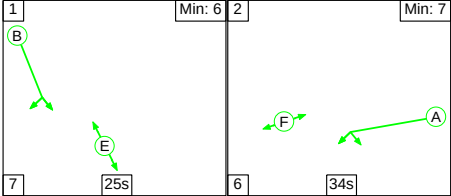
[illegible]

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

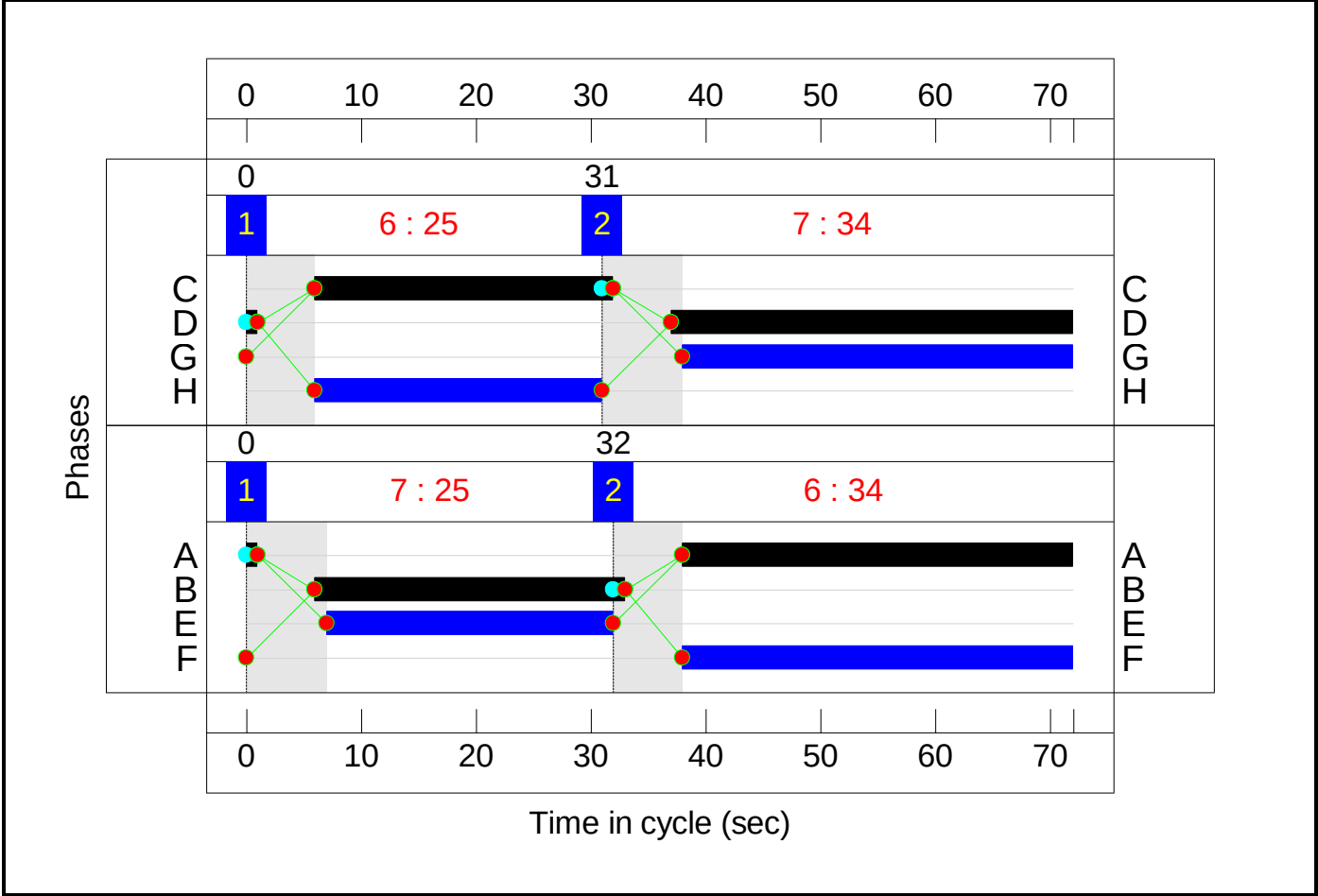
Stage Stream: 1

Stage	1	2
Duration	25	34
Change Point	0	31

Stage Stream: 2

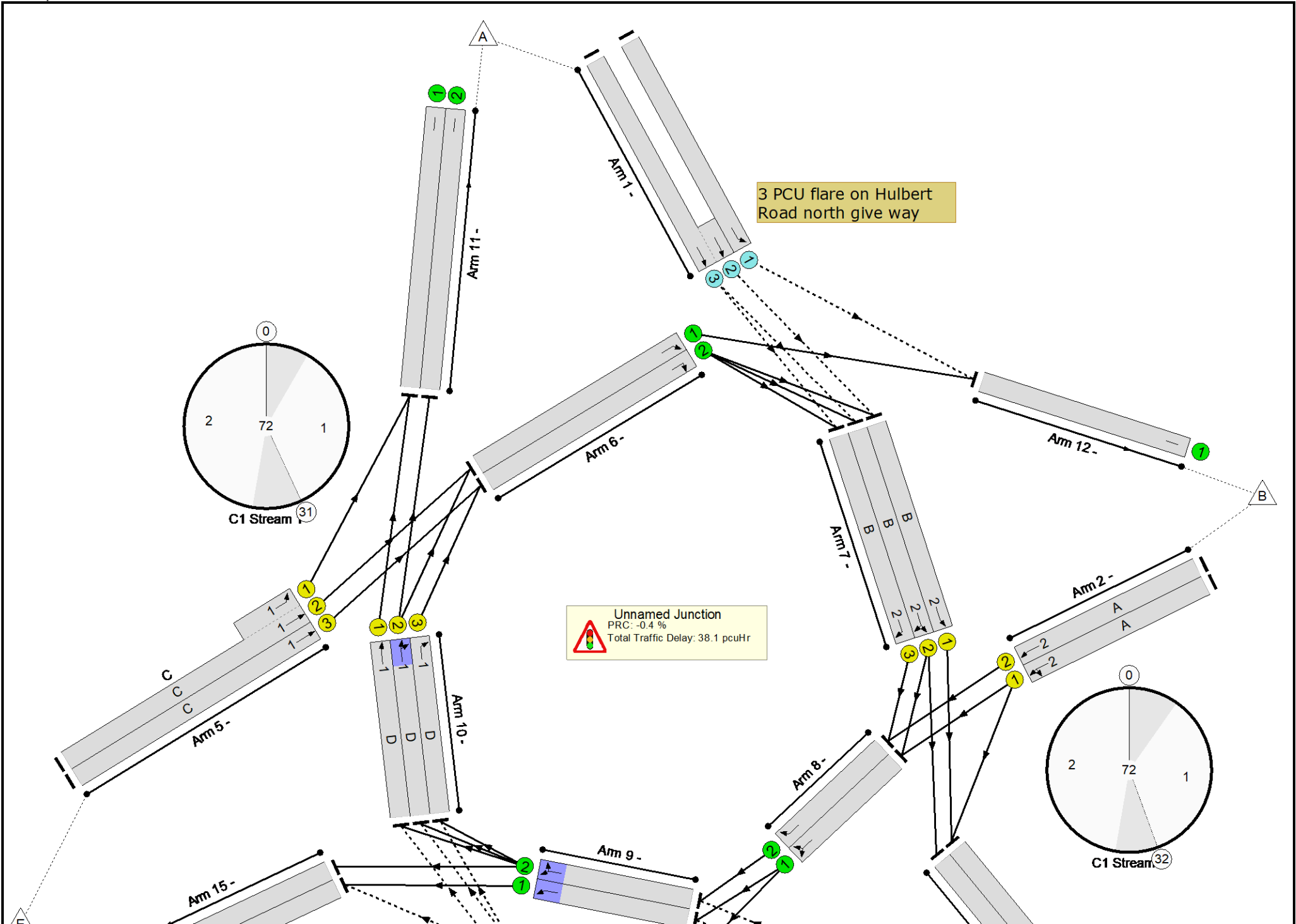
Stage	1	2
Duration	25	34
Change Point	0	32

Signal Timings Diagram



Full Input Data And Results

Network Layout 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: HCC revised 2026 traffic flows	-	-	N/A	-	-		-	-	-	-	-	-	90.4%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	90.4%
1/1	Ahead	O	N/A	N/A	-		-	-	-	454	1900	717	63.4%
1/3+1/2	Ahead	O	N/A	N/A	-		-	-	-	483	1900:1900	909	53.1%
2/1	Ahead Left	U	2	N/A	A		1	35	-	522	1900	950	54.9%
2/2	Ahead	U	2	N/A	A		1	35	-	581	1900	950	61.2%
3/1	Ahead Left	O	N/A	N/A	-		-	-	-	246	1900	350	70.4%
3/2	Ahead	O	N/A	N/A	-		-	-	-	250	1900	350	71.5%
4/1	Ahead Left	O	N/A	N/A	-		-	-	-	387	1900	566	68.3%
4/2	Ahead	O	N/A	N/A	-		-	-	-	404	1900	711	56.8%
5/2+5/1	Ahead Left	U	1	N/A	C		1	26	-	696	1900:1900	770	90.4%
5/3	Ahead	U	1	N/A	C		1	26	-	441	1900	713	61.9%
6/1	Right	U	N/A	N/A	-		-	-	-	858	1900	1900	45.2%
6/2	Right	U	N/A	N/A	-		-	-	-	523	1900	1900	27.5%
7/1	Ahead	U	2	N/A	B		1	27	-	393	1900	739	53.2%
7/2	Right Ahead	U	2	N/A	B		1	27	-	475	1900	739	64.3%
7/3	Right	U	2	N/A	B		1	27	-	138	1900	739	18.7%
8/1	Right Ahead	U	N/A	N/A	-		-	-	-	961	1900	1900	50.6%
8/2	Right	U	N/A	N/A	-		-	-	-	719	1900	1900	37.8%
9/1	Ahead	U	N/A	N/A	-		-	-	-	442	1900	1900	23.3%
9/2	Right Ahead	U	N/A	N/A	-		-	-	-	969	1900	1900	51.0%
10/1	Ahead	U	1	N/A	D		1	36	-	595	1900	976	60.9%
10/2	Right Ahead	U	1	N/A	D		1	36	-	482	1900	976	49.4%
10/3	Right	U	1	N/A	D		1	36	-	82	1900	976	8.4%
11/1		U	N/A	N/A	-		-	-	-	701	Inf	Inf	0.0%

Full Input Data And Results

11/2		U	N/A	N/A	-		-	-	-	214	1900	1900	11.3%
12/1		U	N/A	N/A	-		-	-	-	1312	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	424	1900	1900	22.3%
13/2		U	N/A	N/A	-		-	-	-	5	Inf	Inf	0.0%
14/1		U	N/A	N/A	-		-	-	-	765	1900	1900	40.3%
15/1		U	N/A	N/A	-		-	-	-	741	1900	1900	39.0%
15/2		U	N/A	N/A	-		-	-	-	302	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: HCC revised 2026 traffic flows	-	-	2707	0	0	20.3	17.8	0.0	38.1	-	-	-	-
Unnamed Junction	-	-	2707	0	0	20.3	17.8	0.0	38.1	-	-	-	-
1/1	454	454	454	0	0	0.0	0.9	-	0.9	7.1	2.8	0.9	3.6
1/3+1/2	483	483	966	0	0	0.5	0.6	-	1.0	7.7	2.9	0.6	3.5
2/1	522	522	-	-	-	1.8	0.6	-	2.4	16.6	7.1	0.6	7.7
2/2	581	581	-	-	-	2.1	0.8	-	2.9	17.8	8.2	0.8	9.0
3/1	246	246	246	0	0	0.3	1.2	-	1.5	21.4	2.3	1.2	3.4
3/2	250	250	250	0	0	0.3	1.2	-	1.5	22.1	2.4	1.2	3.6
4/1	387	387	387	0	0	0.4	1.1	-	1.4	13.4	4.0	1.1	5.0
4/2	404	404	404	0	0	0.3	0.7	-	1.0	8.7	3.6	0.7	4.2
5/2+5/1	696	696	-	-	-	4.0	4.2	-	8.2	42.3	12.1	4.2	16.3
5/3	441	441	-	-	-	2.2	0.8	-	3.1	24.9	7.1	0.8	7.9
6/1	858	858	-	-	-	0.0	0.4	-	0.4	1.7	0.0	0.4	0.4
6/2	523	523	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2
7/1	393	393	-	-	-	2.0	0.6	-	2.5	23.3	5.4	0.6	5.9
7/2	475	475	-	-	-	1.8	0.9	-	2.7	20.8	4.5	0.9	5.4
7/3	138	138	-	-	-	0.7	0.1	-	0.8	20.7	2.2	0.1	2.3
8/1	961	961	-	-	-	0.0	0.5	-	0.5	1.9	0.0	0.5	0.5
8/2	719	719	-	-	-	0.0	0.3	-	0.3	1.5	0.0	0.3	0.3
9/1	442	442	-	-	-	0.0	0.2	-	0.2	1.2	0.0	0.2	0.2
9/2	969	969	-	-	-	0.0	0.5	-	0.5	1.9	0.0	0.5	0.5
10/1	595	595	-	-	-	1.7	0.8	-	2.5	15.1	5.4	0.8	6.1
10/2	482	482	-	-	-	1.9	0.5	-	2.4	17.7	6.5	0.5	7.0
10/3	82	82	-	-	-	0.3	0.0	-	0.3	14.4	1.0	0.0	1.0
11/1	701	701	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

11/2	214	214	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.1	0.1
12/1	1312	1312	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	424	424	-	-	-	0.0	0.1	-	0.1	1.2	0.0	0.1	0.1
13/2	5	5	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	765	765	-	-	-	0.0	0.3	-	0.3	1.6	0.0	0.3	0.3
15/1	741	741	-	-	-	0.0	0.3	-	0.3	1.6	0.0	0.3	0.3
15/2	302	302	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
			C1 Stream: 1 PRC for Signalled Lanes (%): C1 Stream: 2 PRC for Signalled Lanes (%): PRC Over All Lanes (%)	-0.4 40.0 -0.4	Total Delay for Signalled Lanes (pcuHr): Total Delay for Signalled Lanes (pcuHr): Total Delay Over All Lanes(pcuHr):	16.42 11.36 38.07	Cycle Time (s): Cycle Time (s):	72 72					

APPENDIX C – LAND OWNERSHIP PLANS

