

Technical Note

Introduction

- 1.1 This Technical Note (TN) has been prepared on behalf of Aster Group to consider the impact of development at Clays Farm on the A27 / Yapton Lane priority junction.
- 1.2 The development site is accessed from North End Road, which becomes Yapton Lane to the north of the development site. Continuing north, Yapton Lane meets the A27.
- 1.3 The site was subject to an outline planning application for 33 dwellings in 2018 (ref: Y/62/18/OUT), which was refused by Arun District Council.
- 1.4 A subsequent appeal against refusal to grant planning permission was made (ref: APP/C3810/W/19/3234972). The Inspector concluded that the appeal should be allowed and the Appeal Decision included a schedule of planning conditions.
- 1.5 The Grampian condition relevant to this TN is Condition 17, which was requested by Highways England in order to mitigate the effects of increased use of the A27 arising from the development. It states:

‘Prior to the first occupation of the seventeenth dwelling within the development hereby permitted, improvement works at the junction of the A27 and Yapton Lane shown on i-Transport’s drawing number ITB11324-GA-014 Rev C “Proposed extension to A27 Yapton Lane right turn” dated 30/8/17, shall be completed and open to the public.’
- 1.6 Condition 17 permits 50% of the Clays Farm development to be occupied before the improvement to the A27 / Yapton Lane junction is required. The improvement identified in the condition is an extension to the right turn lane from the A27 into Yapton Lane, to improve queuing capacity. Similar Grampian conditions have been imposed on a number of other development schemes in the area.
- 1.7 Although not related to the Clays Farm development, there are plans to introduce an A27 Arundel Bypass to replace the existing single carriageway with a dual carriageway bypass. At its junction with the Yapton Lane, the A27 is dual carriageway. The preferred route would see the bypass introduced to the west of the A27 / Yapton Lane junction, with the bypass running to the south of the existing A27, as shown in **Figure 1.1**.

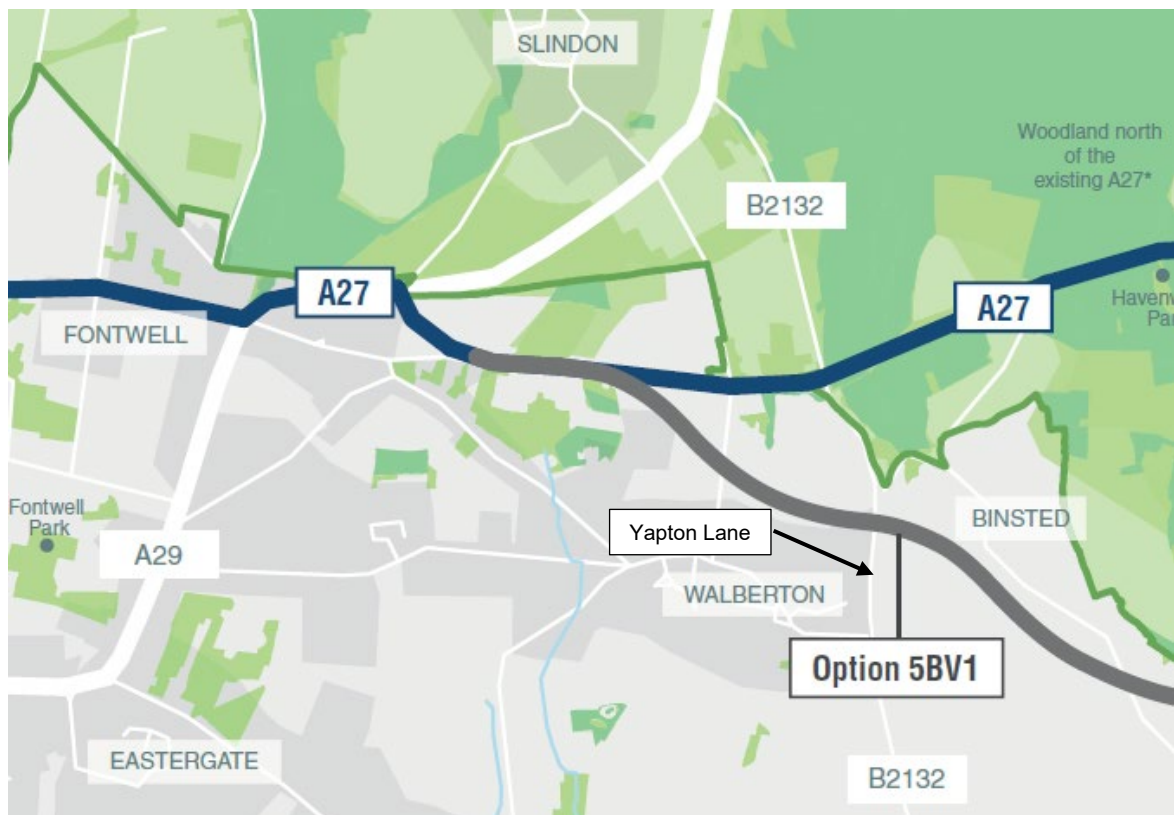


Figure 1.1: A27 Bypass Preferred Route

- 1.8 This TN therefore considers:
- The traffic impact of the proposed Clays Farm development on the A27 / Yapton Lane junction;
 - The cumulative quantum of housing in the area that can be occupied based on the respective planning conditions imposed at nearby consented development sites; and
 - The implications of the introduction of the A27 Arundel Bypass.

Impact on A27 / Yapton Lane Junction

[Development Trip Generation Assessment](#)

- 1.9 The 2018 Transport Statement submitted with the Clays Farm planning application estimated the vehicle trip generation of the development of 33 dwellings during weekday peak hours, as shown in **Table 1.1**.
- 1.10 The trigger for improvement of the A27 / Yapton Lane junction is occupation of 50% of the development and so **Table 1.1** also includes the vehicle trip generation of 16 dwellings at Clays Farm.

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Clays Farm, North End Road, Yapton, Arundel

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	AM Peak		PM Peak	
	Arrivals	Departures	Arrivals	Departures
33 dwellings	5	14	12	5
16 dwellings	2	7	6	3

Table 1.1: Clays Farm Vehicle Trip Generation

- 1.11 One of the nearby approved developments with a 50% occupation restriction applied is land East of Tye Lane in Walberton, which has approval for 175 dwellings. The Transport Assessment (TA) that supported this application included a Census based distribution, which indicated that 68% of development traffic is likely to be assigned northwards towards the A27 / Yapton Lane junction and then onto the A27 or A29. This methodology has been adopted for the Clays Farm development, with the assignment of vehicle trips relating to 16 dwellings, set out in **Table 1.2**.

Route	%	AM Peak		PM Peak	
		Arrivals	Departures	Arrivals	Departures
Yapton Lane N	68%	2	7	6	3
A27 W	44%	2	4	4	2
A27 E	13%	0	1	1	1
A29 S	6%	0	1	1	0
A29 N	5%	0	1	0	0

Table 1.2: Clays Farm Vehicle Trip Assignment – 16 Dwellings

Junction Modelling

- 1.12 The Tye Lane TA included modelling of the A27 / Yapton Lane priority junction, utilising SATURN assignment model traffic flows for a future year of 2031. To understand the implications of introducing traffic associated with the residual quantum of Clays Farm development that triggers an improvement to the A27 / Yapton Lane junction (16 dwellings), this junction modelling has been replicated in Junctions 9.
- 1.13 The Junctions 9 modelling output is contained in **Appendix A** and **Table 1.3** shows the operation of the junction with 2031 SATURN model traffic flows. With respect to the impact of the Clays Farm development, **Table 1.4** shows the pre-trigger scenario (i.e. 2031 SATURN flows with 17 dwellings occupied at Clays Farm) and **Table 1.5** shows the post-trigger scenario (i.e. base scenario with an additional 16 dwellings occupied at Clays Farm).

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Arm	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	Max. RFC	Max. Q	Max. RFC	Max. Q
Yapton Lane	0.35	0.5	0.23	0.3
A27 W right turn	0.22	0.3	0.57	1.3

Table 1.3: 2031 SATURN Model Traffic Flows Base Scenario

Arm	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	Max. RFC	Max. Q	Max. RFC	Max. Q
Yapton Lane	0.37	0.6	0.24	0.3
A27 W right turn	0.22	0.3	0.57	1.3

Table 1.4: 2031 Pre-trigger Scenario

Arm	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	Max. RFC	Max. Q	Max. RFC	Max. Q
Yapton Lane	0.38	0.6	0.24	0.3
A27 W right turn	0.23	0.3	0.58	1.4

Table 1.5: 2031 Post-trigger Scenario

- 1.14 The limit of occupations at Clays Farm before an A27 / Yapton Lane junction improvement is required, is 17 dwellings. With traffic associated with this added to the 2031 SATURN flows, there is predicted to be a maximum queue of 0.3 PCUs (Passenger Car Units) in the AM Peak and 1.3 PCUs in the PM Peak on the right turn lane from the A27 into Yapton Lane (**Table 1.4**).
- 1.15 Adding traffic relating to the remainder of the development that would trigger the need for an A27 / Yapton Lane junction improvement to accord with Condition 17 of the planning permission, there is predicted to be a maximum queue of 0.3 PCUs in the AM Peak and 1.4 PCUs in the PM Peak on the right turn lane from the A27 into Yapton Lane (**Table 1.5**).
- 1.16 Comparing **Tables 1.4 and 1.5**, the junction modelling results show no change in queuing on the right turn lane in the AM peak and a 0.1 PCU increase in queuing in the PM Peak with traffic generated by 16 dwellings. This quantum of development at Clays Farm will have an imperceptible impact on the operation of the A27 / Yapton Lane junction and therefore it is considered that the full quantum of the Clays Farm development could come forward without the requirement for the improvement to the A27 / Yapton Lane junction.

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Cumulative Development Assessment

- 1.17 Condition 17 permits 50% of the Clays Farm development (17 of 33 dwellings) to be occupied before the improvement to the A27 / Yapton Lane junction is required. Similar conditions have been imposed on a number of other development schemes in the area. These development schemes are set out in **Table 1.5**, which identifies the number of dwellings that can be occupied at each site before the A27 / Yapton Lane junction improvement is required, based on respective planning conditions.

Permitted Development	Dwellings	A27 / Yapton Lane junction improvement trigger	Permitted dwelling occupations before improvement is required
Linden Wates – Tye Lane WA/44/17/OUT	175	50%	89
Redrow – Strakers Farm Y/49/17/OUT	45	51%	23
Redrow – Ford Lane Y/80/16/OUT	100	50%	50
Dandara (southern) Y/44/17/OUT	70	70%	49
Total	428		211

Table 1.5: Nearby permitted developments

- 1.18 As shown above, 211 dwellings are permitted to be occupied before the A27 / Yapton Lane junction improvement is required, which indicates there is significant scope to occupy the Clays Farm development in full without the need for this improvement.
- 1.19 Furthermore, the Tye Lane scheme is likely to be impacted by the preferred route of the A27 bypass and may not be able to deliver the full 89 occupations before the A27 / Yapton Lane junction improvement is required. This would offer the potential for the Tye Lane pre-trigger allocation to be used elsewhere and provide the potential for the Clays Farm development to be occupied in full without the need to improve the A27 / Yapton Lane junction.
- 1.20 Elsewhere, the Dandara northern site development (application ref: Y/88/18/OUT) to the south of Clays Farm has been permitted for 38 dwellings without the 50% occupancy condition applied. In addition, Highways England have not responded to an application for 11 dwellings nearby (application ref: Y/121/19/PL).

Implications of the A27 Arundel Bypass

- 1.21 The highways England Scheme Assessment Report (PCF Stage 2 Further Consultation) for the A27 Arundel Bypass dated shows the estimated change in peak hour traffic flows as a result of the bypass scheme. These have been replicated in **Figures 1.2 and 1.3** for the AM and PM peaks respectively and show that traffic levels on the A27 in the vicinity of Yapton Lane are estimated to decrease by 86% and 89% in the AM peak and 69% and 89% in the PM peak.

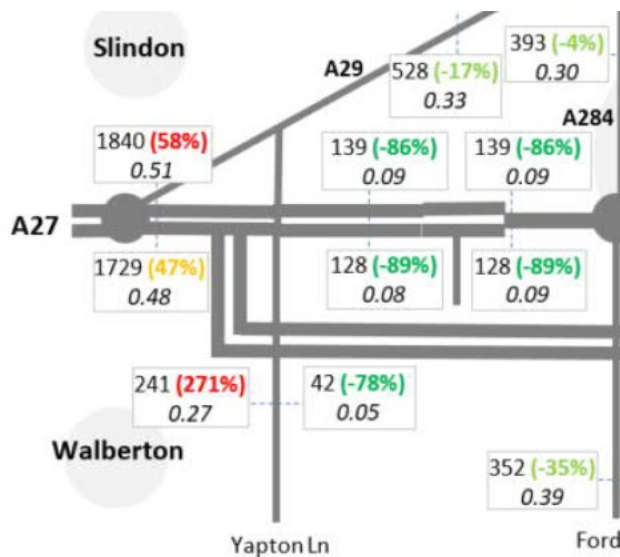


Figure 1.2: A27 Bypass Traffic flows – AM Peak

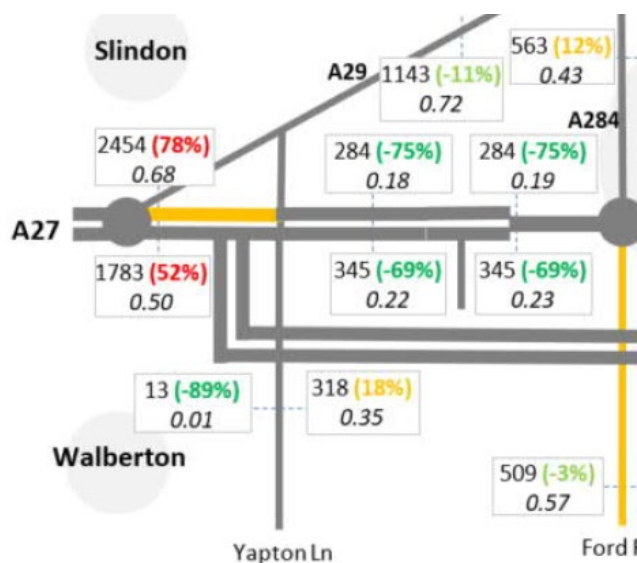


Figure 1.3: A27 Bypass Traffic flows – PM Peak

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Clays Farm, North End Road, Yapton, Arundel

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- 1.22 This significant reduction in traffic on the A27 as a result of the bypass is likely to negate the need to improve the A27 / Yapton Lane junction and therefore any improvement would not be needed once the new route comes forward.

Summary and Conclusions

- 1.23 This Technical Note (TN) has been prepared on behalf of Aster Group to consider the impact of the development of 33 dwellings at Clays Farm on the A27 / Yapton Lane priority junction.
- 1.24 The development site is subject to a Grampian condition, which means that 50% (16 dwellings) of the development cannot be occupied until improvement works at the A27 / Yapton Lane junction are in place.
- 1.25 This TN demonstrates that the development could be fully occupied without the need to improve the A27 / Yapton Lane junction on the basis that:
- Junction modelling indicates that development at Clays Farm will have an imperceptible impact on the operation of the A27 / Yapton Lane junction; and
 - In the local area, 211 dwellings are permitted to be occupied before the A27 / Yapton Lane junction improvement is required. The uncertainties around the full delivery of the 211 units coupled with the imperceptible impact that would be generated by the unrestricted addition of 16 units from Clays Farm would mean it would be wholly unreasonable from a highways perspective to retain the planning condition.
- 1.26 In addition, a significant reduction in traffic on the A27 as a result of the bypass scheme is likely to negate the need to improve the A27 / Yapton Lane junction and therefore any improvement would not be needed once the bypass comes forward.
- 1.27 Given the foregoing, it is considered that the right turn lane improvement scheme is not warranted to facilitate the full provision of 33 residential units on the Clays farm site.

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Date: 27th January 2021

APPENDIX A: Junction 9 Output

Junctions 9											
PICADY 9 - Priority Intersection Module											
Version: 9.5.1.7462 © Copyright TRL Limited, 2019											
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk											
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution											

Filename: A27_Yapton Lane.j9

Path: H:_Planning 7\Current jobs\DDNorthEndRoad\Modelling and TRICS

Report generation date: 22/01/2021 16:08:07

- »2031 SATURN Flows, AM
- »2031 SATURN Flows, PM
- »2031 Base (incl pre trigger), AM
- »2031 Base (incl pre trigger), PM
- »2031 Dev (incl post trigger), AM
- »2031 Dev (incl post trigger), PM

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
	2031 SATURN Flows											
Stream B-AC	D1	0.5	8.68	0.35	A	61 %	D2	0.3	7.58	0.23	A	26 %
Stream C-AB		0.3	7.47	0.22	A	[Stream B-AC]		1.3	13.91	0.57	B	[Stream C-AB]
	2031 Base (incl pre trigger)											
Stream B-AC	D3	0.6	8.84	0.37	A	58 %	D4	0.3	7.63	0.24	A	25 %
Stream C-AB		0.3	7.51	0.22	A	[Stream B-AC]		1.3	14.22	0.57	B	[Stream C-AB]
	2031 Dev (incl post trigger)											
Stream B-AC	D5	0.6	9.01	0.38	A	56 %	D6	0.3	7.69	0.24	A	24 %
Stream C-AB		0.3	7.55	0.23	A	[Stream B-AC]		1.4	14.55	0.58	B	[Stream C-AB]

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

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	A27 / Yapton Lane
Location	
Site number	
Date	22/01/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MAYERBROWN2K1kchaney
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031 SATURN Flows	AM	ONE HOUR	07:00	08:30	15
D2	2031 SATURN Flows	PM	ONE HOUR	16:30	18:00	15
D3	2031 Base (incl pre trigger)	AM	ONE HOUR	07:00	08:30	15
D4	2031 Base (incl pre trigger)	PM	ONE HOUR	16:30	18:00	15
D5	2031 Dev (incl post trigger)	AM	ONE HOUR	07:00	08:30	15
D6	2031 Dev (incl post trigger)	PM	ONE HOUR	16:30	18:00	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2031 SATURN Flows, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.99	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	61	Stream B-AC

Arms

Arms

Arm	Name	Description	Arm type
A	A27 (E)		Major
B	Yapton Lane		Minor
C	A27 (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	14.60	✓	7.00	✓	4.48	250.0	✓	20.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	4.96	250	250

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	964	0.095	0.240	0.151	0.343
B-C	935	0.090	0.227	-	-
C-B	897	0.218	0.218	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2031 SATURN Flows	AM	ONE HOUR	07:00	08:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	1174	100.000
B		✓	206	100.000
C		✓	1342	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	0	1174
	B	0	0	206
	C	1220	122	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.35	8.68	0.5	A
C-AB	0.22	7.47	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	155	734	0.211	154	0.3	6.192	A
C-AB	92	705	0.130	91	0.1	5.863	A
C-A	918			918			
A-B	0			0			
A-C	884			884			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	185	695	0.266	185	0.4	7.046	A
C-AB	110	668	0.164	109	0.2	6.450	A
C-A	1097			1097			
A-B	0			0			
A-C	1055			1055			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	227	642	0.353	226	0.5	8.648	A
C-AB	134	616	0.218	134	0.3	7.465	A
C-A	1343			1343			
A-B	0			0			
A-C	1293			1293			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	227	642	0.353	227	0.5	8.676	A
C-AB	134	616	0.218	134	0.3	7.474	A
C-A	1343			1343			
A-B	0			0			
A-C	1293			1293			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	185	695	0.266	186	0.4	7.073	A
C-AB	110	668	0.164	110	0.2	6.462	A
C-A	1097			1097			
A-B	0			0			
A-C	1055			1055			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	155	734	0.211	155	0.3	6.225	A
C-AB	92	705	0.130	92	0.2	5.878	A
C-A	918			918			
A-B	0			0			
A-C	884			884			

2031 SATURN Flows, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.82	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	26	Stream C-AB

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2031 SATURN Flows	PM	ONE HOUR	16:30	18:00	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	1264	100.000
B		✓	131	100.000
C		✓	1484	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	0	1264
	B	0	0	131
	C	1179	305	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.23	7.58	0.3	A
C-AB	0.57	13.91	1.3	B
C-A				
A-B				
A-C				

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	99	719	0.137	98	0.2	5.791	A
C-AB	230	690	0.333	228	0.5	7.753	A
C-A	888			888			
A-B	0			0			
A-C	952			952			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	118	677	0.174	118	0.2	6.432	A
C-AB	274	650	0.422	273	0.7	9.536	A
C-A	1060			1060			
A-B	0			0			
A-C	1136			1136			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	144	619	0.233	144	0.3	7.573	A
C-AB	336	594	0.565	334	1.3	13.694	B
C-A	1298			1298			
A-B	0			0			
A-C	1392			1392			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	144	619	0.233	144	0.3	7.578	A
C-AB	336	594	0.565	336	1.3	13.906	B
C-A	1298			1298			
A-B	0			0			
A-C	1392			1392			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	118	677	0.174	118	0.2	6.443	A
C-AB	274	650	0.422	276	0.7	9.691	A
C-A	1060			1060			
A-B	0			0			
A-C	1136			1136			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	99	719	0.137	99	0.2	5.808	A
C-AB	230	690	0.333	231	0.5	7.851	A
C-A	888			888			
A-B	0			0			
A-C	952			952			

2031 Base (incl pre trigger), AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.03	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	58	Stream B-AC

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2031 Base (incl pre trigger)	AM	ONE HOUR	07:00	08:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	1174	100.000
B		✓	213	100.000
C		✓	1344	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	0	1174
	B	0	0	213
	C	1220	124	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.37	8.84	0.6	A
C-AB	0.22	7.51	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	160	734	0.218	159	0.3	6.249	A
C-AB	93	705	0.132	93	0.2	5.875	A
C-A	918			918			
A-B	0			0			
A-C	884			884			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	191	695	0.275	191	0.4	7.131	A
C-AB	111	668	0.167	111	0.2	6.471	A
C-A	1097			1097			
A-B	0			0			
A-C	1055			1055			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	235	642	0.365	234	0.6	8.808	A
C-AB	137	616	0.222	136	0.3	7.499	A
C-A	1343			1343			
A-B	0			0			
A-C	1293			1293			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	235	642	0.365	235	0.6	8.841	A
C-AB	137	616	0.222	137	0.3	7.508	A
C-A	1343			1343			
A-B	0			0			
A-C	1293			1293			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	191	695	0.275	192	0.4	7.163	A
C-AB	111	668	0.167	112	0.2	6.481	A
C-A	1097			1097			
A-B	0			0			
A-C	1055			1055			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	160	734	0.218	161	0.3	6.282	A
C-AB	93	705	0.132	94	0.2	5.890	A
C-A	918			918			
A-B	0			0			
A-C	884			884			

2031 Base (incl pre trigger), PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.88	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	25	Stream C-AB

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2031 Base (incl pre trigger)	PM	ONE HOUR	16:30	18:00	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	1265	100.000
B		✓	134	100.000
C		✓	1489	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	1	1264
	B	0	0	134
	C	1179	310	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.24	7.63	0.3	A
C-AB	0.57	14.22	1.3	B
C-A				
A-B				
A-C				

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	101	719	0.140	100	0.2	5.813	A
C-AB	233	690	0.338	231	0.5	7.817	A
C-A	888			888			
A-B	0.75			0.75			
A-C	952			952			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	120	677	0.178	120	0.2	6.466	A
C-AB	279	650	0.429	278	0.7	9.653	A
C-A	1060			1060			
A-B	0.90			0.90			
A-C	1136			1136			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	148	619	0.238	147	0.3	7.620	A
C-AB	341	594	0.575	339	1.3	13.989	B
C-A	1298			1298			
A-B	1			1			
A-C	1392			1392			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	148	619	0.238	148	0.3	7.632	A
C-AB	341	594	0.575	341	1.3	14.222	B
C-A	1298			1298			
A-B	1			1			
A-C	1392			1392			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	120	677	0.178	121	0.2	6.478	A
C-AB	279	650	0.429	281	0.8	9.821	A
C-A	1060			1060			
A-B	0.90			0.90			
A-C	1136			1136			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	101	719	0.140	101	0.2	5.830	A
C-AB	233	690	0.338	234	0.5	7.919	A
C-A	888			888			
A-B	0.75			0.75			
A-C	952			952			

2031 Dev (incl post trigger), AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.07	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	56	Stream B-AC

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	2031 Dev (incl post trigger)	AM	ONE HOUR	07:00	08:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	1175	100.000
B		✓	220	100.000
C		✓	1346	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	1	1174
	B	0	0	220
	C	1220	126	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.38	9.01	0.6	A
C-AB	0.23	7.55	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	166	734	0.226	164	0.3	6.305	A
C-AB	95	705	0.135	94	0.2	5.891	A
C-A	918			918			
A-B	0.75			0.75			
A-C	884			884			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	198	695	0.284	197	0.4	7.222	A
C-AB	113	667	0.170	113	0.2	6.494	A
C-A	1097			1097			
A-B	0.90			0.90			
A-C	1055			1055			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	242	642	0.378	241	0.6	8.977	A
C-AB	139	616	0.225	138	0.3	7.538	A
C-A	1343			1343			
A-B	1			1			
A-C	1293			1293			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	242	642	0.378	242	0.6	9.013	A
C-AB	139	616	0.225	139	0.3	7.547	A
C-A	1343			1343			
A-B	1			1			
A-C	1293			1293			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	198	695	0.284	199	0.4	7.257	A
C-AB	113	667	0.170	114	0.2	6.507	A
C-A	1097			1097			
A-B	0.90			0.90			
A-C	1055			1055			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	166	734	0.226	166	0.3	6.342	A
C-AB	95	705	0.135	95	0.2	5.906	A
C-A	918			918			
A-B	0.75			0.75			
A-C	884			884			

2031 Dev (incl post trigger), PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.95	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	24	Stream C-AB

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	2031 Dev (incl post trigger)	PM	ONE HOUR	16:30	18:00	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	1266	100.000
B		✓	137	100.000
C		✓	1494	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	2	1264
	B	0	0	137
	C	1179	315	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.24	7.69	0.3	A
C-AB	0.58	14.55	1.4	B
C-A				
A-B				
A-C				

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	103	719	0.143	102	0.2	5.835	A
C-AB	237	690	0.344	235	0.5	7.883	A
C-A	888			888			
A-B	2			2			
A-C	952			952			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	123	677	0.182	123	0.2	6.493	A
C-AB	283	650	0.436	282	0.8	9.774	A
C-A	1060			1060			
A-B	2			2			
A-C	1136			1136			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	151	619	0.244	150	0.3	7.676	A
C-AB	347	594	0.584	344	1.4	14.294	B
C-A	1298			1298			
A-B	2			2			
A-C	1392			1392			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	151	619	0.244	151	0.3	7.688	A
C-AB	347	594	0.584	347	1.4	14.550	B
C-A	1298			1298			
A-B	2			2			
A-C	1392			1392			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	123	677	0.182	124	0.2	6.509	A
C-AB	283	650	0.436	286	0.8	9.955	A
C-A	1060			1060			
A-B	2			2			
A-C	1136			1136			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	103	719	0.143	103	0.2	5.852	A
C-AB	237	690	0.344	238	0.5	7.989	A
C-A	888			888			
A-B	2			2			
A-C	952			952			