



Transport Assessment

**Proposed Residential Development
Land north of Hookhams Lane
Salph End
Bedford**

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Contents

1.0	Introduction	1
1.1	Instructions	1
1.2	Site Location	1
1.3	Current Use and Description	2
1.4	Proposed Development.....	2
1.5	Revision Record	2
2.0	Existing Conditions – Site Information	3
2.1	Site Location	3
2.2	Permitted Use.....	3
2.3	Neighbouring Land Uses.....	3
2.4	Existing Access Arrangements	3
3.0	Existing Conditions – Baseline Transport Data	4
3.1	Walking and Cycling.....	4
3.2	Public Transport.....	5
3.3	Highway network.....	6
3.4	Accident Data	6
3.5	Accessibility to Education	7
3.6	Accessibility to Health	8
3.7	Accessibility to Retail and Leisure	8
3.8	Accessibility to Employment	8
3.9	Summary.....	8
4.0	Policy Review	9
4.1	Introduction.....	9
4.2	National Policy	9
4.3	National Planning Policy Framework.....	9
5.0	Proposed Development	11
5.1	Type and Scale	11
5.2	Access – all modes	11
5.3	Parking.....	12
5.4	Trip Generation	12
6.0	Junction Impact Assessment.....	14
6.1	Area of Assessment	14
6.2	Distribution.....	14
6.3	Assessment Year	15

6.4	Background Traffic.....	15
6.5	Committed Development.....	15
7.0	Junction Analysis Results	16
7.1	Introduction.....	16
7.2	A1: Site Access off Hookhams Lane.....	16
7.3	A2: Site Access off Ravensden Road.....	17
	Junction 1: Hookhams Lane / Norse Road / Church Lane / Wentworth Drive	18
7.4	Junction 2: Wentworth Drive / Putnoe Lane.....	19
7.5	Junction 3: A4280 St Neots Road / A4280 Goldington Road / Norse Road.....	20
7.7	Junction 4: A421 / St Neots Road / A4280.	22
7.8	Junction 5: Ravensden Rd / Oldways Rd / Church End.....	24
7.9	Junction 6: B660 / Oldways Rd / Thurleigh Rd	25
8.0	Conclusion.....	27
8.1	Site Location and Permitted Use	27
8.2	Existing Conditions	27
8.3	Proposed Development.....	27

Appendices

Appendix A	A
Location Plan.....	A
MAC drawing no. 248-TA01.....	A
Appendix B	B
Topographical Survey	B
MSurv drawing no. 1215/2272/1, 2 and 3.....	B
Appendix C	C
Parameters Plan.....	C
RG+P drawing no. 40986 013C	C
Appendix D	D
Facilities Plan and Walking Distances	D
MAC drawing no. 248-TA02.....	D
Appendix E	E
Bus timetables and routes	E
Appendix F	F
Accident Data.....	F
Appendix G	G
Hookhams Lane Access.....	G
MAC drawing no. 248-TA11.....	G
Appendix H	H
Ravensden Road Access.....	H
MAC drawing no. 248-TA12.....	H
Appendix I	I
TRICS Data.....	I
Appendix J	J
Distribution	J
Appendix K	K
Vehicle Movement Diagrams.....	K
Appendix L	L
Traffic Count Data	L
Appendix M	M
A1 – Hookhams Lane Access: Analysis – Input and Results.....	M
Appendix N	N
A2 – Access to Ravensden Road: Analysis – Input and Results	N



Appendix O	O
J1 – Hookhams Lane / Norse Road / Church Lane / Wentworth Drive: Analysis – Input and Results	O
Appendix P	P
J2 – Wentworth Drive / Putnoe Lane: Analysis – Input and Results.....	P
Appendix Q	Q
J3 – A4280 St Neots Road / A4280 Goldington Road / Norse Road: Analysis – Input and Results ..	Q
Appendix R	R
J3 – Nil Detriment Improvements.....	R
MAC drawing no. 248-TA20	R
Appendix S	S
J3 – Nil Detriment: Analysis – Input and Results	S
Appendix T	T
J4 – A421 / St Neots Road / A4280: Analysis – Input and Results	T
Appendix U	U
J5: Ravensden Rd / Oldways Rd / Church End: Analysis – Input and Results	U
Appendix V	V
Appendix W	W
Appendix X	X
Appendix Y	Y
Land North off Hookhams Lane via No. 25 Access and Land at 27 Hookhams Lane Access	Y
MAC drawing no. 248-TA13	Y
Appendix Z	Z
Egress for Land to the North off Hookhams Lane via	Z
No. 25 and Access for Land at 27 Hookhams Lane	Z
MAC drawing no. 248-TA14A.....	Z

1.0 Introduction

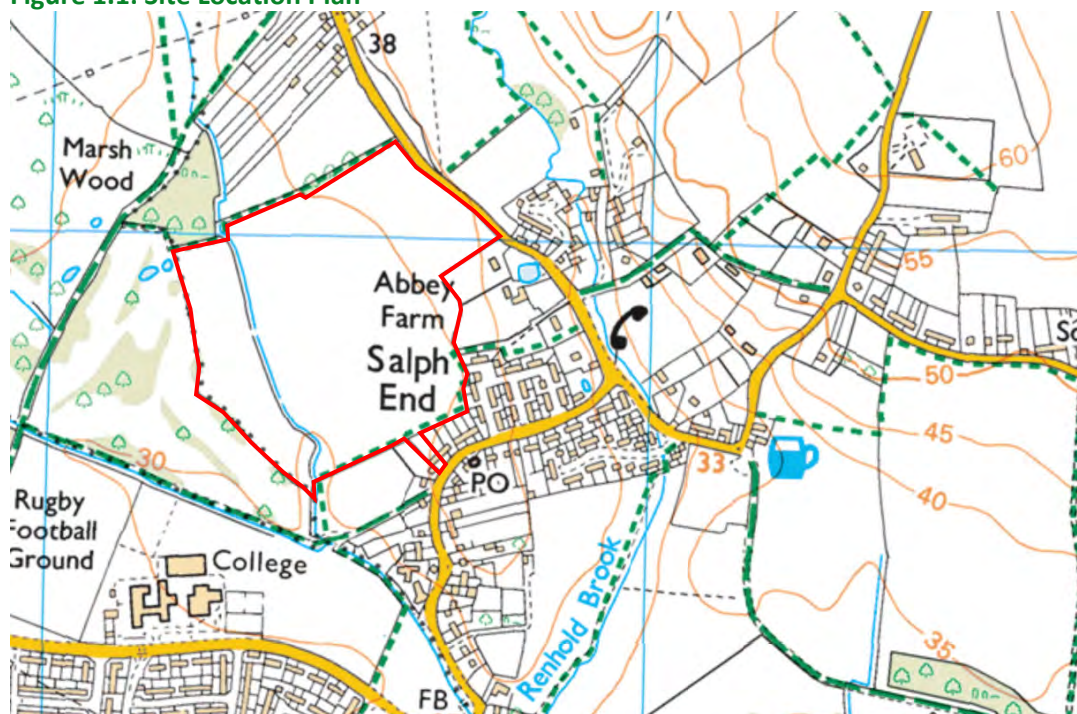
1.1 Instructions

- 1.1.1 This Transport Assessment has been prepared from instructions received from Manor Oak Homes.
- 1.1.2 The report has been prepared to support the submission of an outline planning application.
- 1.1.3 The benefit of this report is to our instructing Client.

1.2 Site Location

- 1.2.1 The proposed residential development is located at land between Hookhams Lane and Ravensden Road, Salph End, as shown in Figure 1.1 below and enclosed in Appendix A. The approximate National Grid Reference for the site is E507519 N252820.

Figure 1.1: Site Location Plan



1.3 Current Use and Description

- 1.3.1 The site currently comprises agricultural land there has been no previous development on the site.

1.4 Proposed Development

- 1.4.1 The proposed development will comprise up to 400 residential dwellings and a two-form entry primary school, up to 420 pupils.

1.5 Revision Record

- 1.5.1 Revision A of the report has been prepared in response to Bedford Borough Council as Local Highway Authority objection to the first issue of the Transport Assessment. The report has undergone various changes and should be read in whole as a new document.

2.0 Existing Conditions – Site Information

2.1 Site Location

2.1.1 The proposed residential development is located at land between Hookhams Lane and Ravensden Road, Salph End.

2.2 Permitted Use

2.2.1 There has been no previous development on the site. The site is currently an agricultural field. The existing site is shown on the topographical survey enclosed in Appendix B.

2.3 Neighbouring Land Uses

2.3.1 The neighbouring land uses are a children's nursery and area of woodland to the north, Ravensden Road and properties fronting this road to the east, properties on Home Close and Hookhams Lane to southeast, the Mark Rutherford secondary school to the south and Mowsbury Golf Course to the west.

2.3.2 We are aware of an undecided planning application on land to the south of the site which includes 27 Hookhams Lane for 14 dwellings, planning reference 18/02496/MAF. Between submission of the Transport Assessment and Revision A of the document this planning application has been refused.

2.4 Existing Access Arrangements

2.4.1 The existing site is accessed via a field access off Ravensden Road.

3.0 Existing Conditions – Baseline Transport Data

3.1 Walking and Cycling

3.1.1 Hookhams Lane is bound by footways on both sides of the carriageway which are approximately 1.5m wide. Home Close is bound by footways on both sides of the carriageway which are approximately 1.8m wide. Ravensden Road is bound by a single footway of approximately 1.2m wide on the western side of the carriageway. Footways on Hookhams Lane are separated from the carriageway by a grass verge.

3.1.2 The existing site has three Public Rights of Way (PROW) running through the site. The PROWs will be maintained through the site post development.

3.1.3 Footways within the vicinity of the site generally have dropped kerbs at the appropriate locations.

3.1.4 There are no dedicated cycling facilities within the vicinity of the site.

3.1.5 Walking and cycling distances to key local facilities is set out on the plan enclosed in Appendix D. The plan also shows the proximity of the site to key facilities including: schools, health services, shops etc. The suitability of the walking distance shown on the drawing is based on the guidance described in full below. Cycle journeys are generally considered acceptable if the distance is less than 5km.

3.1.6 In 2000 the Institution of Highways and Transportation published the document 'Providing for Journeys on Foot'. This document states that:

"80% of walk journeys and walk stages in urban areas are less than one mile. The average length of a walk journey is one kilometre (0.6 miles). This differs little by age or sex and has remained constant since 1975/76."

It goes on to define an average walking speed thus:

"An average walking speed of approximately 1.4 m/s can be assumed, which equates to approximately 400m in five minutes or three miles per hour."

3.1.7 Within the document:

"Table 3.2 contains suggested acceptable walking distances, for pedestrians without a mobility impairment for some common facilities. These may be used for planning and evaluation purposes."

Table 3.2 is replicated below as Table 3.1. Predicted journey times have been added to distances based on the 1.4m/s walking pace.

Table 3.1: Suggested Walking Distances - IHT 'Providing for Journeys on Foot'

	Town Centres		Commuting / School / Sight-seeing		Elsewhere	
	Distance	Time	Distance	Time	Distance	Time
Desirable	200m	2m 23s	500m	5m 57s	400m	4m 46s
Acceptable	400m	4m 46s	1000m	11m 54s	800m	9m 32s
Preferred	800m	9m 32s	2000m	23m 48s	1200m	14m 17s
Maximum						

3.2 Public Transport

Bus

- 3.2.1 The nearest bus stops are located on Hookhams Lane approximately 100m from the site's proposed access on Hookhams Lane. The bus stop is located within a 1-2 minute walk from the development site's access off Hookhams Lane. The bus stops serve the bus routes described in Table 3.2 below. Full timetables are enclosed in Appendix E.

Table 3.2: Bus Services and Frequencies

Route No.	Route	Typical Frequency		
		Mon - Fri	Sat	Sun
27	Bedford - Cople - Willington - Great Barford - Renhold - Bedford	~0800-1500 5 per day	~0800-1500 4 per day	No service
27	Bedford - Renhold - Great Barford - Willington - Cople - Bedford	~1000-1745 4 per day	~1000-1600 3 per day	No service

- 3.2.2 The number 27 bus service provides occasional services to Bedford and surrounding villages. This would allow residents of the development to commute to work in Bedford and connect with additional services in Bedford.

Rail

- 3.2.3 The nearest railway station is Bedford St Johns. The railway station is located on the Marston Vale line between Bletchley and Bedford. The station is served by hourly trains to Bedford and Bletchley.
- 3.2.4 Bedford St Johns railway station is located approximately 6.1km (3.8miles) from the northern site's access to Hookhams Lane.

3.3 Highway network

3.3.1 The proposed development is accessed off Hookhams Lane and Ravensden Road with the characteristics as set out in Table 3.1 below. The proximity of the site in relation to the wider highway network can be seen on the plan enclosed within Appendix D.

Table 3.3: Thenford characteristics

Characteristic	Hookhams Lane	Ravensden Road
Road classification	Unclassified	Unclassified
Carriageway Width	Approx. 5.5m wide	Approx. 5.5m wide
Footways:	Both sides approx. 1.5m wide	Approx. 1.2m wide western side only
Cycleways	None	None
Speed limit	30mph	30mph
Other features	Where footways exist street lit with tactile paving and dropped kerbs at appropriate locations	Where footways exist street lit with tactile paving and dropped kerbs at appropriate locations

3.4 Accident Data

3.4.1 Accident data has been obtained from the local highway authority. The first issue of the Transport Assessment included an accident search comprising Ravensden Road, Hookhams Lane and the Norse Road roundabout. This data covered the most recent 5 year period available at the time from 19 May 2014 to 18 May 2019-. A copy of the accident data is enclosed in Appendix F.

3.4.2 This showed that there had been no accidents on Hookhams Lane or Ravensden Road during this 5 year period.

3.4.3 At Junction 1 Hookhams Lane / Norse Road roundabout there have been two recorded slight accidents and one serious accident. One slight accident occurred on Hookhams Lane, the other on the circulatory carriageway whilst the serious accident occurred on the Norse Road arm of the roundabout. A review of the basic facts does not identify any common course for the accidents.

3.4.4 Accident data for the remaining junctions was obtained at a later date at the request of Bedford Borough Council. This accident data covers the period 10 October 2014 to 9 October 2019.

3.4.5 At Junction 2 Wentworth Drive / Putnoe Lane there have been three recorded slight accidents. One slight accident occurred on Wentworth Road east arm with two accidents recorded on the circulatory carriageway. A review of the basic facts shows that all three accidents occurred under different circumstances.

- 3.4.6 At Junction 3 A4280 St Neots Road / A4280 Goldington Road / Norse Road there have been no recorded accidents. On the Goldington Road approach there has been a single accident. As there is only a single accident no patterns have been formed to suggest there is a significant accident issue at the junction.
- 3.4.7 At Junction 4 A421 / St Neots Road / A4280 northern roundabout there are five recorded slight injury accidents. Four of which have occurred on the A4280 arm, three of which involved some form of slight collisions with cars on the opposite carriageway and a fourth involved a broken-down vehicle with police in attendance. Whilst there are three accidents which result in a broadly similar accident they are of such a low frequency with enough differences to not form a pattern.
- 3.4.8 At Junction 4 A421 / St Neots Road / A4280 southern roundabout there are three recorded slight injury accidents all occurring on or near the A421 off slip. All three accidents are shut type. Three shunt accidents at a junction of this type is not unexpected.
- 3.4.9 At Junction 5 Ravensden Rd / Oldways Rd / Church End there have been two recorded slight injury accidents and a single serious accident. Two accidents, including the serious accident, involved vehicles waiting to turn right onto Church End and failing to see an approaching vehicle. Whilst the third accident involved someone turning right from Church End and again failing to see a vehicle. The type of accidents are as would be expected with a junction of this type in this location. The proposed development is not expected to result in a significant adverse impact.
- 3.4.10 At Junction 6 B660 / Oldways Rd / Thurleigh Rd there were no recorded accidents.
- 3.4.11 The accident data review has not identified any areas of concern. Therefore, the proposed development is not expected to have an adverse impact on the operation safety of the local junctions.

3.5 Accessibility to Education

- 3.5.1 The proposed development will incorporate a primary school, so will be within a desirable walking distance of the school. The vast majority of residents on the site would utilise this school.
- 3.5.2 Existing primary schools are located in Renhold (Renhold VC Primary School, Church End) and Ravensden (Ravensden Primary School, Church End) these are located 1.5km and 1.9km from the nearest access so are within the preferred maximum walking distance for education.
- 3.5.3 To access Renhold Primary School on foot there is at least single sided footway provision between the site and the primary school. However, there is not a complete footway connecting the site and Ravensden Primary School. Given that Ravensden School is located further from the site than the proposed school and the school in Renhold, there is likely to be very limited demand from the site to Ravensden School.

3.5.4 The nearest secondary school, Mark Rutherford School, is located in Bedford, approximately 1.1km from the proposed development access on Hookhams Lane. The secondary school is located within the preferred maximum walking distance for education and is within an acceptable cycling distance from the proposed development. There is adequate footway provision adjacent to the highways connecting the development site with school. There are also Public Rights of Way which could shorten the walking distance, this would offer a seasonal weather dependent route to the school.

3.5.5 The nearest nursery (Little Steps Day Care, Ravensden Road) is located immediately to the north of the development site. This is located within a short walking distance of the site.

3.6 Accessibility to Health

3.6.1 The nearest doctors' surgery, dentist and Pharmacy are all located at Goldington Square on Church Lane. These services are all located approximately 1.0km (0.6 mile) from the proposed development. The location of the doctors' is within an acceptable walking and cycling distance of the proposed development.

3.7 Accessibility to Retail and Leisure

3.7.1 There is a post office and convenience store near the site's access on Hookhams Lane. Additional retail and leisure services can be reached by bus and on bike in Bedford.

3.7.2 Renhold Village Hall is located approximately 1.2km from the proposed development and is accessible via a footway.

3.8 Accessibility to Employment

3.8.1 Employment opportunities can be reached by bus and on bike in Bedford.

3.9 Summary

3.9.1 The proposed development is shown to adequately served for pedestrian, cyclist and public transport infrastructure.

3.9.2 The footway provision between the development and the local facilities is adequate for purpose and would allow pedestrians of the development to access the local facilities. From our desktop review of the existing pedestrian facilities we are not aware of any deficiencies in the footway network which would prevent or significantly reduce the likelihood of residents walking to / from the development site.

3.9.3 A review of the accident data shows that there is not an accident data on the highway network within the vicinity of the proposed development site.

4.0 Policy Review

4.1 Introduction

4.1.1 The following section of the report provides an examination of current policies relating to transport at national and local level as they relate to the proposed development.

4.2 National Policy

4.2.1 Creating Growth, Cutting Carbon: Making Sustainable Local Transport Happen, The Transport White Paper was published in January 2011 by the Coalition Government. The Document outlines a vision ‘for a transport system that is an engine for economic growth, but one that is also greener and safer and improves quality of life in our communities.’ Consequently, reducing carbon emissions derived from transport together with generating economic growth and contributing to economic vitality. The Localism Agenda is another strong theme with the White Paper supporting local solutions that are tailored to specific needs and behaviour patterns to deliver effective local transport.

4.2.2 The priority for local transport, as outlined is to “encourage sustainable local travel and economic growth by making public transport and cycling and walking more attractive and effective, promoting lower carbon transport and tackling local road congestion”.

4.2.3 The White Paper Chapter 4 is titled Enabling Sustainable Transport Choices. The chapter states that ‘the Government wants to encourage and enable more sustainable transport choices’. The document goes on to explain the “nudge” concept that taps into human behavioural tendencies to encourage “good” choices. Nudge interventions are described as being easy and not forbidding choice and travel planning is listed as an example of such.

4.3 National Planning Policy Framework

4.3.1 In March 2012, the National Planning Policy Framework (NPPF) was published by the coalition government with its overarching principle being a ‘presumption in favour of sustainable development.’ The policies contained within the NPPF applied with immediate effect and thereby replaced, amongst other PPS’s and PPG’s, PPG 13 ‘Transport’. Section 4 of the NPPF ‘Promoting sustainable transport’ covers the transport policy, detailed below are the policies that are of relevance.

4.3.2 In paragraph 29, the NPPF acknowledges that ‘transport policies have an important role to play in facilitating sustainable development but also in contributing to wider sustainability and health objectives’ and goes on to say ‘the transport system needs to be balanced in favour of sustainable transport modes, giving people a real choice about how they travel’.

4.3.3 Paragraph 36 states that ‘All developments which generates significant amounts of movement should be required to provide a Travel Plan’.

- 4.3.4 Paragraph 38 states 'Where practical, particularly within large scale developments, key facilities such as primary schools and local shops should be located within walking distance of most properties

5.0 Proposed Development

5.1 Type and Scale

5.1.1 The proposed development will comprise up to 400 residential dwellings and a two-form entry primary school, up to 420 pupils. The proposed development layout is shown on the plan enclosed in Appendix C.

5.2 Access – all modes

5.2.1 It is proposed that the development will be principally accessed off Hookhams Lane via a new all movements access through 25 Hookhams Lane, this access is shown in Appendix G.

5.2.2 The Hookhams Lane access must have regard to the adjacent planning application at 27 Hookhams Lane for 14 dwellings, planning reference 18/02496/MAF. Following submission of this TA the planning application was refused on 20 December 2019, however, it is possible that the applicant may appeal. Therefore, this Transport Assessment also considers the possible access arrangements should the development be subsequently approved.

5.2.3 The proposed access assuming no adjacent development is approved has been subject to a Stage 1 Road Safety Audit (RSA). This scenario 1 RSA, enclosed in Appendix W, did not raise any significant concerns which could not be addressed at detailed design stage.

5.2.4 A further RSA considered the proposed access assuming the adjacent development was approved, scenario 2. A drawing showing this arrangement and the RSA are enclosed in Appendix X with a copy of the RSA enclosed in Appendix Y. This RSA raised as 'problem 2.1' the issue of potential collisions due to the misinterpretation of signals of other approaching vehicles. The auditors recommended that the two access should be rationalised into a single access.

5.2.5 It has not been possible for the adjacent developers to come to an agreement which would see the access rationalised into a single access. Therefore, to overcome the identified problem in the RSA for scenario 2 it is proposed that should the adjacent development be approved that the Hookhams Lane access becomes an egress only. A drawing showing an egress only proposal is enclosed in Appendix Z. A RSA of this arrangement (scenario 3) has been instructed and the results are awaited.

5.2.6 To clarify should the adjacent development at 27 Hookhams Lane be not proceed then an all movements access will be provided. Should planning be granted for development at 277 Hookhams Lane then an egress only access will be provided.

5.2.7 A secondary access will be provided off Ravensden Road, as shown on the drawing enclosed in Appendix H.

- 5.2.8 A spine road, with a width of 6.25m, will connect both accesses on Hookhams Lane and Ravensden Road making this a suitable route for use by buses. Other adoptable roads within the development site will be constructed inline with the current design standards but will typically comprise 5.5m wide carriageway with 2 no. 2m wide footways for non-shared surfaces.
- 5.2.9 In addition, the spine road will also provide a 3.5m wide shared footway / cycleway within the development site.
- 5.2.10 Visibility splay requirements within Bedford Borough are 43m for a recorded speed of 30mph or 90m where no speed surveys have been undertaken. This development undertook speed surveys in June 2017, however, these are not compliant with Bedford Borough Council’s current requirements. Speed surveys were undertaken on Hookhams Lane for the adjacent development at 274 Hookhams Lane, these recorded speeds of 28mph consistent with the appropriate use of 43m visibility splays as shown on the access drawing. As no up to date speed data is available for Ravensden Road a worst case assessment will be undertaken, therefore 90m visibility splays are shown on the access drawing.

5.3 Parking

- 5.3.1 Parking within the development will be provided in line with current Bedfordshire Borough Council guidance at the time of a full or reserved matters planning application.

5.4 Trip Generation

- 5.4.1 Person and vehicle trip rates have been obtained from the TRICS database. The person trip selection criteria is set out in Table 5.1 below. The full TRICS data is enclosed in Appendix I.

Table 5.1: TRICS Parameters

Parameter	Selection	
Version	7.6.1	
Main land use	03 – Residential	04 – Education
Sub land use	A – Houses Privately Owned	A - Primary
Regions	All of England except Greater London	
Locations	Suburban area, edge of town	

- 5.4.2 From the TRICS database the predicted person trip rates are set out in Table 5.2 below.

Table 5.2: Person & Vehicle Trip Rates - Mean

Use	Morning Peak (0800-0900)			Afternoon Peak (1700-1800)		
	Arr	Dep	Total	Arr	Dep	Total
Dwellings						
Person	0.192	0.765	0.957	0.585	0.258	0.843
Per dwell						
School						
Vehicle	0.324	0.245	0.569	0.026	0.037	0.063
Per pupil						

5.4.3 To understand the number of trips generated by the residential aspect of the development by mode we need to establish the likely modal split for a development in this location. The 2011 Census includes the ‘Method of Travel to Work’ (MTW) dataset which defines mode choice for all local authority wards. MTW data has been extracted from the 2011 Census for the Great Barford ward which includes the development site. The ‘Method of Travel to Work’ data is summarised in Table 5.3 below.

Table 5.3: Method of Travel to Work - 2011 Census – Great Barford ward

Mode	Number	Proportion
Driving a car or van	2,777	85.6%
Passenger in a car or van	146	4.5%
On foot	146	4.5%
Bus, minibus or coach	95	2.9%
Bicycle	57	1.8%
Motorcycle, scooter or moped	22	0.7%

5.4.4 Using the above mode splits (Table 5.3) it is possible to calculate the predicted number of residential trips generated by each mode. The proposed trips by mode is shown in Table 5.4 below.

Table 5.4: Residential Trip Numbers by Mode

Mode	Morning Peak (0800-0900)			Afternoon Peak (1700-1800)		
	Arr	Dep	Total	Arr	Dep	Total
Driving a car or van	66	262	328	200	88	289
Passenger in a car or van	3	14	17	11	5	15
On foot	3	14	17	11	5	15
Bus, minibus or coach	2	9	11	7	3	10
Bicycle	1	5	7	4	2	6
Motorcycle, scooter or moped	1	2	3	2	1	2

5.4.5 Using the total number of vehicle trips predicted by the development is shown in Table 5.5 below. The school aspect is based on 420 pupils but takes no account of linked trips.

Table 5.5: Vehicle Trip Numbers

Use	Morning Peak (0800-0900)			Afternoon Peak (1700-1800)		
	Arr	Dep	Total	Arr	Dep	Total
Dwellings	66	262	328	200	88	289
School	136	103	239	11	16	26
Total	213	409	622	245	119	364

5.4.6 The proposed development is predicted to generate 622 vehicle trips in the morning peak and 364 trips in the evening peak. Further junction analysis is required to understand the impact of this development on the highway network.

6.0 Junction Impact Assessment

6.1 Area of Assessment

6.1.1 The following junctions have been identified as requiring an impact assessment.

- A1: Access to Hookhams Lane;
- A2: Access to Ravensden Road;
- J1: Hookhams Lane / Norse Road / Church Lane / Wentworth Drive;
- J2: Wentworth Drive / Putnoe Lane;
- J3: A4280 St Neots Road / A4280 Goldington Road / Norse Road;
- J4: A421 / St Neots Road / A4280;
- J5: Ravensden Rd / Oldways Rd / Church End; and
- J6: B660 / Oldaways Road / Thurleigh Road.

6.2 Distribution

6.2.1 Residential vehicle trip distribution data has been obtained from the 2011 Census using the 'WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)' dataset. The 2011 Census data has been extracted using the following parameters

- Method of Travel to Work – Driving a car or van
- Place of Work – All
- Usual Residence – Bedford 004

6.2.2 Proposed vehicle trips have been assigned onto the highway network using online route planning software. The Census data with proposed assignment is shown in Appendix J.

6.2.3 School vehicle trips for the new primary school have been distributed using engineering judgement as follows:

- 60% originating from the 400 new dwellings on the development site.
- 40% local area predominately Salph End

6.2.4 Proposed development vehicle movement diagrams are shown on the plan enclosed in Appendix K.

6.3 Assessment Year

6.3.1 A planning application will be submitted in 2019. Therefore, a junction analysis will be undertaken for an assessment year of 2030 when the development is expected to be fully occupied.

6.3.2 To grow traffic counts to the future year assessment year Temprow growth factors will be applied utilising the following inputs:

- Temprow – 72;
- Bedford 004
- NTM AF15 – Urban, Principal
- AM peak growth factor – 1.1369
- PM peak growth factor – 1.1554

6.4 Background Traffic

6.4.1 Vehicle counts at the above junctions were completed on Wednesday 27th November 2019. The results are enclosed in Appendix L.

6.5 Committed Development

6.5.1 Except for the adjacent 14 dwelling development we are not aware of any developments which need to be considered separately and would not be picked up as part of generic Temprow assessment.

6.5.2 Vehicle trips from the adjacent development will be generated and assigned to the highway network in the same way as the vehicle trips from the proposed development.

7.0 Junction Analysis Results

7.1 Introduction

7.1.1 The junction assessments have been undertaken using TRL software Arcady 9 and PICADY 9 for roundabouts and priority junctions respectively.

7.1.2 A junction is considered to be operating within capacity if the RFC (Ratio to Flow Capacity) value is less than or equal to 0.85. A RFC value of 1.0 represents absolute capacity, however, a lower value of 0.85 is used to reflect the practical capacity of the junction.

7.2 A1: Site Access off Hookhams Lane

7.2.1 This junction is a new three arm simple priority junction and will comprise the new access for the development site. The arms are labelled thus:

Arm A – Hookhams Lane (W)

Arm B – Access

Arm C – Hookhams Lane (E)

7.2.2 The full junction input data and result can be found in Appendix M. The results of the assessment are summarised below.

Table 7.1: A1 Access off Hookhams Lane – 2030 AM Peak 0800-0900

	Background + Committed + Development	
	Max RFC	Max Queue
B-C	0.25	0
B-A	0.64	2
C-AB	0.11	0

Table 7.2: A1 Access off Hookhams Lane – 2030 AM Peak 0800-0900

	Background + Committed + Development	
	Max RFC	Max Queue
B-C	0.05	0
B-A	0.2	0
C-AB	0.12	0

7.2.3 The access of Hookhams Lane is shown to operate within capacity in the future year scenario.

7.3 A2: Site Access off Ravensden Road

7.3.1 This junction is a new three arm simple priority junction and will comprise the new access for the development site. The arms are labelled thus:

- Arm A – Ravensden Road (S)
- Arm B – Access
- Arm C – Ravensden Road (N)

7.3.2 The full junction input data and result can be found in Appendix N. The results of the assessment are summarised below.

Table 7.3: A1 Access off Ravensden Road – 2030 AM Peak 0800-0900

	Background + Committed + Development	
	Max RFC	Max Queue
B-C	0.07	0
B-A	0	0
C-AB	0.02	0

Table 7.4: A1 Access off Ravensden Road – 2030 AM Peak 0800-0900

	Background + Committed + Development	
	Max RFC	Max Queue
B-C	0.02	0
B-A	0	0
C-AB	0.07	0

7.3.3 The access of Ravensden Road is shown to operate within capacity in the future year scenario.

**Junction 1: Hookhams Lane / Norse Road / Church Lane /
Wentworth Drive**

7.3.4 The junction is a four-arm roundabout, the arms are labelled thus:

- Arm A – Hookhams Lane
- Arm B – Norse Road
- Arm C – Church Lane
- Arm D – Wentworth Drive

7.3.5 The full junction input data and result can be found in Appendix O. The results of the assessment are summarised below.

Table 7.5: J1 Hookhams Ln / Norse Rd / Church Ln / Wentworth Dr – 2030 AM Peak 0800-0900

	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
A – Hookhams Lane	0.61	1	0.84	5	0.23	4
B – Norse Road	0.63	1	0.69	2	0.07	1
C – Church Lane	0.33	0	0.36	1	0.03	1
D – Wentworth Drive	0.65	1	0.67	2	0.02	1

Table 7.6: J1 Hookhams Ln / Norse Rd / Church Ln / Wentworth Dr – 2030 AM Peak 0800-0900

	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
A – Hookhams Lane	0.25	0	0.31	0	0.06	0
B – Norse Road	0.76	3	0.81	4	0.05	1
C – Church Lane	0.36	0	0.42	1	0.06	1
D – Wentworth Drive	0.39	1	0.44	1	0.05	0

7.3.6 The junction is shown to operate within capacity in all scenarios.

7.4 Junction 2: Wentworth Drive / Putnoe Lane

7.4.1 The junction is a three-arm roundabout, the arms are labelled thus:

- Arm A – Wentworth Drive (E)
- Arm B – Putnoe Lane
- Arm C – Wentworth Drive (W)

7.4.2 The full junction input data and result can be found in Appendix P. The results of the assessment are summarised below.

Table 7.7: J2 Wentworth Dr / Putnoe Lane – 2030 AM Peak 0800-0900

	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
A – Wentworth Drive (E)	0.80	4	0.86	5	0.06	1
B – Putnoe Lane	0.55	1	0.57	1	0.02	0
C – Wentworth Drive (W)	0.92	9	0.93	10	0.01	1

Table 7.8: J2 Wentworth Dr / Putnoe Lane – 2030 AM Peak 0800-0900

	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
A – Wentworth Drive (E)	0.81	4	0.83	5	0.02	0
B – Putnoe Lane	0.47	1	0.51	1	0.04	0
C – Wentworth Drive (W)	0.48	1	0.51	1	0.03	0

7.4.3 The junction is shown to typically operate within capacity in all scenarios, except for both Wentworth Drive arms during the morning peak period.

7.4.4 The Wentworth Road (E) arm operates with a RFC value of 0.80 without development and 0.86 with development, an increase of 0.06. As a result of the development the queue length increases by 1 from 4 to 5. Whilst the development takes the junction from operating within capacity to operating over capacity with an RFC value greater than 0.85 the impact of the development is minimal and should not be considered significant.

7.4.5 The Wentworth Road (W) arm operates with a RFC value of 0.92 without development and 0.93 with development, an increase of 0.01. As a result of the development the queue length increases by 1 from 9 to 10. The impact of the development is minimal and should not be considered significant.

7.4.6 The impact of the development is considered insignificant, therefore, nil detriment improvements are not considered necessary.

7.5 Junction 3: A4280 St Neots Road / A4280 Goldington Road / Norse Road

7.5.1 The junction is a four-arm roundabout, the arms are labelled thus:

- Arm A – A4280 St Neots Road
- Arm B – A4280 Goldington Road – Exit Only
- Arm C – A4280 Goldington Road – Entry Only
- Arm D – Norse Road

7.5.2 The full junction input data and result can be found in Appendix Q. The results of the assessment are summarised below.

Table 7.9: J3 A4280 St Neots Rd / A4280 Goldington Rd / Norse Rd – 2030 AM Peak 0800-0900

	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
A – St Neots Rd	1.05	55	1.06	61	0.01	6
B – Southern Access	∞	6	∞	8	0	2
C – Goldington Road	0.53	1	0.54	1	0.01	0
D – Norse Road	0.86	6	0.90	8	0.04	2

Table 7.10: J3 A4280 St Neots Rd / A4280 Goldington Rd / Norse Rd – 2030 PM Peak 1700-1800

	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
A – St Neots Rd	1.12	108	1.14	131	0.02	23
B – Southern Access	∞	11	∞	11	0	0
C – Goldington Road	0.61	2	0.61	2	0	0
D – Norse Road	0.59	2	0.60	2	0.01	0

7.5.3 Arm A St Neots Road operates over capacity in both peak periods the impact of development is considered significant and a nil detriment solution will be required.

7.5.4 Arm B Southern Access operates with an unregistrable RFC value in all scenarios. Due to the movement patterns on the roundabout with few vehicles turning into Arm B few opportunities are created within the model for vehicles to exit Arm B. In reality the small number of exiting vehicles just 10 vehicles in the morning peak and 14 vehicles in the evening peak would be able to depart with much less delay than predicted in the model. Bunching of vehicles and natural variations in flow would create opportunities for vehicles to depart. Therefore, mitigation is not considered necessary.

- 7.5.5 Arm C Goldington Road operates with ample capacity in both the morning and evening peak period.
- 7.5.6 Arm D Norse Road operates over capacity in the morning peak period only. Without development RFC values are 0.86 increasing by 0.04 to 0.90 with the proposed development. As a result of the development the predicted queue length increases by 2 from 6 to 8. The impact of the development on this arm is not considered significant.
- 7.5.7 To achieve nil detriment mitigation on the St Neots Road arm the geometry improvements as shown in Table 7.11 below are required to achieve nil detriment. These changes are also shown on the table enclosed in Appendix R.

Table 7.11: J3 Arm A St Neots Road Nil Detriment Geometry Changes

	Existing	Nil Det	Change
E – Entry Width	7.03	7.36	+0.33
l’– Flare length	30.8	27.9	-2.9
R – Entry Radius	14.0	29.7	+15.7

- 7.5.8 The results of the nil detriment analysis are shown in Table 7.12 and Table 7.13 below with full results enclosed in Appendix S.

Table 7.12: J3 A4280 St Neots Rd / A4280 Goldington Rd / Norse Rd – 2030 AM Peak 0800-0900 – NIL DET

	Background + Committed		Background + Committed + Development – NIL DET		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
A – St Neots Rd	1.05	55	0.99	29	-0.06	-26
B – Southern Access	∞	6	∞	6	0	0
C – Goldington Road	0.53	1	0.54	1	+0.01	0
D – Norse Road	0.86	6	0.90	8	+0.04	+2

Table 7.13: J3 A4280 St Neots Rd / A4280 Goldington Rd / Norse Rd – 2030 PM Peak 1700-1800 – NIL DET

	Background + Committed		Background + Committed + Development – NIL DET		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
A – St Neots Rd	1.12	108	1.08	86	-0.04	22
B – Southern Access	∞	11		11	0	0
C – Goldington Road	0.61	2	0.62	2	+0.01	0
D – Norse Road	0.59	2	0.60	2	+0.01	0

- 7.5.9 The proposed nil detriment solution mitigates the impact of the proposed development on the junction during both the morning and evening peak periods. Hence, with mitigation the proposed development will not have a significant adverse impact on the highway network.

7.7 Junction 4: A421 / St Neots Road / A4280.

7.7.1 The junction is a grade separated dumbbell junction located above the A421. The junction comprises of two roundabouts. One to the north with five arms and one to the south with four arms. The arms are labelled thus:

Northern roundabout

- Arm A – A421 (N) – exit only
- Arm B – Connecting bridge
- Arm C – A421 (S) – entry only
- Arm D – St Neots Road
- Arm E – Water End

Southern roundabout

- Arm A – A421 (N) – entry only
- Arm B – St Neots Road
- Arm C – A421 (S) – exit only
- Arm D – Connecting bridge

7.7.2 The full junction input data and result can be found in Appendix T. The results of the assessment are summarised below.

Table 7.14: J4 A421 / St Neots Road / A4280 – 2030 AM Peak 0800-0900

	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
1B – Connecting bridge	0.32	1	0.33	1	0.01	0
1C – A421 (S) – entry only	0.44	1	0.45	1	0.01	0
1D – St Neots Road	0.84	5	0.88	7	0.04	2
1E – Water End	0.34	1	0.46	1	0.12	0
2A – A421 (N) – entry only	0.31	1	0.33	1	0.02	0
2B – St Neots Road	0.65	2	0.67	2	0.04	0
2D – Water End	0.59	2	0.61	2	0.02	0

Table 7.15: J4 A421 / St Neots Road / A4280 – 2030 PM Peak 1700-1800

	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
1B – Connecting bridge	0.33	1	0.36	1	0.03	0
1C – A421 (S) – entry only	0.65	2	0.68	2	0.03	0
1D – St Neots Road	0.71	2	0.73	3	0.02	1
1E – Water End	0.13	0	0.16	0	0.03	0
2A – A421 (N) – entry only	0.40	1	0.41	1	0.01	0
2B – St Neots Road	0.44	1	0.46	1	0.02	0
2D – Water End	0.63	2	0.64	2	0.01	0

- 7.7.3 Except for the St Neots Road arm of the northern roundabout the junction typically operates within capacity. The St Neots Road arm of northern roundabout operates overcapacity in the morning peak hour only with RFC values of 0.85 and 0.89 in the morning peak without and with development scenarios respectively. As a result of the development the predicted queue length increases by 2 vehicles from 5 to 7.
- 7.7.4 The impact of the development in the morning peak hour on St Neots Road arm of the northern roundabout requires is considered insignificant.

7.8 Junction 5: Ravensden Rd / Oldways Rd / Church End

7.8.1 The junction is a three-arm simple priority junction, the arms are labelled thus:

- Arm A – Oldways Road
- Arm B – Church End
- Arm C – Ravensden Road

7.8.2 The full junction input data and result can be found in Appendix P. The results of the assessment are summarised below.

Table 7.16: J5 Ravensden Rd / Oldways Rd / Church End – 2030 AM Peak 0800-0900

	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
B-C	0.07	0	0.08	0	0.01	0
B-A	0.08	0	0.09	0	0.01	0
C-AB	0.08	0	0.10	0	0.02	0

Table 7.17: J5 Ravensden Rd / Oldways Rd / Church End – 2030 AM Peak 0800-0900

	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
B-C	0.05	0	0.05	0	0	0
B-A	0.05	0	0.05	0	0	0
C-AB	0.06	0	0.07	0	0.01	0

7.8.3 The junction is shown to typically operate within capacity in all scenarios.

7.9 Junction 6: B660 / Oldways Rd / Thurleigh Rd

7.9.1 The junction is a four-arm staggered crossroads junction, the arms are labelled thus:

- Arm A – B660 N
- Arm B – Oldways Road
- Arm C – B660 S
- Arm D – Thurleigh Road

7.9.2 The full junction input data and result can be found in Appendix P. The results of the assessment are summarised below.

Table 7.18: J6 B660 / Oldways Rd / Thurleigh Rd – 2019

	AM Background		PM Background	
	Max RFC	Max Queue	Max RFC	Max Queue
B-ACD	0.49	1	0.74	3
A-BCD	0.04	0	0.04	0
D-A	1.11	3	0.04	0
D-BC	1.09	30	0.39	1
C-ABD	0.16	0	0.05	0

Table 7.19: J6 B660 / Oldways Rd / Thurleigh Rd – 2030 AM Peak 0800-0900

	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
B-ACD	0.64	2	0.79	3	0.15	1
A-BCD	0.05	0	0.05	0	0	0
D-A	1.09	4	1.12	4	0.03	1
D-BC	1.27	74	1.30	84	0.03	10
C-ABD	0.20	0	0.21	0	0.01	0

Table 7.20: J6 B660 / Oldways Rd / Thurleigh Rd – 2030 AM Peak 0800-0900

	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
B-ACD	0.89	6	0.93	8	0.04	2
A-BCD	0.05	0	0.05	0	0	0
D-A	0.05	0	0.05	0	0	0
D-BC	0.47	1	0.50	1	0.03	0
C-ABD	0.06	0	0.06	0	0	0

7.9.3 In the morning peak period Arm D Thurleigh Road operates over capacity in 2019 and 2030. RFC values peak at 1.30 with the development increasing RFC values by 0.03 and increasing vehicle queue length by 10. The proposed development will generate 10 additional vehicle movements during the morning peak period on this arm.

- 7.9.4 In the 2019 base year traffic survey 466 of the 485 cars using Thurleigh Road wish to turn right to either access the B660 S or Oldways Road. Therefore, mitigation would not improve the flow of traffic through this junction as it is not possible to provide two right turning lanes. Neither is it considered appropriate to change the junction type to either a roundabout or a signal-controlled junction.
- 7.9.5 The proposed development will only generate ten additional vehicle trips in the morning peak period on this arm. This is less than the likely daily variation in traffic flows and could be considered minimal insignificant flow. Further as the junction is already operating over capacity users of the junction will be sensitive to change and would seek to use alternative routes where appropriate included users of the proposed development.
- 7.9.6 Whilst the development does have an adverse impact on the Thurleigh Road arm, the impact is considered insignificant.
- 7.9.7 In the evening peak period Oldways operates over capacity in 2030 both without and with the proposed development. As a result of the development RFC values increase from 0.89 to 0.93 which results in a 2 vehicle increase in queue length from 6 to 8. The impact of the development is minor and insignificant and mitigation is not considered necessary.

8.0 Conclusion

8.1 Site Location and Permitted Use

- 8.1.1 The proposed residential development is located at land between Hookhams Lane and Ravensden Road, Salph End.
- 8.1.2 The site currently comprises agricultural land there has been no previous development on the site

8.2 Existing Conditions

- 8.2.1 The proposed development is shown to adequately served for pedestrian, cyclist and public transport infrastructure.
- 8.2.2 The footway provision between the development and the local facilities is adequate for purpose and would allow pedestrians of the development to access the local facilities. From our desktop review of the existing pedestrian facilities we are not aware of any deficiencies in the footway network which would prevent or significantly reduce the likelihood of residents walking to / from the development site.
- 8.2.3 A review of the accident data shows that there is not an accident data on the highway network within the vicinity of the proposed development site.

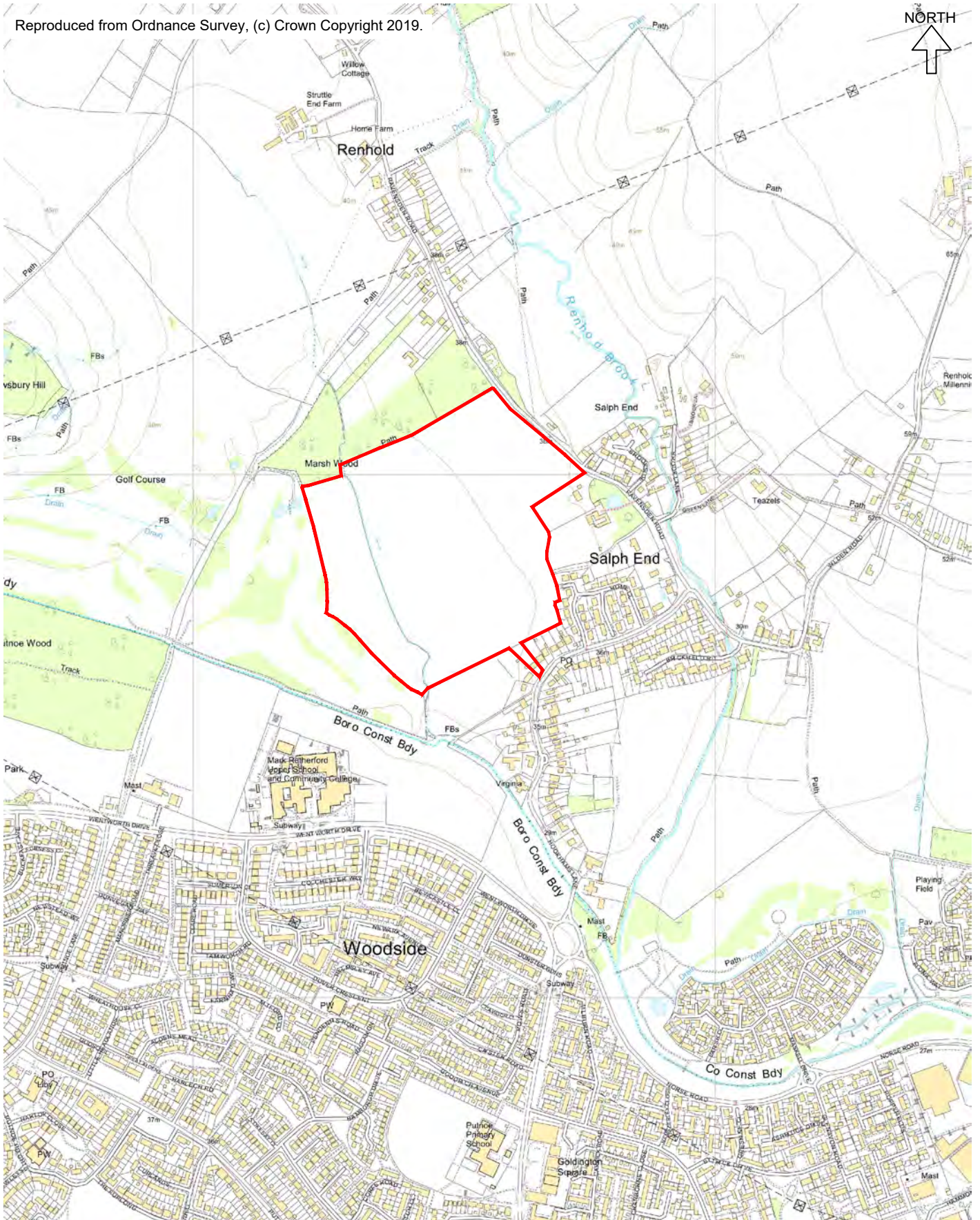
8.3 Proposed Development

- 8.3.1 The proposed development will comprise up to 400 residential dwellings and a two-form entry primary school, up to 420 pupils.
- 8.3.2 The proposed development will be principally accessed off Hookhams Lane via a new access through 25 Hookhams Lane. A secondary access is provided off Ravensden Road.
- 8.3.3 A spine road, with a width of 6.0m, will connect both accesses making this a suitable route for use by buses. Other adoptable roads within the development site will be constructed inline with the current design standards but will typically comprise 5.5m wide carriageway with 2 no. 2m wide footways for non-shared surfaces.
- 8.3.4 In addition, the spine road will also provide a 3m wide shared footway / cycleway within the development site.
- 8.3.5 Parking within the development will be provided in line with current Bedfordshire Borough Council guidance at the time of a full or reserved matters planning application.
- 8.3.6 A junction analysis of the impact from the proposed development has been undertaken at 4 junctions and both accesses. Typically, the impact of the development on the highway network is insignificant.

- 8.3.7 At Junction 3: A4280 St Neots Road / A4280 Goldington Road / Norse Road the impact of the development is such that mitigation is required to the St Neots Road. Small increases are required to the entry width, entry radius and flare length to mitigate the impact of the development on the highway network.

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NORTH



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 Martin Andrews Consulting Ltd

Client: Manor Oak Homes

Project: Land between Hookhams Ln
 and Ravensden Rd
 Salph End, Beds

Date: 28/08/19

Drw: MJA

Chk: MJA

Scale: 1:10,000

Size: A4

Title: Site Location Plan

Drawing No. 248-TA01

Revision A

- Transport Assessments
- Flood Risk Assessments
- Highway Advice
- Drainage Strategies



Appendix A

Location Plan

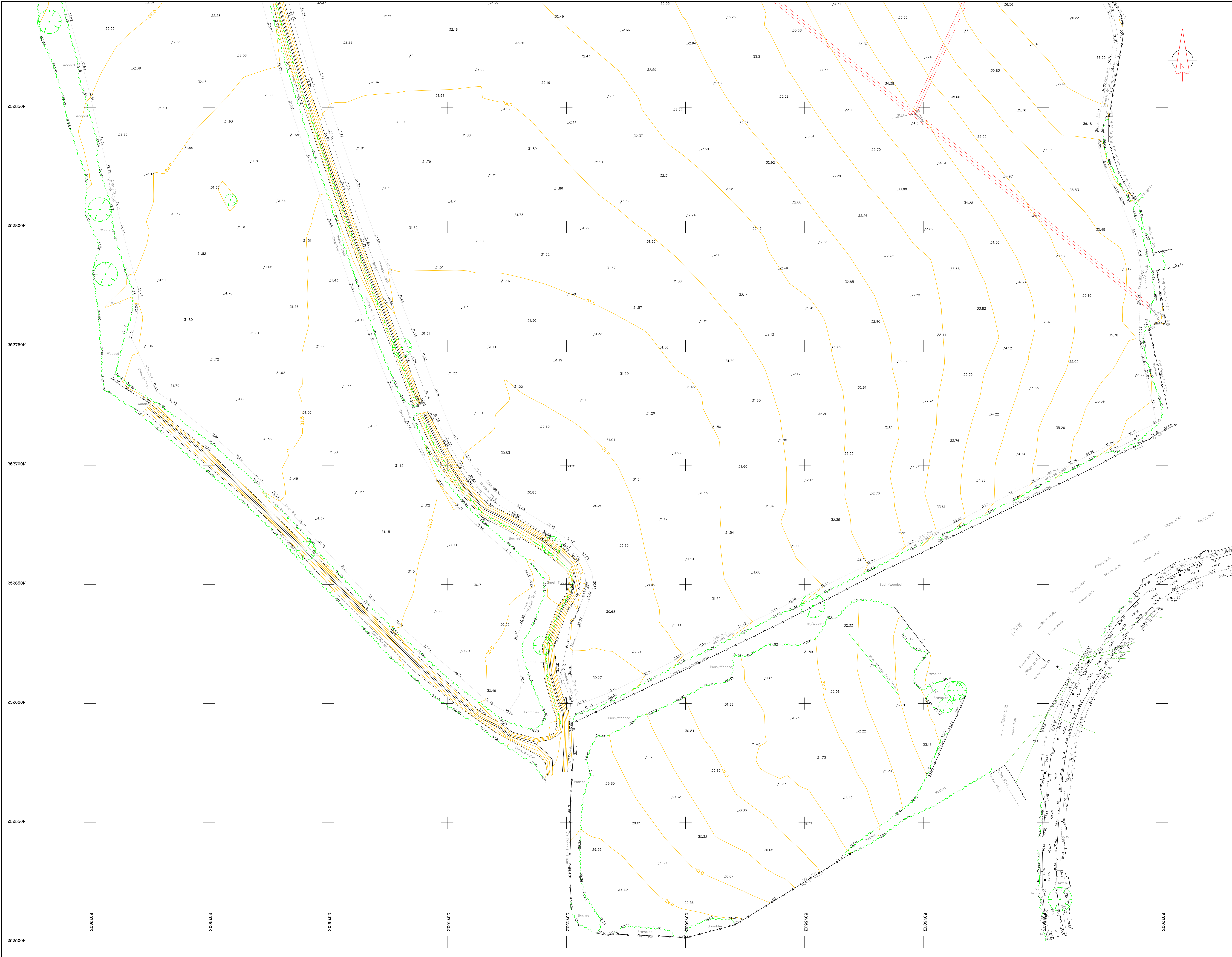
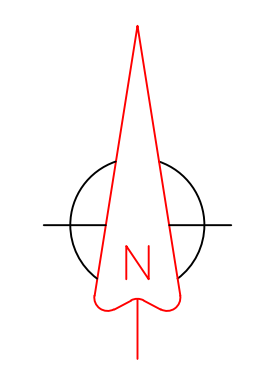
MAC drawing no. 248-TA01



Appendix B

Topographical Survey
MSurv drawing no. 1215/2272/1, 2 and 3

Notes
Grid and levels have been aligned to O.S.
National Grid OSGB36(15).



Suffix	Revision	Date	Initial

MSURV
your surveying solution

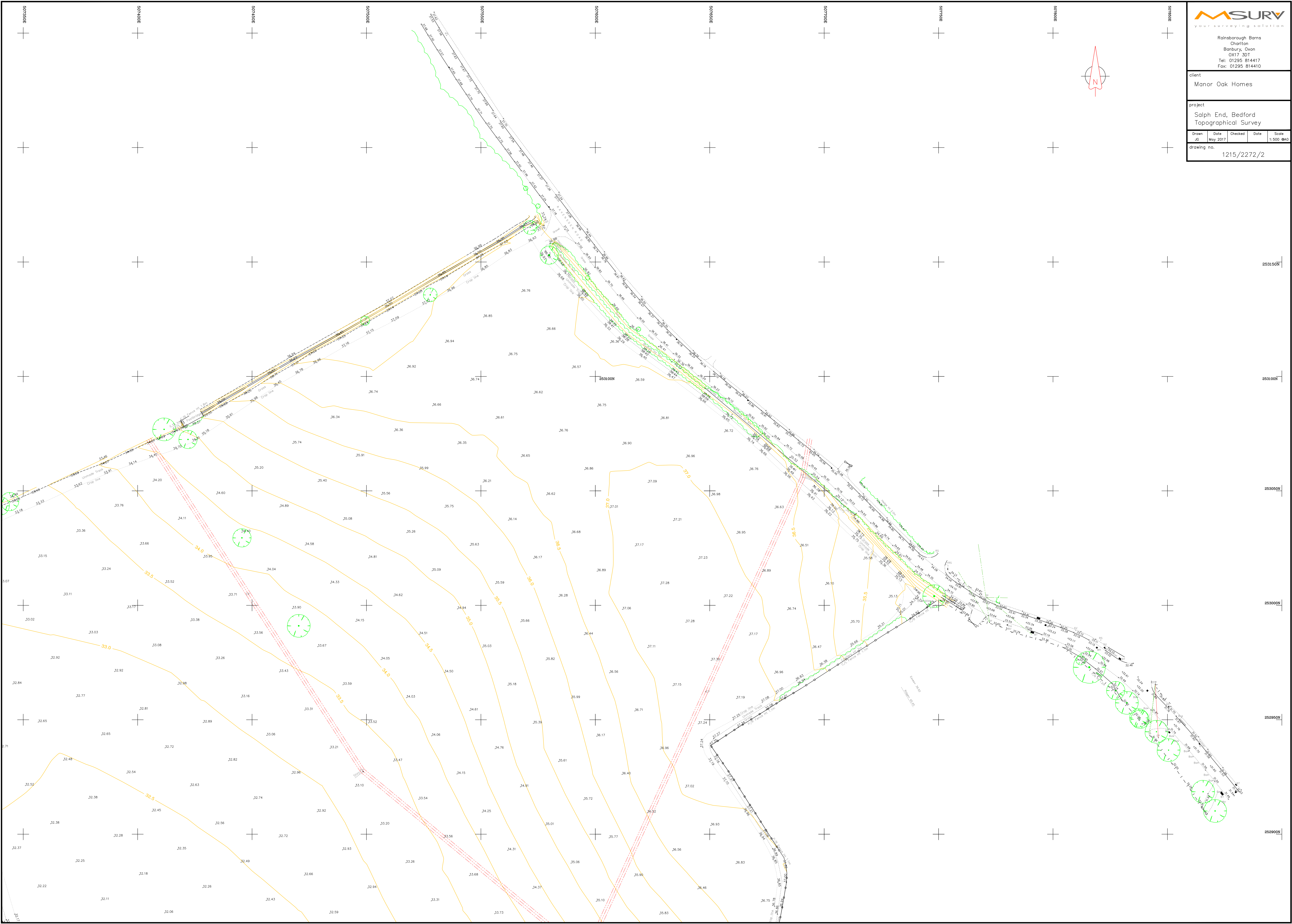
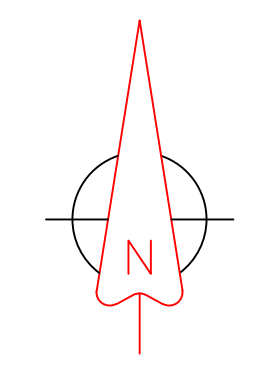
Rainsborough Barns
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Banbury, Oxon
OX17 3DT
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Fax: 01295 814410

client
Manor Oak Homes

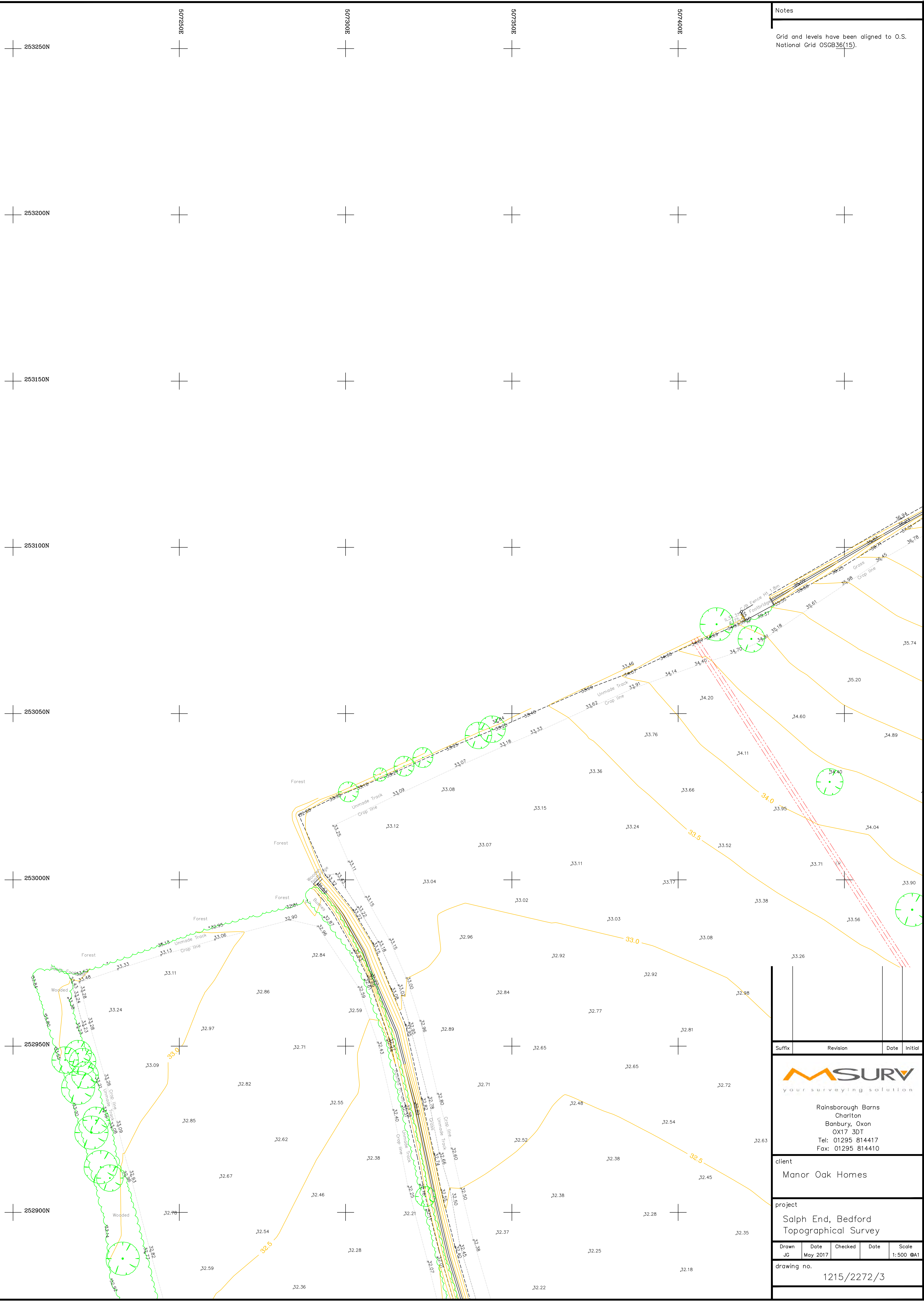
project
Salph End, Bedford
Topographical Survey

Drawn	Date	Checked	Date	Scale
JS	May 2017			1:500 BAO

drawing no. 1215/2272/1



Notes
 Grid and levels have been aligned to O.S. National Grid OSGB36(15).



Suffix	Revision	Date	Initial

MSURV
 your surveying solution

Rainsborough Barns
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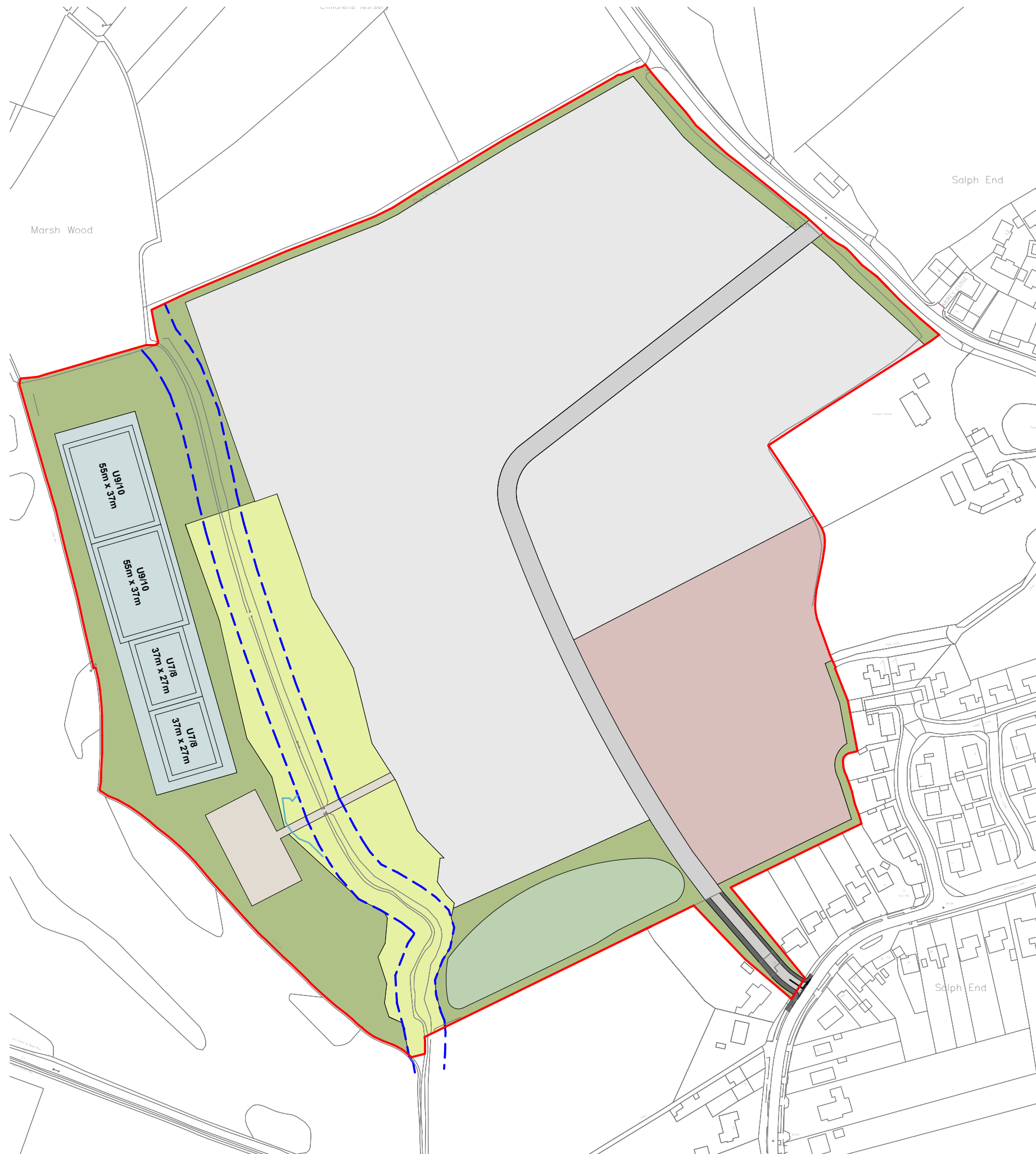
client
 Manor Oak Homes

project
 Salph End, Bedford
 Topographical Survey

Drawn	Date	Checked	Date	Scale
JG	May 2017			1:500 @A1

drawing no.
 1215/2272/3





- Site area 19.57ha
- Open Space 3.17ha
- Developable area 10.75ha
Includes primary route
- School area 2.1ha
- Attenuation basins 0.59ha
Area excluded from open space calculation
- Flood zone 1.88ha
- Sports pitches 1.08ha
- Primary route
- Indicative vehicular access and parking
for sports pitches.
- Easement

Revision:	Date:	By:
A	12.08.19	HW/DW
B	20.08.19	HW/DW
C	22.08.19	HW/DW



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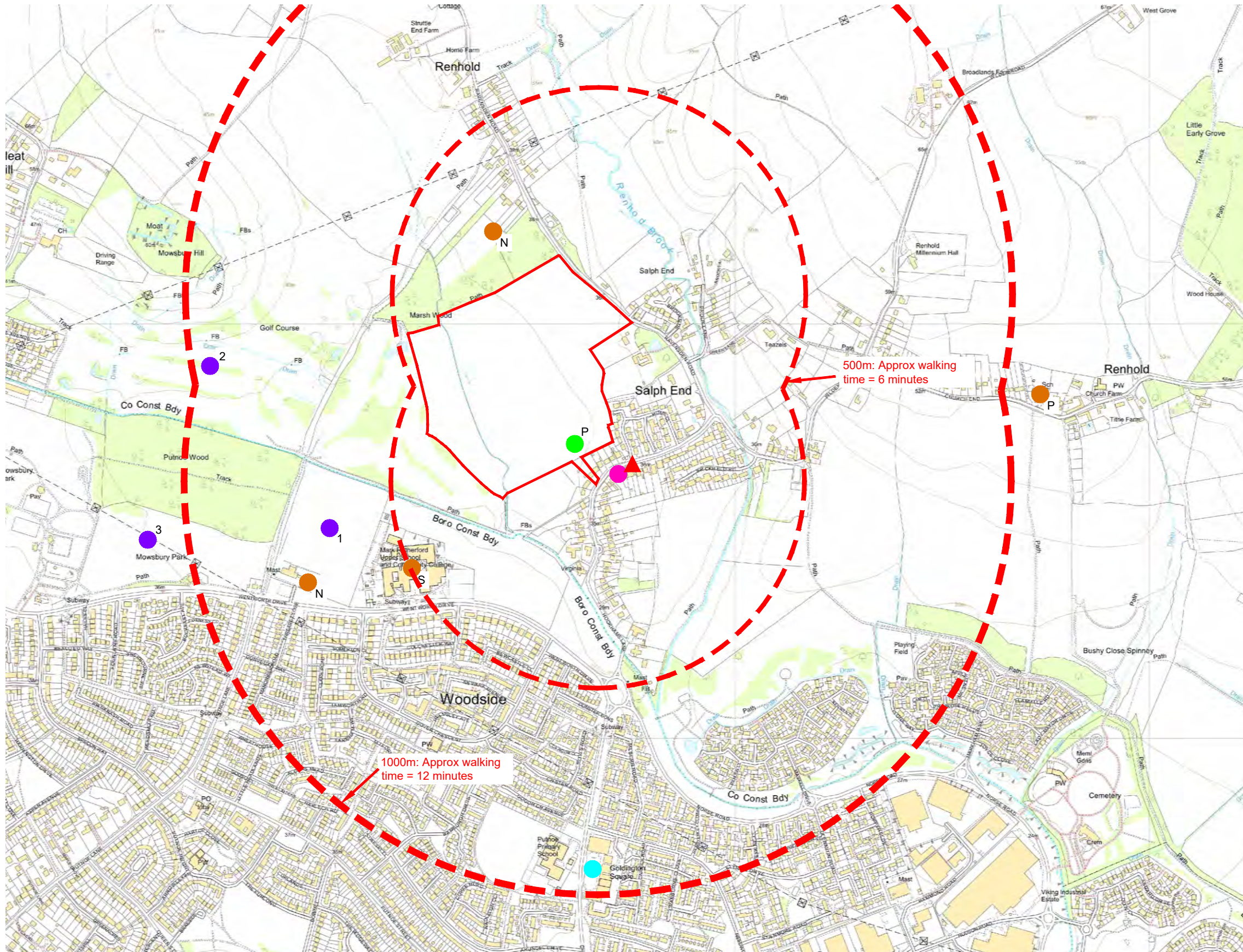
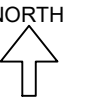
Project:	A development at Salph End, Bedford	
Client:	Manor Oak Homes	
Sheet title:	Parameters Plan	
Ref:	40986 013C	
Scale:	1:2500 @ A3	
Date:	25.07.19	
Drawn:	HW	Checked: DW

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Appendix D

Facilities Plan and Walking Distances
MAC drawing no. 248-TA02



Notes:

1. Walking distances based on a walking speed of 1.4 m/s from 'Providing For Journeys On Foot'.
2. Actual walking distances may vary from radial distances shown.
3. Nearest of each facility / service shown only.


Key

- - - Site Boundary
- Doctors Surgery / Dentist / Pharmacy / Supermarket
- Schools - Existing
Nursery (N) / Primary (P) / Secondary (S)
- Proposed Primary School
- Library
- Post Office / Convenience Store
- Shops 1 - Convenience Store / Petrol Station
2 - Supermarket
- Leisure Facilities**
- 1. Rugby club
- 2. Golf course
- 3. Recreation ground
- ▲ Bus Stops

Walking Times

- 0-420m - 0 to 5 minutes walking time
- 420-840m - 5 to 10minutes walking time
- 840-1260m - 10 to 15minutes walking time

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 MAC T: 01604 340544 Northampton Office E: info@mac-ltd.co.uk W: mac-ltd.co.uk Martin Andrews Consulting Ltd	<ul style="list-style-type: none"> • Transport Assessments • Flood Risk Assessments • Highway Advice • Access Design • Drainage Strategies • Vehicle tracking 	Client: Manor Oak Homes	Project: Land between Hookhams Lane and Ravensden Rd Salph End, Beds
		Title: Facilities Plan and Walking Distances	Date: 28/08/19 Drw: MJA Chk: MJA
		Drawing No: 248-TA02	Revision: -
		Scale: 1:10,000 Size: A3	



Appendix E
Bus timetables and routes



Timetable valid from 01/01/2019 until further notice

Direction of stops: where shown (eg: W-bound) this is the compass direction towards which the bus is pointing when it stops

Mondays to Fridays

Service Restrictions	NSch	Sch	SchTu	Sch NTu	NSch	Sch	NSch
Notes				TUX			
Bedford, Bus Station (Stop Q)	—	—	0815	0815	0820	1045	1315 1425 1425
Fenlake, o/s Tesco Cardington	—	—	0823	0823	0828	1053	1323 1433 1433
Cardington, o/s The Kings Arms	—	0725	0827	0827	0832	1057	1327 1437 1437
Cople, o/s All Saints Church	—	0728	0830	0830	0835	1100	1330 1440 1440
Willington, adj The Crown	—	0735	0835	0835	0840	1105	1335 1445 1445
Great Barford, opp All Saints Church	—	0741	0841	0841	0846	1111	1341 1451 1451
Great Barford, o/s Alban Middle School	—	0743	0843	0843	0848	1113	1343 1453 1453
Renhold, opp The Green	0757	0754	0849	0849	0854	1119	1349 1459 1459
Salph End, o/s 34 Hookhams Lane	0804	0801	0856	0901	0901	1126	1356 — 1506
Brickhill, opp Mowsbury Park Pavillion		0808	0900				—
Goldington, opp Hudson Road	0808	0813	0905	0905	0905	1130	1400 — 1510
Goldington, opp Goldington Green	0812	0817	0909	0909	0909	1134	1404 — 1514
Bedford, Bus Station (Stop Q)	0821	0830	0918	0918	0918	1143	— 1523

Saturdays

Bedford, Bus Station (Stop Q)	0820	1045	1315	1425
Fenlake, o/s Tesco Cardington	0828	1053	1323	1433
Cardington, o/s The Kings Arms	0832	1057	1327	1437
Cople, o/s All Saints Church	0835	1100	1330	1440
Willington, adj The Crown	0840	1105	1335	1445
Great Barford, opp All Saints Church	0846	1111	1341	1451
Great Barford, o/s Alban Middle School	0848	1113	1343	1453
Renhold, opp The Green	0854	1119	1349	1459
Salph End, o/s 34 Hookhams Lane	0901	1126	1356	1506
Goldington, opp Hudson Road	0905	1130	1400	1510
Goldington, opp Goldington Green	0909	1134	1404	1514
Bedford, Bus Station (Stop Q)	0918	1143	1413	1523

Sundays

no service

Late Summer Bank Holiday (Monday 26th Aug)

no service

Service Restrictions: NSch - School holidays only: 11 Feb-15 Feb, 8 Apr-22 Apr, 27 May-3 Jun, 22 Jul-3 Sep
 NTu - Not Tuesdays
 Sch - School days only: 3 Jan-8 Feb, 18 Feb-5 Apr, 23 Apr-24 May, 4 Jun-19 Jul
 Tu - Tuesdays only

Notes: TUX - Not Tuesdays



Timetable valid from 01/01/2019 until further notice

Direction of stops: where shown (eg: W-bound) this is the compass direction towards which the bus is pointing when it stops

Mondays to Fridays

Service Restrictions	Sch		NSch	
	0940	1210	1545	1720
Bedford, Bus Station (Stop Q)	0948	1218	—	1553 1728
Goldington, adj Goldington Green	0952	1222	—	1557 1732
Goldington, adj Hudson Road			1515	
Brickhill, opp Mowsbury Park Pavillion	0956	1226	1518	1601 1736
Salph End, o/s 2 Hookhams Lane	1003	1233	1526	1608 1743
Renhold, adj The Green	1009	1239	1532	1614 1749
Great Barford, opp Alban Middle School	1011	1241	1534	1616 1751
Great Barford, o/s All Saints Church	1017	1247	1540	1622 1757
Willington, opp Willington Lower School	1021	1251	1544	1626 1801
Cople, opp All Saints Church	1023	1253	1546	1628 1803
Cardington, opp The Kings Arms	1028	1258	1551	1633 1808
Fenlake, opp Tesco Cardington	1037	1307	1600	1642 1815
Bedford, Bus Station (Stop Q)				

Saturdays

Bedford, Bus Station (Stop Q)	0940	1210	1545
Goldington, adj Goldington Green	0948	1218	1553
Goldington, adj Hudson Road	0952	1222	1557
Salph End, o/s 2 Hookhams Lane	0956	1226	1601
Renhold, adj The Green	1003	1233	1608
Great Barford, opp Alban Middle School	1009	1239	1614
Great Barford, o/s All Saints Church	1011	1241	1616
Willington, opp Willington Lower School	1017	1247	1622
Cople, opp All Saints Church	1021	1251	1626
Cardington, opp The Kings Arms	1023	1253	1628
Fenlake, opp Tesco Cardington	1028	1258	1633
Bedford, Bus Station (Stop Q)	1037	1307	1640

Sundays

no service

Late Summer Bank Holiday (Monday 26th Aug)

no service

Service Restrictions: NSch - School holidays only: 11 Feb-15 Feb, 8 Apr-22 Apr, 27 May-3 Jun, 22 Jul-3 Sep
 Sch - School days only: 3 Jan-8 Feb, 18 Feb-5 Apr, 23 Apr-24 May, 4 Jun-19 Jul



For times of the next departures from a particular stop you can use **traveline-txt** - by sending the SMS code to **84268**. Add the service number after the code if you just want a specific service - eg: **buctdgttd 60**. The return message from **traveline-txt** will show the next three departures, and it currently costs 25p plus any message sending charge. Departure times will be real-time predictions where available, or scheduled departure times if not.

You can also get the same information by using the SMS code at www.nextbuses.mobi (only normal browsing charges apply) or through several iPhone or Android apps that offer access to **NextBuses**.

NOTE: SMS codes are different in each direction. Make sure you choose the right direction from these lists.

SMS Code	Stop Name	Street	ATCO Code
bfsdamwt	Bedford, Bus Station (Stop Q)		020035577
bfsajwlg	Bedford, St Paul's Square (Stop P2)	St Paul's Square	020035023
bfsapdpg	Bedford, St John's Street (S-bound)	St John's Street	020035770
bfsapdpd	Bedford, opp St Johns Centre	Rope Walk	020035763
bfsapmjp	Bedford, adj Duckmill Lane	Cardington Road	020035821
bfsapdmw	Bedford, o/s Bedford Girls School	Cardington Road	020035761
bfsapdmj	Fenlake, o/s Tesco Cardington	Cardington Road	020035758
bfsapdmg	Fenlake, opp Cardington Road	Cardington Road	020035757
bfsdapap	Fenlake, opp The Fenlake Anchor	Cardington Road	020035581
bfsajpwp	Cardington, o/s The Vicarage	Bedford Road	020033013
bfsajpwj	Cardington, adj St Marys Church	The Green	020033011
bfsajpwg	Cardington, o/s The Kings Arms	The Green	020033009
bfsajpwa	Cardington, o/s Cottage Farm Nursery	Cople Road	020033007
bfsajptp	Cardington, opp Chapel Lane	Cople Road	020033005
bfsajptj	Cople, o/s Grange Farm	Grange Lane	020033003
bfsajptg	Cople, o/s All Saints Church	Grange Lane	020033000
bfsajtag	Cople, adj Rye Crescent	Willington Road	020033021
bfsawtwm	Willington, opp Cople Turn	Bedford Road	020033023
bfsajtap	Willington, adj Churchill Place	Church Road	020033025
bfsdamdj	Willington, adj The Crown	Station Road	020033014
bfsajtat	Willington, Crossroads (S-bound)	Station Road	020033026
bfsajtdj	Great Barford, opp All Saints Church	High Street	020033090
bfsajtdm	Great Barford, opp College Farm	High Street	020033092
bfsdamdp	Great Barford, o/s Alban Middle School	Silver Street	020033018
bfsajtdw	Great Barford, adj The Cross	Bedford Road	020033100
bfsdajtg	Renhold, Green End (N-bound)	Green End	020035526
bfsdajtj	Renhold, opp The Green	Green End	020035527
bfsamtdp	Renhold, adj Becher Close	Green End	020035316
bfsamtdm	Renhold, opp Three Horseshoes	Top End	020035313
bfsamtdj	Renhold, opp Wood Lane	Top End	020035312
bfsadattj	Renhold, opp All Saints' Church	Church End	020035310
bfsadattd	Renhold, o/s 8 Church End	Church End	020035307
bfsadatta	Salph End, o/s 14 Hookhams Lane	Hookhams Lane	020035306
bfsdajwa	Salph End, adj Brookside	Ravensden Road	020035531
bfsdajwj	Salph End, Ravensden Road (N-bound)	Ravensden Road	020035534
bfsawpgw	Ravensden, adj Butler Street	Thurleigh Road	020032005
bfsawpgp	Ravensden, Wood End (N-bound)	Thurleigh Road	020032003
bfsajppj	Riseley, o/s The Old White Horse	High Street	020031041
bfsajppm	Riseley, opp The Five Bells	High Street	020031039
bfsawpdm	Riseley, opp Keysoe Road	High Street	020031068
bfsdajtp	Renhold, opp Village Hall	Wilden Road	020035529
bfsdajtw	Wilden, opp High Farm	Renhold Road	020035530
bfsawpmt	Wilden, Village Centre (N-bound)	High Street	020032019
bfsawpjm	Wilden, Village Hall (W-bound)	High Street	020032017
bfsawpmd	Ravensden, opp Redbrick Cottages	Ravensden Road	020032015
bfsawpjm	Ravensden, o/s Crow Hill Farm	Ravensden Road	020032013
bfsawpjp	Ravensden, adj Vicarage Close	Church End	020032011
bfsawpjj	Ravensden, o/s Horse and Jockey	Church End	020032009
bfsajpmj	Ravensden, adj Oldways Road	Bedford Road	020032006
bfsdamwj	Ravensden, o/s Wayside Farm Park	Bedford Road	020032090
bfsdamgj	Ravensden, Cleat Hill (S-bound)	Cleat Hill	020032053
bfsamdwd	Brickhill, opp Mowsbury Car Park	Kimbolton Road	020035143
bfsamdwj	Brickhill, adj Parkstone Close	Wentworth Drive	020035145
bfsdampg	Woodside, opp Hailes Close	Wentworth Drive	020035560
bfsamdwp	Brickhill, adj Mowsbury Park Pavillion	Wentworth Drive	020035147
bfsdajwg	Salph End, Ravensden Road (S-bound)	Ravensden Road	020035533
bfsamtda	Salph End, o/s 34 Hookhams Lane	Hookhams Lane	020035303
bfsaptpm	Brickhill, opp Mowsbury Park Pavillion	Wentworth Drive	020035488
bfsaptdw	Woodside, opp Hamsterley Close	Norse Road	020035337
bfsaptdp	Woodside, opp Poppyfields	Norse Road	020035335
bfsamjaj	Woodside, o/s Norse Road Cemetery	Norse Road	020035200
bfsaptdm	Goldington, opp Hudson Road	Norse Road	020035334
bfsampjd	Goldington, opp Caxton Road	Norse Road	020035269
bfsampgt	Goldington, opp Elms Farm Industrial Estate	Goldington Road	020035266
bfsampgm	Goldington, adj Waitrose	Goldington Road	020035264
bfsampga	Goldington, o/s The Wayfarer Hotel	Goldington Road	020035261
bfsampdp	Goldington, opp Goldington Green	Goldington Road	020035258
bfsamjmj	Goldington, opp Harvey Road	Goldington Road	020035222
bfsamjmw	Bedford, adj Dean Street	Goldington Green	020035225
bfsamjpd	Bedford, opp Fox and Hounds	Goldington Road	020035227
bfsamjpi	Bedford, opp Goldington Avenue	Goldington Road	020035229
bfsamadw	Bedford, St Peter's Street (W-bound)	St Peter's Street	020035057

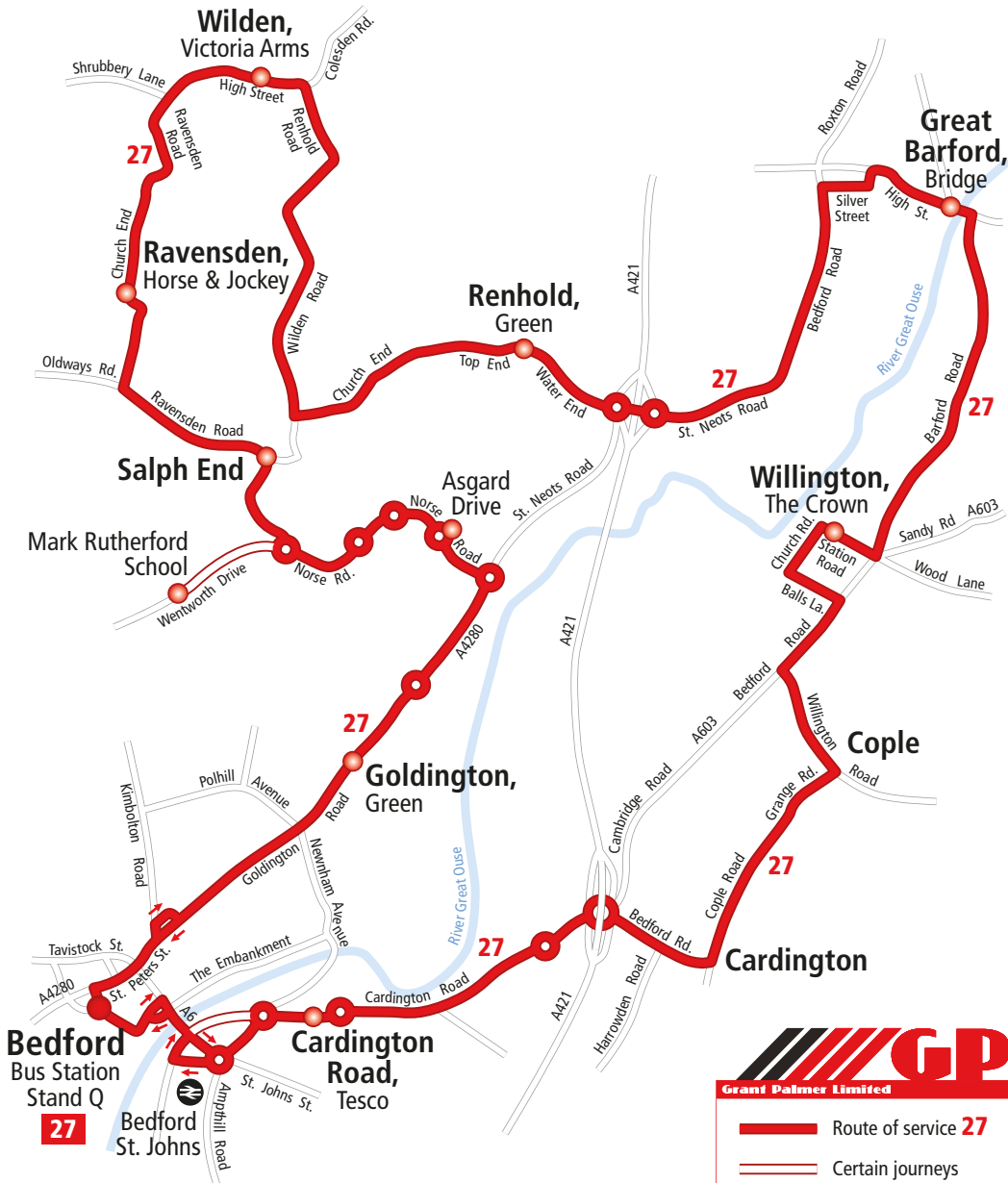


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SMS Code	Stop Name	Street	ATCO Code
bfsdamwt	Bedford, Bus Station (Stop Q)		020035577
bfsamaga	Bedford, St Peter's Street (E-bound)	St Peter's Street	020035058
bfsamjpg	Bedford, adj Goldington Avenue	Goldington Road	020035228
bfsamjpa	Bedford, o/s Fox and Hounds	Goldington Road	020035226
bfsamjmt	Bedford, opp Dean Street	Goldington Green	020035224
bfsamjmp	Goldington, adj Harvey Road	Goldington Green	020035223
bfsampdw	Goldington, adj Goldington Green	Goldington Road	020035260
bfsampgj	Goldington, opp Waitrose	Goldington Road	020035263
bfsamppg	Goldington, adj Elms Farm Industrial Estate	Goldington Road	020035265
bfsampja	Goldington, adj Caxton Road	Norse Road	020035268
bfsampgw	Goldington, adj Hudson Road	Norse Road	020035267
bfsaptdt	Woodside, adj Poppyfields	Norse Road	020035336
bfsaptpm	Brickhill, opp Mowsbury Park Pavillion	Wentworth Drive	020035488
bfsdadpt	Salph End, o/s 2 Hookhams Lane	Hookhams Lane	020035304
bfsdajwa	Salph End, adj Brookside	Ravensden Road	020035531
bfsdajwj	Salph End, Ravensden Road (N-bound)	Ravensden Road	020035534
bfsawpjd	Ravensden, opp Horse and Jockey	Church End	020032008
bfsawpm	Ravensden, opp Vicarage Close	Church End	020032010
bfsawpjt	Ravensden, opp Crow Hill Farm	Ravensden Road	020032012
bfsawpma	Ravensden, o/s Redbrick Cottages	Ravensden Road	020032014
bfsawpmg	Wilden, Village Hall (E-bound)	High Street	020032016
bfsawpmp	Wilden, Village Centre (S-bound)	High Street	020032018
bfsamtdg	Renhold, opp 8 Church End	Church End	020035308
bfsdadtg	Renhold, o/s All Saints' Church	Church End	020035309
bfsdadtm	Renhold, adj Wood Lane	Top End	020035311
bfsdadtp	Renhold, o/s Three Horseshoes	Top End	020035314
bfsdadtw	Renhold, opp Becher Close	Green End	020035315
bfsdajtm	Renhold, adj The Green	Green End Lane	020035528
bfsajtga	Great Barford, opp The Cross	Bedford Road	020033101
bfsdamdt	Great Barford, opp Alban Middle School	Silver Street	020033019
bfsajtdp	Great Barford, o/s College Farm	High Street	020033093
bfsawtwt	Great Barford, o/s All Saints Church	High Street	020033091
bfsawtwp	Willington, Crossroads (N-bound)	Station Road	020033027
bfsdamdm	Willington, opp Willington Lower School	Church Road	020033015
bfsajtam	Willington, opp Churchill Place	Church Road	020033024
bfsajtaj	Willington, adj Cople Turn	Bedford Road	020033022
bfsajtad	Cople, opp All Saints Road	Willington Road	020033020
bfsapwgm	Cople, opp All Saints Church	Grange Lane	020033900
bfsawtwd	Cople, opp Grange Farm	Grange Lane	020033002
bfsajptm	Cardington, adj Chapel Lane	Cople Road	020033004
bfsajptw	Cardington, opp Cottage Farm Nursery	Cople Road	020033006
bfsajpwd	Cardington, opp The Kings Arms	The Green	020033008
bfsawtwg	Cardington, opp St Marys Church	The Green	020033010
bfsajpwm	Cardington, opp The Vicarage	Bedford Road	020033012
bfsapdmd	Fenlake, o/s The Fenlake Anchor	Cardington Road	020035756
bfsapdmp	Fenlake, opp Tesco Cardington	Cardington Road	020035759
bfsapwgp	Bedford, o/s St Johns Centre	Rope Walk	020035493
bfsapmjt	Cauldwell, opp Kingsway Link	Kingsway	020035822
bfsapmjm	Cauldwell, o/s Bedford College	Cauldwell Street	020035817
bfsdaptj	Bedford, opp Bedford Girls School	Cardington Road	020035827
bfsapdpa	Bedford, opp Duckmill Lane	Cardington Road	020035762
bfsajwjp	Bedford, St Paul's Square (Arrivals)	St Paul's Square	020035025
bfsajwmd	Bedford, o/s Pilgrims House	Horne Lane	020035029



Grant Palmer Limited

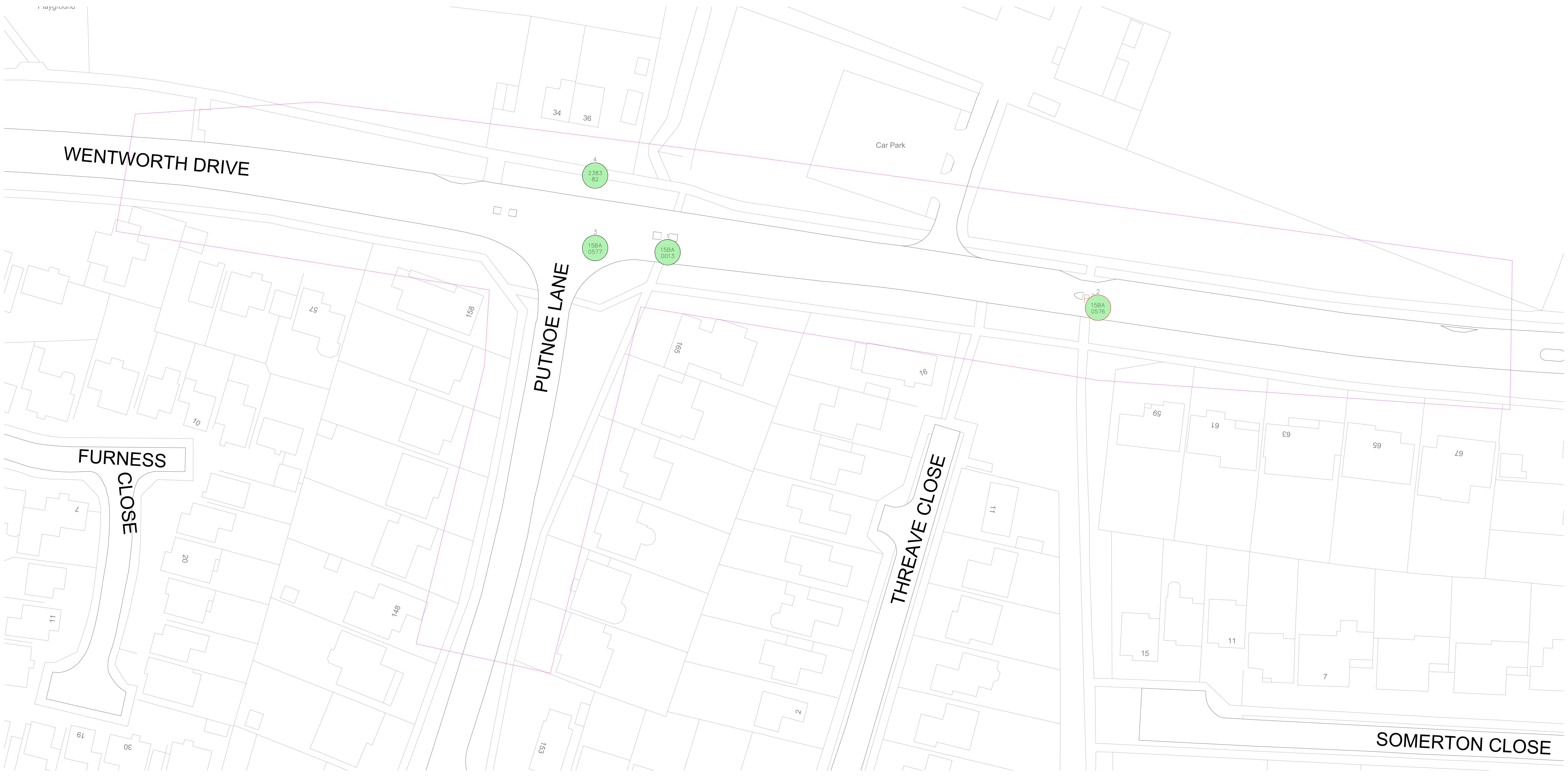
- Route of service 27
- Certain journeys
- Route terminus
- Timing point
- Railway Station



Appendix F
Accident Data

Accident Date BETWEEN '19-May-2014' AND '18-May-2019'

No.	Area L/A	Reference	Severity	Day	Date	Time	Grid Coords	Link/Node	Street				
1	E06000055	112248	Serious	Tuesday	13/09/2016	23:08	507760/252080						
Location: NORSE ROAD UNSPECIFIED ROAD OR LOCATION 10 METRES SOUTH OF JUNCTION WITH CHURCH LANE C40 1st Rd: U0 2nd Rd: C40													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
30MPH	Roundabout	R'dabt Give	Dark/lights lit	Fine	Dry	None	Refuge	None	None				
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Lt hand bend	SE	NW On main	Junt appr	No	None	Offside	Tree	Female	70	N/R
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	1	Drv/Rider	Female	70	Serious	No	Not ped	Not ped	Not ped	Other			
2	1	Passenger	Male	76	Slight	Front	Not ped	Not ped	Not ped	Other			
Description: V1 has been travelling along Norse Road heading towards roundabout on Church Lane. V1 has left the carriageway into a small woodland area, where it has collided with a tree.													
User Information: Contributory Factors: 503V001B 505V001B													
2	E06000055	14BA0537	Slight	Wednesday	11/06/2014	09:50	507560/252237						
Location: Uc Wentworth Drive Metres Uc Dover Crescent, Bedford, Bedfordshire 1st Rd: U 2nd Rd: U													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
30MPH	Roundabout	Mini-R Give	Daylight	Fine	Dry	None	None	None	None				
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Bus or Coach	No	Right turn	S	E On main	Mid junction	No	None		None	Male	51	-ve
2	Car	No	Going ahead	E	W On main	Mid junction	No	None		None	Female	37	-ve
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	2	Drv/Rider	Female	37	Slight	No	Not ped	Not ped	Not ped	Other			
Description: V2 Trav West onto Rdbt. V1 a Bus, Trav North, turning right at Rdbt, Fails to Give Way to V2 and Collision Occurs.													
User Information: Contributory Factors: 405V001A													
3	E06000055	313804	Slight	Friday	29/06/2018	08:08	507721/252178						
Location: HOOKHAMS LANE 1st Rd: U 2nd Rd:													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
30MPH	Single c'way	NotJCT	Daylight	Fine	Dry	None	None	None	None				
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Going ahead	S	N On main	Not at	No	None		None	Female	26	N/R
2	Pedal Cycle	No	Start	E	W On main	Not at	No	None		None	Male	12	N/A
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	2	Drv/Rider	Male	12	Slight	No	Not ped	Not ped	Not ped	Other			
Description: V1 was entering Hookhams Lane from the roundabout. On the other side of the road was a queue of traffic where a pedestrian crossing over the road has been covered by a white van. As V1 has been driving down Hookhams Lane, a 12 year old male on a bicycle (V2) has come out from behind the van into the road. Driver of V1 has a short period of time to react managing to brake but has collided with the male causing him to fall off his bicycle hitting his head, knee and ankle.													
User Information: Contributory Factors: 801C001A 802C001B													
4	E06000055	67374	Slight	Monday	02/05/2016	09:15	507746/252096						
Location: NORSE ROAD UNSPECIFIED ROAD OR LOCATION CHURCH LANE C40 1st Rd: U0 2nd Rd: C40													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
30MPH	Roundabout	R'dabt Give	Daylight	Fine	Dry	None	Refuge	None	None				
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Going ahead	NW	SE On main	Leave r'about	No	None		None	Male	81	-ve
2	Pedal Cycle	No	Going ahead	N	S On main	Mid junction	No	None		None	Male	37	N/A
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	2	Drv/Rider	Male	37	Slight	No	Not ped	Not ped	Not ped	Other			
Description: V2 was travelling southbound from Hook Lane Renhold to Church Lane round the roundabout. V1 was travelling eastbound from Wentworth Drive to Norse Road. V2 was coming past the Norse Road junction, as v1 attempted to pull off the roundabout v1 pulled directly into v2's path causing him to fall off into the road.													
User Information: Contributory Factors: 405V001A 403V001A 505V001B													



WENTWORTH DRIVE

PUTNOE LANE

FURNESS CLOSE

THREAVE CLOSE

SOMERTON CLOSE

Car Park

4
2383
82

3
15BA
0577

15BA
0013

2
15BA
0576

34 36

57

58

165

16

10

7

20

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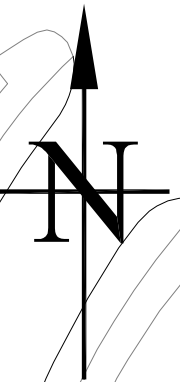
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7

Accident Date BETWEEN '10-Oct-2014' AND '09-Oct-2019'

No.	Area L/A	Reference	Severity	Day	Date	Time	Grid Coords	Link/Node	Street				
1	E06000055	15BA0013	Slight	Saturday	10/01/2015	17:13	506862/252331						
Location: Uc Wentworth Drive 10 Metres East of Uc Putnoe Lane, Bedford, Bedfordshire 1st Rd: U 2nd Rd: U													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
30MPH	Single c'way	R'dabt Give	Dark/lights lit	Fine Wind	Dry	None	Refuge	None	None				
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Reversing	W E	On main	Junt appr	No	None		None	Male	39	+ve
2	Car	No	Waiting	E W	On main	Junt appr	No	None		None	Male	20	-ve
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	1	Drv/Rider	Male	39	Slight	No	Not ped	Not ped	Not ped	Other			
Description: V1 Trav in Front of V2 on Trav West on Approach to Rdbt. V2 Hangs Back Owing to Erratic Driving by V1. V1 Stops at Rdbt and then Selects Reverse and Collides into Front of V2. V1 Drives off Failing to Stop. Apprehended Shortly After.													
User Information: Contributory Factors: 501V001A 601V001A													
2	E06000055	15BA0576	Slight	Monday	22/06/2015	15:04	506963/252318						
Location: Unclassified Road WENTWORTH DRIVE at SOMERTON WALK, BEDFORD, Bedfordshire 1st Rd: U 2nd Rd:													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
30MPH	Single c'way	NotJCT	Daylight	Fine	Dry	None	Refuge	None	None				
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Going ahead	E W	On main	Not at	No	None		None	Male	43	-ve
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	1	Pedestrian	Female	14	Slight	No	South	Offside	Ped x'ing	Yes			
Description: CAS1 A PED CROSSES ROAD AT CENTRAL REFUGE. CAS1 IS ALLOWED TO CROSS BY SLOWING VEHICLE ON EAST CARRIAGEWAY BUT CAS1 FAILS TO CHECK WESTBOUND SIDE, STEPS INTO ROAD AND IS STRUCK BY V1 TRAV WEST.													
User Information: Contributory Factors: 802C001A													
3	E06000055	15BA0577	Slight	Tuesday	23/06/2015	14:10	506845/252332						
Location: Unclassified Road WENTWORTH DRIVE, at its Junction with Unclassified Road PUTNOE LANE, BEDFORD, Bedfordshire 1st Rd: U 2nd Rd: U													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
30MPH	Roundabout	Mini-R Give	Daylight	Fine	Dry	None	Refuge	None	None				
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Going ahead	E W	On main	Mid junction	No	None		None	Female	78	-ve
2	Car	No	Right turn	W S	On main	Mid junction	No	None		None	Female	74	-ve
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	1	Drv/Rider	Female	78	Slight	No	Not ped	Not ped	Not ped	Other			
2	2	Drv/Rider	Female	74	Slight	No	Not ped	Not ped	Not ped	Other			
Description: V2 TRAV EAST, MAKES A LATE DECISION TO TURN RIGHT AT RDBT JUNC. V1 TRAV WEST, ENTERS RDBT AND COLLIDES WITH V2.													
User Information: Contributory Factors: 406V001A 403V002A													
4	E06000055	238382	Slight	Tuesday	26/09/2017	16:20	506845/252349						
Location: OUTSIDE NO 36 WENTWORTH DRIVE AT JN WITH PUTNOE LANE 1st Rd: U 2nd Rd: U													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
30MPH	Roundabout	Mini-R Give	Daylight	Fine	Dry	None	Refuge	None	None				
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Going ahead	S N	Cycleway	Leave r'about	No	None		None	Male	69	-ve
2	Pedal Cycle	No	Going ahead	E W	Cycleway	Junt appr	No	None		None	Male	15	N/A
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	2	Drv/Rider	Male	15	Slight	No	Not ped	Not ped	Not ped	Other			
Description: V001 WAS TRAVELLING ALONG PUTNOE LANE TOWARDS ROUNDABOUT WITH WENTWORTH DRIVE. V001'S DRIVEWAY IS IMMEDIATELY OFF THE ROUNDABOUT BETWEEN 1ST AND 3RD EXIT. V002 WAS CYCLING ALONG HE PAVEMENT. V001 ENTERED ROUNDABOUT AND SAW A VEHICLE TO HIS NEAR SIDE COMING ONTO ROUNDABOUT AS HE SLOWED TO ENTER HIS DRIVEWAY AND COLLIDED WITH A CYCLIST (V002) AS HE DROVE ONTO HIS DRIVEWAY													
User Information: Contributory Factors: 108V001A													

Limegrove House



EI Sub Sta

ESSs

Caxton Court

Sedac House

CAXTON ROAD

3 Sub Sta

Retail Unit

Works

Warehouse

GOLDINGTON ROAD

EI Sub Sta

NORSE ROAD

C/D

Rainfall Brook

Shed

7070
4

EI Sub Sta

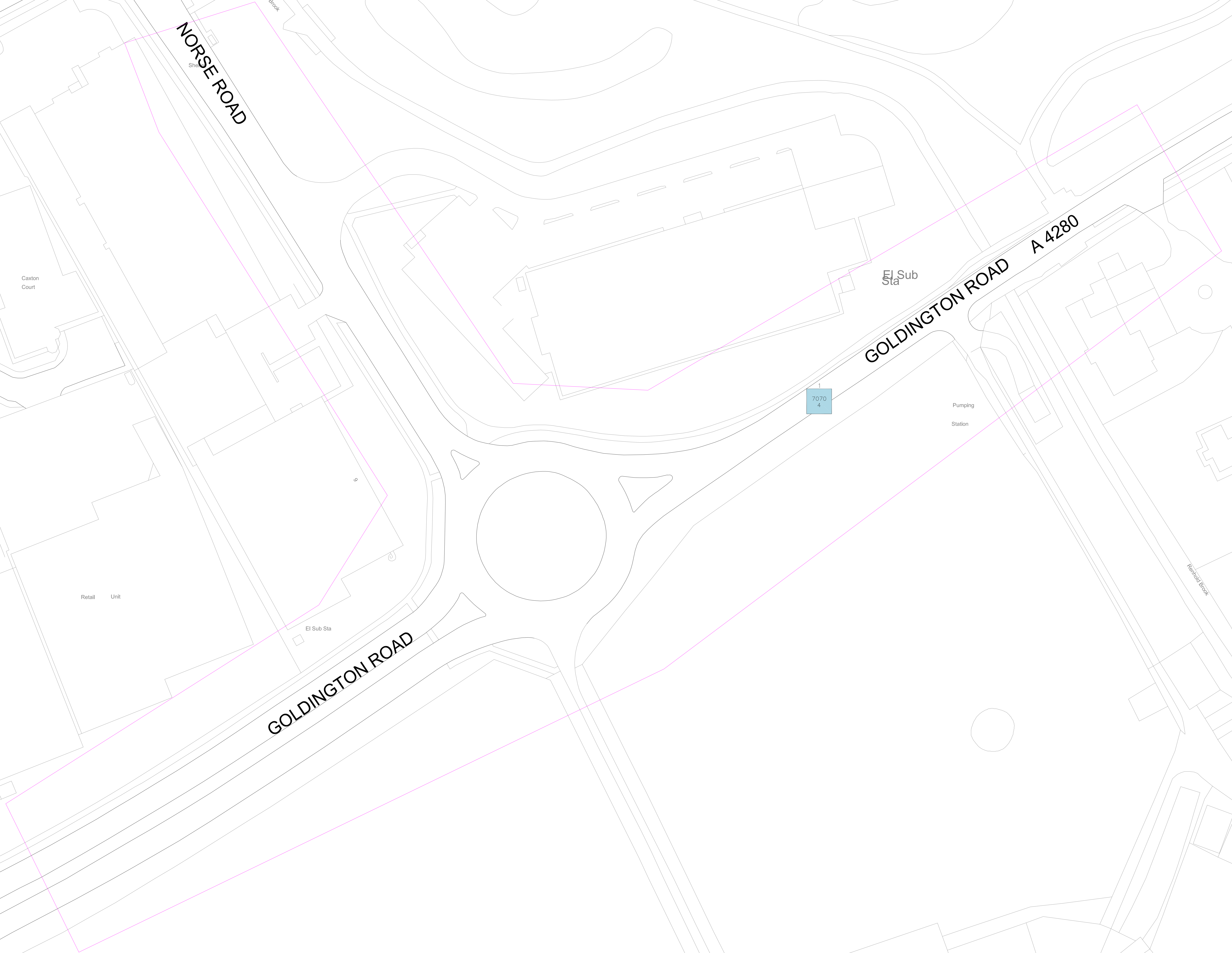
GOLDINGTON ROAD A 4280

Pumping Station

Rainfall Brook

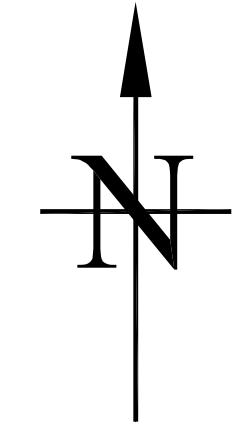
Castle Mill Farm

Garage



Accident Date BETWEEN '10-Oct-2014' AND '09-Oct-2019'

No.	Area	L/A	Reference	Severity	Day	Date	Time	Grid Coords	Link/Node	Street			
1	E06000055		70704	Serious	Saturday	07/05/2016	10:00	508998/251153					
Location: ST NEOTS ROAD A4280 75 METRES EAST OF JUNCTION WITH NORSE ROAD 1st Rd: A4280 2nd Rd:													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
40 MPH	Roundabout	NotJCT	Daylight	Fine	Dry	None	None	None	None	None			
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Stop	NE SW	On main	Not at	No	None		None	Male	57	N/R
2	Pedal Cycle	No	Going ahead	NE SW	On main	Not at	No	None		None	Male	51	N/A
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	2	Drv/Rider	Male	51	Serious	No	Not ped	Not ped	Not ped	Other			
Description: LOCATION IS A SINGLE CARRIAGEWAY ROAD ON THE OUTSKIRTS OF TOWN. CYCLIST 2 WAS CYCLIST IN FRONT OF HIS CYCLIST HEADING WEST ALONG A4280 TOWARDS ROUNDABOUT WITH NORSE ROAD. VEH 1 TRAVELLING IN SAME DIRECTION OVERTOOK CYCLIST 2 AND CAME TO A STOP AT RED PEDESTRIAN TRAFFIC SIGNALS. AS SIGNALS CHANGED CYCLIST 2 RODE UP THE INSIDE OF VEH 1 AND BOTH VEHICLES GAINED SPEED. DRIVER OF VEH 1 BECAME ANNOYED WITH CYCLIST 2 AND HAS PULLED TO THE NEAR SIDE DELIBERATELY SQUEEZING HIM OUT. DRIVER OF VEH 1 HAS THEN BRAKED HARD CAUSING CYCLIST 2 TO COLLIDE INTO THE REAR.													
User Information:						Contributory Factors: 601V001A							



Issues

WATER END

Pond

Drain

Pond

WATER END

A 4280

WATER END

A 421

ST NEOTS ROAD

Trunk

WATER END

Tunnel

Fairfield Cottage

ST NEOTS ROAD

Water End Cottage

Pumping Station

Earthwork

Hillcrest

CS

Bais

11
8027
3

2300
61

10
8023
62

9
3377
16

1484
1259

1484
3096

158A
2259

1679
94

1
2586
20

148A
1201

1481
27

Accident Date BETWEEN '10-Oct-2014' AND '09-Oct-2019'

No.	Area L/A	Reference	Severity	Day	Date	Time	Grid Coords	Link/Node	Street				
1	E06000055	148127	Slight	Saturday	07/01/2017	23:47	510330/251418						
Location: MARKER POST 246 BYPASS A421 1st Rd: A421 2nd Rd:													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
70 MPH	Roundabout	NotJCT	Dark/no lights	Fine	Dry	None	None	None	P/Acc				
Veh	Vehicle type	Towing	Manoeuvr	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Going ahead	E W	On main	Not at	No	None	O/s rebound	Cent barr	Male	49	N/C
2	Car	No	Going ahead	E W	On main	Not at	No	Prev acc	O/s rebound	Cent barr	Male	30	-ve
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	2	Drv/Rider	Male	30	Slight	No	Not ped	Not ped	Not ped	Other			
Description: V1 HAD BEEN TRAVELLING WESTBOUND ALONG THE A421, WHEN IT COLLIDED HEAVILY WITH THE CENTRAL RESERVATION BARRIER, CAUSING EXTENSIVE DAMAGE TO X17 UPRIGHT POSTS AND TO THE VEHICLE ITSELF. AS A RESULT OF THIS COLLISION, V1 CAME TO A STOP IN LANE 1, AND HAD NO HAZARD OR MAIN LIGHTS ILLUMINATED. V2 HAD ALSO BEEN TRAVELLING WESTBOUND ALONG THE A421, AND HAD TO SWERVE OUT OF THE WAY TO AVOID A DIRECT COLLISION, WITH V1, AS IT SAW IT AT THE LAST MINUTE, DUE TO NO LIGHTS BEING ILLUMINATED. AS A RESULT, V2 ALSO COLLIDED WITH THE CENTRAL RESERVATION BARRIER, BEFORE COMING TO A STOP IN LANE 1. DAMAGE TO X5 MORE UPRIGHTS HAD BEEN CAUSED BY V2.													
User Information:					Contributory Factors:								
2	E06000055	14BA0998	Slight	Monday	27/10/2014	18:06	510624/251560						
Location: A4280 St Neots Road Metres A421 Westbound Entry Slip, Renhold, Bedfordshire 1st Rd: A4280 2nd Rd: A421													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
60 MPH	Roundabout	R'dabt Give	Dark/lights lit	Fine	Dry	None	None	None	None				
Veh	Vehicle type	Towing	Manoeuvr	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	M/cycle 50 - 1	No	Right turn	NW SW	On main	Mid junction	No	None		None	Male	32	-ve
2	Car	No	Right turn	NW SW	On main	Mid junction	No	None		None	Female	23	-ve
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	1	Drv/Rider	Male	32	Slight	No	Not ped	Not ped	Not ped	Other			
Description: V1 a Motor Cycle Trav Behind V2 onto Rdbt. V2 Starts to Turn right and V1 Following Too Close Collides into Rear of V2. Rider of V1 Falls Off.													
User Information:					Contributory Factors: 403V001B 403V002B								
3	E06000055	14BA1259	Slight	Saturday	27/12/2014	16:53	510504/251620						
Location: A428 Saint Neots Road Metres A421 Bedford Bypass, Renhold, Bedfordshire 1st Rd: A428 2nd Rd: A421													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
60 MPH	Roundabout	R'dabt Give	Dark/lights lit	Rain Wind	Wet	None	None	None	None				
Veh	Vehicle type	Towing	Manoeuvr	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Stop	SE SW	On main	Ent r'about	Yes	None		None	Male	48	-ve
2	Car	No	Stop	SE SW	On main	Ent r'about	No	None		None	Male	32	-ve
3	Car	No	Left turn	SW NW	On main	Ent r'about	No	None		None	Male	29	-ve
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	2	Drv/Rider	Male	32	Slight	No	Not ped	Not ped	Not ped	Other			
Description: V2 Trav Nw, Enters Rdbt, Followed by V1. V2 Driver Sees V3, a Marked Police Vehicle on Blue Lights and Sirens About to Enter Rdbt from N/S Slip Road. V2 Brakes and is Hit from Behind by V1. V3 Unaware Continues On.													
User Information:					Contributory Factors: 103V001A 408V002B 307V001B								
4	E06000055	14BA1291	Slight	Monday	08/12/2014	08:15	510298/251452						
Location: A4280 Saint Neots Road 250 Metres West of Water End, Renhold, Bedfordshire 1st Rd: A4280 2nd Rd:													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
60 MPH	Single c'way	NotJCT	Daylight	Fine	Wet	None	None	None	None				
Veh	Vehicle type	Towing	Manoeuvr	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Stop	SW NE	On main	Not at	Yes	None		None	Male	25	-ve
2	Car	No	Stop	SW NE	On main	Not at	No	None		None	Female	37	-ve
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	2	Drv/Rider	Female	37	Slight	No	Not ped	Not ped	Not ped	Other			
2	2	Passenger	Female	8	Slight	Front	Not ped	Not ped	Not ped	Other			
Description: V2 Trav Ne, Begins to Slow Gently on Approach to Rdbt Junc Ahead. V1 Trav Behind Witnessed Trav Too Fast for Conditions, Brakes and Skids into Rear of V2.													
User Information:					Contributory Factors: 103V001A 307V001A 308V001A 406V001A 602V001B								

Accident Date BETWEEN '10-Oct-2014' AND '09-Oct-2019'

No.	Area L/A	Reference	Severity	Day	Date	Time	Grid Coords	Link/Node	Street				
5	E06000055	15BA0259	Slight	Thursday	26/03/2015	18:00	510635/251565						
Location: A421 BEDFORD BYPASS, at its Junction with A4280 SAINT NEOTS ROAD, RENHOLD, BEDFORDSHIRE 1st Rd: A421 2nd Rd: A4280													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
70 MPH	Slip road	R'dabt Give	Daylight	Fine	Dry	None	None	None	None				
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Waiting	NE	SW On main	Junt appr	No	None		None	Male	-1	N/C
2	Car	No	Waiting	NE	SW On main	Junt appr	No	None		None	Female	20	N/C
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	2	Drv/Rider	Female	20	Slight	No	Not ped	Not ped	Not ped	Other			

Description: V2 TRAV SW, STOPS AT THE END OF THE SLIP ROAD, WAITING TO ENTER RDBT AND IS STRUCK FROM BEHIND BY V1.

User Information:

Contributory Factors:

No.	Area L/A	Reference	Severity	Day	Date	Time	Grid Coords	Link/Node	Street				
6	E06000055	167994	Slight	Wednesday	15/03/2017	17:40	510634/251572						
Location: GREAT BARFORD BYPASS A421 AT JN WITH ST NEOTS ROAD 1st Rd: A421 2nd Rd: U													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
30 MPH	Roundabout	R'dabt Give	Daylight	Fine	Dry	None	None	None	None				
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Going ahead	NE	SW On main	Junt appr	No	None		None	Untra.	-1	N/C
2	Car	No	Stop	NE	SW On main	Junt appr	No	None		None	Male	43	N/C
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
2	2	Drv/Rider	Male	43	Slight	No	Not ped	Not ped	Not ped	Other			

Description: VEH 2 HAS BEEN TRAVELLING UP SLIP ROAD WHEN VEH 1 HAS FAILED TO STOP AND HAS COLLIDED WITH THE REAR OF VEH 2. ALL DETAILS EXCHANGED AT SCENE BUT DRIVER OF VEH 2 HAS NOW DISCLOSED THAT HE IS HAVING PAIN IN HIS BACK. HE HAS PHONED THE DOCTORS AND THEY HAVE ADVISED TO TAKE PAIN KILLERS SO ASKED TO RECORD IT AS AN INJURY OWING TO THE RTC

User Information:

Contributory Factors:

No.	Area L/A	Reference	Severity	Day	Date	Time	Grid Coords	Link/Node	Street				
7	E06000055	230561	Slight	Sunday	08/10/2017	02:48	510423/251601						
Location: ST NEOTS ROAD A4280 AT JN WITH WATER END 1st Rd: A4280 2nd Rd: U													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
60 MPH	Single c'way	R'dabt Give	Dark/lights lit	Fine	Wet	None	None	None	None				
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Going ahead	SW	NE On main	Ent r'about	Yes	None		None	Male	28	-ve
2	Taxi	No	Going ahead	NE	SW On main	Leave r'about	No	None		None	Male	45	-ve
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	2	Drv/Rider	Male	45	Slight	No	Not ped	Not ped	Not ped	Other			
2	1	Passenger	Female	30	Slight	No	Not ped	Not ped	Not ped	Other			

Description: V1 lost control on bend in damp conditions collided had on with V2 travelling in opposite direction.

User Information:

Contributory Factors: 409V001A 601V001A

No.	Area L/A	Reference	Severity	Day	Date	Time	Grid Coords	Link/Node	Street				
8	E06000055	258620	Slight	Wednesday	10/01/2018	09:06	510669/251704						
Location: WESTBOUND A421 AT JN WITH WATER END 1st Rd: A421 2nd Rd: U													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
70 MPH	Dual c'way	Slip-R Give	Daylight	Rain	Wet	None	None	None	None				
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Stop	W	E On main	Junt cleared	No	None		None	Male	-1	-ve
2	Car	No	Stop	W	E On main	Junt cleared	Yes	None		None	Male	20	-ve
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	2	Drv/Rider	Male	20	Slight	No	Not ped	Not ped	Not ped	Other			

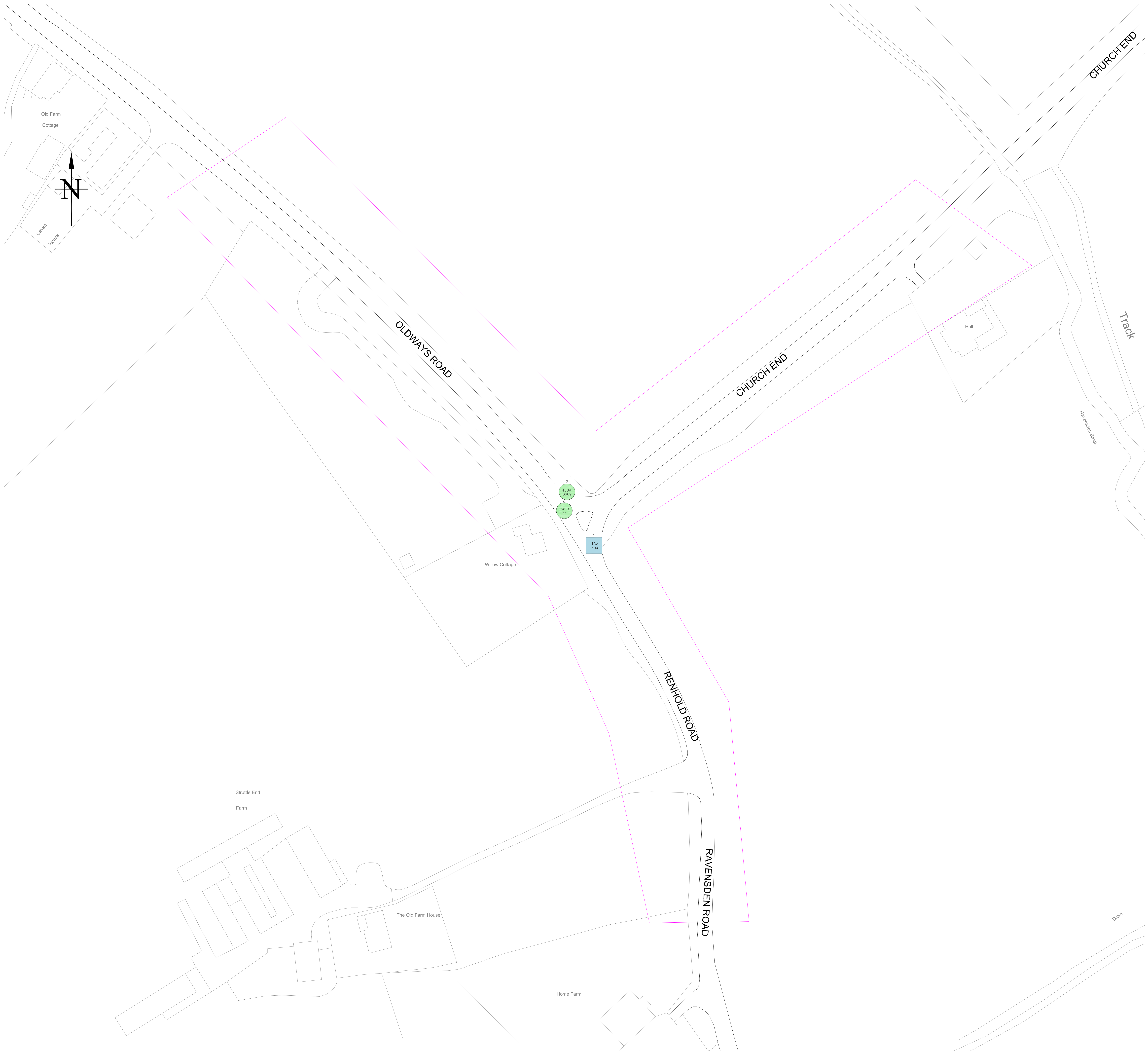
Description: Both vehicles driving westbound on A421, weather conditions were wet & raining, DV1 saw the traffic in front of him slow down so came to a stop, Vehicle behind (V02) was allegedly driving about 50 mph, started to slow down & skidded in the road.

User Information:

Contributory Factors: 103V002A

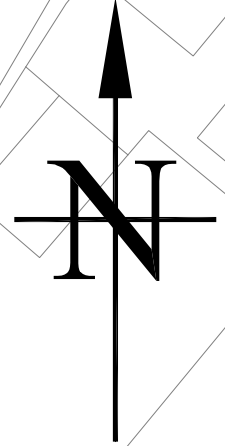
Accident Date BETWEEN '10-Oct-2014' AND '09-Oct-2019'

No.	Area L/A	Reference	Severity	Day	Date	Time	Grid Coords	Link/Node	Street				
9	E06000055	337716	Slight	Monday	15/10/2018	12:00	510466/251641						
Location: A428 AT JN WITH WATER END 1st Rd: A428 2nd Rd: U													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
60 MPH	Roundabout	R'dabt Give	Daylight	Rain	Wet	None	None	None	None				
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Stop	SW	NE On main	Ent r'about	No	None		None	Female	38	N/R
2	Car	No	Going ahead	SE	SW On main	Leave r'about	Yes	None		None	Female	50	N/P
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	1	Drv/Rider	Female	38	Slight	No	Not ped	Not ped	Not ped	Other			
2	2	Drv/Rider	Female	50	Slight	No	Not ped	Not ped	Not ped	Other			
Description: V1 was sitting in stationary traffic approaching the roundabout, V2 has exited the roundabout and slid into V1.													
User Information:					Contributory Factors:								
10	E06000055	802367	Slight	Tuesday	20/11/2018	14:10	510455/251633						
Location: ST NEOTS ROAD (A4280) NEAR JUNCTION WITH WATER END (A4280) 1st Rd: A4280 2nd Rd: A4280													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
30 MPH	Dual c'way	R'dabt Give	Daylight	Rain	Wet	None	None	None	None				
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Stop	NE	SW On main	Leave r'about	No	None		None	Female	30	-ve
2	Car	No	Stop	NE	SW On main	Leave r'about	No	None		None	Male	49	-ve
3	Car	No	Stop	NE	SW On main	Leave r'about	No	None		None	Female	64	-ve
4	Car	No	Parked	P	P On main	Leave r'about	No	None		None	Male	28	-ve
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	1	Drv/Rider	Female	30	Slight	No	Not ped	Not ped	Not ped	Other			
2	2	Drv/Rider	Male	49	Slight	No	Not ped	Not ped	Not ped	Other			
3	2	Passenger	Female	-1	Slight	Front	Not ped	Not ped	Not ped	Other			
Description: V4 police car had stopped on side of road, helping a broken down vehicle. V3 slowed on opposite side of carriage way after seeing blue lights but did not notice v2 had pulled over and stopped. V3 collided with v2, pushing it into the rear of v1.													
User Information:					Contributory Factors: 405V003A 406V003A 510V003A								
11	E06000055	80273	Slight	Tuesday	17/05/2016	22:45	510402/251561						
Location: ST NEOTS ROAD A4280 100 METRES WEST OF JUNCTION WITH WATER END C44 1st Rd: A4280 2nd Rd:													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
60 MPH	One Way St	NotJCT	Dark/lights lit	Rain	Wet	None	None	None	None				
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Going ahead	SW	NE On main	Not at	No	None		None	Female	68	N/R
2	Taxi	No	Going ahead	NE	SW On main	Not at	No	None		None	Male	61	N/R
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	1	Drv/Rider	Female	68	Slight	No	Not ped	Not ped	Not ped	Other			
Description: Vehicle one has been driving up Goldington Road out of Bedford, towards the A421, vehicle 002 has been coming in the other direction. Vehicle 001 has possibly mis-judged the carriageway and junction and has then collided with the other vehicle													
User Information:					Contributory Factors: 405V001A 410V001B								



Old Farm
Cottage

Curran
House



OLDWAYS ROAD

CHURCH END

CHURCH END

Track

Ravensden Brook

Hall

158A
1589

2499
35

148A
1504

Willow Cottage

RENFOLD ROAD

RAVENSDEN ROAD

Struttie End
Farm

The Old Farm House

Home Farm

Drain

Accident Date BETWEEN '10-Oct-2014' AND '09-Oct-2019'

No.	Area L/A	Reference	Severity	Day	Date	Time	Grid Coords	Link/Node	Street				
1	E06000055	14BA1304	Serious	Saturday	06/12/2014	10:56	507314/253804						
Location: C43 Revensden Road Metres Uc42 Church Road, Ravensden, Bedfordshire 1st Rd: C43 2nd Rd: U													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
40MPH	Single c'way	T/Stag Give	Daylight	Fine	Wet	None	None	None	None				
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Right turn	SE	NE On main	Mid junction	No	None		None	Female	76	-ve
2	Car	No	Going ahead	NW	SE On main	Mid junction	No	None		None	Female	39	-ve
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	1	Drv/Rider	Female	76	Serious	No	Not ped	Not ped	Not ped	Other			
2	2	Drv/Rider	Female	39	Serious	No	Not ped	Not ped	Not ped	Other			
Description: V1 Trav Nw, Turns right at T Junc, across the Path of Oncoming V2. V2 Collides into V1.													
User Information: Contributory Factors: 999V001B 103V001A 103V002B													
2	E06000055	15BA0669	Slight	Wednesday	22/07/2015	17:00	507304/253824						
Location: C43 OLDWAYS ROAD, at its Junction with U42 CHURCH END, RAVENS DEN, Bedfordshire 1st Rd: C43 2nd Rd: U42													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
40MPH	Single c'way	T/Stag Give	Daylight	Fine	Dry	None	None	None	None				
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Right turn	NE	NW On main	Mid junction	No	None		None	Male	72	-ve
2	Car	No	Going ahead	NW	SE On main	Mid junction	No	None		None	Female	47	-ve
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	1	Drv/Rider	Male	72	Slight	No	Not ped	Not ped	Not ped	Other			
2	2	Drv/Rider	Female	47	Slight	No	Not ped	Not ped	Not ped	Other			
Description: V1 TRAV SW, TURNS RIGHT ONTO MAIN ROAD, FAILING TO SEE OR GIVE WAY TO V2 TRAV SE. V1 STRIKES V2 TO E/N/S.													
User Information: Contributory Factors: 706V001B 406V001A													
3	E06000055	249935	Slight	Thursday	07/12/2017	08:18	507303/253817						
Location: RAVENS DEN ROAD AT JN WITH CHURCH END 1st Rd: U 2nd Rd: U													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
30MPH	Single c'way	Other Give	Daylight	Rain	Wet	None	None	None	None				
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Right turn	SE	NE On main	Junt appr	No	None		None	Female	55	-ve
2	Car	No	Rt hand bend	NW	SE On main	Junt appr	No	None		None	Male	30	-ve
3	Car	No	Lt hand bend	SE	NW On main	Junt appr	No	None		None	Female	55	-ve
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	1	Drv/Rider	Female	55	Slight	No	Not ped	Not ped	Not ped	Other			
2	2	Drv/Rider	Male	30	Slight	No	Not ped	Not ped	Not ped	Other			
3	1	Passenger	Female	62	Slight	Front	Not ped	Not ped	Not ped	Other			
Description: V1 was travelling along Ravensden Road, waiting to turn right onto church end. V1 failed to see V2 and turned right in front of V2, colliding with V2. V3 was travelling behind V1 and was hit by debris caused by the collision between V1 and V2.													
User Information: Contributory Factors: 401V001A													



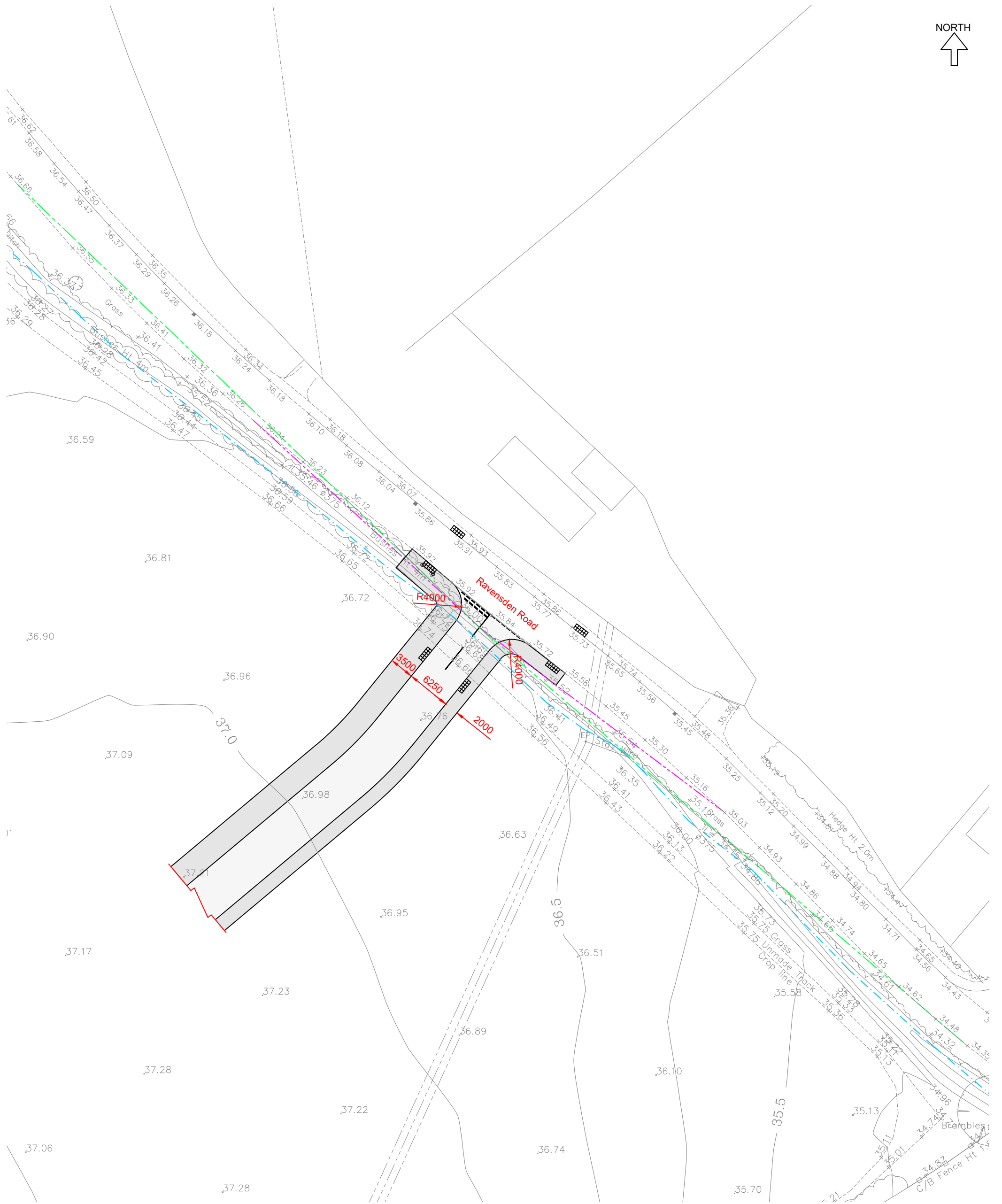
Appendix G

Hookhams Lane Access
MAC drawing no. 248-TA11



Appendix H

Ravensden Road Access
MAC drawing no. 248-TA12




Notes

1. Based on MSurv 'Topographical Survey' drawing number 1215/2272/1.
2. Based on Ordnance Survey mapping.

Key

- Visibility Splays - 2.4m x 43m
- Visibility Splays - 2.4m x 90m
- Highway Boundary

 <p>T: 01604 340544 Northampton Office E: info@mac-ltd.co.uk W: mac-ltd.co.uk Martin Andrews Consulting Ltd</p>	<ul style="list-style-type: none"> • Transport Assessments • Flood Risk Assessments • Highway Advice • Access Design • Drainage Strategies • Vehicle tracking 	<p>Client: Manor Oak Homes</p> <p>Project: Land North of Hookhams Lane Salph End</p>	<p>Date: 19/01/20</p> <p>Drw: MJA</p> <p>Chk: MJA</p> <p>Scale: 1:500</p> <p>Size: A3</p>	
	<p>Title: Ravensden Road Access</p>		<p>Revision: A</p>	
	<p>Drawing No: 248-TA11</p>			



Calculation Reference: AUDIT-864401-190717-0707

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : A - HOUSES PRIVATELY OWNED
 MULTI-MODAL TOTAL PEOPLE

Selected regions and areas:

02	SOUTH EAST	
	ES EAST SUSSEX	3 days
	HC HAMPSHIRE	3 days
	KC KENT	4 days
	SC SURREY	1 days
	WS WEST SUSSEX	6 days
03	SOUTH WEST	
	DC DORSET	1 days
	DV DEVON	3 days
	SM SOMERSET	1 days
	WL WILTSHIRE	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	2 days
	NF NORFOLK	3 days
	SF SUFFOLK	2 days
05	EAST MIDLANDS	
	DS DERBYSHIRE	1 days
	LN LINCOLNSHIRE	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	2 days
	ST STAFFORDSHIRE	1 days
	WK WARWICKSHIRE	2 days
	WO WORCESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NE NORTH EAST LINCOLNSHIRE	1 days
	NY NORTH YORKSHIRE	6 days
	SY SOUTH YORKSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	2 days
	GM GREATER MANCHESTER	1 days
	MS MERSEYSIDE	1 days
09	NORTH	
	DH DURHAM	1 days
	TW TYNE & WEAR	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Secondary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of dwellings
Actual Range: 6 to 805 (units:)
Range Selected by User: 6 to 805 (units:)

Parking Spaces Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/11 to 20/11/18

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	10 days
Tuesday	11 days
Wednesday	13 days
Thursday	11 days
Friday	7 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	52 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	25
Edge of Town	27

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	50
No Sub Category	2

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

C3	52 days
----	---------

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

1,000 or Less	1 days
1,001 to 5,000	6 days
5,001 to 10,000	10 days
10,001 to 15,000	15 days
15,001 to 20,000	9 days
20,001 to 25,000	6 days
25,001 to 50,000	5 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Secondary Filtering selection (Cont.):

Population within 5 miles:

5,001 to 25,000	5 days
25,001 to 50,000	3 days
50,001 to 75,000	7 days
75,001 to 100,000	13 days
100,001 to 125,000	2 days
125,001 to 250,000	16 days
250,001 to 500,000	5 days
500,001 or More	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	15 days
1.1 to 1.5	37 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	10 days
No	42 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	52 days
-----------------	---------

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	CA-03-A-04	DETACHED		CAMBRI D G E S H I R E
	PETERBOROUGH			
	THORPE PARK ROAD			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		9	
	<i>Survey date: TUESDAY</i>		<i>18/10/11</i>	<i>Survey Type: MANUAL</i>
2	CA-03-A-05	DETACHED HOUSES		CAMBRI D G E S H I R E
	EASTFIELD ROAD			
	PETERBOROUGH			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		28	
	<i>Survey date: MONDAY</i>		<i>17/10/16</i>	<i>Survey Type: MANUAL</i>
3	CH-03-A-08	DETACHED		C H E S H I R E
	WHITCHURCH ROAD			
	CHESTER			
	BOUGHTON HEATH			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		11	
	<i>Survey date: TUESDAY</i>		<i>22/05/12</i>	<i>Survey Type: MANUAL</i>
4	CH-03-A-09	TERRACED HOUSES		C H E S H I R E
	GREYSTOKE ROAD			
	MACCLESFIELD			
	HURDSFIELD			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		24	
	<i>Survey date: MONDAY</i>		<i>24/11/14</i>	<i>Survey Type: MANUAL</i>
5	DC-03-A-08	BUNGALOWS		D O R S E T
	HURSTDENE ROAD			
	BOURNEMOUTH			
	CASTLE LANE WEST			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		28	
	<i>Survey date: MONDAY</i>		<i>24/03/14</i>	<i>Survey Type: MANUAL</i>
6	DH-03-A-01	SEMI DETACHED		D U R H A M
	GREENFIELDS ROAD			
	BISHOP AUCKLAND			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		50	
	<i>Survey date: TUESDAY</i>		<i>28/03/17</i>	<i>Survey Type: MANUAL</i>
7	DS-03-A-02	MIXED HOUSES		D E R B Y S H I R E
	RADBOURNE LANE			
	DERBY			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		371	
	<i>Survey date: TUESDAY</i>		<i>10/07/18</i>	<i>Survey Type: MANUAL</i>
8	DV-03-A-01	TERRACED HOUSES		D E V O N
	BRONSHILL ROAD			
	TORQUAY			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		37	
	<i>Survey date: WEDNESDAY</i>		<i>30/09/15</i>	<i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

9	DV-03-A-02 MILLHEAD ROAD HONITON	HOUSES & BUNGALOWS	DEVON
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 116 <i>Survey date: FRIDAY 25/09/15</i>		
10	DV-03-A-03 LOWER BRAND LANE HONITON	TERRACED & SEMI DETACHED	DEVON
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 70 <i>Survey date: MONDAY 28/09/15</i>		
11	ES-03-A-02 SOUTH COAST ROAD PEACEHAVEN	PRIVATE HOUSING	EAST SUSSEX
	Edge of Town Residential Zone Total Number of dwellings: 37 <i>Survey date: FRIDAY 18/11/11</i>		
12	ES-03-A-03 SHEPHAM LANE POLEGATE	MIXED HOUSES & FLATS	EAST SUSSEX
	Edge of Town Residential Zone Total Number of dwellings: 212 <i>Survey date: MONDAY 11/07/16</i>		
13	ES-03-A-04 NEW LYDD ROAD CAMBER	MIXED HOUSES & FLATS	EAST SUSSEX
	Edge of Town Residential Zone Total Number of dwellings: 134 <i>Survey date: FRIDAY 15/07/16</i>		
14	GM-03-A-10 BUTT HILL DRIVE MANCHESTER PRESTWICH	DETACHED/SEMI	GREATER MANCHESTER
	Edge of Town Residential Zone Total Number of dwellings: 29 <i>Survey date: WEDNESDAY 12/10/11</i>		
15	HC-03-A-20 CANADA WAY LIPHOOK	HOUSES & FLATS	HAMPSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 62 <i>Survey date: TUESDAY 20/11/18</i>		
16	HC-03-A-21 PRIESTLEY ROAD BASINGSTOKE HOUNDMILLS	TERRACED & SEMI-DETACHED	HAMPSHIRE
	Edge of Town Residential Zone Total Number of dwellings: 39 <i>Survey date: TUESDAY 13/11/18</i>		

LIST OF SITES relevant to selection parameters (Cont.)

17	HC-03-A-22 BOW LAKE GARDENS NEAR EASTLEIGH BISHOPSTOKE Edge of Town Residential Zone Total Number of dwellings: 40 <i>Survey date: WEDNESDAY 31/10/18</i>	MIXED HOUSES HAMPSHIRE	<i>Survey Type: MANUAL</i>
18	KC-03-A-03 HYTHE ROAD ASHFORD WILLESBOROUGH Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 51 <i>Survey date: THURSDAY 14/07/16</i>	MIXED HOUSES & FLATS KENT	<i>Survey Type: MANUAL</i>
19	KC-03-A-04 KILN BARN ROAD AYLESFORD DITTON Edge of Town Residential Zone Total Number of dwellings: 110 <i>Survey date: FRIDAY 22/09/17</i>	SEMI-DETACHED & TERRACED KENT	<i>Survey Type: MANUAL</i>
20	KC-03-A-06 MARGATE ROAD HERNE BAY Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 363 <i>Survey date: WEDNESDAY 27/09/17</i>	MIXED HOUSES & FLATS KENT	<i>Survey Type: MANUAL</i>
21	KC-03-A-07 RECVLVER ROAD HERNE BAY Edge of Town Residential Zone Total Number of dwellings: 288 <i>Survey date: WEDNESDAY 27/09/17</i>	MIXED HOUSES KENT	<i>Survey Type: MANUAL</i>
22	LN-03-A-03 ROOKERY LANE LINCOLN BOULTHAM Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 22 <i>Survey date: TUESDAY 18/09/12</i>	SEMI DETACHED LINCOLNSHIRE	<i>Survey Type: MANUAL</i>
23	MS-03-A-03 BEMPTON ROAD LIVERPOOL OTTERSPOOL Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 15 <i>Survey date: FRIDAY 21/06/13</i>	DETACHED MERSEYSIDE	<i>Survey Type: MANUAL</i>
24	NE-03-A-02 HANOVER WALK SCUNTHORPE Edge of Town No Sub Category Total Number of dwellings: 432 <i>Survey date: MONDAY 12/05/14</i>	SEMI DETACHED & DETACHED NORTH EAST LINCOLNSHIRE	<i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

25	NF-03-A-01 YARMOUTH ROAD CAISTER-ON-SEA	SEMI DET. & BUNGALOWS		NORFOLK
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 27 <i>Survey date: TUESDAY 16/10/12</i>			
26	NF-03-A-02 DEREHAM ROAD NORWICH	HOUSES & FLATS		NORFOLK
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 98 <i>Survey date: MONDAY 22/10/12</i>			
27	NF-03-A-03 HALING WAY THETFORD	DETACHED HOUSES		NORFOLK
	Edge of Town Residential Zone Total Number of dwellings: 10 <i>Survey date: WEDNESDAY 16/09/15</i>			
28	NY-03-A-06 HORSEFAIR BOROUGHBRIDGE	BUNGALOWS & SEMI DET.		NORTH YORKSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 115 <i>Survey date: FRIDAY 14/10/11</i>			
29	NY-03-A-08 NICHOLAS STREET YORK	TERRACED HOUSES		NORTH YORKSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 21 <i>Survey date: MONDAY 16/09/13</i>			
30	NY-03-A-09 GRAMMAR SCHOOL LANE NORTHALLERTON	MIXED HOUSING		NORTH YORKSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 52 <i>Survey date: MONDAY 16/09/13</i>			
31	NY-03-A-10 BOROUGHBRIDGE ROAD RIPON	HOUSES AND FLATS		NORTH YORKSHIRE
	Edge of Town No Sub Category Total Number of dwellings: 71 <i>Survey date: TUESDAY 17/09/13</i>			
32	NY-03-A-11 HORSEFAIR BOROUGHBRIDGE	PRIVATE HOUSING		NORTH YORKSHIRE
	Edge of Town Residential Zone Total Number of dwellings: 23 <i>Survey date: WEDNESDAY 18/09/13</i>			

LIST OF SITES relevant to selection parameters (Cont.)

33	NY-03-A-13	TERRACED HOUSES	NORTH YORKSHIRE
	CATTERICK ROAD CATTERICK GARRISON OLD HOSPITAL COMPOUND Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 10 <i>Survey date: WEDNESDAY 10/05/17</i>		
	<i>Survey Type: MANUAL</i>		
34	SC-03-A-04	DETACHED & TERRACED	SURREY
	HIGH ROAD BYFLEET Edge of Town Residential Zone Total Number of dwellings: 71 <i>Survey date: THURSDAY 23/01/14</i>		
	<i>Survey Type: MANUAL</i>		
35	SF-03-A-04	DETACHED & BUNGALOWS	SUFFOLK
	NORMANSTON DRIVE LOWESTOFT Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 7 <i>Survey date: TUESDAY 23/10/12</i>		
	<i>Survey Type: MANUAL</i>		
36	SF-03-A-05	DETACHED HOUSES	SUFFOLK
	VALE LANE BURY ST EDMUNDS Edge of Town Residential Zone Total Number of dwellings: 18 <i>Survey date: WEDNESDAY 09/09/15</i>		
	<i>Survey Type: MANUAL</i>		
37	SH-03-A-05	SEMI -DETACHED/TERRACED	SHROPSHIRE
	SANDCROFT TELFORD SUTTON HILL Edge of Town Residential Zone Total Number of dwellings: 54 <i>Survey date: THURSDAY 24/10/13</i>		
	<i>Survey Type: MANUAL</i>		
38	SH-03-A-06	BUNGALOWS	SHROPSHIRE
	ELLESMERE ROAD SHREWSBURY Edge of Town Residential Zone Total Number of dwellings: 16 <i>Survey date: THURSDAY 22/05/14</i>		
	<i>Survey Type: MANUAL</i>		
39	SM-03-A-01	DETACHED & SEMI	SOMERSET
	WEMBDON ROAD BRIDGWATER NORTHFIELD Edge of Town Residential Zone Total Number of dwellings: 33 <i>Survey date: THURSDAY 24/09/15</i>		
	<i>Survey Type: MANUAL</i>		
40	ST-03-A-07	DETACHED & SEMI -DETACHED	STAFFORDSHIRE
	BEACONSIDE STAFFORD MARSTON GATE Edge of Town Residential Zone Total Number of dwellings: 248 <i>Survey date: WEDNESDAY 22/11/17</i>		
	<i>Survey Type: MANUAL</i>		

LIST OF SITES relevant to selection parameters (Cont.)

41	SY-03-A-01 A19 BENTLEY ROAD DONCASTER BENTLEY RISE Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 54 <i>Survey date: WEDNESDAY 18/09/13</i>	SEMI DETACHED HOUSES	SOUTH YORKSHIRE	<i>Survey Type: MANUAL</i>
42	TW-03-A-02 WEST PARK ROAD GATESHEAD Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 16 <i>Survey date: MONDAY 07/10/13</i>	SEMI-DETACHED	TYNE & WEAR	<i>Survey Type: MANUAL</i>
43	WK-03-A-01 ARLINGTON AVENUE LEAMINGTON SPA Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 6 <i>Survey date: FRIDAY 21/10/11</i>	TERRACED/SEMI /DET.	WARWICKSHIRE	<i>Survey Type: MANUAL</i>
44	WK-03-A-02 NARBERTH WAY COVENTRY POTTERS GREEN Edge of Town Residential Zone Total Number of dwellings: 17 <i>Survey date: THURSDAY 17/10/13</i>	BUNGALOWS	WARWICKSHIRE	<i>Survey Type: MANUAL</i>
45	WL-03-A-02 HEADLANDS GROVE SWINDON Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 27 <i>Survey date: THURSDAY 22/09/16</i>	SEMI DETACHED	WILTSHIRE	<i>Survey Type: MANUAL</i>
46	WO-03-A-07 TEASEL WAY WORCESTER CLAINES Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 146 <i>Survey date: TUESDAY 26/06/18</i>	MIXED HOUSES	WORCESTERSHIRE	<i>Survey Type: MANUAL</i>
47	WS-03-A-04 HILLS FARM LANE HORSHAM BROADBRIDGE HEATH Edge of Town Residential Zone Total Number of dwellings: 151 <i>Survey date: THURSDAY 11/12/14</i>	MIXED HOUSES	WEST SUSSEX	<i>Survey Type: MANUAL</i>
48	WS-03-A-05 UPPER SHOREHAM ROAD SHOREHAM BY SEA Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 48 <i>Survey date: WEDNESDAY 18/04/12</i>	TERRACED & FLATS	WEST SUSSEX	<i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

49	WS-03-A-06	MIXED HOUSES		WEST SUSSEX
	ELLIS ROAD			
	WEST HORSHAM			
	S BROADBRIDGE HEATH			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		805	
	<i>Survey date: THURSDAY</i>		<i>02/03/17</i>	<i>Survey Type: MANUAL</i>
50	WS-03-A-08	MIXED HOUSES		WEST SUSSEX
	ROUNDSTONE LANE			
	ANGMERING			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		180	
	<i>Survey date: THURSDAY</i>		<i>19/04/18</i>	<i>Survey Type: MANUAL</i>
51	WS-03-A-09	MIXED HOUSES & FLATS		WEST SUSSEX
	LITTLEHAMPTON ROAD			
	WORTHING			
	WEST DURRINGTON			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		197	
	<i>Survey date: THURSDAY</i>		<i>05/07/18</i>	<i>Survey Type: MANUAL</i>
52	WS-03-A-10	MIXED HOUSES		WEST SUSSEX
	TODDINGTON LANE			
	LITTLEHAMPTON			
	WICK			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		79	
	<i>Survey date: WEDNESDAY</i>		<i>07/11/18</i>	<i>Survey Type: MANUAL</i>

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE

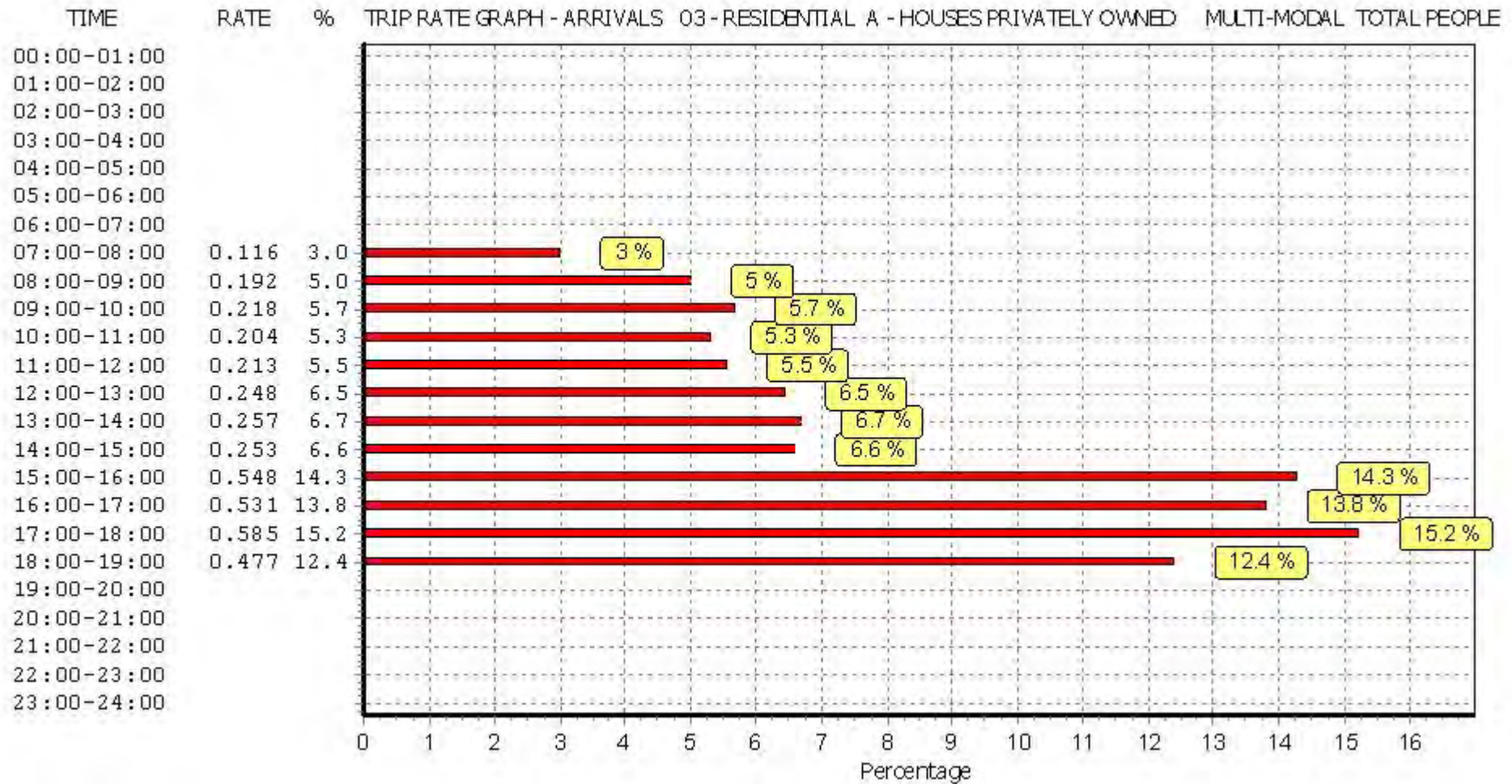
Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

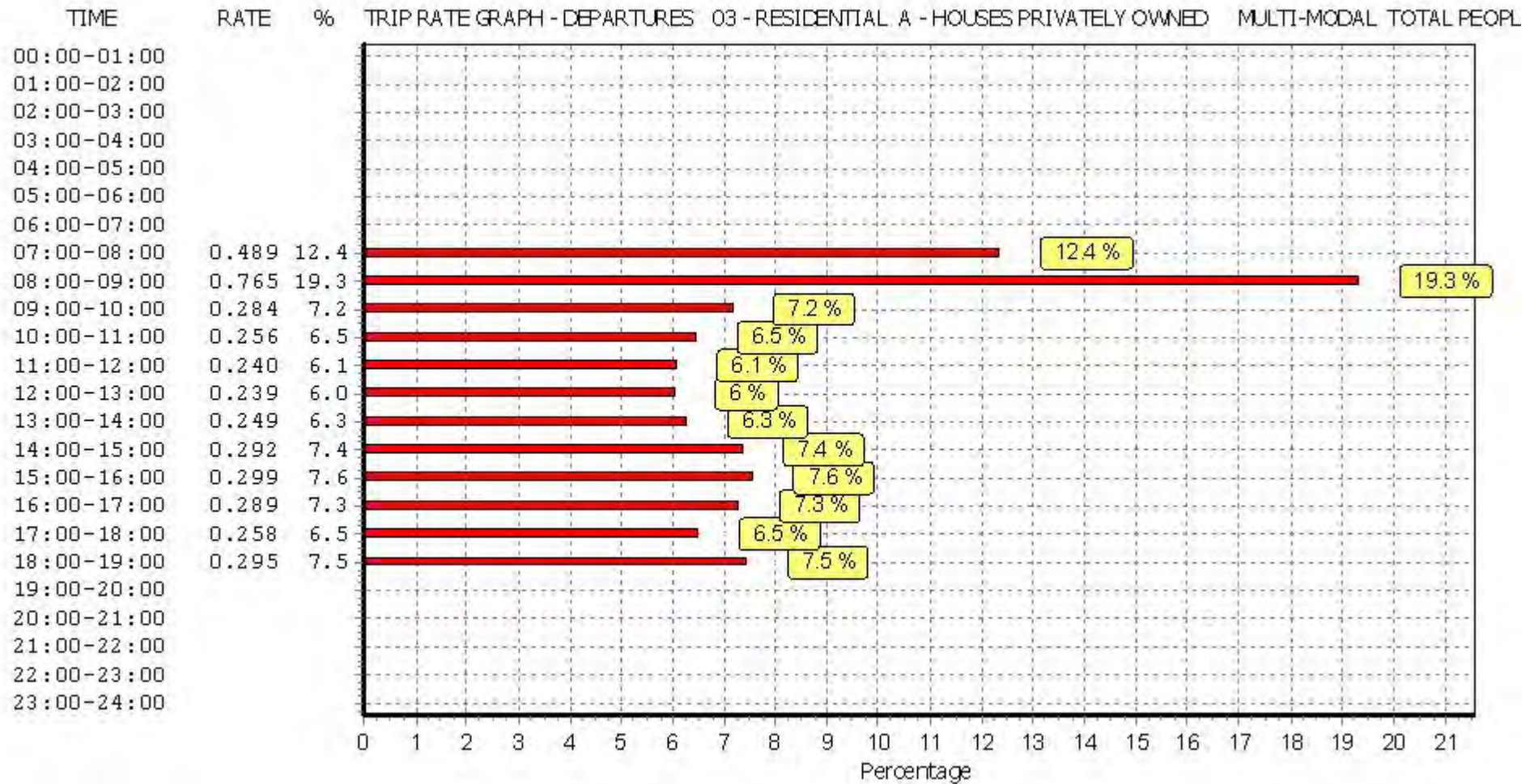
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	52	100	0.116	52	100	0.489	52	100	0.605
08:00 - 09:00	52	100	0.192	52	100	0.765	52	100	0.957
09:00 - 10:00	52	100	0.218	52	100	0.284	52	100	0.502
10:00 - 11:00	52	100	0.204	52	100	0.256	52	100	0.460
11:00 - 12:00	52	100	0.213	52	100	0.240	52	100	0.453
12:00 - 13:00	52	100	0.248	52	100	0.239	52	100	0.487
13:00 - 14:00	52	100	0.257	52	100	0.249	52	100	0.506
14:00 - 15:00	52	100	0.253	52	100	0.292	52	100	0.545
15:00 - 16:00	52	100	0.548	52	100	0.299	52	100	0.847
16:00 - 17:00	52	100	0.531	52	100	0.289	52	100	0.820
17:00 - 18:00	52	100	0.585	52	100	0.258	52	100	0.843
18:00 - 19:00	52	100	0.477	52	100	0.295	52	100	0.772
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.842			3.955			7.797

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

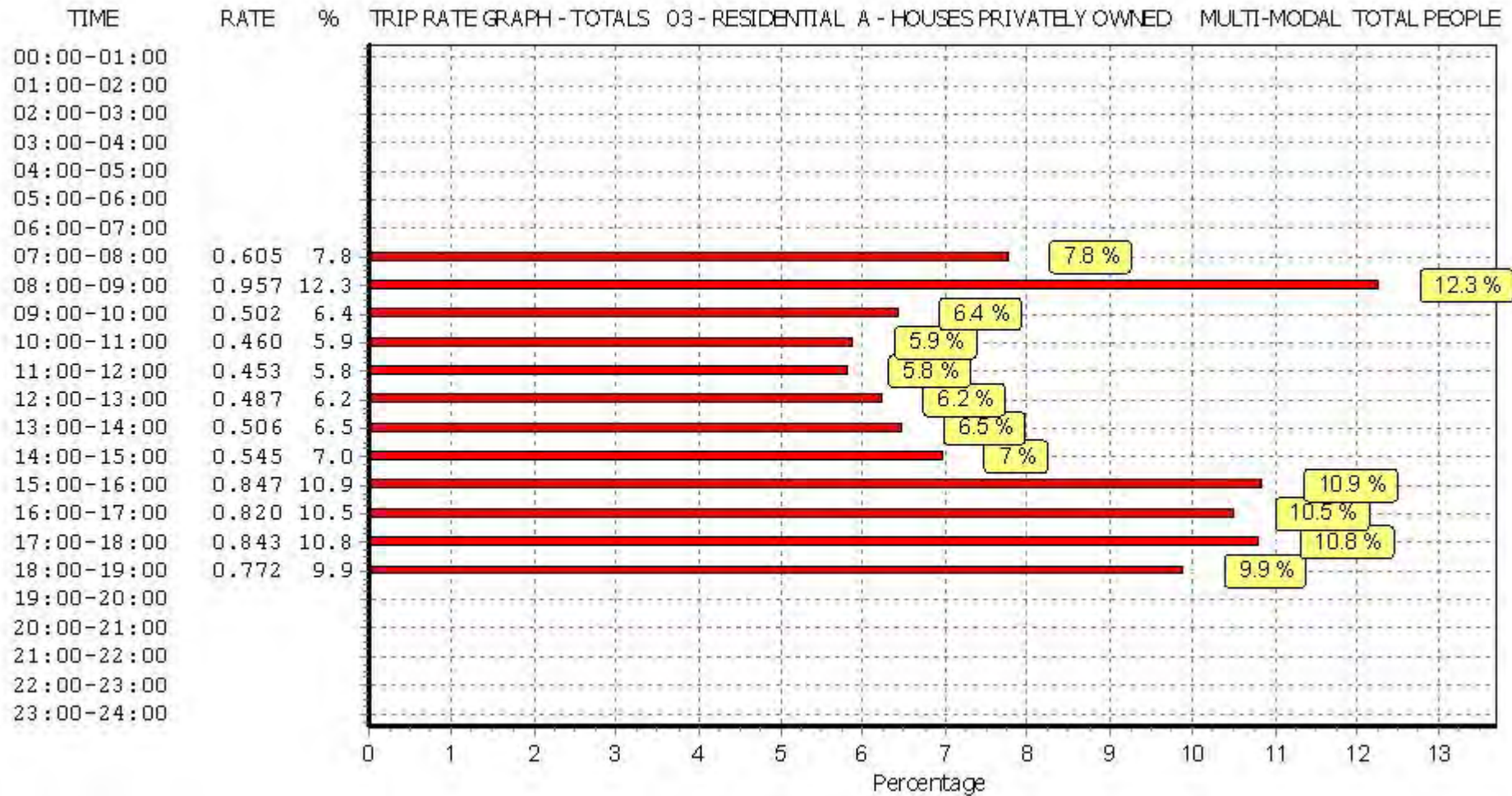
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

Calculation Reference: AUDIT-864401-190717-0722

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 04 - EDUCATION

Category : A - PRIMARY

VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	HC HAMPSHIRE		1 days
03	SOUTH WEST		
	BR BRISTOL CITY		1 days
05	EAST MIDLANDS		
	DS DERBYSHIRE		1 days
	LE LEICESTERSHIRE		1 days
	NR NORTHAMPTONSHIRE		1 days
06	WEST MIDLANDS		
	WM WEST MIDLANDS		1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NE NORTH EAST LINCOLNSHIRE		1 days
	WY WEST YORKSHIRE		2 days
08	NORTH WEST		
	CH CHESHIRE		1 days
	GM GREATER MANCHESTER		1 days
	LC LANCASHIRE		1 days
	MS MERSEYSIDE		1 days
09	NORTH		
	TW TYNE & WEAR		1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Secondary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of pupils
 Actual Range: 147 to 621 (units:)
 Range Selected by User: 79 to 657 (units:)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/11 to 12/07/17

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	4 days
Tuesday	4 days
Wednesday	1 days
Thursday	5 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	14 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	6
Edge of Town	8

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	13
No Sub Category	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

D1 14 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	3 days
10,001 to 15,000	1 days
15,001 to 20,000	4 days
20,001 to 25,000	1 days
25,001 to 50,000	4 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	1 days
125,001 to 250,000	4 days
250,001 to 500,000	7 days
500,001 or More	2 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	7 days
1.1 to 1.5	7 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	2 days
No	12 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	14 days
-----------------	---------

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters (Cont.)

10	NR-04-A-03 BOOTH LANE NORTH NORTHAMPTON	PRIMARY SCHOOL		NORTHAMPTONSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of pupils: 400 <i>Survey date: THURSDAY 24/03/16</i>			
11	TW-04-A-01 GLYNWOOD GARDENS GATESHEAD	PRIMARY SCHOOL		TYNE & WEAR
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of pupils: 260 <i>Survey date: MONDAY 07/10/13</i>			
12	WM-04-A-02 HAZEL ROAD BIRMINGHAM RUBERY	PRIMARY SCHOOL		WEST MIDLANDS
	Edge of Town Residential Zone Total Number of pupils: 234 <i>Survey date: TUESDAY 10/11/15</i>			
13	WY-04-A-01 SHAKESPEARE AVENUE LEEDS	PRIMARY SCHOOL		WEST YORKSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of pupils: 370 <i>Survey date: THURSDAY 19/09/13</i>			
14	WY-04-A-02 TOWN STREET LEEDS	PRIMARY SCHOOL		WEST YORKSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of pupils: 621 <i>Survey date: MONDAY 19/10/15</i>			

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
VEHICLES

Calculation factor: 1 PUPILS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	14	355	0.065	14	355	0.024	14	355	0.089
08:00 - 09:00	14	355	0.324	14	355	0.245	14	355	0.569
09:00 - 10:00	14	355	0.029	14	355	0.051	14	355	0.080
10:00 - 11:00	14	355	0.013	14	355	0.011	14	355	0.024
11:00 - 12:00	14	355	0.023	14	355	0.014	14	355	0.037
12:00 - 13:00	14	355	0.023	14	355	0.028	14	355	0.051
13:00 - 14:00	14	355	0.016	14	355	0.023	14	355	0.039
14:00 - 15:00	14	355	0.080	14	355	0.023	14	355	0.103
15:00 - 16:00	14	355	0.172	14	355	0.259	14	355	0.431
16:00 - 17:00	14	355	0.051	14	355	0.089	14	355	0.140
17:00 - 18:00	14	355	0.026	14	355	0.037	14	355	0.063
18:00 - 19:00	14	355	0.011	14	355	0.017	14	355	0.028
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.833			0.821			1.654

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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Parameter summary

Trip rate parameter range selected:	147 - 621 (units:)
Survey date date range:	01/01/11 - 12/07/17
Number of weekdays (Monday-Friday):	14
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.



Appendix J
Distribution

	AM Peak 08:00-09:00			PM Peak 17:00-18:00		
	Arms	Departures	Total	Arms	Departures	Total
Overlings	600	66	666	68	18	696
School	600	130	730	11	16	26
Overlings	141	9	150	7	1	8

A1 Access to Hootham Lane



Residential - 500 dwellings			
%	A	B	C
A	66%	66%	20%
B	66%	20%	20%
C	20%	20%	20%

School - 420 Pupils			
AM	A	B	C
A	27	27	0
B	21	27	21
C	0	27	21

Total			
AM	A	B	C
A	93	93	20
B	87	54	42
C	21	54	42

Residential - 14 dwellings			
AM	A	B	C
A	14	0	0
B	14	0	0
C	0	14	0

A2 Access to Ravensden Rd



Residential - 500 dwellings			
%	A	B	C
A	66%	14%	20%
B	66%	14%	20%
C	20%	14%	20%

School - 420 Pupils			
AM	A	B	C
A	0	0	27
B	0	0	27
C	0	0	0

Total			
AM	A	B	C
A	0	0	54
B	0	0	54
C	0	0	0

Residential - 14 dwellings			
AM	A	B	C
A	0	1	0
B	0	1	0
C	0	0	1

I1 Hootham Lane / Norse Road / Church Lane / Worthworth Drive



Residential - 500 dwellings				
%	A	B	C	D
A	25%	25%	25%	25%
B	25%	25%	25%	25%
C	25%	25%	25%	25%
D	25%	25%	25%	25%

School - 420 Pupils				
AM	A	B	C	D
A	69	56	56	56
B	17	7	7	7
C	14	7	7	7
D	11	7	7	7

Total				
AM	A	B	C	D
A	86	63	63	63
B	34	14	14	14
C	28	14	14	14
D	22	14	14	14

Residential - 14 dwellings				
AM	A	B	C	D
A	0	0	0	0
B	0	2	2	2
C	0	0	0	0
D	0	0	0	0

I2 Worthworth Drive / Palace Lane



Residential - 500 dwellings			
%	A	B	C
A	11%	9%	9%
B	11%	9%	9%
C	9%	9%	9%

School - 420 Pupils			
AM	A	B	C
A	0	0	0
B	7	20	22
C	6	0	0

Total			
AM	A	B	C
A	0	0	0
B	7	20	22
C	6	0	0

Residential - 14 dwellings			
AM	A	B	C
A	0	1	1
B	0	0	0
C	0	0	0

I3 Norse Rd / A4280 St Neots Road / A4280 Goldington Rd



Residential - 500 dwellings				
%	A	B	C	D
A	0	0	21%	0
B	0	0	21%	0
C	0	0	21%	0
D	0	0	21%	0

School - 420 Pupils				
AM	A	B	C	D
A	0	0	0	14
B	0	0	0	0
C	0	0	0	0
D	55	0	0	0

Total				
AM	A	B	C	D
A	0	0	0	14
B	0	0	0	0
C	0	0	0	0
D	55	0	0	0

Residential - 14 dwellings				
AM	A	B	C	D
A	0	0	0	1
B	0	0	0	0
C	0	0	0	0
D	1	0	0	0

I4 A421 (N) / St Neots Rd / A421 (S) / A4280



Residential - 500 dwellings					
%	A	B	C	D	E
A	3%	7%	3%	7%	0
B	3%	7%	3%	7%	0
C	3%	7%	3%	7%	0
D	7%	3%	7%	3%	0
E	7%	3%	7%	3%	0

School - 420 Pupils					
AM	A	B	C	D	E
A	4	4	7	7	0
B	7	4	7	4	0
C	7	7	4	4	0
D	18	7	18	7	0
E	18	7	18	7	0

Total					
AM	A	B	C	D	E
A	11	11	14	14	0
B	14	11	14	11	0
C	14	14	11	11	0
D	36	14	36	14	0
E	36	14	36	14	0

Residential - 14 dwellings					
AM	A	B	C	D	E
A	0	0	0	0	0
B	0	0	0	0	0
C	0	0	0	0	0
D	1	1	1	1	0
E	1	1	1	1	0

I4 Roundabout 1 - North



Residential - 500 dwellings					
%	A	B	C	D	E
A	0%	0%	10%	10%	0%
B	0%	0%	10%	10%	0%
C	7%	14%	0%	0%	0%
D	7%	14%	0%	0%	0%
E	7%	14%	0%	0%	0%

School - 420 Pupils					
AM	A	B	C	D	E
A	0	0	7	7	0
B	0	0	7	7	0
C	18	38	0	0	0
D	18	38	0	0	0
E	18	38	0	0	0

Total					
AM	A	B	C	D	E
A	0	0	14	14	0
B	0	0	14	14	0
C	36	76	0	0	0
D	36	76	0	0	0
E	36	76	0	0	0

Residential - 14 dwellings					
AM	A	B	C	D	E
A	0	0	0	0	0
B	0	0	0	0	0
C	0	0	0	0	0
D	1	1	0	0	0
E	1	1	0	0	0

I4 Roundabout 2 - South



Residential - 500 dwellings					
%	A	B	C	D	E
A	0%	0%	3%	3%	0%
B	0%	0%	3%	3%	0%
C	0%	0%	3%	3%	0%
D	3%	6%	0%	0%	0%
E	3%	6%	0%	0%	0%

School - 420 Pupils					
AM	A	B	C	D	E
A	0	0	0	0	0
B	0	0	0	0	0
C	0	0	0	0	0
D	0	0	0	0	0
E	0	0	0	0	0

Total					
AM	A	B	C	D	E
A	0	0	0	0	0
B	0	0	0	0	0
C	0	0	0	0	0
D	0	0	0	0	0
E	0	0	0	0	0

Residential - 14 dwellings					
AM	A	B	C	D	E
A	0	0	0	0	0
B	0	0	0	0	0
C	0	0	0	0	0
D	0	0	0	0	0
E	0	0	0	0	0

I5 Ravensden Rd / Oldways Rd / Church End



Residential - 500 dwellings			
%	A	B	C
A	13%	13%	13%
B	13%	13%	13%
C	13%	13%	13%

School - 420 Pupils			
AM	A	B	C
A	0	0	0
B	0	0	0
C	33	0	0

Total			
AM	A	B	C
A	0	0	0
B	0	0	0
C	33	0	0

Residential - 14 dwellings			
AM	A	B	C
A	0	1	1
B	0	1	1
C	0	0	1

J1 8600 / Oldways Rd / Thurligh Rd



Residential - 500 dwellings				
%	A	B	C	D
A	0%	8%	8%	0%
B	8%	0%	8%	0%
C	8%	8%	0%	0%
D	8%	8%	0%	0%

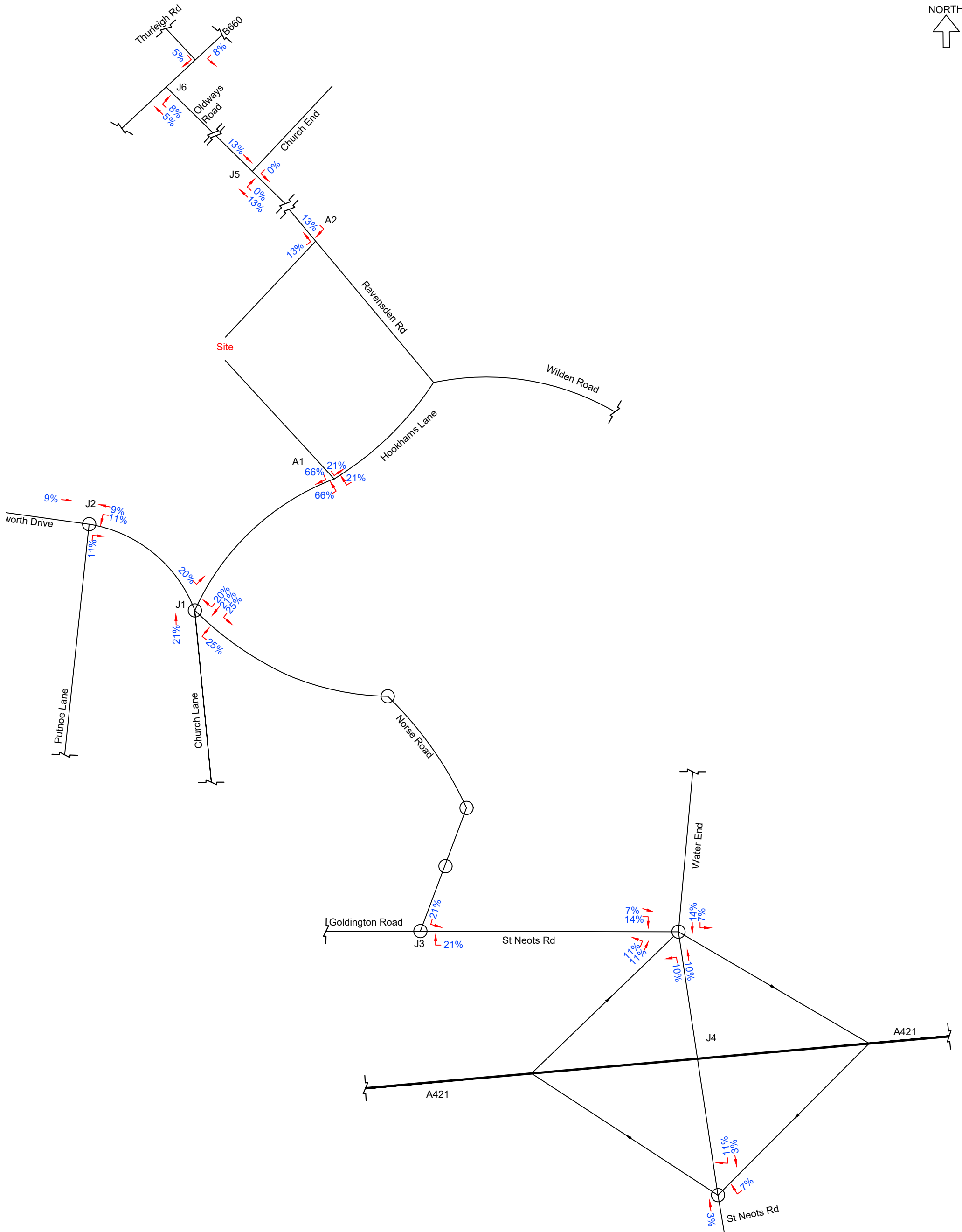
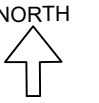
School - 420 Pupils				
AM	A	B	C	D
A	0	0	0	0
B	20	0	0	13
C	0	0	0	0
D	0	0	0	0

Total				
AM	A	B	C	D
A	20	0	0	13
B	0	0	0	13
C	0	0	0	0
D	0	0	0	0

Residential - 14 dwellings				
AM	A	B	C	D
A	0	1	1	1
B	0	1	1	0
C	0	0	0	0
D	0	0	0	0



Appendix K
Vehicle Movement Diagrams



Junctions:

- A1: Hookhams Lane Access
- A2: Ravensden Road Access
- J1: Hookhams Lane / Norse Rd / Church Lane / Wentworth Drive
- J2: Wentworth Drive / Putnoe Lane
- J3: A4280 St Neots Road / A4280 Goldington Road / Norse Road
- J4: A421 / St Neots Road / A4280



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- Transport Assessments
- Flood Risk Assessments
- Highway Advice
- Access Design
- Drainage Strategies
- Vehicle tracking

Client: Manor Oak Homes

Project: Land north of Hookhams Ln Salph End

Title: Vehicle Distribution - Dwellings

Date: 21/01/20

Drw: MJA

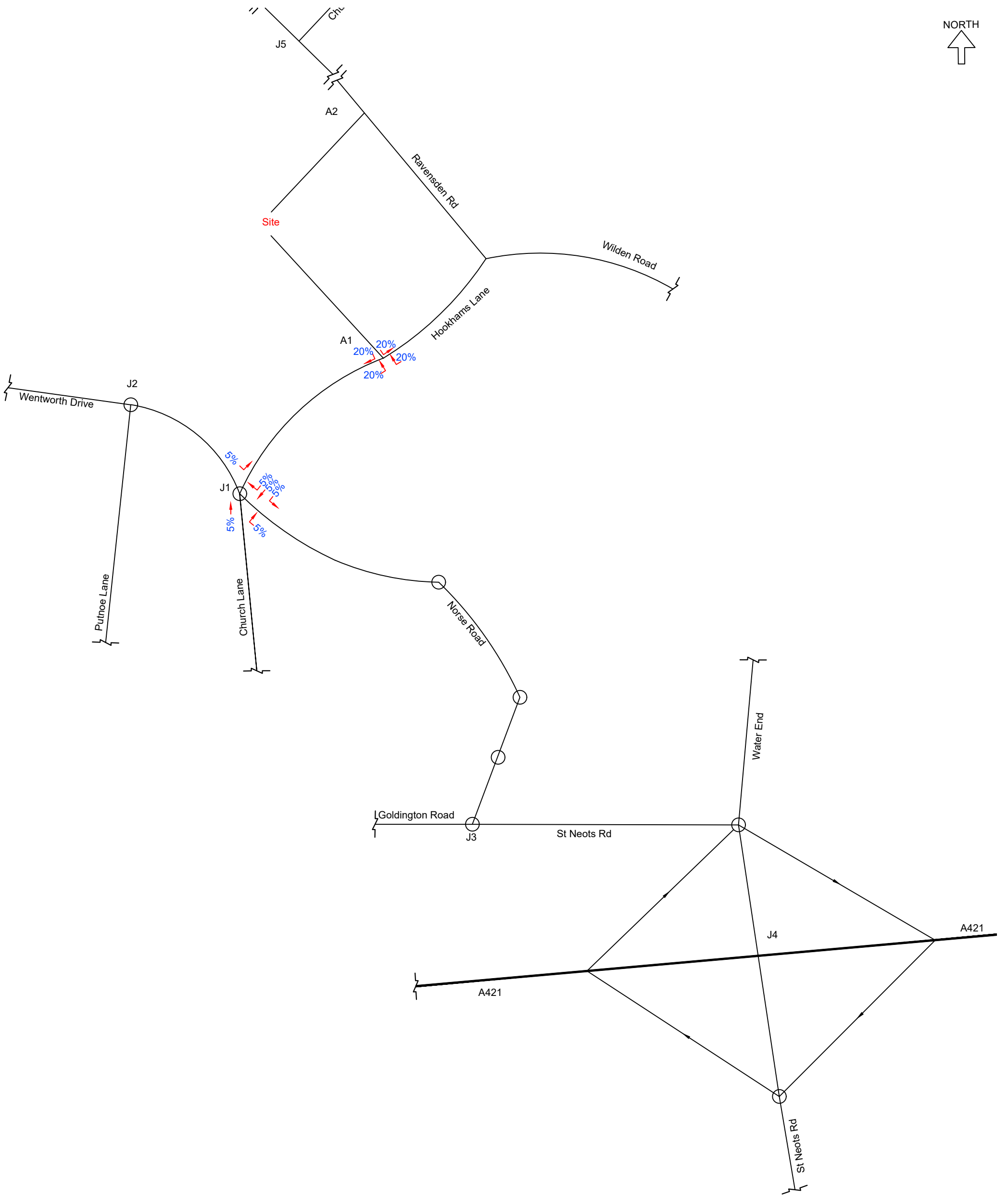
Chk: MJA

Drawing No: 143-TA25


Revision: A

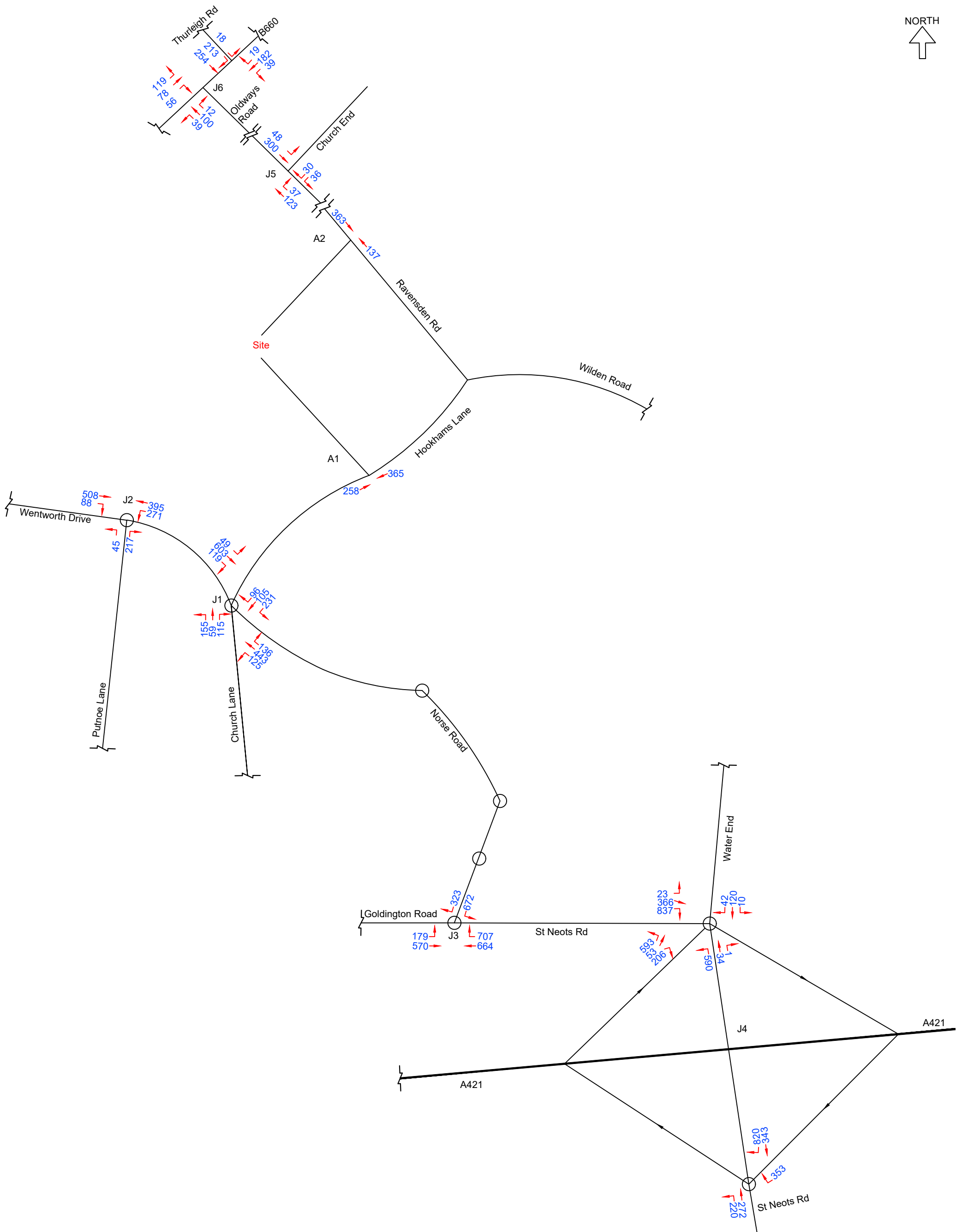
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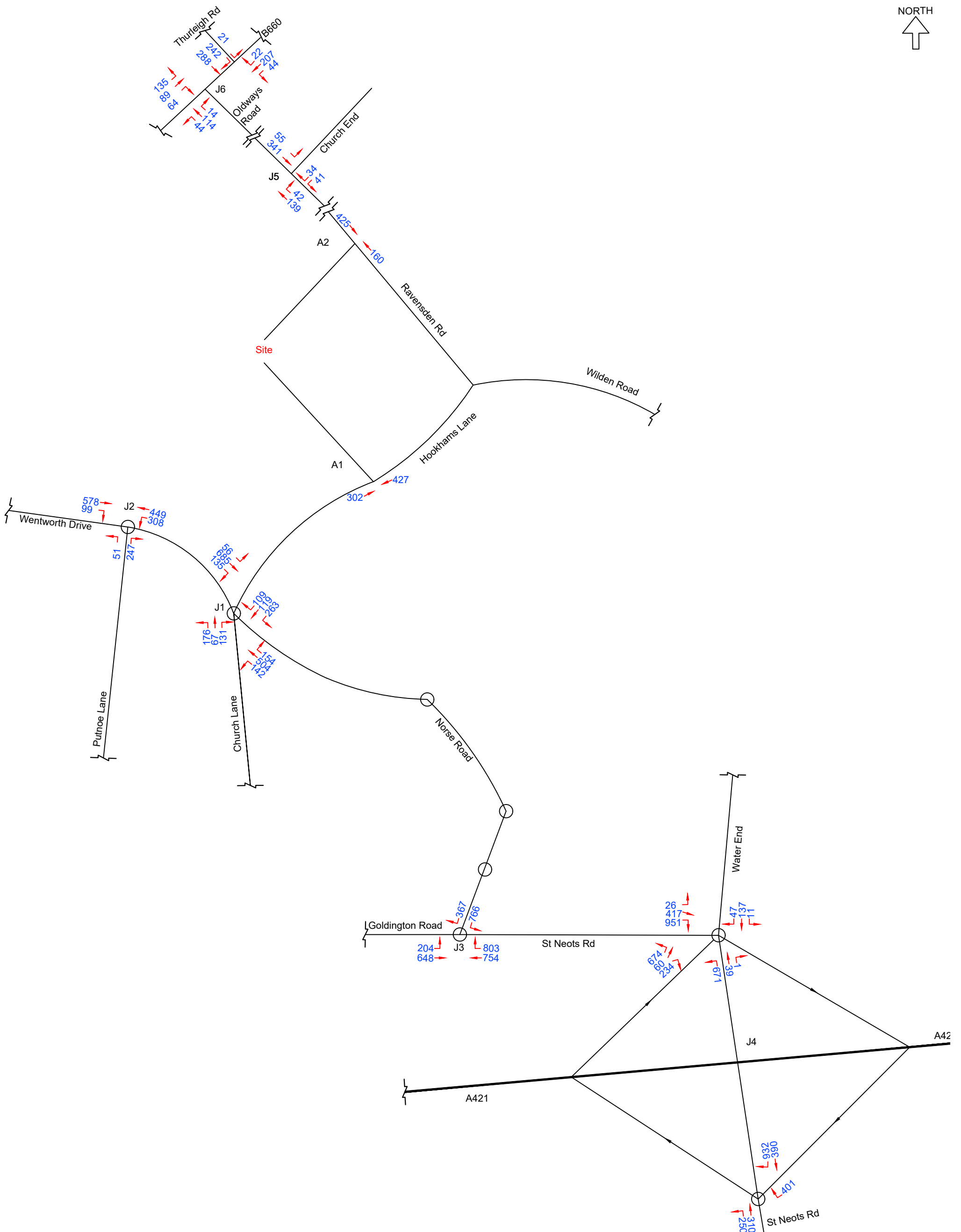
- Junctions:**
- A1: Hookhams Lane Access
 - A2: Ravensden Road Access
 - J1: Hookhams Lane / Norse Rd / Church Lane / Wentworth Drive
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		Title: Vehicle Distribution - School		Date: 29/08/19	
		Drawing No: 143-TA26		Revision: -	Drw: MJA
				Scale: NTS	Chk: MJA
			Size: A3		



- Junctions:**
- A1: Hookhams Lane Access
 - A2: Ravensden Road Access
 - J1: Hookhams Lane / Norse Rd / Church Lane / Wentworth Drive
 - J2: Wentworth Drive / Putnoe Lane
 - J3: A4280 St Neots Road / A4280 Goldington Road / Norse Road
 - J4: A421 / St Neots Road / A4280

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		Title: Vehicle Trip Movement Diagram 2019 - AM Peak Background	
		Drawing No: 143-TA30	Revision: A
		Scale: NTS Size: A3	



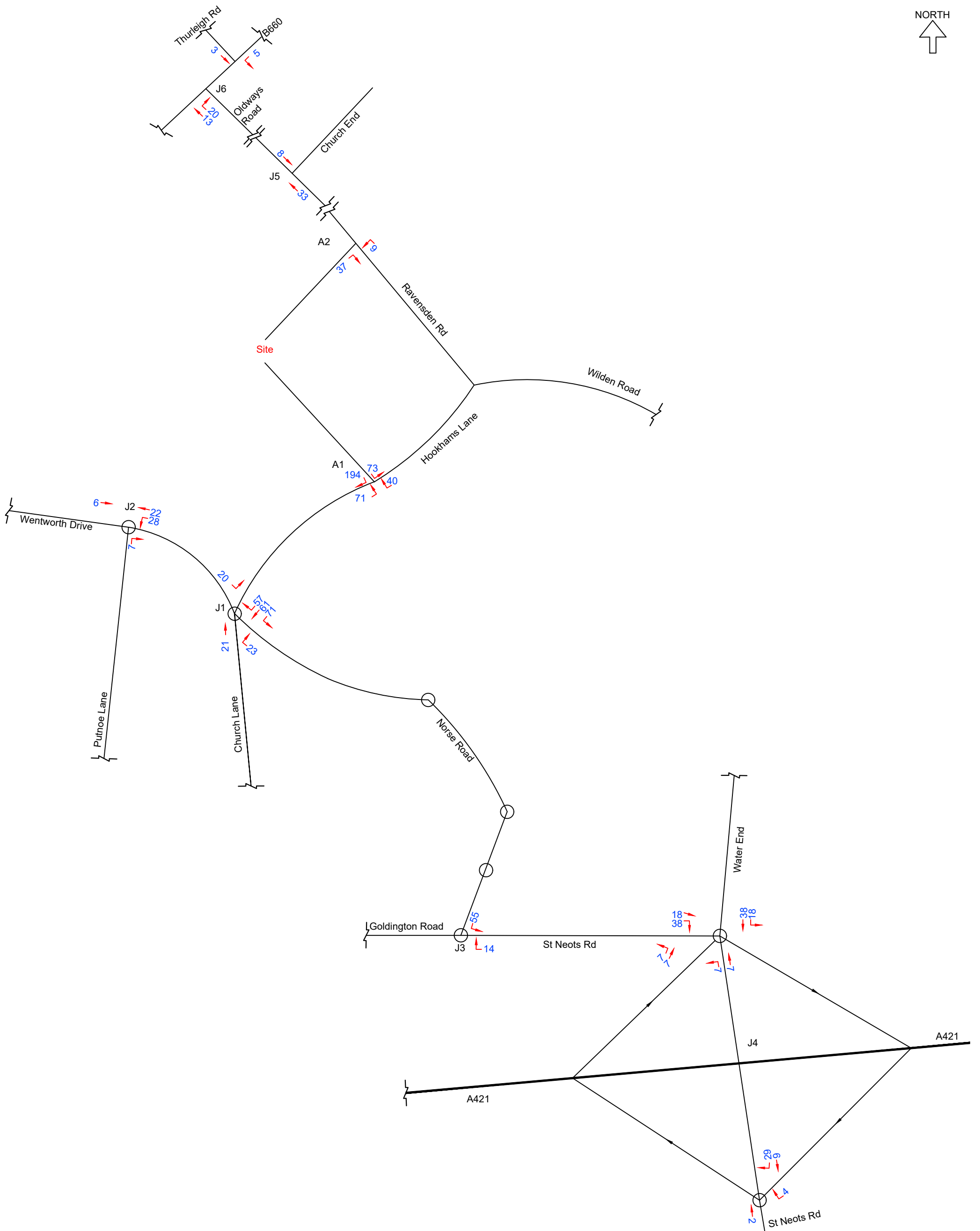
- Junctions:**
- A1: Hookhams Lane Access
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- Highway Advice
- Access Design
- Drainage Strategies
- Vehicle tracking

Client: Manor Oak Homes		Project: Land north of Hookhams Ln Salph End	
Title: Vehicle Trip Movement Diagram 2030 - AM Peak Background		Date: 21/01/20	Drw: MJA
Drawing No: 143-TA31		Revision: A	Scale: NTS
			Size: A3



Junctions:

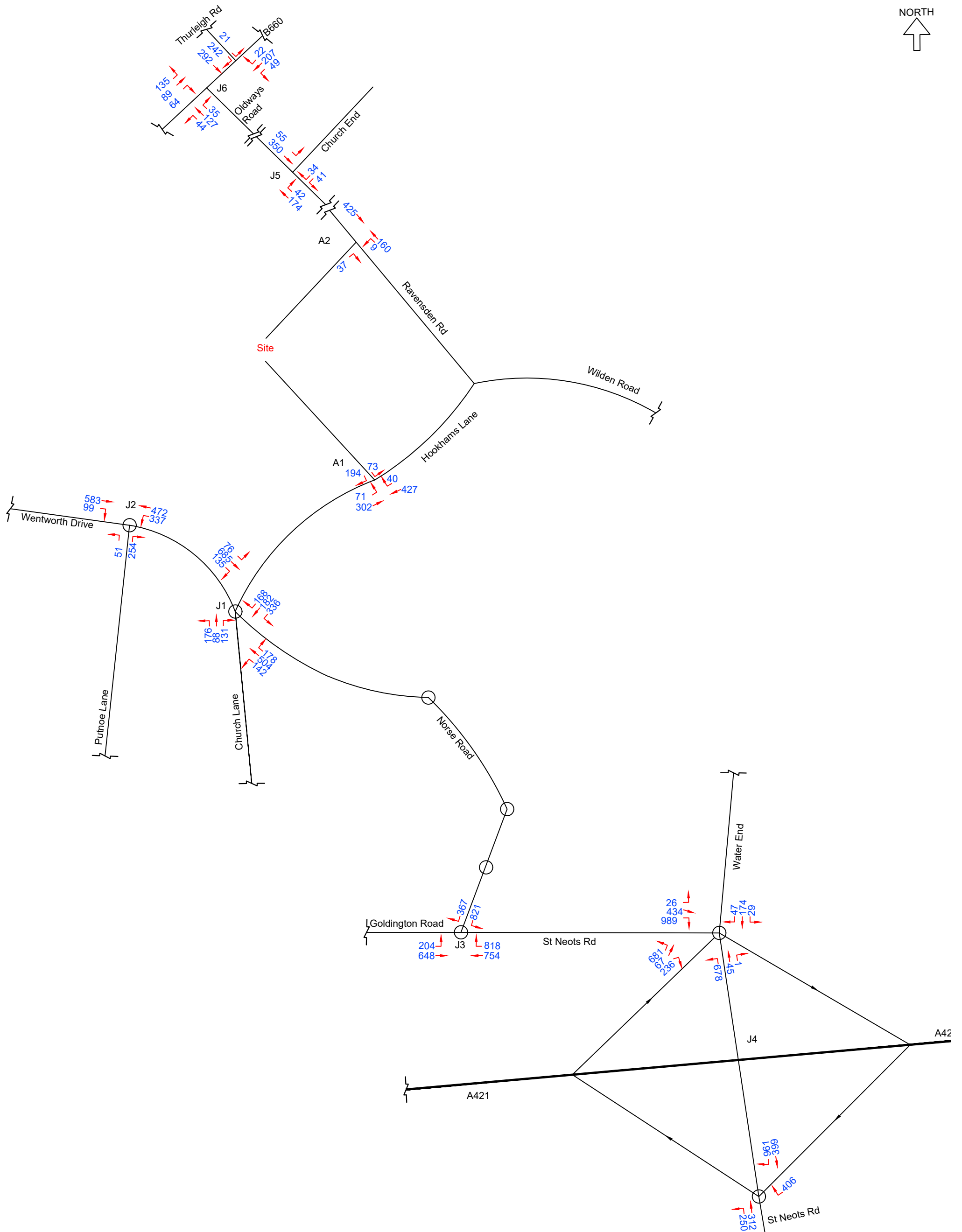
- A1: Hookhams Lane Access
- A2: Ravensden Road Access
- J1: Hookhams Lane / Norse Rd / Church Lane / Wentworth Drive
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- Transport Assessments
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- Access Design
- Drainage Strategies
- Vehicle tracking

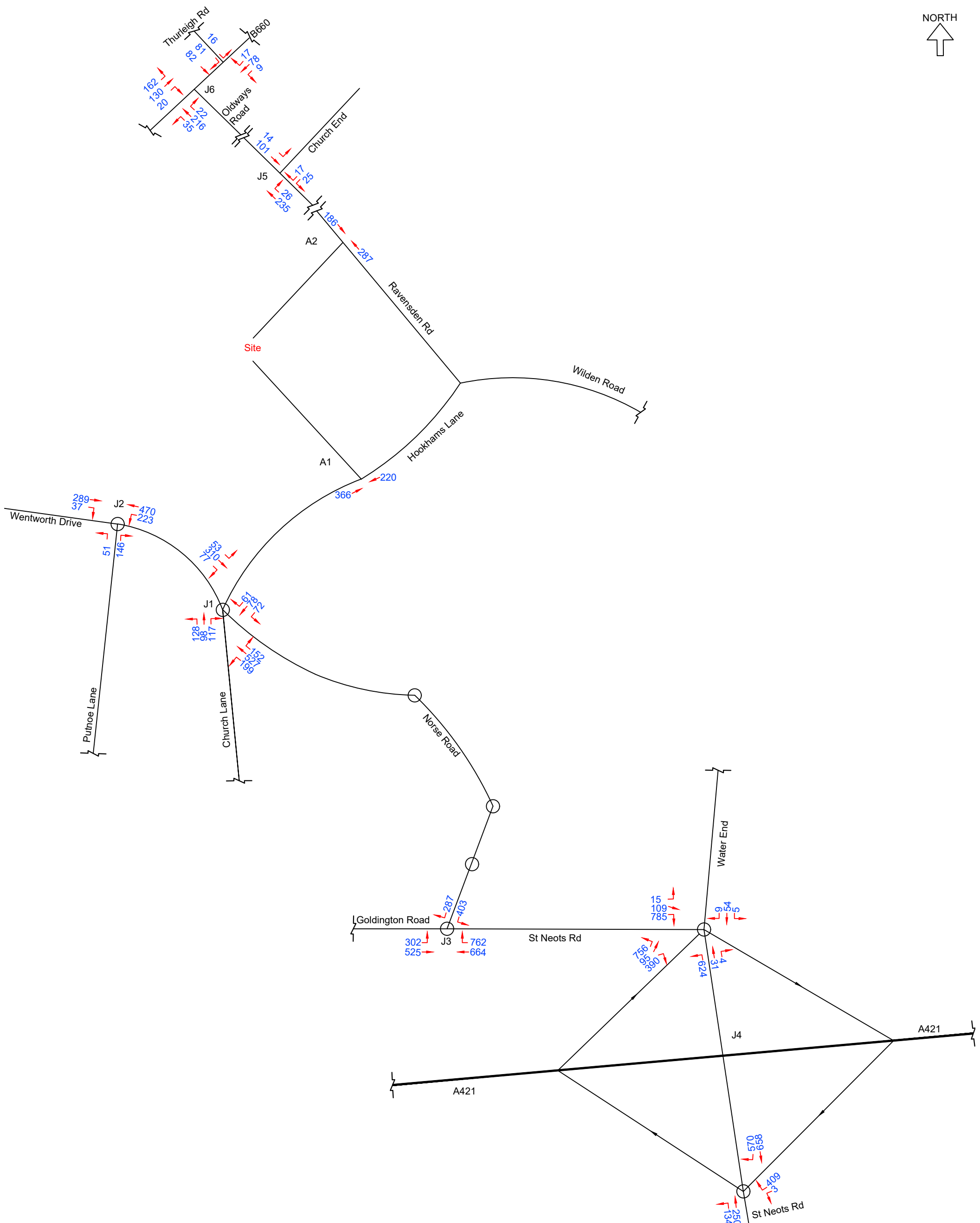
Client: Manor Oak Homes		Project: Land north of Hookhams Ln Salph End	
Title: Vehicle Trip Movement Diagram 2030 - AM Peak Development		Date: 21/01/20	Drw: MJA
		Chk: MJA	Scale: NTS
Drawing No: 143-TA33		Revision: A	Size: A3



Junctions:

- A1: Hookhams Lane Access
- A2: Ravensden Road Access
- J1: Hookhams Lane / Norse Rd / Church Lane / Wentworth Drive
- J2: Wentworth Drive / Putnoe Lane
- J3: A4280 St Neots Road / A4280 Goldington Road / Norse Road
- J4: A421 / St Neots Road / A4280

 <p>T: 01604 340544 Northampton Office E: info@mac-ltd.co.uk W: mac-ltd.co.uk Martin Andrews Consulting Ltd</p>	<ul style="list-style-type: none"> • Transport Assessments • Flood Risk Assessments • Highway Advice • Access Design • Drainage Strategies • Vehicle tracking 	<p>Client: Manor Oak Homes</p> <p>Project: Land north of Hookhams Ln Salph End</p>	<p>Title: Vehicle Trip Movement Diagram 2030 - AM Peak Background - Committed - Development</p>	<p>Date: 21/01/20</p> <p>Drw: MJA</p> <p>Chk: MJA</p> <p>Scale: NTS</p> <p>Size: A3</p>
	<p>Drawing No: 143-TA34</p>	<p>Revision: A</p>		

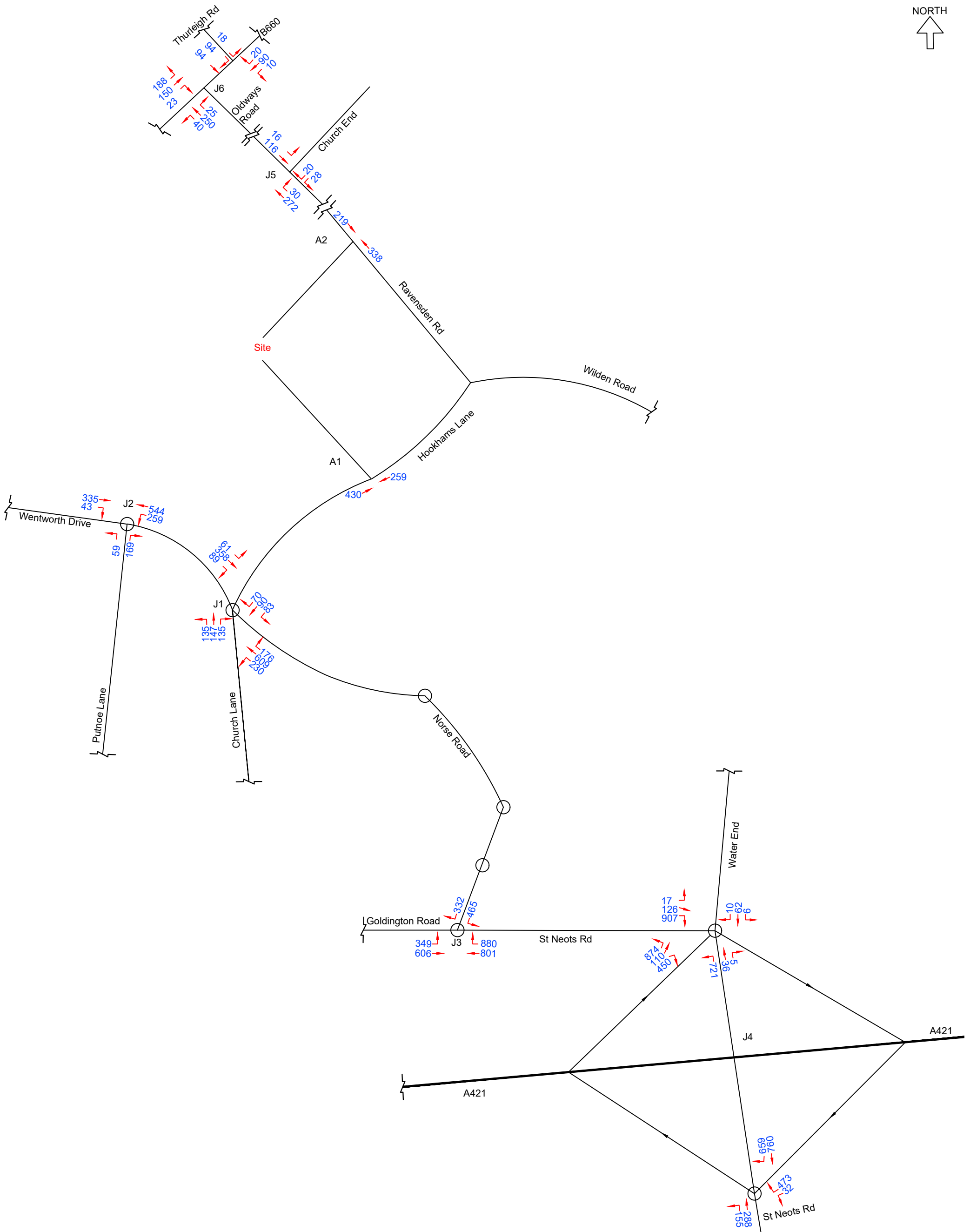


- Junctions:**
- A1: Hookhams Lane Access
 - A2: Ravensden Road Access
 - J1: Hookhams Lane / Norse Rd / Church Lane / Wentworth Drive
 - J2: Wentworth Drive / Putnoe Lane
 - J3: A4280 St Neots Road / A4280 Goldington Road / Norse Road
 - J4: A421 / St Neots Road / A4280


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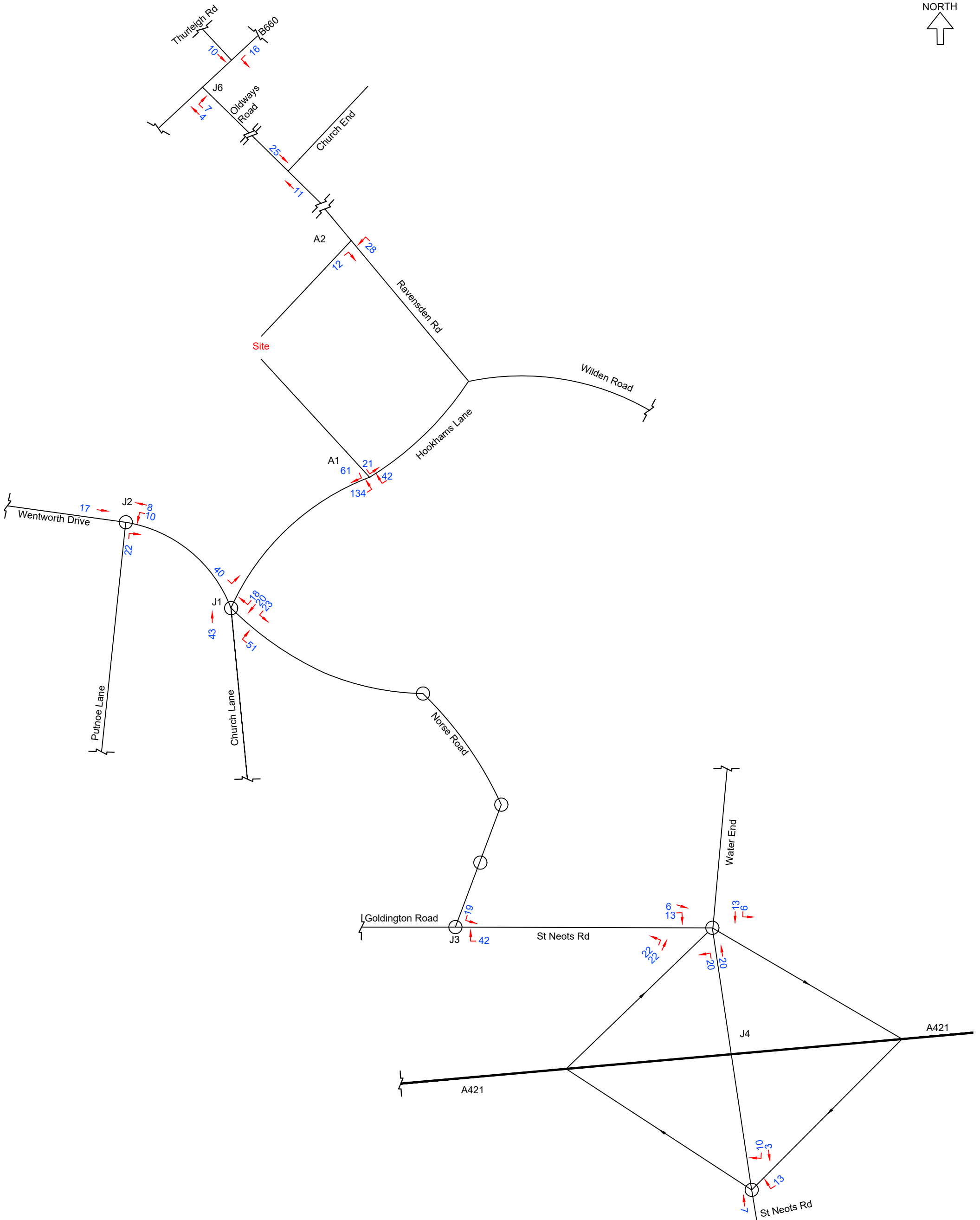
- Transport Assessments
- Flood Risk Assessments
- Highway Advice
- Access Design
- Drainage Strategies
- Vehicle tracking

Client: Manor Oak Homes	Project: Land north of Hookhams Ln Salph End	
Title: Vehicle Trip Movement Diagram 2019 - PM Peak Background	Date: 21/01/20	Drw: MJA
	Chk: MJA	Scale: NTS
Drawing No: 143-TA40	Revision: a	Size: A3



- Junctions:**
- A1: Hookhams Lane Access
 - A2: Ravensden Road Access
 - J1: Hookhams Lane / Norse Rd / Church Lane / Wentworth Drive
 - J2: Wentworth Drive / Putnoe Lane
 - J3: A4280 St Neots Road / A4280 Goldington Road / Norse Road
 - J4: A421 / St Neots Road / A4280

 <p>T: 01604 340544 Northampton Office E: info@mac-ltd.co.uk W: mac-ltd.co.uk Martin Andrews Consulting Ltd</p>	<ul style="list-style-type: none"> • Transport Assessments • Flood Risk Assessments • Highway Advice • Access Design • Drainage Strategies • Vehicle tracking 	Client: Manor Oak Homes	Project: Land north of Hookhams Ln Salph End
		Title: Vehicle Trip Movement Diagram 2030 - PM Peak Background	
		Drawing No: 143-TA41	Revision: A
			Drw: MJA Chk: MJA Scale: NTS Size: A3

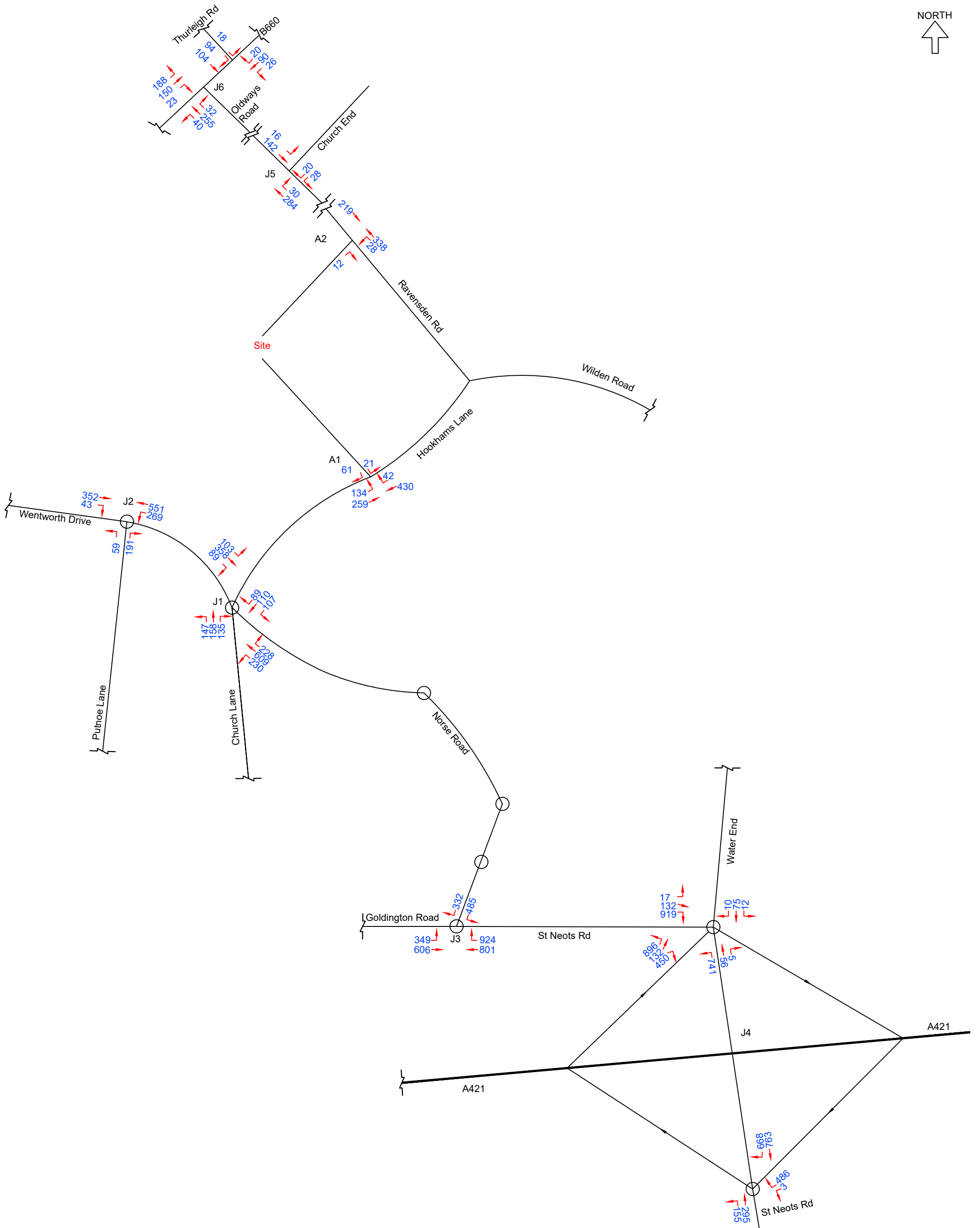


- Junctions:**
- A1: Hookhams Lane Access
 - A2: Ravensden Road Access
 - J1: Hookhams Lane / Norse Rd / Church Lane / Wentworth Drive
 - J2: Wentworth Drive / Putnoe Lane
 - J3: A4280 St Neots Road / A4280 Goldington Road / Norse Road
 - J4: A421 / St Neots Road / A4280


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- Transport Assessments
- Flood Risk Assessments
- Highway Advice
- Access Design
- Drainage Strategies
- Vehicle tracking

Client: Manor Oak Homes		Project: Land north of Hookhams Ln Salph End	
Title: Vehicle Trip Movement Diagram 2030 - PM Peak Development		Date: 21/01/20	Drw: MJA
Drawing No: 143-TA43		Revision: A	Scale: NTS
			Size: A3



- Junctions:**
- A1: Hookhams Lane Access
 - A2: Ravensden Road Access
 - J1: Hookhams Lane / Norse Rd / Church Lane / Wentworth Drive
 - J2: Wentworth Drive / Putnoe Lane
 - J3: A4280 St Neots Road / A4280 Goldington Road / Norse Road
 - J4: A421 / St Neots Road / A4280

 <p>T: 01604 340544 Northampton Office E: info@mac-ltd.co.uk W: mac-ltd.co.uk Martin Andrews Consulting Ltd</p>	<ul style="list-style-type: none"> • Transport Assessments • Flood Risk Assessments • Highway Advice • Access Design • Drainage Strategies • Vehicle tracking 	Client: Manor Oak Homes	Project: Land north of Hookhams Ln Salph End
		Title: Vehicle Trip Movement Diagram 2030 - PM Peak Background - Committed - Development	
		Drawing No: 143-TA44	Revision: A
		Scale: NTS Size: A3	



Appendix L
Traffic Count Data

Salph End Bedford - Manual Traffic Survey, Wednesday 27th November 2019

Produced by Road Data Services Ltd.

Junction: (4) Hookhams Lane / Norse Road / Church Lane / Wentworth Drive

Approach: Hookhams Lane

TIME	B - Left to Norse Road								C - Ahead to Church Lane								D - Right to Wentworth Drive							
	1	0.4	1	1	1.5	2.3	2	TOTAL	1	0.4	1	1	1.5	2.3	2	TOTAL	1	0.4	1	1	1.5	2.3	2	TOTAL
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	8	4	1	0	0	13	0	0	5	1	0	0	0	6	0	0	3	1	0	0	0	4
0715 - 0730	0	0	24	5	0	0	0	29	0	0	7	1	0	0	0	8	0	0	2	1	1	0	0	4
0730 - 0745	0	0	33	4	0	0	0	37	0	0	10	3	0	0	0	13	0	0	10	2	0	0	0	12
0745 - 0800	0	0	42	7	1	0	0	50	0	0	16	4	0	0	0	20	0	0	9	1	0	0	0	10
Hourly Total	0	0	107	20	2	0	0	129	0	0	38	9	0	0	0	47	0	0	24	5	1	0	0	30
0800 - 0815	0	0	36	6	0	0	0	42	0	0	17	4	1	0	0	22	0	0	29	3	0	0	1	33
0815 - 0830	0	0	64	6	2	0	0	72	0	0	16	5	0	0	1	22	0	0	29	1	2	0	0	32
0830 - 0845	0	0	43	8	0	0	2	53	0	0	26	6	0	0	0	32	0	0	16	1	0	0	0	17
0845 - 0900	0	0	52	9	0	0	0	61	0	0	26	1	0	0	0	27	0	0	10	2	0	0	0	12
Hourly Total	0	0	195	29	2	0	2	228	0	0	85	16	1	0	1	103	0	0	84	7	2	0	1	94
Hourly Total	0	0	195	29	3	0	4	231	0	0	85	16	1.5	0	2	104.5	0	0	84	7	3	0	2	96
0900 - 0915	0	0	41	3	0	0	1	45	0	0	20	2	0	0	0	22	0	0	7	2	0	0	0	9
0915 - 0930	0	0	29	3	1	0	0	33	0	0	17	0	2	0	0	19	0	0	6	3	1	0	0	10
0930 - 0945	0	0	15	2	1	0	0	18	0	0	10	2	0	0	0	12	0	0	7	0	0	0	0	7
0945 - 1000	0	0	12	3	2	0	0	17	0	0	10	3	1	0	0	14	0	0	14	0	0	0	0	14
Hourly Total	0	0	97	11	4	0	1	113	0	0	57	7	3	0	0	67	0	0	34	5	1	0	0	40
Session Total	0	0	399	60	8	0	3	470	0	0	180	32	4	0	1	217	0	0	142	17	4	0	1	164
1600 - 1615	0	0	15	6	0	0	0	21	0	0	16	4	0	0	1	21	0	0	8	3	0	0	0	11
1615 - 1630	0	0	13	6	0	0	0	19	0	0	13	2	0	0	0	15	0	0	14	2	0	0	0	16
1630 - 1645	0	0	21	0	0	0	0	21	0	0	6	1	0	0	0	7	0	0	16	2	0	0	0	18
1645 - 1700	0	0	20	1	1	0	0	22	0	0	24	1	0	0	0	25	0	0	13	0	0	0	0	13
Hourly Total	0	0	69	13	1	0	0	83	0	0	59	8	0	0	1	68	0	0	51	7	0	0	0	58
1700 - 1715	0	0	15	2	1	0	0	18	1	0	13	1	1	0	1	17	0	0	6	3	0	0	0	9
1715 - 1730	0	0	18	4	0	0	0	22	0	0	20	0	0	0	1	21	0	0	10	2	0	0	0	12
1730 - 1745	0	0	16	0	0	0	0	16	0	0	18	1	0	0	0	19	0	0	12	1	0	0	0	13
1745 - 1800	0	0	14	0	1	0	0	15	0	0	16	2	0	0	0	18	0	0	25	2	0	0	0	27
Hourly Total	0	0	63	6	2	0	0	71	1	0	67	4	1	0	2	75.5	0	0	53	8	0	0	0	61
Hourly Total	0	0	63	6	3	0	0	72	1	0	67	4	1.5	0	4	77.5	0	0	53	8	0	0	0	61
1800 - 1815	0	0	11	0	0	0	0	11	0	0	10	2	0	0	0	12	0	0	16	0	0	0	0	16
1815 - 1830	0	0	8	0	0	0	0	8	0	0	9	2	0	0	0	11	0	0	5	0	0	0	0	5
1830 - 1845	0	0	8	1	0	0	0	9	0	0	6	0	0	0	0	6	0	0	4	1	0	0	0	5
1845 - 1900	0	0	12	0	0	0	0	12	0	0	7	1	0	0	0	8	0	0	9	0	0	0	0	9
Hourly Total	0	0	39	1	0	0	0	40	0	0	32	5	0	0	0	37	0	0	34	1	0	0	0	35
Session Total	0	0	171	20	3	0	0	194	1	0	158	17	1	0	3	180	0	0	138	16	0	0	0	154

Salph End Bedford - Manual Traffic Survey, Wednesday 27th November 2019

Produced by Road Data Services Ltd.

Junction: (4) Hookhams Lane / Norse Road / Church Lane / Wentworth Drive

Approach: Norse Road

TIME	C - Left to Church Lane								D - Ahead to Wentworth Drive								A - Right to Hookhams Lane							
	1	0.4	1	1	1.5	2.3	2	TOTAL	1	0.4	1	1	1.5	2.3	2	TOTAL	1	0.4	1	1	1.5	2.3	2	TOTAL
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	5	1	0	0	1	7	0	1	24	4	2	0	0	31	0	0	6	2	1	0	0	9
0715 - 0730	0	0	6	0	0	0	1	7	0	0	50	5	1	1	1	58	0	0	3	2	0	0	0	5
0730 - 0745	0	0	9	2	0	0	1	12	0	0	55	11	4	0	0	70	0	0	12	4	0	0	0	16
0745 - 0800	0	0	19	2	1	0	2	24	0	0	96	16	1	1	0	114	0	0	23	3	1	0	0	27
Hourly Total	0	0	39	5	1	0	5	50	0	1	225	36	8	2	1	273	0	0	44	11	2	0	0	57
0800 - 0815	0	0	17	1	1	0	2	21	0	0	102	8	1	1	1	113	0	0	25	8	0	0	0	33
0815 - 0830	0	0	26	3	0	0	1	30	0	1	119	12	0	0	0	132	0	0	22	3	2	0	1	28
0830 - 0845	0	0	35	2	0	0	0	37	1	0	80	7	4	1	0	93	0	0	24	6	1	0	0	31
0845 - 0900	0	0	27	1	1	0	2	31	0	0	81	14	3	0	0	98	0	0	39	0	0	0	1	40
Hourly Total	0	0	105	7	2	0	5	119	1	1	382	41	8	2	1	436	0	0	110	17	3	0	2	132
Hourly Total	0	0	105	7	3	0	10	125	1	0.4	382	41	12	4.6	2	443	0	0	110	17	4.5	0	4	135.5
0900 - 0915	0	0	13	0	0	0	0	13	0	0	54	4	4	2	2	66	0	0	13	5	0	0	0	18
0915 - 0930	0	0	12	1	1	0	2	16	0	0	38	10	3	1	0	52	0	0	6	6	1	0	0	13
0930 - 0945	0	0	17	1	1	0	1	20	0	1	37	6	0	0	1	45	0	0	7	3	1	0	0	11
0945 - 1000	0	0	7	1	0	0	2	10	0	0	47	9	3	1	0	60	0	0	10	4	1	0	1	16
Hourly Total	0	0	49	3	2	0	5	59	0	1	176	29	10	4	3	223	0	0	36	18	3	0	1	58
Session Total	0	0	193	15	5	0	15	228	1	3	783	106	26	8	5	932	0	0	190	46	8	0	3	247
1600 - 1615	0	2	44	6	0	0	4	56	0	0	99	24	0	3	1	127	0	0	33	6	0	0	0	39
1615 - 1630	0	3	44	8	0	0	1	56	0	0	105	27	3	1	0	136	0	0	31	6	3	0	0	40
1630 - 1645	0	0	38	6	0	0	0	44	0	4	119	17	2	0	0	142	0	0	36	6	1	1	0	44
1645 - 1700	0	0	40	7	0	0	1	48	0	0	116	21	1	1	0	139	0	0	31	7	0	0	0	38
Hourly Total	0	5	166	27	0	0	6	204	0	4	439	89	6	5	1	544	0	0	131	25	4	1	0	161
1700 - 1715	0	0	42	4	0	0	2	48	0	0	130	13	0	0	0	143	0	0	51	2	0	0	0	53
1715 - 1730	0	1	49	9	1	0	2	62	0	0	110	18	1	0	0	129	0	0	37	3	0	0	1	41
1730 - 1745	0	0	46	4	1	0	1	52	0	1	126	7	1	0	0	135	0	0	37	2	0	0	0	39
1745 - 1800	0	0	26	4	0	0	1	31	0	0	107	11	1	0	0	119	0	0	16	2	0	0	0	18
Hourly Total	0	1	163	21	2	0	6	193	0	1	473	49	3	0	0	526	0	0	141	9	0	0	1	151
Hourly Total	0	0.4	163	21	3	0	12	199.4	0	0.4	473	49	4.5	0	0	526.9	0	0	141	9	0	0	2	152
1800 - 1815	0	1	41	2	0	0	1	45	0	0	116	9	0	0	0	125	0	0	27	0	0	0	0	27
1815 - 1830	0	0	34	1	0	0	2	37	0	0	91	7	0	0	0	98	0	0	27	0	0	0	0	27
1830 - 1845	0	0	27	1	0	0	0	28	0	0	105	10	1	0	0	116	0	0	20	0	0	0	0	20
1845 - 1900	0	0	24	0	0	0	1	25	0	1	106	6	2	0	0	115	0	0	11	2	0	0	0	13
Hourly Total	0	1	126	4	0	0	4	135	0	1	418	32	3	0	0	454	0	0	85	2	0	0	0	87
Session Total	0	7	455	52	2	0	16	532	0	6	1330	170	12	5	1	1524	0	0	357	36	4	1	1	399

Salph End Bedford - Manual Traffic Survey, Wednesday 27th November 2019

Produced by Road Data Services Ltd.

Junction: (4) Hookhams Lane / Norse Road / Church Lane / Wentworth Drive

Approach: Church Lane

TIME	D - Left to Wentworth Drive								A - Ahead to Hookhams Lane								B - Right to Norse Road							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	3	0	0	0	1	4	0	0	7	3	1	0	1	12	0	0	10	5	0	1	1	17
0715 - 0730	0	0	7	0	1	0	1	9	0	0	11	5	0	0	0	16	0	0	11	2	0	0	0	14
0730 - 0745	0	1	7	2	0	0	1	11	1	0	7	6	0	0	1	15	0	1	17	3	0	0	0	23
0745 - 0800	0	0	24	1	0	0	0	25	0	0	8	2	0	0	0	10	0	0	14	3	0	0	0	18
Hourly Total	0	1	41	3	1	0	3	49	1	0	33	16	1	0	2	53	0	1	52	13	0	1	0	72
0800 - 0815	0	0	50	2	1	0	2	55	0	0	12	0	0	0	0	12	0	0	20	2	0	0	0	23
0815 - 0830	0	0	47	3	0	0	1	51	0	0	13	1	0	0	0	14	0	0	20	1	0	0	0	22
0830 - 0845	0	0	16	1	0	0	0	17	0	0	14	2	0	0	0	16	0	0	24	3	1	0	0	29
0845 - 0900	0	0	25	2	1	0	0	28	0	0	17	0	0	0	0	17	0	0	32	1	0	1	1	35
Hourly Total	0	0	138	8	2	0	3	151	0	0	56	3	0	0	0	59	0	0	96	7	1	1	4	109
0900 - 0915	0	0	26	0	0	0	2	28	0	0	12	4	1	0	0	17	0	0	18	3	0	0	0	23
0915 - 0930	0	0	21	0	0	0	0	21	1	0	6	0	1	0	0	8	0	0	10	4	0	0	0	15
0930 - 0945	0	0	12	1	3	0	1	17	0	0	15	3	0	0	0	18	0	0	8	1	1	0	0	11
0945 - 1000	0	0	23	4	0	0	0	27	1	0	12	2	1	0	0	16	0	0	11	0	0	0	0	13
Hourly Total	0	0	82	5	3	0	3	93	2	0	45	9	3	0	0	59	0	0	47	8	1	0	0	62
Session Total	0	1	261	16	6	0	9	293	3	0	134	28	4	0	2	171	0	1	195	28	2	2	15	243
1600 - 1615	1	0	23	1	2	0	1	28	0	0	14	2	1	0	0	17	0	0	29	2	0	0	0	32
1615 - 1630	0	0	23	4	0	0	0	27	0	0	22	3	0	0	1	26	0	2	37	4	0	0	0	43
1630 - 1645	1	0	28	1	0	0	2	32	0	0	18	5	0	0	0	23	0	0	28	5	0	0	0	34
1645 - 1700	0	1	27	2	0	0	0	30	0	0	46	4	0	0	1	51	0	2	28	3	0	0	0	35
Hourly Total	2	1	101	8	2	0	3	117	0	0	100	14	1	0	2	117	0	4	122	14	0	0	4	144
1700 - 1715	0	0	32	3	0	0	1	36	0	0	19	4	0	0	0	23	0	0	21	0	0	0	0	23
1715 - 1730	0	0	26	1	1	0	0	28	0	0	16	3	0	0	0	19	0	0	25	1	1	0	0	28
1730 - 1745	0	0	23	1	0	0	1	25	0	0	30	1	1	0	0	32	0	0	26	1	0	0	0	28
1745 - 1800	0	0	32	4	0	0	0	36	0	0	18	4	1	0	0	23	0	0	27	4	0	0	0	32
Hourly Total	0	0	113	9	1	0	2	125	0	0	83	12	2	0	0	97	0	0	99	6	1	0	0	111
uk	0	0	113	9	1.5	0	4	127.5	0	0	83	12	3	0	0	98	0	0	99	6	1.5	0	0	116.5
1800 - 1815	0	0	13	2	0	0	1	16	0	0	11	3	1	0	0	15	0	0	25	0	0	0	0	26
1815 - 1830	0	0	28	1	0	0	0	29	0	0	9	1	0	0	0	10	0	0	24	3	0	0	0	29
1830 - 1845	0	0	18	2	0	0	1	21	0	0	15	1	0	0	0	16	0	0	25	0	0	0	0	26
1845 - 1900	0	0	11	3	0	0	0	14	0	0	54	10	1	0	1	66	0	0	22	3	1	0	0	27
Hourly Total	0	0	70	8	0	0	2	80	0	0	89	15	2	0	1	107	0	0	96	6	1	0	0	108
Session Total	2	1	284	25	3	0	7	322	0	0	272	41	5	0	3	321	0	4	317	26	2	0	14	363

Salph End Bedford - Manual Traffic Survey, Wednesday 27th November 2019

Produced by Road Data Services Ltd.

Junction: (4) Hookhams Lane / Norse Road / Church Lane / Wentworth Drive

Approach: Wentworth Drive

TIME	A - Left to Hookhams Lane								B - Ahead to Norse Road								C - Right to Church Lane							
	1	0.4	1	1	1.5	2.3	2	TOTAL	1	0.4	1	1	1.5	2.3	2	TOTAL	1	0.4	1	1	1.5	2.3	2	TOTAL
	P/CYCLE	M/CYCLE	CAR	LGW	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGW	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGW	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	2	0	0	0	0	2	0	0	70	15	1	1	0	87	0	0	3	0	0	0	0	3
0715 - 0730	0	0	4	0	0	0	0	4	0	0	60	10	0	0	0	70	0	0	8	1	1	0	1	11
0730 - 0745	0	0	5	0	0	0	0	5	0	0	71	16	2	0	0	89	0	0	13	0	1	0	0	14
0745 - 0800	0	0	8	2	2	0	0	12	0	0	91	15	0	2	0	108	0	0	20	4	0	0	1	25
Hourly Total	0	0	19	2	2	0	0	23	0	0	292	56	3	3	0	354	0	0	44	5	2	0	2	53
0800 - 0815	0	0	11	0	0	0	0	11	0	0	122	17	1	0	1	141	0	0	32	2	0	0	0	34
0815 - 0830	0	0	13	2	0	0	0	15	0	0	146	14	1	1	3	165	0	0	37	1	0	0	0	40
0830 - 0845	0	0	13	1	0	0	0	14	0	1	140	19	2	2	2	166	0	0	26	1	0	0	0	27
0845 - 0900	0	0	8	1	0	0	0	9	0	0	102	14	1	0	1	118	0	0	15	1	0	0	0	16
Hourly Total	0	0	45	4	0	0	0	49	0	1	510	64	5	3	7	590	0	0	110	5	0	0	2	117
0900 - 0915	0	0	5	2	0	0	0	7	0	0	78	12	5	0	0	95	0	0	25	2	0	0	0	27
0915 - 0930	3	0	5	2	1	0	0	11	0	0	66	6	5	0	0	77	0	0	14	0	0	0	0	16
0930 - 0945	2	0	2	0	1	0	0	5	0	0	53	10	1	2	0	66	0	0	26	3	0	0	0	29
0945 - 1000	0	0	7	0	0	1	0	8	0	0	49	6	2	1	0	58	0	0	17	2	1	0	1	21
Hourly Total	5	0	19	4	2	1	0	31	0	0	246	34	13	3	0	296	0	0	82	7	1	0	3	93
Session Total	5	0	83	10	4	1	0	103	0	1	1048	154	21	9	7	1240	0	0	236	17	3	0	7	263
1600 - 1615	0	0	10	0	0	0	0	10	0	0	86	12	4	0	1	103	0	1	30	2	0	0	0	33
1615 - 1630	0	0	16	2	0	0	0	18	0	0	62	17	5	0	0	84	0	0	14	0	0	0	1	15
1630 - 1645	0	0	9	5	0	0	0	14	0	1	83	12	1	0	0	97	0	0	16	1	0	0	1	18
1645 - 1700	0	0	15	2	0	0	0	17	0	0	72	17	0	0	1	90	0	0	20	1	0	0	1	22
Hourly Total	0	0	50	9	0	0	0	59	0	1	303	58	10	0	2	374	0	1	80	4	0	0	3	88
1700 - 1715	0	0	12	3	0	0	0	15	0	0	66	14	1	0	0	81	0	0	17	0	0	0	1	18
1715 - 1730	0	0	18	1	0	0	0	19	0	0	66	6	0	0	0	72	0	0	18	1	0	0	1	20
1730 - 1745	1	0	11	0	0	0	0	12	0	0	70	9	0	0	0	79	0	0	19	1	0	0	0	20
1745 - 1800	0	0	7	0	0	0	0	7	0	1	69	8	0	0	0	78	0	0	15	2	0	0	0	17
Hourly Total	1	0	48	4	0	0	0	53	0	1	271	37	1	0	0	310	0	0	69	4	0	0	2	75
Hourly Total	1	0	48	4	0	0	0	53	0	0.4	271	37	1.5	0	0	309.9	0	0	69	4	0	0	4	77
1800 - 1815	0	0	3	0	0	0	0	3	0	0	72	4	2	0	0	78	0	0	20	1	1	0	1	23
1815 - 1830	0	0	5	0	0	0	0	5	0	0	55	5	0	0	1	61	0	0	16	1	0	0	1	18
1830 - 1845	0	0	4	1	0	0	0	5	0	0	47	3	0	0	1	51	0	0	21	0	1	0	0	22
1845 - 1900	0	0	6	0	0	0	0	6	0	0	34	3	0	0	0	37	0	0	17	1	0	0	1	19
Hourly Total	0	0	18	1	0	0	0	19	0	0	208	15	2	0	2	227	0	0	74	3	2	0	3	82
Session Total	1	0	116	14	0	0	0	131	0	2	782	110	13	0	4	911	0	1	223	11	2	0	8	245

Salph End Bedford - Manual Traffic Survey, Wednesday 27th November 2019

Produced by Road Data Services Ltd.

Junction: (2) Wentworth Drive / Putnoe Lane

Approach: Wentworth Drive (East)

TIME	B - Left to Putnoe Lane								C - Ahead to Wentworth Drive (West)								A - U-Turn							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	15	0	1	0	0	16	0	0	18	4	1	0	1	24	0	0	0	0	0	0	0	0
0715 - 0730	0	0	21	2	1	0	1	25	0	0	40	5	3	1	1	50	0	0	0	0	0	0	0	0
0730 - 0745	0	0	33	3	1	0	0	37	0	0	46	10	2	1	1	60	0	0	1	0	0	0	0	1
0745 - 0800	0	0	64	10	0	0	0	74	0	1	53	7	0	1	1	63	0	0	1	1	0	0	0	2
Hourly Total	0	0	133	15	3	0	1	152	0	1	157	26	6	3	4	197	0	0	2	1	0	0	0	3
0800 - 0815	1	0	69	6	1	1	0	78	0	0	75	13	1	0	2	91	0	0	2	1	0	0	0	3
0815 - 0830	0	1	81	4	0	0	0	86	0	0	93	11	2	0	0	106	0	0	7	0	0	0	0	7
0830 - 0845	0	0	61	4	0	0	1	66	0	0	90	7	5	1	1	104	0	0	0	0	0	0	0	0
0845 - 0900	0	0	29	8	1	0	0	38	1	0	72	9	1	1	0	84	0	0	0	0	0	0	0	0
Hourly Total	1	1	240	22	2	1	1	268	1	0	330	40	9	2	3	385	0	0	9	1	0	0	0	10
	1	0.4	240	22	3	2.3	2	270.7	1	0	330	40	13.5	4.6	6	395.1	0	0	9	1	0	0	0	10
0900 - 0915	0	1	33	0	0	0	1	35	0	0	61	6	3	3	1	74	0	0	0	0	0	0	0	0
0915 - 0930	0	0	26	1	3	0	1	31	0	0	31	10	1	1	0	43	0	0	0	0	0	0	0	0
0930 - 0945	0	1	28	4	0	0	0	33	0	0	43	5	2	0	2	52	0	0	0	0	0	0	0	0
0945 - 1000	0	0	29	2	2	0	0	33	0	0	45	8	3	1	0	57	0	0	0	0	0	0	0	0
Hourly Total	0	2	116	7	5	0	2	132	0	0	180	29	9	5	3	226	0	0	0	0	0	0	0	0
Session Total	1	3	489	44	10	1	4	552	1	1	667	95	24	10	10	808	0	0	11	2	0	0	0	13
1600 - 1615	1	0	40	5	1	0	1	48	0	0	87	17	2	3	1	110	0	0	2	0	0	0	0	2
1615 - 1630	0	0	39	4	1	0	0	44	0	0	90	22	2	1	0	115	0	0	2	0	0	0	0	2
1630 - 1645	0	0	55	7	1	0	0	63	2	1	107	15	1	1	1	128	0	0	0	0	0	0	0	0
1645 - 1700	0	3	36	6	1	0	0	46	0	0	95	13	0	1	0	109	0	0	0	0	0	0	0	0
Hourly Total	1	3	170	22	4	0	1	201	2	1	379	67	5	6	2	462	0	0	4	0	0	0	0	4
1700 - 1715	1	0	64	8	0	0	0	73	0	0	103	10	0	0	1	114	0	0	0	0	0	0	0	0
1715 - 1730	0	0	37	5	0	0	0	42	0	0	97	17	2	0	0	116	0	0	0	0	0	0	0	0
1730 - 1745	0	0	55	3	0	0	0	58	0	1	104	5	1	0	1	112	0	0	0	0	0	0	0	0
1745 - 1800	0	0	46	4	0	0	0	50	0	0	114	10	1	0	0	125	0	0	1	1	0	0	0	2
Hourly Total	1	0	202	20	0	0	0	223	0	1	418	42	4	0	2	467	0	0	1	1	0	0	0	2
	1	0	202	20	0	0	0	223	0	0.4	418	42	6	0	4	470.4	0	0	1	1	0	0	0	2
1800 - 1815	0	0	51	2	0	0	0	53	0	0	92	10	0	0	1	103	0	0	0	0	0	0	0	0
1815 - 1830	0	0	43	3	0	0	0	46	0	0	79	4	0	0	0	83	0	0	0	0	0	0	0	0
1830 - 1845	0	0	37	1	0	0	0	38	0	0	86	9	1	0	1	97	0	0	0	0	0	0	0	0
1845 - 1900	0	0	31	2	1	0	0	34	0	1	89	5	1	0	0	96	0	0	0	0	0	0	0	0
Hourly Total	0	0	162	8	1	0	0	171	0	1	346	28	2	0	2	379	0	0	0	0	0	0	0	0
Session Total	2	3	534	50	5	0	1	595	2	3	1143	137	11	6	6	1308	0	0	5	1	0	0	0	6

Salph End Bedford - Manual Traffic Survey, Wednesday 27th November 2019

Produced by Road Data Services Ltd.

Junction: (2) Wentworth Drive / Putnoe Lane

Approach: Putnoe Lane

TIME	C - Left to Wentworth Drive (West)								A - Right to Wentworth Drive (East)							
	1	0.4	1	1.5	2.3	2	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	
0700 - 0715	0	0	1	0	0	0	1	0	0	11	1	1	0	0	13	
0715 - 0730	0	0	2	3	0	0	5	0	0	15	1	0	0	0	16	
0730 - 0745	0	1	12	0	0	0	13	0	0	18	4	0	0	0	22	
0745 - 0800	0	0	5	1	0	0	6	0	0	35	2	0	1	0	38	
Hourly Total	0	1	20	4	0	0	25	0	0	79	8	1	1	0	89	
0800 - 0815	0	0	7	0	0	0	7	0	1	53	2	0	0	1	57	
0815 - 0830	0	0	11	3	0	0	14	0	0	58	7	2	0	0	67	
0830 - 0845	0	0	10	0	0	0	10	0	0	51	3	1	0	0	55	
0845 - 0900	0	0	11	3	0	0	14	0	0	32	4	0	0	0	36	
Hourly Total	0	0	39	6	0	0	45	0	1	194	16	3	0	1	215	
	0	0	39	6	0	0	45	0	0.4	194	16	4.5	0	2	216.9	
0900 - 0915	0	0	6	0	0	0	6	0	0	32	1	3	0	0	36	
0915 - 0930	0	1	3	1	0	0	5	0	0	24	2	0	0	0	26	
0930 - 0945	0	0	10	0	0	0	10	0	0	19	3	1	1	0	24	
0945 - 1000	0	0	5	0	2	0	7	0	1	36	1	0	0	0	38	
Hourly Total	0	1	24	1	2	0	28	0	1	111	7	4	1	0	124	

Session Total	0	2	83	11	2	0	0	98	0	2	384	31	8	2	1	428
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1600 - 1615	0	0	12	1	0	0	0	13	0	0	32	6	0	0	0	38
1615 - 1630	0	0	5	1	0	0	0	6	0	0	38	10	2	0	0	50
1630 - 1645	0	0	9	0	0	0	0	9	0	0	37	4	0	0	0	41
1645 - 1700	0	0	11	1	0	0	0	12	0	1	42	6	0	0	0	49
Hourly Total	0	0	37	3	0	0	0	40	0	1	149	26	2	0	0	178
1700 - 1715	0	0	11	0	0	0	0	11	0	0	32	4	0	0	0	36
1715 - 1730	0	0	11	1	0	0	0	12	0	0	36	5	0	0	0	41
1730 - 1745	0	0	10	2	0	0	0	12	1	0	38	2	0	0	0	41
1745 - 1800	0	0	13	3	0	0	0	16	0	0	28	0	0	0	0	28
Hourly Total	0	0	45	6	0	0	0	51	1	0	134	11	0	0	0	146
	0	0	45	6	0	0	0	51	1	0	134	11	0	0	0	146
1800 - 1815	0	0	7	1	0	0	0	8	0	0	27	2	1	0	0	30
1815 - 1830	0	0	7	1	0	0	0	8	0	0	27	5	0	0	0	32
1830 - 1845	0	0	6	1	0	0	0	7	0	0	27	0	0	0	0	27
1845 - 1900	0	0	7	2	0	0	0	9	0	0	35	1	0	0	0	36
Hourly Total	0	0	27	5	0	0	0	32	0	0	116	8	1	0	0	125

Session Total	0	0	109	14	0	0	0	123	1	1	399	45	3	0	0	449
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Salph End Bedford - Manual Traffic Survey, Wednesday 27th November 2019

Produced by Road Data Services Ltd.

Junction: (2) Wentworth Drive / Putnoe Lane

Approach: Wentworth Drive (West)

TIME	A - Ahead to Wentworth Drive (East)								B - Right to Putnoe Lane							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	65	15	0	1	0	81	0	0	2	8	0	0	0	10
0715 - 0730	0	0	52	7	2	0	1	62	0	0	5	0	0	0	0	5
0730 - 0745	0	0	78	11	1	0	0	90	0	0	1	0	0	0	0	1
0745 - 0800	0	0	105	19	1	1	1	127	0	0	7	5	0	0	0	12
Hourly Total	0	0	300	52	4	2	2	360	0	0	15	13	0	0	0	28
0800 - 0815	0	0	114	15	1	0	1	131	0	0	18	2	0	0	0	20
0815 - 0830	0	0	122	14	0	1	3	140	0	0	21	3	2	0	0	26
0830 - 0845	0	1	104	12	2	1	1	121	0	0	28	1	1	0	0	30
0845 - 0900	0	0	95	9	1	0	1	106	0	0	9	1	0	0	0	10
Hourly Total	0	1	435	50	4	2	6	498	0	0	76	7	3	0	0	86
	0	0.4	435	50	6	4.6	12	508	0	0	76	7	4.5	0	0	87.5
0900 - 0915	0	0	74	13	3	0	0	90	0	0	5	4	0	0	0	9
0915 - 0930	5	0	56	6	5	0	1	73	0	0	8	0	0	0	0	8
0930 - 0945	0	0	50	12	1	1	0	64	0	0	2	0	0	0	0	2
0945 - 1000	0	0	44	4	3	2	1	54	0	0	7	0	0	0	0	7
Hourly Total	5	0	224	35	12	3	2	281	0	0	22	4	0	0	0	26

Session Total	5	1	959	137	20	7	10	1139	0	0	113	24	3	0	0	140
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1600 - 1615	0	0	74	10	2	0	1	87	0	0	6	4	0	0	0	10
1615 - 1630	0	0	53	9	4	0	1	67	0	0	7	2	0	0	0	9
1630 - 1645	1	1	74	9	0	0	1	86	0	0	8	1	0	0	0	9
1645 - 1700	0	0	73	11	1	0	2	87	0	1	7	1	0	0	1	10
Hourly Total	1	1	274	39	7	0	5	327	0	1	28	8	0	0	1	38
1700 - 1715	0	0	61	12	0	0	0	73	0	0	5	0	0	0	0	5
1715 - 1730	0	0	64	7	0	0	1	72	0	0	12	0	0	0	0	12
1730 - 1745	0	0	66	8	0	0	0	74	0	0	7	2	0	0	0	9
1745 - 1800	0	0	61	8	0	0	0	69	0	0	7	4	0	0	0	11
Hourly Total	0	0	252	35	0	0	1	288	0	0	31	6	0	0	0	37
	0	0	252	35	0	0	2	289	0	0	31	6	0	0	0	37
1800 - 1815	1	0	68	3	2	0	0	74	0	0	7	1	0	0	0	8
1815 - 1830	0	0	55	6	0	0	0	61	0	0	8	1	0	0	0	9
1830 - 1845	0	0	40	3	1	0	0	44	0	0	8	0	1	0	0	9
1845 - 1900	0	0	41	4	0	0	1	46	0	0	4	0	0	0	0	4
Hourly Total	1	0	204	16	3	0	1	225	0	0	27	2	1	0	0	30

Session Total	2	1	730	90	10	0	7	840	0	1	86	16	1	0	1	105
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Salph End Bedford - Manual Traffic Survey, Wednesday 27th November 2019

Produced by Road Data Services Ltd.

Junction: (5) Norse Road / St Neots Road / Southern Arm / A4280

Approach: St Neots Road

TIME	B - Left to Southern Arm								C - Ahead to A4280								D - Right to Norse Road							
	1	0.4	1	1	1.5	2.3	2	TOTAL	1	0.4	1	1	1.5	2.3	2	TOTAL	1	0.4	1	1	1.5	2.3	2	TOTAL
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0	40	14	5	2	0	61	0	1	51	15	5	1	0	73
0715 - 0730	0	0	0	0	0	0	0	0	0	0	70	16	2	1	1	90	0	0	86	11	3	4	1	105
0730 - 0745	0	0	0	0	0	0	0	0	0	0	94	19	1	0	0	114	0	0	93	29	8	5	0	135
0745 - 0800	0	0	0	1	0	0	0	1	0	0	133	24	4	1	3	165	0	0	143	33	4	2	0	182
Hourly Total	0	0	0	1	0	0	0	1	0	0	337	73	12	4	4	430	0	1	373	88	20	12	1	495
0800 - 0815	0	0	0	1	0	0	0	1	0	0	139	16	3	2	1	161	0	0	129	19	4	2	1	155
0815 - 0830	0	0	0	0	0	0	0	0	0	1	147	16	2	1	0	167	0	0	150	25	4	2	0	181
0830 - 0845	0	0	0	1	0	0	0	1	0	0	129	16	4	1	1	151	0	0	130	24	8	4	1	167
0845 - 0900	0	0	0	0	0	0	0	0	0	0	137	22	5	3	0	167	0	0	138	27	6	4	0	175
Hourly Total	0	0	0	2	0	0	0	2	0	1	552	70	14	7	2	646	0	0	547	95	22	12	2	678
	0	0	0	2	0	0	0	2	0	0.4	552	70	21	16.1	4	663.5	0	0	547	95	33	27.6	4	706.6
0900 - 0915	0	0	0	1	0	0	0	1	0	0	73	17	0	0	0	90	0	0	85	17	7	6	2	117
0915 - 0930	0	0	1	0	0	0	0	1	2	0	86	10	1	1	1	101	0	0	67	20	4	3	0	94
0930 - 0945	0	0	0	0	0	0	0	0	0	0	69	6	3	2	2	82	0	0	74	9	10	2	1	96
0945 - 1000	0	0	0	0	0	0	0	0	0	0	69	9	2	4	0	84	0	0	52	22	4	5	1	84
Hourly Total	0	0	1	1	0	0	0	2	2	0	297	42	6	7	3	357	0	0	278	68	25	16	4	391
Session Total	0	0	1	4	0	0	0	5	2	1	1186	185	32	18	9	1433	0	1	1198	251	67	40	7	1564
1600 - 1615	0	0	0	0	0	0	0	0	0	0	132	20	1	0	0	153	0	0	123	25	5	1	1	155
1615 - 1630	0	0	0	2	1	0	0	3	0	1	145	12	0	1	1	160	0	1	147	52	7	4	0	211
1630 - 1645	0	0	1	0	1	0	0	2	0	0	150	14	2	0	2	168	0	0	131	26	5	0	0	162
1645 - 1700	0	0	0	0	0	0	0	0	0	1	181	19	4	1	0	206	0	0	145	37	7	1	0	190
Hourly Total	0	0	1	2	2	0	0	5	0	2	608	65	7	2	3	687	0	1	546	140	24	6	1	718
1700 - 1715	0	0	1	1	0	0	0	2	2	0	149	25	1	0	0	175	0	0	159	21	6	1	0	187
1715 - 1730	0	0	0	0	0	0	0	0	0	1	158	14	1	1	1	176	0	1	148	22	5	1	0	177
1730 - 1745	0	0	0	0	0	0	0	0	0	0	153	16	2	0	0	171	0	0	183	11	3	1	0	198
1745 - 1800	0	0	0	0	0	0	0	0	0	0	145	19	1	0	1	166	0	0	156	20	3	4	0	183
Hourly Total	0	0	1	1	0	0	0	2	0	1	605	74	5	1	2	688	0	1	646	74	17	7	0	745
	0	0	1	1	0	0	0	2	0	0.4	605	74	7.5	2.3	4	693.2	0	0.4	646	74	25.5	16.1	0	762
1800 - 1815	0	0	0	0	0	0	0	0	0	0	178	18	1	0	0	197	0	1	135	9	3	3	0	151
1815 - 1830	0	0	0	0	0	0	0	0	0	0	147	15	0	1	1	164	0	0	112	10	3	1	0	126
1830 - 1845	0	0	0	0	0	0	0	0	0	1	112	12	0	0	1	126	0	0	114	11	3	1	0	129
1845 - 1900	0	0	0	0	0	0	0	0	0	0	129	6	2	1	3	141	0	1	111	11	1	0	0	124
Hourly Total	0	0	0	0	0	0	0	0	0	1	566	51	3	2	5	628	0	2	472	41	10	5	0	530
Session Total	0	0	2	3	2	0	0	7	0	4	1779	190	15	5	10	2003	0	4	1664	255	51	18	1	1993

Salph End Bedford - Manual Traffic Survey, Wednesday 27th November 2019

Produced by Road Data Services Ltd.

Junction: (5) Norse Road / St Neots Road / Southern Arm / A4280

Approach: Southern Arm

TIME	C - Left to A4280								D - Ahead to Norse Road								A - Right to St Neots Road							
	P/CYCLE	M/CYCLE	CAR	LGW	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGW	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGW	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0715 - 0730	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0730 - 0745	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0745 - 0800	0	0	1	0	0	0	0	1	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
Hourly Total	0	0	3	0	0	0	0	3	0	0	2	0	0	0	2	0	0	1	0	0	0	0	1	
0800 - 0815	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0815 - 0830	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0830 - 0845	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0845 - 0900	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2	1	0	0	0	3
Hourly Total	0	0	2	0	0	0	0	2	0	0	3	0	0	0	3	0	0	3	1	0	0	0	4	
0900 - 0915	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0915 - 0930	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0930 - 0945	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
0945 - 1000	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	2	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
Session Total	0	0	7	2	0	0	0	9	0	0	5	0	0	0	5	0	0	4	1	1	0	0	6	
1600 - 1615	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
1615 - 1630	0	0	1	1	0	0	0	2	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0
1630 - 1645	1	0	2	0	0	0	0	3	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
1645 - 1700	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
Hourly Total	1	0	6	1	0	0	0	8	0	0	3	1	0	0	4	0	0	1	0	0	0	0	1	
1700 - 1715	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	2	0	0	0	0	2
1715 - 1730	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1730 - 1745	0	0	4	0	0	0	0	4	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	1
1745 - 1800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	
Hourly Total	0	0	6	0	0	0	0	6	0	0	1	1	0	0	2	0	0	4	0	0	0	0	4	
1800 - 1815	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1815 - 1830	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1830 - 1845	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1845 - 1900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Session Total	1	0	12	1	0	0	0	14	0	0	4	2	0	0	6	0	0	5	0	0	0	0	5	

Salph End Bedford - Manual Traffic Survey, Wednesday 27th November 2019

Produced by Road Data Services Ltd.

Junction: (5) Norse Road / St Neots Road / Southern Arm / A4280

Approach: A4280

TIME	D - Left to Norse Road								A - Ahead to St Neots Road								B - Right to Southern Arm							
	1	0.4	1	1	1.5	2.3	2	TOTAL	1	0.4	1	1	1.5	2.3	2	TOTAL	1	0.4	1	1	1.5	2.3	2	TOTAL
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	12	4	0	0	0	16	0	1	111	18	3	0	1	134	0	0	1	1	0	0	0	2
0715 - 0730	0	0	15	3	1	0	0	19	0	0	94	14	2	2	0	112	0	0	1	0	0	0	0	1
0730 - 0745	0	0	22	4	2	0	0	28	0	0	104	15	7	2	1	129	0	0	0	1	0	0	0	1
0745 - 0800	0	1	39	6	0	0	0	46	0	0	96	14	9	0	0	119	0	0	0	0	0	0	0	0
Hourly Total	0	1	88	17	3	0	0	109	0	1	405	61	21	4	2	494	0	0	2	2	0	0	0	4
0800 - 0815	0	0	26	8	0	0	1	35	0	0	110	32	4	2	0	148	0	0	0	0	0	0	0	0
0815 - 0830	0	0	37	4	0	0	1	42	0	0	107	17	6	2	0	132	0	0	0	0	0	0	0	0
0830 - 0845	0	0	39	4	1	0	0	44	0	0	125	19	3	2	1	150	0	0	0	0	0	0	0	0
0845 - 0900	0	0	47	7	1	0	0	55	0	0	92	20	4	1	2	119	0	0	2	0	0	0	0	2
Hourly Total	0	0	149	23	2	0	2	176	0	0	434	88	17	7	3	549	0	0	2	0	0	0	0	2
0900 - 0915	0	0	39	8	0	1	0	48	0	0	60	15	2	1	1	79	0	0	0	1	0	0	0	1
0915 - 0930	0	0	28	6	0	0	0	34	0	0	74	14	4	3	0	95	0	0	0	0	0	0	0	0
0930 - 0945	0	0	34	6	0	0	0	40	0	0	69	11	4	1	0	85	0	0	1	0	1	0	0	2
0945 - 1000	0	0	38	6	0	1	1	46	1	0	59	14	8	2	1	85	0	0	2	0	0	0	0	2
Hourly Total	0	0	139	26	0	2	1	168	1	0	262	54	18	7	2	344	0	0	3	1	1	0	0	5
Session Total	0	1	376	66	5	2	3	453	1	1	1101	203	56	18	7	1387	0	0	7	3	1	0	0	11
1600 - 1615	1	0	63	11	0	0	0	75	0	2	119	12	1	0	2	136	0	0	0	2	0	0	0	2
1615 - 1630	0	2	62	8	0	0	0	72	0	0	114	17	4	0	0	135	0	0	0	1	0	0	0	1
1630 - 1645	0	0	62	8	0	0	0	70	0	1	121	13	4	0	1	140	0	0	1	1	0	0	0	2
1645 - 1700	0	0	73	6	1	0	0	80	0	0	116	13	1	1	0	131	0	0	1	1	0	0	0	2
Hourly Total	1	2	260	33	1	0	0	297	0	3	470	55	10	1	3	542	0	0	2	5	0	0	0	7
1700 - 1715	0	0	67	4	1	0	0	72	0	1	127	13	1	0	2	144	0	0	1	0	0	0	0	1
1715 - 1730	0	1	72	6	0	0	1	80	0	0	121	13	0	2	0	136	0	0	0	0	0	0	0	0
1730 - 1745	0	0	74	5	0	0	0	79	0	1	114	14	0	0	0	129	0	0	0	0	1	0	0	1
1745 - 1800	0	2	64	3	0	1	0	70	0	0	100	9	2	0	0	111	0	0	0	1	0	0	0	1
Hourly Total	0	3	277	18	1	1	1	301	0	2	462	49	3	2	2	520	0	0	1	1	1	0	0	3
1800 - 1815	0	0	62	2	0	1	0	65	0	0	93	11	1	1	1	107	0	0	0	0	0	0	0	0
1815 - 1830	0	1	49	2	1	0	0	53	0	0	92	6	0	0	1	99	0	0	0	0	0	0	0	0
1830 - 1845	0	2	75	2	1	0	0	80	0	1	90	6	0	0	4	101	0	0	0	0	0	0	0	0
1845 - 1900	0	0	46	0	1	0	0	47	0	0	72	4	0	1	0	77	0	0	0	0	0	0	0	0
Hourly Total	0	3	232	6	3	1	0	245	0	1	347	27	1	2	6	384	0	0	0	0	0	0	0	0
Session Total	1	8	769	57	5	2	1	843	0	6	1279	131	14	5	11	1446	0	0	3	6	1	0	0	10

Salph End Bedford - Manual Traffic Survey, Wednesday 27th November 2019

Produced by Road Data Services Ltd.

Junction: (5) Norse Road / St Neots Road / Southern Arm / A4280

Approach: Norse Road

TIME	A - Left to St Neots Road								B - Ahead to Southern Arm								C - Right to A4280							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	105	19	8	2	0	134	0	0	0	0	0	0	0	0	0	1	23	7	0	0	1	32
0715 - 0730	0	1	127	14	9	2	0	153	0	0	0	0	0	0	0	0	0	0	37	5	0	1	1	44
0730 - 0745	0	0	136	13	8	0	0	157	0	0	1	0	0	0	0	1	0	2	33	2	1	0	1	39
0745 - 0800	0	0	132	16	6	2	0	156	0	0	0	0	0	0	0	0	0	0	33	9	1	0	1	44
Hourly Total	0	1	500	62	31	6	0	600	0	0	1	0	0	0	0	1	0	3	126	23	2	1	4	159
0800 - 0815	0	0	129	17	9	2	0	157	0	0	0	0	0	0	0	0	0	0	61	8	1	0	2	72
0815 - 0830	0	0	142	19	2	1	2	166	0	0	0	0	0	0	0	0	0	0	60	20	2	2	1	85
0830 - 0845	0	1	141	24	6	2	3	177	0	0	0	0	0	0	0	0	0	0	60	11	3	0	2	76
0845 - 0900	0	0	111	15	12	2	2	142	0	0	1	0	0	0	0	1	0	1	67	10	0	0	1	79
Hourly Total	0	1	523	75	29	7	7	642	0	0	1	0	0	0	0	1	0	1	248	49	6	2	6	312
	0	0.4	523	75	43.5	16.1	14	672	0	0	1	0	0	0	0	1	0	0.4	248	49	9	4.6	12	323
0900 - 0915	0	0	96	26	6	4	0	132	0	0	2	1	0	0	0	3	0	0	41	6	1	0	2	50
0915 - 0930	0	0	70	23	6	3	0	102	0	0	1	0	0	0	0	1	0	0	50	7	2	0	2	61
0930 - 0945	0	0	56	19	6	3	0	84	0	0	0	0	1	0	0	1	0	0	44	9	0	0	1	54
0945 - 1000	0	0	66	7	7	5	0	85	0	0	0	0	0	0	0	0	0	0	49	3	0	0	2	54
Hourly Total	0	0	288	75	25	15	0	403	0	0	3	1	1	0	0	5	0	0	184	25	3	0	7	219
Session Total	0	2	1311	212	85	28	7	1645	0	0	5	1	1	0	0	7	0	4	558	97	11	3	17	690
1600 - 1615	0	0	124	12	6	1	1	144	0	0	0	1	0	0	0	1	0	1	64	7	1	1	2	76
1615 - 1630	0	0	83	17	5	1	0	106	0	0	0	0	0	0	0	0	0	0	41	6	2	0	0	49
1630 - 1645	0	1	110	18	4	0	0	133	0	0	1	0	0	0	0	1	0	0	59	7	0	0	1	67
1645 - 1700	0	0	90	19	1	2	1	113	0	0	0	0	0	0	0	0	0	0	54	5	0	0	2	61
Hourly Total	0	1	407	66	16	4	2	496	0	0	1	1	0	0	0	2	0	1	218	25	3	1	5	253
1700 - 1715	0	1	89	12	0	2	0	104	0	0	0	0	0	0	0	0	0	0	65	7	1	0	0	73
1715 - 1730	0	0	84	16	0	0	0	100	0	0	0	0	0	0	0	0	0	0	69	2	0	1	3	75
1730 - 1745	0	0	90	10	2	1	0	103	0	0	0	0	0	0	0	0	0	1	64	1	0	0	1	67
1745 - 1800	0	1	73	12	1	2	0	89	0	0	0	0	0	0	0	0	0	0	65	2	0	0	0	67
Hourly Total	0	2	336	50	3	5	0	396	0	0	0	0	0	0	0	0	0	1	263	12	1	1	4	282
	0	0.8	336	50	4.5	11.5	0	402.8	0	0	0	0	0	0	0	0	0	0.4	263	12	1.5	2.3	8	287.2
1800 - 1815	0	0	78	7	1	0	0	86	0	0	0	0	0	0	0	0	0	1	53	4	0	0	2	60
1815 - 1830	0	0	54	8	2	1	0	65	0	0	0	0	0	0	0	0	0	0	39	2	0	0	1	42
1830 - 1845	0	0	56	2	1	1	2	62	0	0	0	0	0	0	0	0	0	0	45	2	1	0	1	49
1845 - 1900	0	0	28	2	1	2	0	33	0	0	0	0	0	0	0	0	0	0	46	1	0	0	2	49
Hourly Total	0	0	216	19	5	4	2	246	0	0	0	0	0	0	0	0	0	1	183	9	1	0	6	200
Session Total	0	3	959	135	24	13	4	1138	0	0	1	1	0	0	0	2	0	3	664	46	5	2	15	735

Salph End Bedford - Manual Traffic Survey, Wednesday 27th November 2019

Produced by Road Data Services Ltd.

Junction: (4-1) Water End / A421 On Slip / A421 Off Slip / A4280

Approach: Water End (South)

TIME	C - First Left to A421 Off Slip								D - Second Left to A4280						E - Ahead to Water End (North)						A - Right to A421 On Slip													
	1	0.4	1	1.5	2.3	2			1	0.4	1	1	1.5	2.3	2			1	0.4	1	1	1.5	2.3	2			1	0.4	1	1	1.5	2.3	2	
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL		
0700 - 0715	0	0	0	0	0	0	0	0	0	2	51	15	2	4	1	75	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0		
0715 - 0730	0	0	0	0	0	0	0	0	0	0	76	16	5	4	1	102	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0		
0730 - 0745	0	0	0	0	0	0	0	0	0	0	104	34	3	2	0	143	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0		
0745 - 0800	0	0	0	0	0	0	0	0	0	0	150	35	6	3	4	198	0	0	1	0	0	0	1	2	0	0	1	0	0	0	0	1		
Hourly Total	0	0	0	0	0	0	0	0	0	2	381	100	16	13	6	518	0	0	7	0	0	0	1	8	0	0	1	0	0	0	0	1		
0800 - 0815	0	0	0	0	0	0	0	0	0	0	150	20	0	4	1	175	0	0	7	4	2	0	0	13	0	0	0	0	0	0	0	0	0	
0815 - 0830	0	0	0	0	0	0	0	0	0	0	104	23	3	2	1	133	0	0	5	4	0	0	0	9	0	0	0	0	0	0	0	0	0	
0830 - 0845	0	0	0	0	0	0	0	0	0	0	98	22	7	4	0	131	0	0	6	1	0	0	0	7	0	0	0	1	0	0	0	0	1	
0845 - 0900	0	0	0	0	0	0	0	0	0	0	104	16	3	3	0	126	0	0	1	1	0	0	1	3	0	0	0	0	0	0	0	0	0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	456	81	13	13	2	565	0	0	19	10	2	0	1	32	0	0	0	1	0	0	0	0	1	
0900 - 0915	0	0	0	0	0	0	0	0	0	0	456	81	13	13	2	590.4	0	0	19	10	3	0	2	34	0	0	0	1	0	0	0	0	0	
0915 - 0930	0	0	0	0	0	0	0	0	0	1	75	19	2	0	1	98	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0
0930 - 0945	0	0	0	0	0	0	0	0	0	0	79	12	4	2	1	98	0	0	3	2	0	0	0	5	0	0	1	0	0	0	0	0	0	1
0945 - 1000	0	0	0	0	0	0	0	0	0	0	76	12	5	2	3	98	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1
Hourly Total	0	0	0	0	0	0	0	0	0	1	299	58	17	10	5	390	0	0	8	2	0	0	0	10	0	0	2	0	0	0	0	0	2	
Session Total	0	0	0	0	0	0	0	0	0	1	2	1136	239	46	36	13	1473	0	0	34	12	2	0	2	50	0	0	3	1	0	0	0	4	
1600 - 1615	0	0	0	0	0	0	0	0	0	0	109	17	2	0	0	128	0	0	3	3	0	0	0	6	0	0	0	0	2	0	0	0	2	
1615 - 1630	0	0	0	0	0	0	0	0	0	1	109	25	3	1	1	140	0	0	4	2	0	0	0	6	0	0	1	0	0	0	0	0	1	
1630 - 1645	0	0	0	0	0	0	0	0	0	0	104	13	5	0	0	122	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	
1645 - 1700	0	0	0	0	0	0	0	0	0	0	115	19	3	0	0	137	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	
Hourly Total	0	0	0	0	0	0	0	0	0	1	437	74	13	1	1	527	0	0	16	5	0	0	0	21	0	0	1	0	2	0	0	3		
1700 - 1715	0	0	0	0	0	0	0	0	0	0	134	22	3	1	1	161	0	0	4	1	0	0	0	5	0	0	0	0	0	0	0	0	0	0
1715 - 1730	0	0	0	0	0	0	0	0	0	0	138	18	5	1	0	162	0	0	12	0	0	0	0	12	0	0	2	1	0	0	0	0	3	
1730 - 1745	0	0	0	0	0	0	0	0	0	0	139	10	2	1	0	152	0	0	6	0	0	0	0	6	0	0	1	0	0	0	0	0	1	
1745 - 1800	0	0	0	0	0	0	0	0	0	0	114	19	1	1	1	136	0	0	8	0	0	0	0	8	0	0	0	0	0	0	0	0	0	4
Hourly Total	0	0	0	0	0	0	0	0	0	0	525	69	11	4	2	611	0	0	30	1	0	0	0	31	0	0	3	1	0	0	0	0	4	
1800 - 1815	0	0	0	0	0	0	0	0	0	0	107	12	3	2	0	124	0	0	7	0	1	0	0	8	0	0	1	1	0	0	0	0	2	
1815 - 1830	0	0	0	0	0	0	0	0	0	0	123	9	2	1	0	136	0	0	3	0	0	0	0	3	0	0	1	1	1	0	0	0	2	
1830 - 1845	0	0	0	0	0	0	0	0	0	0	111	10	2	1	0	124	0	0	4	0	0	0	0	4	0	0	2	0	0	0	0	0	2	
1845 - 1900	0	0	0	0	0	0	0	0	0	1	134	14	1	0	3	153	0	0	8	1	0	0	0	9	0	0	0	1	0	0	0	0	1	
Hourly Total	0	0	0	0	0	0	0	0	0	1	475	45	8	4	3	536	0	0	22	1	1	0	0	24	0	0	4	3	0	0	0	7		
Session Total	0	0	0	0	0	0	0	0	0	2	1437	188	32	9	6	1674	0	0	68	7	1	0	0	76	0	0	8	4	2	0	0	14		

Salph End Bedford - Manual Traffic Survey, Wednesday 27th November 2019

Produced by Road Data Services Ltd.

Junction: (4-2) Water End / A421 Off Slip / St Neots Road / A421 On Slip

Approach: A421 Off Slip

TIME	B - Left to St Neots Road								C - Ahead to A421 On Slip								D - Right to Water End							
	1	0.4	1	1	1.5	2.3	2	TOTAL	1	0.4	1	1	1.5	2.3	2	TOTAL	1	0.4	1	1	1.5	2.3	2	TOTAL
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	37	10	2	3	0	53
0715 - 0730	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	38	11	4	4	0	57
0730 - 0745	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67	19	3	2	0	91
0745 - 0800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	91	22	5	3	0	121
Hourly Total	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	1	233	62	14	12	0	322
0800 - 0815	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70	13	0	2	1	86
0815 - 0830	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	61	21	3	2	0	87
0830 - 0845	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	14	6	4	0	83
0845 - 0900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64	8	3	2	0	77
Hourly Total	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	254	56	12	10	1	333
	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	254	56	18	23	2	353
0900 - 0915	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	16	1	0	0	66
0915 - 0930	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58	10	3	2	0	73
0930 - 0945	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47	10	5	2	1	65
0945 - 1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	9	5	5	0	60
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	195	45	14	9	1	264
Session Total	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	1	682	163	40	31	2	919
1600 - 1615	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69	13	4	0	0	86
1615 - 1630	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	66	14	3	1	0	84
1630 - 1645	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	69	9	4	0	0	82
1645 - 1700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70	13	3	0	0	86
Hourly Total	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	274	49	14	1	0	338
1700 - 1715	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	82	12	3	1	0	98
1715 - 1730	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	94	11	4	1	0	110
1730 - 1745	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	96	6	2	1	0	105
1745 - 1800	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	72	10	1	1	1	85
Hourly Total	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	344	39	10	4	1	398
	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	344	39	15	9.2	2	409.2
1800 - 1815	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	77	7	3	2	0	89
1815 - 1830	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	98	9	2	1	0	110
1830 - 1845	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	87	5	2	0	0	94
1845 - 1900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	99	14	1	0	0	115
Hourly Total	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	361	35	8	3	0	408
Session Total	0	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0	1	979	123	32	8	1	1144

Salph End Bedford - Manual Traffic Survey, Wednesday 27th November 2019

Produced by Road Data Services Ltd.

Junction: (4-2) Water End / A421 Off Slip / St Neots Road / A421 On Slip

Approach: Water End

TIME	A - Left to A421 Off Slip								B - Ahead to St Neots Road								C - Right to A421 On Slip							
	1	0.4	1	1	1.5	2.3	2	TOTAL	1	0.4	1	1	1.5	2.3	2	TOTAL	1	0.4	1	1	1.5	2.3	2	TOTAL
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0	49	10	2	0	1	62	0	1	113	23	10	0	0	147
0715 - 0730	0	0	0	0	0	0	0	0	0	1	50	14	3	2	0	70	0	0	125	9	6	1	0	141
0730 - 0745	0	0	0	0	0	0	0	0	0	0	70	13	0	2	1	86	0	0	130	17	9	1	0	157
0745 - 0800	0	0	0	0	0	0	0	0	0	0	64	13	5	0	0	82	0	0	191	19	8	2	0	220
Hourly Total	0	0	0	0	0	0	0	0	0	1	233	50	10	4	2	300	0	1	559	68	33	4	0	665
0800 - 0815	0	0	0	0	0	0	0	0	0	0	67	17	6	1	0	91	0	0	167	30	5	2	0	204
0815 - 0830	0	0	0	0	0	0	0	0	0	0	70	8	2	0	1	81	0	0	194	18	5	1	1	219
0830 - 0845	0	0	0	0	0	0	0	0	0	0	63	18	0	1	3	85	0	0	148	26	8	2	1	185
0845 - 0900	0	0	0	0	0	0	0	0	0	0	51	12	3	0	4	70	0	1	152	28	8	0	1	190
Hourly Total	0	0	0	0	0	0	0	0	0	0	251	55	11	2	8	327	0	1	661	102	26	5	3	798
	0	0	0	0	0	0	0	0	0	0	251	55	16.5	4.6	16	343.1	0	0.4	661	102	39	11.5	6	819.9
0900 - 0915	0	0	0	0	0	0	0	0	0	0	39	8	2	1	1	51	0	0	113	24	6	4	0	147
0915 - 0930	0	0	0	0	0	0	0	0	0	0	33	9	3	0	0	45	0	0	101	23	5	4	0	133
0930 - 0945	0	0	0	0	0	0	0	0	0	0	32	10	0	1	0	43	0	0	69	10	1	1	0	81
0945 - 1000	0	0	0	0	0	0	0	0	0	0	32	10	1	0	1	44	0	0	64	9	6	6	0	85
Hourly Total	0	0	0	0	0	0	0	0	0	0	136	37	6	2	2	183	0	0	347	66	18	15	0	446
Session Total	0	0	0	0	0	0	0	0	0	1	620	142	27	8	12	810	0	2	1567	236	77	24	3	1909
1600 - 1615	0	0	0	0	0	0	0	0	0	0	128	30	3	2	2	165	0	0	134	21	5	1	0	161
1615 - 1630	0	0	0	0	0	0	0	0	0	0	132	27	4	0	1	164	0	1	125	21	6	0	0	153
1630 - 1645	0	0	0	0	0	0	0	0	0	1	181	25	8	0	0	215	0	0	98	17	2	0	0	117
1645 - 1700	0	0	0	0	0	0	0	0	0	0	156	32	4	1	1	194	0	0	125	13	1	0	0	139
Hourly Total	0	0	0	0	0	0	0	0	0	1	597	114	19	3	4	738	0	1	482	72	14	1	0	570
1700 - 1715	0	0	0	0	0	0	0	0	0	0	181	20	1	0	0	202	0	1	108	8	0	4	1	122
1715 - 1730	0	0	0	0	0	0	0	0	0	0	168	16	2	1	2	189	0	0	108	14	0	0	0	122
1730 - 1745	0	0	0	0	0	0	0	0	0	0	132	9	2	0	0	143	0	0	126	19	2	2	0	149
1745 - 1800	0	0	0	0	0	0	0	0	0	2	105	9	1	0	1	118	1	0	150	13	1	1	0	166
Hourly Total	0	0	0	0	0	0	0	0	0	2	586	54	6	1	3	652	1	1	492	54	3	7	1	559
	0	0	0	0	0	0	0	0	0	0.8	586	54	9	2.3	6	658.1	1	0.4	492	54	4.5	16.1	2	570
1800 - 1815	0	0	0	0	0	0	0	0	0	0	98	7	0	1	1	107	0	0	88	11	3	0	0	102
1815 - 1830	0	0	0	0	0	0	0	0	0	1	68	4	1	0	0	74	0	0	75	8	0	1	0	84
1830 - 1845	0	0	0	0	0	0	0	0	0	0	60	2	0	0	4	66	0	0	60	4	2	1	1	68
1845 - 1900	0	0	0	0	0	0	0	0	0	0	44	1	0	0	1	46	0	0	53	5	1	2	0	61
Hourly Total	0	0	0	0	0	0	0	0	0	1	270	14	1	1	6	293	0	0	276	28	6	4	1	315
Session Total	0	0	0	0	0	0	0	0	0	4	1453	182	26	5	13	1683	1	2	1250	154	23	12	2	1444

Salph End Bedford - Manual Traffic Survey, Wednesday 27th November 2019

Produced by Road Data Services Ltd.

Junction: (5) Oldways Road / Church End / Ravensden Roac

Approach: Oldways Road

TIME	B - Left to Church End								C - Ahead to Ravensden Road							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	1	0	0	0	0	1	0	0	22	3	1	0	0	26
0715 - 0730	0	0	2	1	0	0	0	3	0	0	32	9	0	0	0	41
0730 - 0745	0	0	1	0	0	0	0	1	0	0	41	4	1	0	0	46
0745 - 0800	0	0	9	0	0	0	0	9	0	0	65	8	2	0	0	75
Hourly Total	0	0	13	1	0	0	0	14	0	0	160	24	4	0	0	188
0800 - 0815	0	0	2	0	0	0	0	2	0	0	74	10	2	0	0	86
0815 - 0830	0	0	10	0	0	0	0	10	0	0	75	9	1	0	0	85
0830 - 0845	0	0	16	2	0	0	0	18	0	0	61	9	1	0	2	73
0845 - 0900	0	0	15	3	0	0	0	18	0	0	45	7	0	0	0	52
Hourly Total	0	0	43	5	0	0	0	48	0	0	255	35	4	0	2	296
	0	0	43	5	0	0	0	48	0	0	255	35	6	0	4	300
0900 - 0915	0	0	5	1	0	0	0	6	0	0	31	4	0	0	0	35
0915 - 0930	0	0	3	0	1	0	0	4	0	0	28	5	2	0	0	35
0930 - 0945	0	0	2	1	0	0	0	3	0	0	17	4	1	0	0	22
0945 - 1000	0	0	5	2	0	0	0	7	0	0	12	3	1	0	0	16
Hourly Total	0	0	15	4	1	0	0	20	0	0	88	16	4	0	0	108

Session Total	0	0	71	10	1	0	0	82	0	0	503	75	12	0	2	592
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1600 - 1615	0	0	6	0	0	0	0	6	0	0	29	7	0	0	0	36
1615 - 1630	0	0	5	1	0	0	0	6	0	0	21	2	0	0	0	23
1630 - 1645	0	0	5	0	0	0	0	5	0	0	27	1	0	0	0	28
1645 - 1700	0	0	5	0	0	0	0	5	1	0	22	1	0	0	0	24
Hourly Total	0	0	21	1	0	0	0	22	1	0	99	11	0	0	0	111
1700 - 1715	0	0	2	0	0	0	0	2	1	0	22	0	1	0	0	24
1715 - 1730	0	0	5	1	0	0	0	6	0	0	21	0	1	0	1	23
1730 - 1745	0	0	1	0	0	0	0	1	0	0	25	0	0	0	0	25
1745 - 1800	0	0	5	0	0	0	0	5	0	0	24	1	1	0	0	26
Hourly Total	0	0	13	1	0	0	0	14	1	0	92	1	3	0	1	98
	0	0	13	1	0	0	0	14	1	0	92	1	4.5	0	2	100.5
1800 - 1815	0	0	1	0	0	0	0	1	0	0	17	0	0	0	0	17
1815 - 1830	0	1	2	0	0	0	0	3	0	0	15	0	0	0	0	15
1830 - 1845	1	0	2	0	1	0	0	4	0	0	18	0	0	0	0	18
1845 - 1900	0	0	3	0	0	0	0	3	0	0	8	0	0	0	0	8
Hourly Total	1	1	8	0	1	0	0	11	0	0	58	0	0	0	0	58

Session Total	1	1	42	2	1	0	0	47	2	0	249	12	3	0	1	267
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Salph End Bedford - Manual Traffic Survey, Wednesday 27th November 2019

Produced by Road Data Services Ltd.

Junction: (5) Oldways Road / Church End / Ravensden Roac

Approach: Church End

TIME	C - Left to Ravensden Road								A - Right to Oldways Road							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	2	2	0	0	0	4	0	0	0	0	0	0	0	0
0715 - 0730	0	0	4	0	0	0	0	4	0	0	4	0	0	0	0	4
0730 - 0745	0	0	1	2	0	0	0	3	0	0	2	1	0	0	0	3
0745 - 0800	0	0	7	0	0	0	0	7	0	0	2	0	0	0	0	2
Hourly Total	0	0	14	4	0	0	0	18	0	0	8	1	0	0	0	9
0800 - 0815	0	0	5	0	0	0	1	6	0	0	5	1	0	0	0	6
0815 - 0830	0	0	7	0	0	0	0	7	0	1	2	0	0	0	0	3
0830 - 0845	0	0	3	1	0	0	0	4	0	0	3	0	0	1	0	4
0845 - 0900	0	0	18	0	0	0	0	18	0	0	16	0	0	0	0	16
Hourly Total	0	0	33	1	0	0	1	35	0	1	26	1	0	1	0	29
	0	0	33	1	0	0	2	36	0	0.4	26	1	0	2.3	0	29.7
0900 - 0915	0	0	16	1	0	0	1	18	0	0	11	0	1	0	0	12
0915 - 0930	0	0	3	0	1	0	0	4	0	0	2	2	0	0	0	4
0930 - 0945	0	0	3	0	0	0	0	3	0	0	5	1	0	0	0	6
0945 - 1000	0	0	6	0	0	0	0	6	0	0	2	1	0	0	0	3
Hourly Total	0	0	28	1	1	0	1	31	0	0	20	4	1	0	0	25

Session Total	0	0	75	6	1	0	2	84	0	1	54	6	1	1	0	63
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1600 - 1615	0	0	4	1	0	0	0	5	0	0	9	2	0	0	0	11
1615 - 1630	0	0	6	1	0	0	0	7	0	0	3	0	0	0	0	3
1630 - 1645	0	0	5	0	0	0	0	5	0	0	5	1	0	0	0	6
1645 - 1700	0	0	14	0	1	0	0	15	0	0	1	0	0	0	0	1
Hourly Total	0	0	29	2	1	0	0	32	0	0	18	3	0	0	0	21
1700 - 1715	0	0	6	2	0	0	0	8	0	0	6	1	0	0	0	7
1715 - 1730	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
1730 - 1745	0	0	9	0	0	0	0	9	0	0	5	1	0	0	0	6
1745 - 1800	0	0	4	0	1	0	0	5	0	0	4	0	0	0	0	4
Hourly Total	0	0	21	2	1	0	0	24	0	0	15	2	0	0	0	17
	0	0	21	2	1.5	0	0	24.5	0	0	15	2	0	0	0	17
1800 - 1815	0	0	1	0	0	0	0	1	0	0	2	0	0	0	0	2
1815 - 1830	0	0	3	0	0	0	0	3	0	0	3	2	0	0	0	5
1830 - 1845	0	0	4	0	0	0	0	4	0	0	6	0	0	0	0	6
1845 - 1900	0	0	4	0	0	0	0	4	0	0	3	0	0	0	0	3
Hourly Total	0	0	12	0	0	0	0	12	0	0	14	2	0	0	0	16

Session Total	0	0	62	4	2	0	0	68	0	0	47	7	0	0	0	54
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Salph End Bedford - Manual Traffic Survey, Wednesday 27th November 2019

Produced by Road Data Services Ltd.

Junction: (5) Oldways Road / Church End / Ravensden Roac

Approach: Ravensden Road

TIME	A - Ahead to Oldways Road								B - Right to Church End							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	14	2	1	0	1	18	0	0	1	3	0	0	0	4
0715 - 0730	0	0	11	6	0	0	0	17	0	0	1	2	0	0	0	3
0730 - 0745	1	0	16	4	0	0	0	21	0	0	0	2	0	0	0	2
0745 - 0800	0	0	24	7	1	0	0	32	0	1	4	1	0	0	0	6
Hourly Total	1	0	65	19	2	0	1	88	0	1	6	8	0	0	0	15
0800 - 0815	0	0	27	6	1	0	0	34	0	0	5	2	0	0	0	7
0815 - 0830	0	0	29	5	1	0	0	35	0	0	6	1	0	0	0	7
0830 - 0845	0	0	24	4	0	0	0	28	0	0	10	0	0	0	0	10
0845 - 0900	0	0	19	4	1	0	0	24	0	0	13	0	0	0	0	13
Hourly Total	0	0	99	19	3	0	0	121	0	0	34	3	0	0	0	37
	0	0	99	19	4.5	0	0	122.5	0	0	34	3	0	0	0	37
0900 - 0915	0	0	19	6	0	0	0	25	0	0	6	1	0	0	0	7
0915 - 0930	1	0	16	2	1	0	0	20	0	0	4	1	0	0	0	5
0930 - 0945	0	0	13	6	0	0	0	19	0	0	3	1	0	0	0	4
0945 - 1000	1	0	11	1	2	0	0	15	0	0	2	2	0	0	1	5
Hourly Total	2	0	59	15	3	0	0	79	0	0	15	5	0	0	1	21

Session Total	3	0	223	53	8	0	1	288	0	1	55	16	0	0	1	73
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1600 - 1615	0	0	39	6	0	0	0	45	0	0	4	0	0	0	0	4
1615 - 1630	0	0	39	6	2	0	0	47	0	0	5	1	0	0	0	6
1630 - 1645	0	0	47	11	2	0	0	60	0	0	6	2	1	0	0	9
1645 - 1700	0	0	40	13	2	0	0	55	0	0	4	0	0	0	0	4
Hourly Total	0	0	165	36	6	0	0	207	0	0	19	3	1	0	0	23
1700 - 1715	0	0	65	5	0	0	0	70	0	0	2	0	0	0	0	2
1715 - 1730	0	0	45	4	0	0	0	49	0	0	6	1	0	0	0	7
1730 - 1745	0	0	59	1	0	0	0	60	0	0	10	2	0	0	1	13
1745 - 1800	0	1	51	5	0	0	0	57	0	0	3	0	0	0	0	3
Hourly Total	0	1	220	15	0	0	0	236	0	0	21	3	0	0	1	25
	0	0.4	220	15	0	0	0	235.4	0	0	21	3	0	0	2	26
1800 - 1815	0	0	38	2	0	0	0	40	0	0	4	0	0	0	0	4
1815 - 1830	0	0	37	2	1	0	0	40	0	0	3	0	0	0	0	3
1830 - 1845	0	0	29	1	0	0	0	30	0	0	7	0	0	0	0	7
1845 - 1900	1	0	20	2	0	0	0	23	0	0	3	0	0	0	0	3
Hourly Total	1	0	124	7	1	0	0	133	0	0	17	0	0	0	0	17

Session Total	1	1	509	58	7	0	0	576	0	0	57	6	1	0	1	65
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Salph End Bedford - Manual Traffic Survey, Wednesday 27th November 2019

Produced by Road Data Services Ltd.

Junction: (6) B660 / Access / Oldways Road / Thurleigh Road

Approach: B660 (North)

TIME	1 0.4 1 1 1.5 2.3 2								1 0.4 1 1 1.5 2.3 2								1 0.4 1 1 1.5 2.3 2								1 0.4 1 1 1.5 2.3 2							
	First Left to Access								B - Second Left to Oldways Road								C - Ahead to B660 (South)								D - Right to Thurleigh Road							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	7	0	0	1	0	8	0	0	0	0	0	0	3	
0715 - 0730	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0	16	0	0	0	1	17	0	0	4	2	0	0	6	
0730 - 0745	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	0	0	35	5	0	0	0	40	0	0	2	2	0	0	4	
0745 - 0800	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	32	4	0	0	1	37	0	0	2	2	0	1	5	
Hourly Total	0	0	0	0	0	0	0	0	0	0	15	1	0	0	0	16	0	0	90	9	0	1	2	102	0	0	11	6	0	1	0	18
0800 - 0815	0	0	0	0	0	0	0	0	0	0	11	1	1	0	0	13	0	0	49	4	3	0	0	56	0	0	6	1	0	0	7	
0815 - 0830	0	0	0	0	0	0	0	0	0	0	10	3	0	0	0	13	0	0	48	3	2	0	3	56	0	0	4	1	0	0	6	
0830 - 0845	0	0	0	0	0	0	0	0	0	0	7	2	0	0	0	9	0	0	24	1	2	2	0	29	0	0	4	2	0	0	6	
0845 - 0900	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	27	3	0	0	1	31	0	0	1	0	0	0	1	
Hourly Total	0	0	0	0	0	0	0	0	0	0	31	6	1	0	0	38	0	0	148	11	7	2	4	172	0	0	15	4	0	0	19	
0900 - 0915	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	20	1	0	1	0	22	0	0	1	0	0	0	1	
0915 - 0930	0	0	0	0	0	0	0	0	0	0	4	2	0	0	0	6	0	0	12	0	0	1	0	13	0	0	0	0	1	0	1	
0930 - 0945	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0	14	4	0	2	0	20	0	0	2	2	1	0	5	
0945 - 1000	0	0	0	0	0	0	0	0	0	0	4	3	1	0	0	8	0	0	11	1	1	0	0	13	0	0	1	0	0	0	1	
Hourly Total	0	0	0	0	0	0	0	0	0	0	14	6	1	0	0	21	0	0	57	6	1	4	0	68	0	0	4	2	1	0	8	
Session Total	0	0	0	0	0	0	0	0	0	0	60	13	2	0	0	75	0	0	295	26	8	7	6	342	0	0	30	12	1	2	0	45
1600 - 1615	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0	14	2	2	0	1	19	0	0	3	0	1	0	4	
1615 - 1630	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	3	1	0	1	11	0	0	3	0	0	0	3	
1630 - 1645	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	9	0	0	14	3	0	0	0	17	0	0	3	2	1	0	6	
1645 - 1700	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6	0	0	20	4	1	0	0	25	0	0	5	1	0	0	6	
Hourly Total	0	0	0	0	0	0	0	0	0	0	17	2	0	0	0	19	0	0	54	12	4	0	2	72	0	0	14	3	2	0	19	
1700 - 1715	0	0	0	0	0	0	0	0	0	0	2	3	0	0	0	5	0	0	12	2	0	1	0	15	0	0	3	0	0	0	3	
1715 - 1730	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	14	2	0	0	0	16	0	0	6	1	0	0	7	
1730 - 1745	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	2	1	0	0	22	0	0	3	1	0	0	4	
1745 - 1800	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	21	2	0	0	0	23	0	0	3	0	0	0	3	
Hourly Total	0	0	0	0	0	0	0	0	0	0	5	4	0	0	0	9	0	0	66	8	1	1	0	76	0	0	15	2	0	0	17	
1800 - 1815	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	13	2	0	0	0	15	0	0	3	1	0	0	4	
1815 - 1830	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	10	0	0	0	0	10	0	0	2	0	0	0	2	
1830 - 1845	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	14	0	0	0	0	14	0	0	1	0	0	0	1	
1845 - 1900	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	9	2	0	0	0	11	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8	0	0	46	4	0	0	0	50	0	0	6	1	0	0	7	
Session Total	0	0	0	0	0	0	0	0	0	0	30	6	0	0	0	36	0	0	166	24	5	1	2	198	0	0	35	6	2	0	0	43

Salph End Bedford - Manual Traffic Survey, Wednesday 27th November 2019

Produced by Road Data Services Ltd.

Junction: (6) B660 / Access / Oldways Road / Thurleigh Road

Approach: B660 (South)

TIME	D - Left to Thurleigh Road							A - Ahead to B660 (North)							Right to Access							B - Last Right to Oldways Road										
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	7	1	0	0	0	8	0	0	7	1	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
0715 - 0730	0	0	16	3	0	0	1	20	0	0	8	4	0	0	12	0	0	0	0	0	0	0	0	0	0	2	2	0	1	0		
0730 - 0745	0	0	20	5	0	0	0	25	0	0	6	2	1	0	10	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0		
0745 - 0800	0	2	16	2	1	0	0	21	0	0	15	2	2	1	21	0	0	0	0	0	0	0	0	0	0	7	2	0	0	0		
Hourly Total	0	2	59	11	1	0	1	74	0	0	36	9	4	1	2	52	0	0	0	0	0	0	0	0	0	0	13	5	0	1	0	
0800 - 0815	0	0	27	6	1	0	0	34	1	0	11	2	1	1	16	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0		
0815 - 0830	0	0	30	2	0	0	0	32	0	0	13	0	0	0	14	0	0	0	0	0	0	0	0	0	0	11	1	0	0	0		
0830 - 0845	0	0	27	0	1	0	0	28	0	0	19	1	2	0	22	0	0	0	0	0	0	0	0	0	0	23	1	0	0	0		
0845 - 0900	0	0	18	4	1	0	0	23	0	0	16	4	0	1	21	0	0	0	0	0	0	0	0	0	0	11	2	0	0	0		
Hourly Total	0	0	102	12	3	0	0	117	1	0	59	7	3	2	1	73	0	0	0	0	0	0	0	0	0	0	52	4	0	0	0	
0900 - 0915	0	0	15	2	0	0	0	17	0	0	5	1	2	1	9	0	0	0	0	0	0	0	0	0	0	5	0	1	0	0		
0915 - 0930	0	1	18	1	0	0	1	21	0	0	13	0	0	2	15	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0		
0930 - 0945	0	0	0	0	1	0	0	1	0	0	12	2	0	0	14	0	0	0	0	0	0	0	0	0	0	5	3	0	0	0		
0945 - 1000	0	0	8	0	0	1	0	9	0	0	7	2	2	0	11	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0		
Hourly Total	0	1	41	3	1	1	1	48	0	0	37	5	4	3	0	49	0	0	0	0	0	0	0	0	0	0	19	3	1	0	0	
Session Total	0	3	202	26	5	1	2	239	1	0	132	21	11	6	3	174	0	0	0	0	0	0	0	0	0	0	84	12	1	1	0	
1600 - 1615	0	0	30	5	0	2	0	37	0	0	31	4	0	1	36	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0		
1615 - 1630	0	0	44	1	0	2	0	47	0	0	26	3	0	1	30	0	0	0	0	0	0	0	0	0	0	8	2	0	1	0		
1630 - 1645	0	0	31	6	0	0	0	37	0	0	27	2	3	0	32	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0		
1645 - 1700	0	0	44	0	2	0	0	46	0	0	25	1	0	1	27	0	0	0	0	0	0	0	0	0	0	5	0	1	0	0		
Hourly Total	0	0	149	12	2	4	0	167	0	0	109	10	3	3	0	125	0	0	0	0	0	0	0	0	0	0	33	2	1	1	0	
1700 - 1715	0	0	39	0	1	0	0	40	0	0	28	2	0	0	31	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0		
1715 - 1730	0	0	49	0	0	0	0	49	0	0	37	2	0	0	39	0	0	0	0	0	0	0	0	0	0	7	1	0	0	0		
1730 - 1745	0	1	34	0	1	0	0	36	0	0	29	0	0	0	29	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0		
1745 - 1800	0	0	35	0	0	0	1	36	0	0	30	0	0	0	30	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0		
Hourly Total	0	1	157	0	2	0	1	161	0	0	124	4	0	1	129	0	0	0	0	0	0	0	0	0	0	0	19	1	0	0	0	
1800 - 1815	0	0	28	1	0	0	0	29	0	0	19	1	0	0	20	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	
1815 - 1830	0	0	17	0	0	0	0	17	0	0	15	1	0	0	16	0	0	0	0	0	0	0	0	0	0	1	0	4	0	0	0	0
1830 - 1845	0	0	18	0	0	0	0	18	0	0	11	0	0	0	11	0	0	0	0	0	0	0	0	0	0	1	0	3	0	0	0	0
1845 - 1900	0	0	13	0	0	0	0	13	0	0	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Hourly Total	0	0	76	1	0	0	0	77	0	0	54	2	0	0	56	0	0	0	0	0	0	0	0	0	2	0	11	0	0	0	0	
Session Total	0	1	382	13	4	4	1	405	0	0	287	16	3	3	1	310	0	0	0	0	0	0	0	0	0	2	0	63	3	1	1	0

Salph End Bedford - Manual Traffic Survey, Wednesday 27th November 2019

Produced by Road Data Services Ltd.

Junction: (6) B660 / Access / Oldways Road / Thurleigh Road

Approach: Thurleigh Road

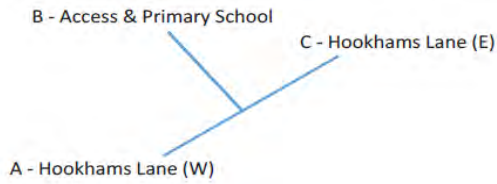
TIME	A - Left to B660 (North)								Ahead to Access								B - Right to Oldways Road								C - Last Right to B660 (South)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	2	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	15	5	1	0	0	0	21	0	1	10	0	0	11	
0715 - 0730	0	0	1	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	30	10	0	0	0	40	0	0	23	1	0	23		
0730 - 0745	0	0	1	2	1	0	0	4	0	0	0	0	0	0	0	0	0	0	38	5	1	0	0	44	0	0	58	12	0	70		
0745 - 0800	0	0	2	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	55	8	1	0	0	64	0	0	67	11	0	78		
Hourly Total	0	0	6	7	2	0	0	15	0	0	0	0	0	0	0	0	0	138	28	3	0	0	169	0	1	156	24	0	1	0	182	
0800 - 0815	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	57	10	1	0	0	68	0	0	51	6	0	57		
0815 - 0830	0	0	3	0	1	0	0	4	0	0	0	0	0	0	0	0	0	0	59	8	1	0	0	68	0	0	46	9	1	67		
0830 - 0845	0	0	4	2	0	1	0	7	0	0	0	0	0	0	0	0	0	0	55	8	1	0	2	66	0	0	55	4	1	61		
0845 - 0900	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	39	9	0	0	0	48	0	0	25	6	1	54		
Hourly Total	0	0	10	3	2	1	0	16	0	0	0	0	0	0	0	0	0	210	35	3	0	2	250	0	0	177	25	3	1	2	208	
0900 - 0915	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	28	5	0	0	0	33	0	0	20	4	3	27		
0915 - 0930	0	0	2	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	28	2	3	0	0	33	0	0	11	4	1	16		
0930 - 0945	0	0	1	1	1	0	0	3	0	0	0	0	0	0	0	0	0	0	17	2	1	0	0	20	0	0	16	5	2	24		
0945 - 1000	0	0	1	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	10	4	1	0	0	15	0	0	13	3	0	16		
Hourly Total	0	0	6	2	2	1	0	11	0	0	0	0	0	0	0	0	0	83	13	5	0	0	101	0	0	60	16	6	0	1	83	
Session Total	0	0	22	12	6	2	0	42	0	0	0	0	0	0	0	0	0	431	76	11	0	2	520	0	1	393	65	9	2	3	473	
1600 - 1615	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	24	6	0	0	0	30	0	1	19	4	0	24		
1615 - 1630	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	18	4	0	0	0	22	0	0	16	11	0	27		
1630 - 1645	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	16	2	0	0	0	18	0	0	10	4	1	16		
1645 - 1700	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	1	1	10	2	0	0	0	14	0	1	10	4	0	16		
Hourly Total	0	0	10	2	0	0	0	12	0	0	0	0	0	0	0	1	1	68	14	0	0	0	84	0	2	55	23	1	0	2	83	
1700 - 1715	0	0	3	0	1	0	0	4	0	0	0	0	0	0	0	0	0	0	17	1	1	0	0	19	0	0	21	4	0	25		
1715 - 1730	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	14	0	1	0	1	16	0	0	18	2	0	20		
1730 - 1745	0	0	4	2	0	0	0	6	0	0	0	0	0	0	0	0	0	0	27	0	0	0	0	27	0	0	17	1	0	18		
1745 - 1800	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	16	0	1	0	0	17	0	0	18	0	0	18		
Hourly Total	0	0	10	4	1	0	0	15	0	0	0	0	0	0	0	0	0	74	1	3	0	1	79	0	0	74	7	0	0	0	81	
1800 - 1815	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	16	0	0	10	1	0	11		
1815 - 1830	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	1	0	0	0	13	0	0	16	0	0	16		
1830 - 1845	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	11	0	1	0	0	12	0	0	6	1	0	7		
1845 - 1900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	7	0	0	6	1	0	7		
Hourly Total	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	45	2	1	0	0	48	0	0	38	3	0	0	0	41	
Session Total	0	0	21	6	1	0	0	28	0	0	0	0	0	0	0	1	1	187	17	4	0	1	211	0	2	167	33	1	0	2	205	



Appendix M

A1 – Hookhams Lane Access: Analysis – Input and Results

A1 Access to Hookhams Lane



Background 2017

AM	A	B	C
A			258
B			
C	365		

Tempro 2017-2030

AM	A	B	C
A	1.170	1.170	1.170
B	1.170	1.170	1.170
C	1.170	1.170	1.170

Background 2030

AM	A	B	C
A	0	0	302
B	0	0	0
C	427	0	0

Committed Development

AM	A	B	C
A	0	2	0
B	6	0	0
C	0	0	0

Background 2030 + Committed

AM	A	B	C
A	0	2	302
B	6	0	0
C	427	0	0

Development

AM	A	B	C
A	0	71	0
B	194	0	73
C	0	40	0

Background 2030 + Development

AM	A	B	C
A	0	72	302
B	200	0	73
C	427	40	0

Background 2017

PM	A	B	C
A			366
B			
C	220		

Tempro 2017-2030

PM	A	B	C
A	1.176	1.176	1.176
B	1.176	1.176	1.176
C	1.176	1.176	1.176

Background 2030

PM	A	B	C
A	0	0	430
B	0	0	0
C	259	0	0

Committed Development

PM	A	B	C
A	0	5	0
B	2	0	0
C	0	0	0

Background 2030 + Committed

PM	A	B	C
A	0	5	430
B	2	0	0
C	259	0	0

Development

PM	A	B	C
A	0	134	0
B	61	0	21
C	0	42	0

Background 2030 + Development

PM	A	B	C
A	0	139	430
B	63	0	21
C	259	42	0

Junctions 9
PICADY 9 - Priority Intersection Module
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Filename: A1 Hookhams Lane Access.j9
Path: C:\Users\Martin\OneDrive - Martin Andrews Consulting Ltd\Projects 200 - 299\248 - Salph End, Bedford\Reports\TA\Junction Analysis
Report generation date: 20/01/2020 13:31:39

- »2030-Base+Comm+Dev, AM
- »2030-Base+Comm+Dev, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2030-Base+Comm+Dev							
Stream B-C	0.3	14.69	0.25	B	0.1	8.64	0.05	A
Stream B-A	1.7	28.63	0.64	D	0.3	13.38	0.20	B
Stream C-AB	0.3	4.96	0.11	A	0.2	5.97	0.12	A

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

File summary

File Description

Title	
Location	
Site number	
Date	24/07/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DESKTOP-2HPI2P9\Martin
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

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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)	Run automatically
D5	2030-Base+Comm+Dev	AM	ONE HOUR	07:45	09:15	15	✓
D6	2030-Base+Comm+Dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2030-Base+Comm+Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
A1	Access to Hookhams Lane	T-Junction	Two-way		6.45	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Hookhams Ln (W)		Major
B	Access		Minor
C	Hookhams Ln (E)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			93.0	✓	0.00

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	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	7.08	3.28	3.00	3.00	3.00		1.00	25	40

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
A1	B-A	528	0.096	0.243	0.153	0.348
A1	B-C	589	0.090	0.228	-	-
A1	C-B	628	0.243	0.243	-	-

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)	Run automatically
D5	2030-Base+Comm+Dev	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	374	100.000
B		ONE HOUR	✓	273	100.000
C		ONE HOUR	✓	467	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	72	302
	B	200	0	73
	C	427	40	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	1
	B	0	0	0
	C	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.25	14.69	0.3	B	67	100
B-A	0.64	28.63	1.7	D	184	275
C-AB	0.11	4.96	0.3	A	72	109
C-A					356	534
A-B					66	99
A-C					277	416

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	55	14	462	0.119	54	0.0	0.1	8.819	A
B-A	151	38	407	0.370	148	0.0	0.6	13.823	B
C-AB	51	13	781	0.066	51	0.0	0.1	4.952	A
C-A	300	75			300				
A-B	54	14			54				
A-C	227	57			227				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	66	16	417	0.157	65	0.1	0.2	10.233	B
B-A	180	45	381	0.471	179	0.6	0.9	17.646	C
C-AB	68	17	814	0.084	68	0.1	0.2	4.852	A
C-A	351	88			351				
A-B	65	16			65				
A-C	271	68			271				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	80	20	330	0.243	80	0.2	0.3	14.347	B
B-A	220	55	345	0.638	217	0.9	1.6	27.422	D
C-AB	98	24	860	0.113	97	0.2	0.3	4.745	A
C-A	417	104			417				
A-B	79	20			79				
A-C	333	83			333				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	80	20	325	0.247	80	0.3	0.3	14.689	B
B-A	220	55	345	0.638	220	1.6	1.7	28.632	D
C-AB	98	24	860	0.114	98	0.3	0.3	4.752	A
C-A	416	104			416				
A-B	79	20			79				
A-C	333	83			333				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	66	16	412	0.159	66	0.3	0.2	10.418	B
B-A	180	45	381	0.472	183	1.7	0.9	18.424	C
C-AB	69	17	814	0.084	69	0.3	0.2	4.863	A
C-A	351	88			351				
A-B	65	16			65				
A-C	271	68			271				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	55	14	459	0.120	55	0.2	0.1	8.915	A
B-A	151	38	406	0.371	152	0.9	0.6	14.225	B
C-AB	51	13	781	0.066	52	0.2	0.1	4.960	A
C-A	300	75			300				
A-B	54	14			54				
A-C	227	57			227				

2030-Base+Comm+Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
A1	Access to Hookhams Lane	T-Junction	Two-way		1.49	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2030-Base+Comm+Dev	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	569	100.000
B		ONE HOUR	✓	84	100.000
C		ONE HOUR	✓	301	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	139	430
	B	63	0	21
	C	259	42	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.05	8.64	0.1	A	19	29
B-A	0.20	13.38	0.3	B	58	87
C-AB	0.12	5.97	0.2	A	61	91
C-A					215	323
A-B					128	191
A-C					395	592

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	16	4	490	0.032	16	0.0	0.0	7.584	A
B-A	47	12	399	0.119	47	0.0	0.1	10.217	B
C-AB	45	11	662	0.068	44	0.0	0.1	5.845	A
C-A	182	45			182				
A-B	105	26			105				
A-C	324	81			324				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	19	5	470	0.040	19	0.0	0.0	7.987	A
B-A	57	14	373	0.152	56	0.1	0.2	11.354	B
C-AB	58	14	671	0.086	58	0.1	0.2	5.892	A
C-A	213	53			213				
A-B	125	31			125				
A-C	387	97			387				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	23	6	440	0.053	23	0.0	0.1	8.638	A
B-A	69	17	338	0.205	69	0.2	0.3	13.352	B
C-AB	79	20	685	0.116	79	0.2	0.2	5.964	A
C-A	252	63			252				
A-B	153	38			153				
A-C	473	118			473				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	23	6	440	0.053	23	0.1	0.1	8.643	A
B-A	69	17	338	0.205	69	0.3	0.3	13.381	B
C-AB	80	20	686	0.116	80	0.2	0.2	5.974	A
C-A	252	63			252				
A-B	153	38			153				
A-C	473	118			473				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	19	5	469	0.040	19	0.1	0.0	7.993	A
B-A	57	14	373	0.152	57	0.3	0.2	11.390	B
C-AB	58	15	671	0.087	58	0.2	0.2	5.904	A
C-A	212	53			212				
A-B	125	31			125				
A-C	387	97			387				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	16	4	490	0.032	16	0.0	0.0	7.596	A
B-A	47	12	399	0.119	48	0.2	0.1	10.263	B
C-AB	45	11	662	0.068	45	0.2	0.1	5.859	A
C-A	182	45			182				
A-B	105	26			105				
A-C	324	81			324				

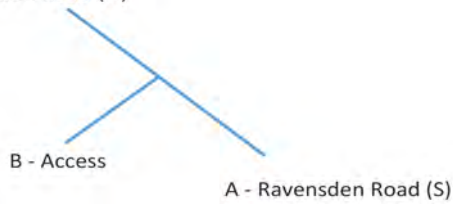


Appendix N

A2 – Access to Ravensden Road: Analysis – Input and Results

A2 Access to Ravensden Rd

C - Ravensden Road (N)



Background 2017

AM	A	B	C
A			137
B			
C	363		

Tempro 2017-2030

AM	A	B	C
A	1.170	1.170	1.170
B	1.170	1.170	1.170
C	1.170	1.170	1.170

Background 2030

AM	A	B	C
A	0	0	160
B	0	0	0
C	425	0	0

Committed Development

AM	A	B	C
A	0	0	0
B	0	0	1
C	0	0	0

Background 2030 + Committed

AM	A	B	C
A	0	0	160
B	0	0	1
C	425	0	0

Development

AM	A	B	C
A	0	0	0
B	0	0	37
C	0	9	0

Background 2030 + Development

AM	A	B	C
A	0	0	160
B	0	0	38
C	425	10	0

Background 2017

PM	A	B	C
A			287
B			
C	186		

Tempro 2017-2030

PM	A	B	C
A	1.176	1.176	1.176
B	1.176	1.176	1.176
C	1.176	1.176	1.176

Background 2030

PM	A	B	C
A	0	0	338
B	0	0	0
C	219	0	0

Committed Development

PM	A	B	C
A	0	0	0
B	0	0	0
C	0	1	0

Background 2030 + Committed

PM	A	B	C
A	0	0	338
B	0	0	0
C	219	1	0

Development

PM	A	B	C
A	0	0	0
B	0	0	12
C	0	28	0

Background 2030 + Development

PM	A	B	C
A	0	0	338
B	0	0	13
C	219	29	0

Junctions 9
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Filename: A2 Ravensden Road Access.j9
Path: C:\Users\Martin\OneDrive - Martin Andrews Consulting Ltd\Projects 200 - 299\248 - Salph End, Bedford\Reports\TA\Junction Analysis
Report generation date: 24/07/2019 10:27:59

- »2030-Base+Comm+Dev, AM
- »2030-Base+Comm+Dev, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2030-Base+Comm+Dev								
Stream B-C	0.1	6.09	0.07	A	0.0	6.35	0.02	A
Stream B-A	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream C-AB	0.0	4.44	0.02	A	0.1	5.43	0.07	A

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

File summary

File Description

Title	
Location	Ravensden Access
Site number	
Date	24/07/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DESKTOP-2HPI2P9\Martin
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

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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)	Run automatically
D5	2030-Base+Comm+Dev	AM	ONE HOUR	07:45	09:15	15	✓
D6	2030-Base+Comm+Dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2030-Base+Comm+Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
A2	Access to Ravensden Road	T-Junction	Two-way		0.50	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Ravensden Rd (N)		Major
B	Access		Minor
C	Ravensden Rd (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			125.0	✓	0.00

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	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	9.25	3.33	3.00	3.00	3.00		1.00	25	40

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
A2	B-A	569	0.104	0.262	0.165	0.374
A2	B-C	679	0.104	0.263	-	-
A2	C-B	646	0.250	0.250	-	-

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)	Run automatically
D5	2030-Base+Comm+Dev	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	160	100.000
B		ONE HOUR	✓	38	100.000
C		ONE HOUR	✓	435	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	0	160
	B	0	0	38
	C	425	10	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	1
	B	0	0	0
	C	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.07	6.09	0.1	A	35	52
B-A	0.00	0.00	0.0	A	0	0
C-AB	0.02	4.44	0.0	A	17	26
C-A					382	573
A-B					0	0
A-C					147	220

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	29	7	648	0.044	28	0.0	0.0	5.812	A
B-A	0	0	482	0.000	0	0.0	0.0	0.000	A
C-AB	12	3	827	0.015	12	0.0	0.0	4.437	A
C-A	315	79			315				
A-B	0	0			0				
A-C	120	30			120				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	34	9	642	0.053	34	0.0	0.1	5.926	A
B-A	0	0	465	0.000	0	0.0	0.0	0.000	A
C-AB	16	4	863	0.019	16	0.0	0.0	4.269	A
C-A	375	94			375				
A-B	0	0			0				
A-C	144	36			144				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	42	10	633	0.066	42	0.1	0.1	6.088	A
B-A	0	0	441	0.000	0	0.0	0.0	0.000	A
C-AB	23	6	914	0.025	23	0.0	0.0	4.059	A
C-A	456	114			456				
A-B	0	0			0				
A-C	176	44			176				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	42	10	633	0.066	42	0.1	0.1	6.088	A
B-A	0	0	441	0.000	0	0.0	0.0	0.000	A
C-AB	23	6	914	0.025	23	0.0	0.0	4.060	A
C-A	456	114			456				
A-B	0	0			0				
A-C	176	44			176				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	34	9	642	0.053	34	0.1	0.1	5.929	A
B-A	0	0	465	0.000	0	0.0	0.0	0.000	A
C-AB	16	4	863	0.019	16	0.0	0.0	4.272	A
C-A	375	94			375				
A-B	0	0			0				
A-C	144	36			144				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	29	7	648	0.044	29	0.1	0.0	5.817	A
B-A	0	0	482	0.000	0	0.0	0.0	0.000	A
C-AB	12	3	827	0.015	12	0.0	0.0	4.441	A
C-A	315	79			315				
A-B	0	0			0				
A-C	120	30			120				

2030-Base+Comm+Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
A2	Access to Ravensden Road	T-Junction	Two-way		0.51	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2030-Base+Comm+Dev	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	338	100.000
B		ONE HOUR	✓	13	100.000
C		ONE HOUR	✓	248	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	0	338
	B	0	0	13
	C	219	29	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.02	6.35	0.0	A	12	18
B-A	0.00	0.00	0.0	A	0	0
C-AB	0.07	5.43	0.1	A	38	57
C-A					190	285
A-B					0	0
A-C					310	465

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	10	2	612	0.016	10	0.0	0.0	5.973	A
B-A	0	0	467	0.000	0	0.0	0.0	0.000	A
C-AB	29	7	694	0.041	28	0.0	0.1	5.419	A
C-A	158	40			158				
A-B	0	0			0				
A-C	254	64			254				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	12	3	599	0.020	12	0.0	0.0	6.124	A
B-A	0	0	447	0.000	0	0.0	0.0	0.000	A
C-AB	36	9	705	0.051	36	0.1	0.1	5.398	A
C-A	187	47			187				
A-B	0	0			0				
A-C	304	76			304				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	14	4	581	0.025	14	0.0	0.0	6.347	A
B-A	0	0	419	0.000	0	0.0	0.0	0.000	A
C-AB	48	12	720	0.067	48	0.1	0.1	5.372	A
C-A	225	56			225				
A-B	0	0			0				
A-C	372	93			372				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	14	4	581	0.025	14	0.0	0.0	6.347	A
B-A	0	0	419	0.000	0	0.0	0.0	0.000	A
C-AB	48	12	720	0.067	48	0.1	0.1	5.376	A
C-A	225	56			225				
A-B	0	0			0				
A-C	372	93			372				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	12	3	599	0.020	12	0.0	0.0	6.125	A
B-A	0	0	447	0.000	0	0.0	0.0	0.000	A
C-AB	36	9	705	0.051	36	0.1	0.1	5.404	A
C-A	187	47			187				
A-B	0	0			0				
A-C	304	76			304				

18:00 - 18:15

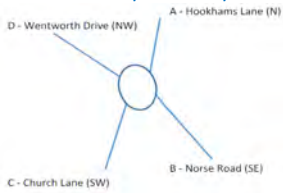
Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	10	2	612	0.016	10	0.0	0.0	5.975	A
B-A	0	0	467	0.000	0	0.0	0.0	0.000	A
C-AB	29	7	694	0.041	29	0.1	0.1	5.427	A
C-A	158	40			158				
A-B	0	0			0				
A-C	254	64			254				



Appendix O

J1 – Hookhams Lane / Norse Road / Church Lane / Wentworth Drive: Analysis – Input and Results

J1: Hookhams Lane / Norse Road / Church Lane / Wentworth Drive



Background 2019

AM	A	B	C	D
A	0	231	105	96
B	136	0	125	443
C	59	115	0	155
D	49	603	119	0

Tempo 2019-2030

AM	A	B	C	D
A	1.1369	1.1369	1.1369	1.1369
B	1.1369	1.1369	1.1369	1.1369
C	1.1369	1.1369	1.1369	1.1369
D	1.1369	1.1369	1.1369	1.1369

Background 2030

AM	A	B	C	D
A	0	263	119	109
B	154	0	142	504
C	67	131	0	176
D	56	685	135	0

Committed Development

AM	A	B	C	D
A	0	2	2	2
B	1	0	0	0
C	0	0	0	0
D	0	0	0	0

Background 2030 + Committed

AM	A	B	C	D
A	0	265	121	111
B	155	0	142	504
C	68	131	0	176
D	56	685	135	0

Development

AM	A	B	C	D
A	0	71	61	57
B	23	0	0	0
C	21	0	0	0
D	20	0	0	0

Background 2030 + Development

AM	A	B	C	D
A	0	336	182	168
B	178	0	142	504
C	88	131	0	176
D	76	685	135	0

Background 2019

PM	A	B	C	D
A	0	72	78	61
B	152	0	199	527
C	98	117	0	128
D	53	310	77	0

Tempo 2019-2030

PM	A	B	C	D
A	1.1554	1.1554	1.1554	1.1554
B	1.1554	1.1554	1.1554	1.1554
C	1.1554	1.1554	1.1554	1.1554
D	1.1554	1.1554	1.1554	1.1554

Background 2030

PM	A	B	C	D
A	0	83	90	70
B	176	0	230	609
C	113	135	0	147
D	61	358	89	0

Committed Development

PM	A	B	C	D
A	0	1	1	1
B	2	0	0	0
C	2	0	0	0
D	1	0	0	0

Background 2030 + Committed

PM	A	B	C	D
A	0	84	90	71
B	177	0	230	609
C	115	135	0	147
D	63	358	89	0

Development

PM	A	B	C	D
A	0	23	20	18
B	51	0	0	0
C	43	0	0	0
D	40	0	0	0

Background 2030 + Development

PM	A	B	C	D
A	0	107	110	89
B	228	0	230	609
C	158	135	0	147
D	103	358	89	0

HGV%age

AM	A	B	C	D
A	0%	1%	1%	1%
B	2%	0%	4%	1%
C	0%	5%	0%	2%
D	0%	2%	2%	0%

HGV%age

PM	A	B	C	D
A	0%	0%	3%	0%
B	1%	0%	3%	0%
C	0%	5%	0%	2%
D	0%	0%	3%	0%

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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Filename: J1 Hookhams Ln.j9
Path: C:\Users\Martin\OneDrive - Martin Andrews Consulting Ltd\Projects 200 - 299\248 - Salph End, Bedford\Reports\TA\Junction Analysis
Report generation date: 20/01/2020 13:48:08

- »2019-Base, AM
- »2019-Base, PM
- »2030-Base+Comm, AM
- »2030-Base+Comm, PM
- »2030-Base+Comm+Dev, AM
- »2030-Base+Comm+Dev, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2019-Base								
Arm A	1.0	7.53	0.50	A	0.3	4.01	0.20	A
Arm B	1.2	5.66	0.55	A	1.9	6.99	0.65	A
Arm C	0.4	3.89	0.28	A	0.4	4.12	0.30	A
Arm D	1.3	5.53	0.56	A	0.5	3.64	0.33	A
2030-Base+Comm								
Arm A	1.6	10.40	0.61	B	0.3	4.40	0.25	A
Arm B	1.7	7.16	0.63	A	3.2	10.46	0.76	B
Arm C	0.5	4.39	0.33	A	0.6	4.82	0.36	A
Arm D	1.9	7.02	0.65	A	0.6	4.10	0.39	A
2030-Base+Comm+Dev								
Arm A	4.9	24.60	0.84	C	0.4	4.78	0.31	A
Arm B	2.2	8.83	0.69	A	4.3	13.46	0.81	B
Arm C	0.6	4.78	0.36	A	0.7	5.44	0.42	A
Arm D	2.1	7.70	0.67	A	0.8	4.61	0.44	A

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

File summary

File Description

Title	
Location	
Site number	
Date	24/07/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DESKTOP-2HPI2P9\Martin
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

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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)	Run automatically
D1	2019-Base	AM	ONE HOUR	07:45	09:15	15	✓
D2	2019-Base	PM	ONE HOUR	16:45	18:15	15	✓
D3	2030-Base+Comm	AM	ONE HOUR	07:45	09:15	15	✓
D4	2030-Base+Comm	PM	ONE HOUR	16:45	18:15	15	✓
D5	2030-Base+Comm+Dev	AM	ONE HOUR	07:45	09:15	15	✓
D6	2030-Base+Comm+Dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2019-Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	J2 Hookhams Lane / Norse Road / Church Lane / Wentworth Drive	Standard Roundabout		A, B, C, D	5.72	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Hookhams Ln	
B	Norse Rd	
C	Church Ln	
D	Wentworth Rd	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	2.79	6.20	11.7	23.1	64.0	25.0	
B	3.04	6.13	17.5	25.0	60.2	14.0	
C	3.64	6.29	26.0	26.6	61.9	31.0	
D	3.60	6.68	20.9	20.9	64.0	36.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.493	1413
B	0.559	1619
C	0.553	1723
D	0.529	1693

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019-Base	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	432	100.000
B		ONE HOUR	✓	704	100.000
C		ONE HOUR	✓	329	100.000
D		ONE HOUR	✓	771	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A	B	C	D
A	0	231	105	96
B	136	0	125	443
C	59	115	0	155
D	49	603	119	0

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A	B	C	D
A	0	1	1	1
B	2	0	4	1
C	0	5	0	2
D	0	2	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.50	7.53	1.0	A	396	595
B	0.55	5.66	1.2	A	646	969
C	0.28	3.89	0.4	A	302	453
D	0.56	5.53	1.3	A	707	1061

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	325	81	628	1103	0.295	324	183	0.0	0.4	4.654	A
B	530	133	240	1485	0.357	528	711	0.0	0.6	3.820	A
C	248	62	506	1444	0.172	247	262	0.0	0.2	3.087	A
D	580	145	233	1570	0.370	578	520	0.0	0.6	3.688	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	388	97	752	1042	0.373	388	219	0.4	0.6	5.549	A
B	633	158	287	1458	0.434	632	852	0.6	0.8	4.428	A
C	296	74	606	1388	0.213	296	313	0.2	0.3	3.381	A
D	693	173	278	1545	0.449	692	623	0.6	0.8	4.294	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	476	119	920	959	0.496	474	268	0.6	1.0	7.469	A
B	775	194	351	1422	0.545	773	1042	0.8	1.2	5.629	A
C	362	91	741	1313	0.276	362	383	0.3	0.4	3.882	A
D	849	212	341	1512	0.561	847	762	0.8	1.3	5.496	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	476	119	922	958	0.496	476	269	1.0	1.0	7.531	A
B	775	194	352	1422	0.545	775	1045	1.2	1.2	5.662	A
C	362	91	743	1312	0.276	362	384	0.4	0.4	3.888	A
D	849	212	341	1512	0.561	849	764	1.3	1.3	5.529	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	388	97	754	1041	0.373	390	220	1.0	0.6	5.597	A
B	633	158	289	1457	0.434	635	856	1.2	0.8	4.461	A
C	296	74	609	1387	0.213	296	315	0.4	0.3	3.389	A
D	693	173	279	1545	0.449	695	626	1.3	0.8	4.323	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	325	81	631	1102	0.295	326	184	0.6	0.4	4.691	A
B	530	133	241	1484	0.357	531	716	0.8	0.6	3.846	A
C	248	62	509	1442	0.172	248	263	0.3	0.2	3.095	A
D	580	145	234	1569	0.370	581	523	0.8	0.6	3.715	A

2019-Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	J2 Hookhams Lane / Norse Road / Church Lane / Wentworth Drive	Standard Roundabout		A, B, C, D	5.34	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2019-Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	211	100.000
B		ONE HOUR	✓	878	100.000
C		ONE HOUR	✓	343	100.000
D		ONE HOUR	✓	440	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		A	B	C	D	
From	A	0	72	78	61	
	B	152	0	199	527	
	C	98	117	0	128	
	D	53	310	77	0	

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	
From	A	0	0	3	0	
	B	1	0	3	0	
	C	0	5	0	2	
	D	0	0	3	0	

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.20	4.01	0.3	A	194	290
B	0.65	6.99	1.9	A	806	1209
C	0.30	4.12	0.4	A	315	472
D	0.33	3.64	0.5	A	404	606

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	159	40	378	1226	0.130	158	227	0.0	0.1	3.405	A
B	661	165	162	1528	0.433	658	374	0.0	0.8	4.158	A
C	258	65	555	1417	0.182	257	265	0.0	0.2	3.180	A
D	331	83	275	1547	0.214	330	537	0.0	0.3	2.970	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	190	47	453	1190	0.159	190	272	0.1	0.2	3.638	A
B	789	197	194	1510	0.523	788	448	0.8	1.1	5.017	A
C	308	77	664	1356	0.227	308	318	0.2	0.3	3.517	A
D	396	99	330	1518	0.261	395	643	0.3	0.4	3.221	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	232	58	554	1140	0.204	232	333	0.2	0.3	4.009	A
B	967	242	238	1486	0.651	964	549	1.1	1.8	6.913	A
C	378	94	812	1274	0.296	377	389	0.3	0.4	4.108	A
D	484	121	403	1479	0.327	484	786	0.4	0.5	3.633	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	232	58	555	1139	0.204	232	334	0.3	0.3	4.012	A
B	967	242	238	1486	0.651	967	549	1.8	1.9	6.991	A
C	378	94	815	1273	0.297	378	390	0.4	0.4	4.117	A
D	484	121	404	1479	0.328	484	788	0.5	0.5	3.637	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	190	47	454	1189	0.160	190	273	0.3	0.2	3.642	A
B	789	197	194	1510	0.523	792	449	1.9	1.1	5.080	A
C	308	77	668	1354	0.228	309	319	0.4	0.3	3.530	A
D	396	99	331	1518	0.261	396	646	0.5	0.4	3.229	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	159	40	380	1226	0.130	159	228	0.2	0.2	3.414	A
B	661	165	163	1528	0.433	662	376	1.1	0.8	4.203	A
C	258	65	558	1415	0.183	259	267	0.3	0.2	3.188	A
D	331	83	277	1546	0.214	332	540	0.4	0.3	2.979	A

2030-Base+Comm, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	J2 Hookhams Lane / Norse Road / Church Lane / Wentworth Drive	Standard Roundabout		A, B, C, D	7.34	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2030-Base+Comm	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	497	100.000
B		ONE HOUR	✓	801	100.000
C		ONE HOUR	✓	375	100.000
D		ONE HOUR	✓	876	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		A	B	C	D	
From	A	0	265	121	111	
	B	155	0	142	504	
	C	68	131	0	176	
	D	56	685	135	0	

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	
From	A	0	1	1	1	
	B	2	0	4	1	
	C	0	5	0	2	
	D	0	2	2	0	

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.61	10.40	1.6	B	456	684
B	0.63	7.16	1.7	A	735	1103
C	0.33	4.39	0.5	A	344	516
D	0.65	7.02	1.9	A	804	1206

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	374	94	713	1061	0.353	372	209	0.0	0.5	5.275	A
B	603	151	275	1465	0.412	600	810	0.0	0.7	4.221	A
C	282	71	577	1404	0.201	281	298	0.0	0.3	3.287	A
D	659	165	265	1552	0.425	657	593	0.0	0.7	4.081	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	447	112	854	992	0.450	446	250	0.5	0.8	6.643	A
B	720	180	329	1435	0.502	719	970	0.7	1.0	5.108	A
C	337	84	691	1341	0.251	337	357	0.3	0.3	3.679	A
D	788	197	318	1525	0.517	786	710	0.7	1.1	4.957	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	547	137	1044	898	0.609	544	306	0.8	1.5	10.199	B
B	882	220	402	1394	0.633	879	1186	1.0	1.7	7.075	A
C	413	103	845	1256	0.329	412	437	0.3	0.5	4.376	A
D	964	241	389	1487	0.649	961	868	1.1	1.8	6.939	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	547	137	1047	896	0.610	547	307	1.5	1.6	10.399	B
B	882	220	404	1393	0.633	882	1190	1.7	1.7	7.164	A
C	413	103	848	1255	0.329	413	438	0.5	0.5	4.389	A
D	964	241	390	1486	0.649	964	871	1.8	1.9	7.022	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	447	112	858	990	0.451	450	252	1.6	0.8	6.769	A
B	720	180	332	1433	0.502	723	976	1.7	1.0	5.174	A
C	337	84	695	1339	0.252	338	359	0.5	0.3	3.695	A
D	788	197	319	1524	0.517	791	714	1.9	1.1	5.023	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	374	94	717	1059	0.353	375	210	0.8	0.6	5.325	A
B	603	151	277	1464	0.412	604	816	1.0	0.7	4.266	A
C	282	71	581	1402	0.201	283	300	0.3	0.3	3.301	A
D	659	165	267	1551	0.425	661	597	1.1	0.8	4.123	A

2030-Base+Comm, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	J2 Hookhams Lane / Norse Road / Church Lane / Wentworth Drive	Standard Roundabout		A, B, C, D	7.24	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2030-Base+Comm	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	245	100.000
B		ONE HOUR	✓	1016	100.000
C		ONE HOUR	✓	397	100.000
D		ONE HOUR	✓	510	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		A	B	C	D	
From	A	0	84	90	71	
	B	177	0	230	609	
	C	115	135	0	147	
	D	63	358	89	0	

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	
From	A	0	0	3	0	
	B	1	0	3	0	
	C	0	5	0	2	
	D	0	0	3	0	

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.25	4.40	0.3	A	225	337
B	0.76	10.46	3.2	B	932	1398
C	0.36	4.82	0.6	A	364	546
D	0.39	4.10	0.6	A	468	702

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	184	46	437	1198	0.154	184	266	0.0	0.2	3.587	A
B	765	191	187	1514	0.505	761	433	0.0	1.0	4.795	A
C	299	75	642	1368	0.218	298	306	0.0	0.3	3.440	A
D	384	96	320	1523	0.252	383	620	0.0	0.3	3.167	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	220	55	523	1155	0.191	220	319	0.2	0.2	3.890	A
B	913	228	225	1493	0.612	911	518	1.0	1.6	6.214	A
C	357	89	769	1298	0.275	356	367	0.3	0.4	3.912	A
D	458	115	383	1490	0.308	458	742	0.3	0.4	3.504	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	270	67	640	1097	0.246	269	389	0.2	0.3	4.393	A
B	1119	280	275	1465	0.764	1112	634	1.6	3.1	10.122	B
C	437	109	939	1204	0.363	436	449	0.4	0.6	4.794	A
D	562	140	469	1445	0.389	561	906	0.4	0.6	4.090	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	270	67	641	1097	0.246	270	391	0.3	0.3	4.399	A
B	1119	280	275	1465	0.764	1118	635	3.1	3.2	10.458	B
C	437	109	943	1202	0.364	437	450	0.6	0.6	4.820	A
D	562	140	470	1444	0.389	562	910	0.6	0.6	4.100	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	220	55	524	1154	0.191	221	321	0.3	0.2	3.898	A
B	913	228	225	1493	0.612	920	520	3.2	1.6	6.400	A
C	357	89	775	1295	0.276	358	369	0.6	0.4	3.938	A
D	458	115	385	1489	0.308	459	748	0.6	0.4	3.519	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	184	46	439	1197	0.154	185	268	0.2	0.2	3.598	A
B	765	191	188	1513	0.505	767	435	1.6	1.0	4.880	A
C	299	75	647	1366	0.219	299	309	0.4	0.3	3.457	A
D	384	96	322	1522	0.252	384	624	0.4	0.3	3.180	A

2030-Base+Comm+Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	J2 Hookhams Lane / Norse Road / Church Lane / Wentworth Drive	Standard Roundabout		A, B, C, D	11.75	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2030-Base+Comm+Dev	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	684	100.000
B		ONE HOUR	✓	823	100.000
C		ONE HOUR	✓	395	100.000
D		ONE HOUR	✓	896	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		A	B	C	D	
From	A	0	334	182	168	
	B	177	0	142	504	
	C	88	131	0	176	
	D	76	685	135	0	

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	
From	A	0	1	1	1	
	B	2	0	4	1	
	C	0	5	0	2	
	D	0	2	2	0	

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.84	24.60	4.9	C	628	941
B	0.69	8.83	2.2	A	755	1133
C	0.36	4.78	0.6	A	362	544
D	0.67	7.70	2.1	A	822	1233

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	515	129	713	1061	0.485	511	256	0.0	0.9	6.564	A
B	620	155	363	1416	0.438	616	861	0.0	0.8	4.564	A
C	297	74	636	1372	0.217	296	344	0.0	0.3	3.428	A
D	675	169	297	1536	0.439	671	635	0.0	0.8	4.226	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	615	154	853	992	0.620	612	306	0.9	1.6	9.509	A
B	740	185	434	1376	0.538	738	1031	0.8	1.2	5.731	A
C	355	89	761	1302	0.273	355	411	0.3	0.4	3.892	A
D	805	201	355	1505	0.535	804	761	0.8	1.2	5.222	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	753	188	1044	898	0.838	741	374	1.6	4.6	21.707	C
B	906	227	527	1324	0.685	902	1257	1.2	2.1	8.606	A
C	435	109	929	1210	0.359	434	501	0.4	0.6	4.751	A
D	987	247	435	1463	0.674	983	928	1.2	2.1	7.584	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	753	188	1047	896	0.840	752	375	4.6	4.9	24.598	C
B	906	227	533	1320	0.686	906	1265	2.1	2.2	8.825	A
C	435	109	934	1207	0.360	435	505	0.6	0.6	4.780	A
D	987	247	436	1462	0.675	986	933	2.1	2.1	7.703	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	615	154	858	989	0.621	628	308	4.9	1.7	10.382	B
B	740	185	443	1371	0.540	744	1043	2.2	1.2	5.876	A
C	355	89	770	1298	0.274	356	417	0.6	0.4	3.922	A
D	805	201	357	1504	0.536	809	768	2.1	1.2	5.303	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	515	129	718	1059	0.486	518	257	1.7	1.0	6.754	A
B	620	155	367	1414	0.438	621	869	1.2	0.8	4.631	A
C	297	74	641	1369	0.217	298	347	0.4	0.3	3.446	A
D	675	169	299	1535	0.440	676	640	1.2	0.8	4.278	A

2030-Base+Comm+Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	J2 Hookhams Lane / Norse Road / Church Lane / Wentworth Drive	Standard Roundabout		A, B, C, D	8.78	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2030-Base+Comm+Dev	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	305	100.000
B		ONE HOUR	✓	1066	100.000
C		ONE HOUR	✓	440	100.000
D		ONE HOUR	✓	550	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		A	B	C	D	
From	A	0	106	110	89	
	B	227	0	230	609	
	C	158	135	0	147	
	D	103	358	89	0	

Vehicle Mix

Heavy Vehicle Percentages

		To				
		A	B	C	D	
From	A	0	0	3	0	
	B	1	0	3	0	
	C	0	5	0	2	
	D	0	0	3	0	

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.31	4.78	0.4	A	280	420
B	0.81	13.46	4.3	B	978	1467
C	0.42	5.44	0.7	A	404	606
D	0.44	4.61	0.8	A	505	757

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	230	57	436	1198	0.192	229	366	0.0	0.2	3.751	A
B	803	201	216	1498	0.536	798	449	0.0	1.1	5.153	A
C	331	83	693	1340	0.247	330	321	0.0	0.3	3.634	A
D	414	104	390	1487	0.279	413	633	0.0	0.4	3.363	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	274	69	523	1155	0.237	274	438	0.2	0.3	4.127	A
B	958	240	259	1474	0.650	956	538	1.1	1.8	6.964	A
C	396	99	829	1265	0.313	395	385	0.3	0.5	4.225	A
D	494	124	467	1446	0.342	494	758	0.4	0.5	3.797	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	336	84	640	1097	0.306	335	535	0.3	0.4	4.770	A
B	1174	293	317	1442	0.814	1165	658	1.8	4.1	12.699	B
C	484	121	1011	1164	0.416	483	470	0.5	0.7	5.393	A
D	606	151	570	1391	0.435	605	925	0.5	0.8	4.593	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	336	84	641	1097	0.306	336	537	0.4	0.4	4.780	A
B	1174	293	317	1441	0.814	1173	659	4.1	4.3	13.457	B
C	484	121	1018	1161	0.417	484	472	0.7	0.7	5.439	A
D	606	151	572	1390	0.436	606	930	0.8	0.8	4.611	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	274	69	524	1154	0.238	275	441	0.4	0.3	4.138	A
B	958	240	259	1474	0.650	968	540	4.3	1.9	7.305	A
C	396	99	839	1259	0.314	397	388	0.7	0.5	4.268	A
D	494	124	470	1444	0.342	495	765	0.8	0.5	3.819	A

18:00 - 18:15

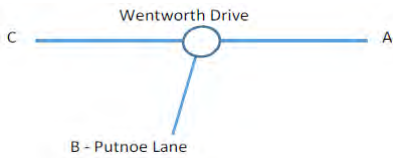
Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	230	57	439	1197	0.192	230	368	0.3	0.2	3.767	A
B	803	201	217	1497	0.536	805	452	1.9	1.2	5.270	A
C	331	83	699	1337	0.248	332	324	0.5	0.3	3.662	A
D	414	104	392	1485	0.279	415	638	0.5	0.4	3.380	A



Appendix P

J2 – Wentworth Drive / Putnoe Lane: Analysis – Input and Results

J2: Wentworth Drive / Putnoe Lane



Background 2019

AM	A	B	C
A	10	271	395
B	217	0	45
C	508	88	0

Tempo 2019-2030

AM	A	B	C
A	1.1369	1.1369	1.1369
B	1.1369	1.1369	1.1369
C	1.1369	1.1369	1.1369

Background 2030

AM	A	B	C
A	11	308	449
B	247	0	51
C	578	99	0

Committed Development

AM	A	B	C
A	0	1	1
B	0	0	0
C	0	0	0

Background 2030 + Committed

AM	A	B	C
A	11	309	450
B	247	0	51
C	578	99	0

Development

AM	A	B	C
A	0	28	22
B	7	0	0
C	6	0	0

Background 2030 + Development

AM	A	B	C
A	11	337	472
B	254	0	51
C	583	99	0

Background 2019

PM	A	B	C
A	2	223	470
B	146	0	51
C	289	37	0

Tempo 2019-2030

PM	A	B	C
A	1.1554	1.1554	1.1554
B	1.1554	1.1554	1.1554
C	1.1554	1.1554	1.1554

Background 2030

PM	A	B	C
A	2	258	544
B	169	0	59
C	334	43	0

Committed Development

PM	A	B	C
A	0	2	0
B	1	0	0
C	1	0	0

10

Background 2030 + Committed

PM	A	B	C
A	2	259	544
B	169	0	59
C	335	43	0

Development

PM	A	B	C
A	0	10	8
B	22	0	0
C	17	0	0

Background 2030 + Development

PM	A	B	C
A	2	269	551
B	191	0	59
C	352	43	0

HGV%age

AM	A	B	C
A	0%	1%	1%
B	0%	0%	0%
C	2%	0%	0%

HGV%age

PM	A	B	C
A	0%	0%	0%
B	0%	0%	0%
C	0%	0%	0%

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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Filename: J2-Wentworth _ Putnoe.j9
Path: C:\Users\Martin\OneDrive - Martin Andrews Consulting Ltd\Projects 200 - 299\248 - Salph End, Bedford\Reports\TA\Junction Analysis
Report generation date: 16/01/2020 16:10:38

- »2019-Base, AM
- »2019-Base, PM
- »2030-Base+Comm, AM
- »2030-Base+Comm, PM
- »2030-Base+Comm+Dev, AM
- »2030-Base+Comm+Dev, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2019-Base								
Arm A	2.3	11.35	0.70	B	2.2	10.73	0.70	B
Arm B	0.8	10.28	0.45	B	0.6	9.61	0.37	A
Arm C	3.6	20.49	0.79	C	0.7	6.79	0.40	A
2030-Base+Comm								
Arm A	3.9	17.25	0.80	C	4.0	17.00	0.81	C
Arm B	1.2	13.25	0.55	B	0.9	12.46	0.47	B
Arm C	9.0	46.42	0.92	E	0.9	7.88	0.48	A
2030-Base+Comm+Dev								
Arm A	5.5	22.90	0.86	C	4.5	18.58	0.83	C
Arm B	1.3	14.46	0.57	B	1.0	13.84	0.51	B
Arm C	10.0	51.46	0.93	F	1.0	8.53	0.51	A

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

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

File summary

File Description

Title	
Location	J2 Wentworth Rd / Putnoe Ln
Site number	
Date	24/07/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DESKTOP-2HPI2P9\Martin
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

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9	5.75				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)	Run automatically
D1	2019-Base	AM	ONE HOUR	07:45	09:15	15	✓
D2	2019-Base	PM	ONE HOUR	16:45	18:15	15	✓
D3	2030-Base+Comm	AM	ONE HOUR	07:45	09:15	15	✓
D4	2030-Base+Comm	PM	ONE HOUR	16:45	18:15	15	✓
D5	2030-Base+Comm+Dev	AM	ONE HOUR	07:45	09:15	15	✓
D6	2030-Base+Comm+Dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2019-Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and C have 82% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
2	Wentworth Dr / Putnoe Ln	Mini-roundabout		A, B, C	14.72	B

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Name	Description
A	Wentworth Rd (E)	
B	Putnoe Rd	
C	Wentworth Rd (W)	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
A	3.65	3.65	6.24	6.4	11.28	8.12	0.0	
B	3.75	3.75	6.47	1.9	12.13	7.68	0.0	
C	3.65	3.65	3.65	0.0	16.23	15.95	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.659	1127
B	0.638	923
C	0.655	996

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019-Base	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	676	100.000
B		ONE HOUR	✓	262	100.000
C		ONE HOUR	✓	596	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	10	271	395
	B	217	0	45
	C	508	88	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	1
	B	0	0	0
	C	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.70	11.35	2.3	B	620	930
B	0.45	10.28	0.8	B	240	361
C	0.79	20.49	3.6	C	547	820

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	509	127	66	1084	0.470	505	549	0.0	0.9	6.236	A
B	197	49	303	730	0.270	196	268	0.0	0.4	6.724	A
C	449	112	170	885	0.507	445	329	0.0	1.0	8.231	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	608	152	79	1075	0.565	606	658	0.9	1.3	7.710	A
B	236	59	363	691	0.341	235	322	0.4	0.5	7.877	A
C	536	134	204	863	0.621	533	395	1.0	1.6	11.022	B

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	744	186	96	1064	0.700	740	802	1.3	2.3	11.080	B
B	288	72	444	640	0.451	287	393	0.5	0.8	10.171	B
C	656	164	249	833	0.788	649	482	1.6	3.4	19.124	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	744	186	97	1063	0.700	744	809	2.3	2.3	11.349	B
B	288	72	446	639	0.452	288	395	0.8	0.8	10.277	B
C	656	164	250	832	0.788	656	484	3.4	3.6	20.488	C

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	608	152	80	1074	0.566	612	668	2.3	1.3	7.907	A
B	236	59	366	689	0.342	237	325	0.8	0.5	7.974	A
C	536	134	205	862	0.622	543	398	3.6	1.7	11.739	B

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	509	127	67	1083	0.470	511	556	1.3	0.9	6.355	A
B	197	49	306	728	0.271	198	271	0.5	0.4	6.800	A
C	449	112	171	884	0.508	451	332	1.7	1.1	8.506	A

2019-Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and C have 83% of the total flow for the roundabout for one or more time segments]
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	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
2	Wentworth Dr / Putnoe Ln	Mini-roundabout		A, B, C	9.49	A

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2019-Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	695	100.000
B		ONE HOUR	✓	197	100.000
C		ONE HOUR	✓	326	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	2	223	470
	B	146	0	51
	C	289	37	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

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.70	10.73	2.2	B	638	957
B	0.37	9.61	0.6	A	181	271
C	0.40	6.79	0.7	A	299	449

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	523	131	28	1109	0.472	520	327	0.0	0.9	6.075	A
B	148	37	353	698	0.213	147	194	0.0	0.3	6.527	A
C	245	61	111	924	0.266	244	390	0.0	0.4	5.286	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	625	156	33	1105	0.565	623	392	0.9	1.3	7.444	A
B	177	44	423	653	0.271	177	233	0.3	0.4	7.551	A
C	293	73	133	909	0.322	293	467	0.4	0.5	5.835	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	765	191	41	1100	0.696	762	480	1.3	2.2	10.512	B
B	217	54	517	593	0.366	216	285	0.4	0.6	9.529	A
C	359	90	162	890	0.403	358	571	0.5	0.7	6.762	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	765	191	41	1100	0.696	765	481	2.2	2.2	10.728	B
B	217	54	520	592	0.367	217	286	0.6	0.6	9.606	A
C	359	90	163	889	0.404	359	574	0.7	0.7	6.785	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	625	156	33	1105	0.565	628	394	2.2	1.3	7.610	A
B	177	44	427	651	0.272	178	235	0.6	0.4	7.625	A
C	293	73	134	909	0.323	294	471	0.7	0.5	5.862	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	523	131	28	1109	0.472	525	330	1.3	0.9	6.184	A
B	148	37	356	696	0.213	149	196	0.4	0.3	6.590	A
C	245	61	112	923	0.266	246	393	0.5	0.4	5.320	A

2030-Base+Comm, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and C have 82% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
2	Wentworth Dr / Putnoe Ln	Mini-roundabout		A, B, C	27.88	D

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2030-Base+Comm	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	770	100.000
B		ONE HOUR	✓	298	100.000
C		ONE HOUR	✓	677	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	11	309	450
	B	247	0	51
	C	578	99	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	1	1
	B	0	0	0
	C	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.80	17.25	3.9	C	707	1060
B	0.55	13.25	1.2	B	273	410
C	0.92	46.42	9.0	E	621	932

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	580	145	74	1078	0.538	575	623	0.0	1.2	7.145	A
B	224	56	344	703	0.319	222	304	0.0	0.5	7.459	A
C	510	127	193	870	0.586	504	374	0.0	1.4	9.854	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	692	173	88	1069	0.648	690	747	1.2	1.8	9.501	A
B	268	67	413	660	0.406	267	365	0.5	0.7	9.150	A
C	609	152	231	845	0.721	604	449	1.4	2.5	14.941	B

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	848	212	106	1057	0.802	840	901	1.8	3.8	16.133	C
B	328	82	503	602	0.545	326	443	0.7	1.2	12.948	B
C	745	186	282	811	0.919	725	547	2.5	7.7	35.750	E

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	848	212	108	1056	0.803	847	916	3.8	3.9	17.250	C
B	328	82	507	599	0.547	328	448	1.2	1.2	13.249	B
C	745	186	284	810	0.920	740	551	7.7	9.0	46.419	E

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	692	173	93	1066	0.649	700	774	3.9	1.9	10.125	B
B	268	67	419	656	0.409	270	374	1.2	0.7	9.380	A
C	609	152	234	843	0.722	633	455	9.0	2.8	19.192	C

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	580	145	75	1077	0.538	583	635	1.9	1.2	7.373	A
B	224	56	349	700	0.320	225	309	0.7	0.5	7.589	A
C	510	127	195	868	0.587	515	379	2.8	1.5	10.498	B

2030-Base+Comm, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and C have 83% of the total flow for the roundabout for one or more time segments]
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	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
2	Wentworth Dr / Putnoe Ln	Mini-roundabout		A, B, C	13.82	B

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2030-Base+Comm	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	805	100.000
B		ONE HOUR	✓	228	100.000
C		ONE HOUR	✓	378	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	2	259	544
	B	169	0	59
	C	335	43	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

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.81	17.00	4.0	C	739	1108
B	0.47	12.46	0.9	B	209	314
C	0.48	7.88	0.9	A	347	520

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	606	152	32	1106	0.548	601	378	0.0	1.2	7.070	A
B	172	43	408	663	0.259	170	226	0.0	0.3	7.288	A
C	285	71	128	912	0.312	283	450	0.0	0.4	5.701	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	724	181	39	1102	0.657	721	454	1.2	1.9	9.392	A
B	205	51	489	611	0.335	204	271	0.3	0.5	8.839	A
C	340	85	153	896	0.379	339	540	0.4	0.6	6.462	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	886	222	47	1096	0.809	878	555	1.9	3.9	15.962	C
B	251	63	596	543	0.462	250	330	0.5	0.8	12.214	B
C	416	104	187	873	0.476	415	658	0.6	0.9	7.832	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	886	222	47	1096	0.809	886	557	3.9	4.0	16.997	C
B	251	63	601	540	0.465	251	332	0.8	0.9	12.455	B
C	416	104	188	873	0.477	416	663	0.9	0.9	7.881	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	724	181	39	1101	0.657	732	457	4.0	2.0	9.950	A
B	205	51	496	606	0.338	206	274	0.9	0.5	9.031	A
C	340	85	155	895	0.380	341	548	0.9	0.6	6.515	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	606	152	32	1106	0.548	609	382	2.0	1.2	7.293	A
B	172	43	413	659	0.260	172	228	0.5	0.4	7.398	A
C	285	71	129	911	0.312	285	456	0.6	0.5	5.753	A

2030-Base+Comm+Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and C have 83% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
2	Wentworth Dr / Putnoe Ln	Mini-roundabout		A, B, C	32.25	D

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2030-Base+Comm+Dev	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	820	100.000
B		ONE HOUR	✓	305	100.000
C		ONE HOUR	✓	682	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	11	337	472
	B	254	0	51
	C	583	99	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	1	1
	B	0	0	0
	C	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.86	22.90	5.5	C	752	1129
B	0.57	14.46	1.3	B	280	420
C	0.93	51.46	10.0	F	626	939

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	617	154	74	1078	0.572	612	632	0.0	1.3	7.695	A
B	230	57	361	693	0.331	228	325	0.0	0.5	7.705	A
C	513	128	198	867	0.593	508	390	0.0	1.4	10.040	B

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	737	184	88	1069	0.690	734	758	1.3	2.2	10.717	B
B	274	69	432	647	0.424	273	390	0.5	0.7	9.602	A
C	613	153	237	841	0.729	609	468	1.4	2.6	15.449	C

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	903	226	106	1057	0.854	891	912	2.2	5.1	20.460	C
B	336	84	525	588	0.571	334	472	0.7	1.3	14.011	B
C	751	188	290	806	0.931	728	569	2.6	8.4	38.343	E

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	903	226	108	1056	0.855	901	928	5.1	5.5	22.898	C
B	336	84	531	584	0.575	336	478	1.3	1.3	14.457	B
C	751	188	292	805	0.933	744	575	8.4	10.0	51.461	F

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	737	184	93	1066	0.692	750	789	5.5	2.3	11.901	B
B	274	69	442	641	0.428	276	401	1.3	0.8	9.925	A
C	613	153	240	839	0.731	641	478	10.0	2.9	20.781	C

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	617	154	75	1077	0.573	621	644	2.3	1.4	8.020	A
B	230	57	366	690	0.333	231	331	0.8	0.5	7.863	A
C	513	128	200	865	0.594	519	396	2.9	1.5	10.745	B

2030-Base+Comm+Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and C have 82% of the total flow for the roundabout for one or more time segments]
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	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
2	Wentworth Dr / Putnoe Ln	Mini-roundabout		A, B, C	15.07	C

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2030-Base+Comm+Dev	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	822	100.000
B		ONE HOUR	✓	250	100.000
C		ONE HOUR	✓	395	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	2	269	551
	B	191	0	59
	C	352	43	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

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.83	18.58	4.5	C	754	1131
B	0.51	13.84	1.0	B	229	344
C	0.51	8.53	1.0	A	362	544

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	619	155	32	1106	0.560	614	407	0.0	1.2	7.247	A
B	188	47	413	660	0.285	187	233	0.0	0.4	7.589	A
C	297	74	144	902	0.330	295	456	0.0	0.5	5.918	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	739	185	39	1102	0.671	736	489	1.2	2.0	9.768	A
B	225	56	495	607	0.370	224	279	0.4	0.6	9.382	A
C	355	89	173	883	0.402	354	546	0.5	0.7	6.801	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	905	226	47	1096	0.826	896	597	2.0	4.3	17.226	C
B	275	69	603	539	0.511	274	340	0.6	1.0	13.490	B
C	435	109	211	858	0.507	434	665	0.7	1.0	8.456	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	905	226	47	1096	0.826	904	600	4.3	4.5	18.583	C
B	275	69	608	535	0.515	275	343	1.0	1.0	13.843	B
C	435	109	212	857	0.507	435	671	1.0	1.0	8.526	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	739	185	39	1101	0.671	749	492	4.5	2.1	10.462	B
B	225	56	504	602	0.373	226	284	1.0	0.6	9.637	A
C	355	89	175	882	0.403	356	555	1.0	0.7	6.871	A

18:00 - 18:15

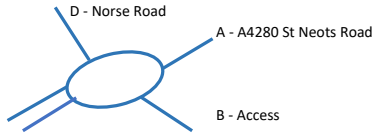
Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	619	155	32	1106	0.560	622	412	2.1	1.3	7.496	A
B	188	47	419	656	0.287	189	236	0.6	0.4	7.723	A
C	297	74	146	901	0.330	298	462	0.7	0.5	5.982	A



Appendix Q

J3 – A4280 St Neots Road / A4280 Goldington Road / Norse Road: Analysis – Input and Results

J3: Norse Rd / A4280 St Neots Road / A4280 Goldington Rd



C - A4280 Goldington Road

Background 2019

AM	A	B	C	D
A	0	2	664	707
B	4	0	2	3
C	570	2	0	179
D	672	1	323	0

Tempo 2019-2030

AM	A	B	C	D
A	1.1369	1.1369	1.1369	1.1369
B	1.1369	1.1369	1.1369	1.1369
C	1.1369	1.1369	1.1369	1.1369
D	1.1369	1.1369	1.1369	1.1369

Background 2030

AM	A	B	C	D
A	0	2	754	803
B	5	0	2	3
C	648	2	0	204
D	764	1	367	0

Committed Development

AM	A	B	C	D
A	0	0	0	0
B	0	0	0	0
C	0	0	0	0
D	2	0	0	0

Background 2030 + Committed

AM	A	B	C	D
A	0	2	754	804
B	5	0	2	3
C	648	2	0	204
D	766	1	367	0

Development

AM	A	B	C	D
A	0	0	0	14
B	0	0	0	0
C	0	0	0	0
D	55	0	0	0

Background 2030 + Development

AM	A	B	C	D
A	0	2	754	818
B	5	0	2	3
C	648	2	0	204
D	821	1	367	0

Background 2019

PM	A	B	C	D
A	0	2	693	762
B	4	0	6	2
C	525	4	0	302
D	403	0	287	0

Tempo 2019-2030

PM	A	B	C	D
A	1.1554	1.1554	1.1554	1.1554
B	1.1554	1.1554	1.1554	1.1554
C	1.1554	1.1554	1.1554	1.1554
D	1.1554	1.1554	1.1554	1.1554

Background 2030

PM	A	B	C	D
A	0	2	801	880
B	5	0	7	2
C	606	4	0	349
D	465	0	332	0

Committed Development

PM	A	B	C	D
A	0	0	0	1
B	0	0	0	0
C	0	0	0	0
D	1	0	0	0

Background 2030 + Committed

PM	A	B	C	D
A	0	2	801	882
B	5	0	7	2
C	606	4	0	349
D	466	0	332	0

Development

PM	A	B	C	D
A	0	0	0	42
B	0	0	0	0
C	0	0	0	0
D	19	0	0	0

Background 2030 + Development

PM	A	B	C	D
A	0	2	801	924
B	5	0	7	2
C	606	4	0	349
D	485	0	332	0

HGV%age

AM	A	B	C	D
A	0%	0%	1%	2%
B	0%	0%	0%	0%
C	2%	0%	0%	1%
D	2%	0%	3%	0%

HGV%age

PM	A	B	C	D
A	0%	0%	0%	1%
B	0%	0%	0%	0%
C	1%	0%	0%	1%
D	1%	0%	2%	0%

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk
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Filename: J3-St Neots_Norse Rd-Jan 2020.j9
Path: C:\Users\Martin\OneDrive - Martin Andrews Consulting Ltd\Projects 200 - 299\248 - Salph End, Bedford\Reports\TA\Junction Analysis
Report generation date: 17/01/2020 13:52:40

- »2019-Base, AM
- »2019-Base, PM
- »2030-Base+Comm, AM
- »2030-Base+Comm, PM
- »2030-Base+Comm+Dev, AM
- »2030-Base+Comm+Dev, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2019-Base								
Arm A	8.8	22.12	0.91	C	14.0	33.51	0.95	D
Arm B	0.4	147.01	0.29	F	1.4	369.24	0.82	F
Arm C	0.9	3.79	0.46	A	1.1	4.31	0.52	A
Arm D	2.7	8.90	0.73	A	1.0	4.70	0.49	A
2030-Base+Comm								
Arm A	54.9	105.29	1.05	F	108.4	187.89	1.12	F
Arm B	5.8	1255.58	9999999999.00	F	11.1	2419.04	9999999999.00	F
Arm C	1.2	4.48	0.53	A	1.5	5.32	0.61	A
Arm D	5.7	17.07	0.86	C	1.5	6.01	0.59	A
2030-Base+Comm+Dev								
Arm A	60.6	114.17	1.06	F	131.1	244.04	1.14	F
Arm B	7.9	2301.53	9999999999.00	F	11.2	3807.63	9999999999.00	F
Arm C	1.2	4.51	0.54	A	1.6	5.42	0.61	A
Arm D	7.8	22.82	0.90	C	1.5	6.21	0.60	A

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

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

File summary

File Description

Title	J3
Location	St Neots _ Putnoe
Site number	
Date	24/07/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DESKTOP-2HPI2P9\Martin
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

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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)	Run automatically
D1	2019-Base	AM	ONE HOUR	07:45	09:15	15	✓
D2	2019-Base	PM	ONE HOUR	16:45	18:15	15	✓
D3	2030-Base+Comm	AM	ONE HOUR	07:45	09:15	15	✓
D4	2030-Base+Comm	PM	ONE HOUR	16:45	18:15	15	✓
D5	2030-Base+Comm+Dev	AM	ONE HOUR	07:45	09:15	15	✓
D6	2030-Base+Comm+Dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2019-Base, AM

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
3	St Neots _ Putnoe	Standard Roundabout		A, B, C, D	13.87	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	St Neots Rd	
B	Southern Access	
C	Goldington Rd	
D	Norse Rd	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	3.79	7.03	30.8	14.0	60.8	25.0	
B	2.00	5.39	2.0	10.0	60.8	34.0	
C	7.82	7.91	0.1	14.7	60.8	34.0	
D	5.03	6.44	8.0	32.4	60.8	21.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.582	1876
B	0.367	717
C	0.648	2302
D	0.598	1887

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019-Base	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1373	100.000
B		ONE HOUR	✓	9	100.000
C		ONE HOUR	✓	751	100.000
D		ONE HOUR	✓	996	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	A	B	C	D	
From	A	0	2	664	707
	B	4	0	2	3
	C	570	2	0	179
	D	672	1	323	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
	A	B	C	D	
From	A	0	0	1	2
	B	0	0	0	0
	C	2	0	0	1
	D	1	0	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.91	22.12	8.8	C	1260	1890
B	0.29	147.01	0.4	F	8	12
C	0.46	3.79	0.9	A	689	1034
D	0.73	8.90	2.7	A	914	1371

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1034	258	244	1734	0.596	1028	934	0.0	1.5	5.134	A
B	7	2	1268	252	0.027	7	4	0.0	0.0	14.688	B
C	565	141	534	1955	0.289	564	741	0.0	0.4	2.628	A
D	750	187	432	1629	0.460	746	666	0.0	0.9	4.143	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1234	309	292	1706	0.724	1230	1118	1.5	2.6	7.607	A
B	8	2	1518	160	0.051	8	4	0.0	0.1	23.665	C
C	675	169	640	1887	0.358	675	886	0.4	0.6	3.018	A
D	895	224	517	1578	0.567	894	797	0.9	1.3	5.347	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1512	378	357	1668	0.906	1490	1367	2.6	8.0	18.589	C
B	10	2	1842	41	0.241	9	5	0.1	0.3	109.815	F
C	827	207	774	1800	0.459	826	1077	0.6	0.9	3.754	A
D	1097	274	633	1509	0.727	1091	967	1.3	2.6	8.680	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1512	378	359	1667	0.907	1509	1372	8.0	8.8	22.120	C
B	10	2	1862	34	0.295	10	6	0.3	0.4	147.006	F
C	827	207	784	1794	0.461	827	1087	0.9	0.9	3.788	A
D	1097	274	634	1508	0.727	1096	977	2.6	2.7	8.900	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1234	309	295	1705	0.724	1258	1125	8.8	2.7	8.609	A
B	8	2	1549	149	0.054	9	5	0.4	0.1	26.019	D
C	675	169	655	1877	0.360	676	903	0.9	0.6	3.055	A
D	895	224	519	1577	0.568	901	812	2.7	1.4	5.468	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1034	258	246	1733	0.597	1039	940	2.7	1.5	5.301	A
B	7	2	1281	247	0.027	7	4	0.1	0.0	14.999	B
C	565	141	540	1952	0.290	566	748	0.6	0.4	2.646	A
D	750	187	434	1628	0.461	752	672	1.4	0.9	4.199	A

2019-Base, PM

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
3	St Neots _ Putnoe	Standard Roundabout		A, B, C, D	20.09	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2019-Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1457	100.000
B		ONE HOUR	✓	12	100.000
C		ONE HOUR	✓	831	100.000
D		ONE HOUR	✓	690	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A	B	C	D
A	0	2	693	762
B	4	0	6	2
C	525	4	0	302
D	403	0	287	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
	A	B	C	D	
From	A	0	0	0	1
	B	0	0	0	0
	C	1	0	0	1
	D	1	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.95	33.51	14.0	D	1337	2005
B	0.82	369.24	1.4	F	11	17
C	0.52	4.31	1.1	A	763	1144
D	0.49	4.70	1.0	A	633	950

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1097	274	218	1749	0.627	1090	699	0.0	1.7	5.440	A
B	9	2	1304	239	0.038	9	4	0.0	0.0	15.665	C
C	626	156	575	1929	0.324	624	738	0.0	0.5	2.781	A
D	519	130	400	1648	0.315	518	798	0.0	0.5	3.224	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1310	327	261	1724	0.760	1304	837	1.7	3.1	8.506	A
B	11	3	1560	144	0.075	11	5	0.0	0.1	26.852	D
C	747	187	687	1856	0.402	746	883	0.5	0.7	3.274	A
D	620	155	479	1601	0.387	620	955	0.5	0.6	3.718	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1604	401	320	1690	0.949	1569	1024	3.1	11.9	24.757	C
B	13	3	1882	26	0.503	11	7	0.1	0.7	213.459	F
C	915	229	826	1767	0.518	913	1067	0.7	1.1	4.253	A
D	760	190	585	1537	0.494	758	1154	0.6	1.0	4.677	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1604	401	320	1690	0.949	1596	1025	11.9	14.0	33.509	D
B	13	3	1909	16	0.816	10	7	0.7	1.4	369.236	F
C	915	229	840	1758	0.521	915	1080	1.1	1.1	4.314	A
D	760	190	586	1537	0.494	760	1169	1.0	1.0	4.696	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1310	327	262	1723	0.760	1353	841	14.0	3.3	10.808	B
B	11	3	1609	126	0.085	16	5	1.4	0.1	33.878	D
C	747	187	715	1838	0.406	749	910	1.1	0.7	3.340	A
D	620	155	482	1599	0.388	622	982	1.0	0.6	3.739	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1097	274	219	1748	0.627	1103	703	3.3	1.7	5.663	A
B	9	2	1318	233	0.039	9	5	0.1	0.0	16.078	C
C	626	156	582	1925	0.325	626	746	0.7	0.5	2.801	A
D	519	130	402	1647	0.315	520	806	0.6	0.5	3.241	A

2030-Base+Comm, AM

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
3	St Neots _ Putnoe	Standard Roundabout		A, B, C, D	56.21	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2030-Base+Comm	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1560	100.000
B		ONE HOUR	✓	10	100.000
C		ONE HOUR	✓	854	100.000
D		ONE HOUR	✓	1134	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	A	B	C	D	
From	A	0	2	754	804
	B	5	0	2	3
	C	648	2	0	204
	D	766	1	367	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
	A	B	C	D	
From	A	0	0	1	2
	B	0	0	0	0
	C	2	0	0	1
	D	1	0	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	1.05	105.29	54.9	F	1431	2147
B	999999999.00	1255.58	5.8	F	9	14
C	0.53	4.48	1.2	A	784	1175
D	0.86	17.07	5.7	C	1041	1561

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1174	294	277	1715	0.685	1166	1064	0.0	2.2	6.558	A
B	8	2	1439	189	0.040	7	4	0.0	0.0	19.812	C
C	643	161	607	1909	0.337	641	840	0.0	0.5	2.884	A
D	854	213	491	1593	0.536	849	756	0.0	1.2	4.899	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1402	351	332	1683	0.833	1392	1273	2.2	4.7	12.151	B
B	9	2	1719	86	0.104	9	4	0.0	0.1	46.381	E
C	768	192	724	1832	0.419	767	1004	0.5	0.7	3.434	A
D	1019	255	588	1536	0.664	1016	903	1.2	2.0	7.020	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1718	429	403	1642	1.046	1605	1546	4.7	32.9	52.476	F
B	11	3	2002	0	999999999.000	0	5	0.1	2.9	1255.576	F
C	940	235	827	1766	0.532	939	1175	0.7	1.1	4.419	A
D	1249	312	714	1460	0.855	1235	1051	2.0	5.4	15.433	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1718	429	407	1639	1.048	1629	1556	32.9	54.9	105.289	F
B	11	3	2031	0	999999999.000	0	5	2.9	5.6	216.449	F
C	940	235	840	1758	0.535	940	1191	1.1	1.2	4.481	A
D	1249	312	716	1459	0.856	1247	1064	5.4	5.7	17.067	C

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1402	351	337	1680	0.835	1597	1286	54.9	6.2	61.532	F
B	9	2	1930	9	1.033	8	5	5.6	5.8	1001.220	F
C	768	192	830	1764	0.435	769	1108	1.2	0.8	3.686	A
D	1019	255	590	1535	0.664	1034	1009	5.7	2.1	7.528	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1174	294	280	1713	0.685	1190	1083	6.2	2.3	7.186	A
B	8	2	1466	179	0.042	31	4	5.8	0.0	28.144	D
C	643	161	638	1888	0.340	644	859	0.8	0.5	2.945	A
D	854	213	506	1585	0.539	857	776	2.1	1.2	5.064	A

2030-Base+Comm, PM

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
3	St Neots _ Putnoe	Standard Roundabout		A, B, C, D	104.27	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2030-Base+Comm	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1685	100.000
B		ONE HOUR	✓	14	100.000
C		ONE HOUR	✓	959	100.000
D		ONE HOUR	✓	798	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	A	B	C	D	
From	A	0	2	801	882
	B	5	0	7	2
	C	606	4	0	349
	D	466	0	332	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
	A	B	C	D	
From	A	0	0	0	1
	B	0	0	0	0
	C	1	0	0	1
	D	1	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	1.12	187.89	108.4	F	1546	2319
B	999999999.00	2419.04	11.1	F	13	19
C	0.61	5.32	1.5	A	880	1320
D	0.59	6.01	1.5	A	732	1098

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1269	317	252	1729	0.734	1258	808	0.0	2.7	7.512	A
B	11	3	1505	165	0.064	10	4	0.0	0.1	23.284	C
C	722	180	664	1872	0.386	719	852	0.0	0.6	3.149	A
D	601	150	461	1611	0.373	598	922	0.0	0.6	3.593	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1515	379	302	1701	0.891	1497	967	2.7	7.0	16.543	C
B	13	3	1794	59	0.214	12	5	0.1	0.2	75.774	F
C	862	216	790	1790	0.482	861	1016	0.6	0.9	3.908	A
D	717	179	552	1557	0.461	716	1099	0.6	0.9	4.336	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1855	464	369	1661	1.117	1646	1177	7.0	59.3	81.897	F
B	15	4	2009	0	999999999.000	0	6	0.2	4.1	2419.040	F
C	1056	264	862	1743	0.606	1053	1147	0.9	1.5	5.252	A
D	879	220	670	1487	0.591	876	1245	0.9	1.4	5.959	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1855	464	370	1661	1.117	1659	1180	59.3	108.4	187.886	F
B	15	4	2022	0	999999999.000	0	6	4.1	8.0	1724.298	F
C	1056	264	868	1739	0.607	1056	1154	1.5	1.5	5.320	A
D	879	220	672	1486	0.591	879	1253	1.4	1.5	6.013	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1515	379	303	1700	0.891	1684	966	108.4	66.1	187.626	F
B	13	3	1982	0	999999999.000	0	6	8.0	11.1	1010.724	F
C	862	216	882	1731	0.498	864	1100	1.5	1.0	4.207	A
D	717	179	550	1559	0.460	720	1196	1.5	0.9	4.364	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1269	317	253	1729	0.734	1521	828	66.1	3.0	42.225	E
B	11	3	1770	68	0.156	54	5	11.1	0.2	336.034	F
C	722	180	823	1768	0.408	723	1000	1.0	0.7	3.482	A
D	601	150	479	1601	0.375	602	1067	0.9	0.6	3.660	A

2030-Base+Comm+Dev, AM

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
3	St Neots _ Putnoe	Standard Roundabout		A, B, C, D	64.44	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2030-Base+Comm+Dev	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1573	100.000
B		ONE HOUR	✓	10	100.000
C		ONE HOUR	✓	854	100.000
D		ONE HOUR	✓	1187	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A	B	C	D
A	0	2	754	817
B	5	0	2	3
C	648	2	0	204
D	819	1	367	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
	A	B	C	D	
From	A	0	0	1	2
	B	0	0	0	0
	C	2	0	0	1
	D	1	0	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	1.06	114.17	60.6	F	1443	2165
B	999999999.00	2301.53	7.9	F	9	14
C	0.54	4.51	1.2	A	784	1175
D	0.90	22.82	7.8	C	1089	1634

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1184	296	277	1715	0.691	1175	1103	0.0	2.2	6.671	A
B	8	2	1449	185	0.041	7	4	0.0	0.0	20.197	C
C	643	161	616	1902	0.338	641	840	0.0	0.5	2.898	A
D	894	223	491	1593	0.561	888	766	0.0	1.3	5.167	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1414	354	331	1683	0.840	1403	1320	2.2	4.9	12.588	B
B	9	2	1730	82	0.110	9	4	0.0	0.1	48.894	E
C	768	192	736	1825	0.421	767	1003	0.5	0.7	3.458	A
D	1067	267	588	1536	0.695	1063	915	1.3	2.3	7.699	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1732	433	401	1643	1.054	1609	1600	4.9	35.5	55.523	F
B	11	3	2005	0	999999999.000	0	5	0.1	2.9	2301.531	F
C	940	235	836	1760	0.534	939	1169	0.7	1.2	4.450	A
D	1307	327	714	1460	0.895	1287	1060	2.3	7.2	19.335	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1732	433	407	1639	1.056	1632	1613	35.5	60.6	114.166	F
B	11	3	2033	0	999999999.000	0	5	2.9	5.6	1458.439	F
C	940	235	847	1753	0.536	940	1185	1.2	1.2	4.508	A
D	1307	327	716	1459	0.896	1304	1072	7.2	7.8	22.817	C

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1414	354	339	1679	0.842	1628	1335	60.6	7.1	74.475	F
B	9	2	1963	0	999999999.000	0	5	5.6	7.9	610.126	F
C	768	192	846	1754	0.438	769	1117	1.2	0.8	3.728	A
D	1067	267	585	1537	0.694	1089	1029	7.8	2.4	8.560	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1184	296	280	1713	0.691	1203	1128	7.1	2.3	7.424	A
B	8	2	1479	174	0.043	39	4	7.9	0.0	33.183	D
C	643	161	656	1877	0.343	644	862	0.8	0.5	2.976	A
D	894	223	510	1583	0.565	898	791	2.4	1.3	5.388	A

2030-Base+Comm+Dev, PM

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
3	St Neots _ Putnoe	Standard Roundabout		A, B, C, D	137.92	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2030-Base+Comm+Dev	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1726	100.000
B		ONE HOUR	✓	14	100.000
C		ONE HOUR	✓	959	100.000
D		ONE HOUR	✓	816	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	A	B	C	D	
From	A	0	2	801	923
	B	5	0	7	2
	C	606	4	0	349
	D	484	0	332	0

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A	B	C	D
A	0	0	0	1
B	0	0	0	0
C	1	0	0	1
D	1	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	1.14	244.04	131.1	F	1584	2376
B	999999999.00	3807.63	11.2	F	13	19
C	0.61	5.42	1.6	A	880	1320
D	0.60	6.21	1.5	A	749	1123

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1299	325	252	1729	0.751	1288	821	0.0	2.9	7.995	A
B	11	3	1535	154	0.069	10	4	0.0	0.1	25.055	D
C	722	180	694	1852	0.390	719	852	0.0	0.6	3.203	A
D	614	154	461	1611	0.381	612	952	0.0	0.6	3.643	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1552	388	302	1701	0.912	1530	983	2.9	8.4	19.094	C
B	13	3	1826	47	0.268	12	5	0.1	0.3	99.665	F
C	862	216	824	1768	0.488	861	1014	0.6	1.0	4.002	A
D	734	183	552	1557	0.471	732	1133	0.6	0.9	4.420	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1900	475	369	1661	1.144	1651	1197	8.4	70.9	95.448	F
B	15	4	2013	0	999999999.000	0	6	0.3	4.2	3265.560	F
C	1056	264	883	1730	0.610	1053	1131	1.0	1.6	5.356	A
D	898	225	670	1487	0.604	896	1266	0.9	1.5	6.155	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1900	475	370	1661	1.144	1660	1200	70.9	131.1	224.141	F
B	15	4	2023	0	999999999.000	0	6	4.2	8.0	3571.213	F
C	1056	264	887	1727	0.612	1056	1136	1.6	1.6	5.419	A
D	898	225	672	1486	0.605	898	1272	1.5	1.5	6.215	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1552	388	303	1700	0.913	1687	983	131.1	97.3	244.042	F
B	13	3	1984	0	999999999.000	0	6	8.0	11.2	3766.247	F
C	862	216	902	1717	0.502	864	1082	1.6	1.0	4.274	A
D	734	183	550	1559	0.471	736	1217	1.5	0.9	4.451	A

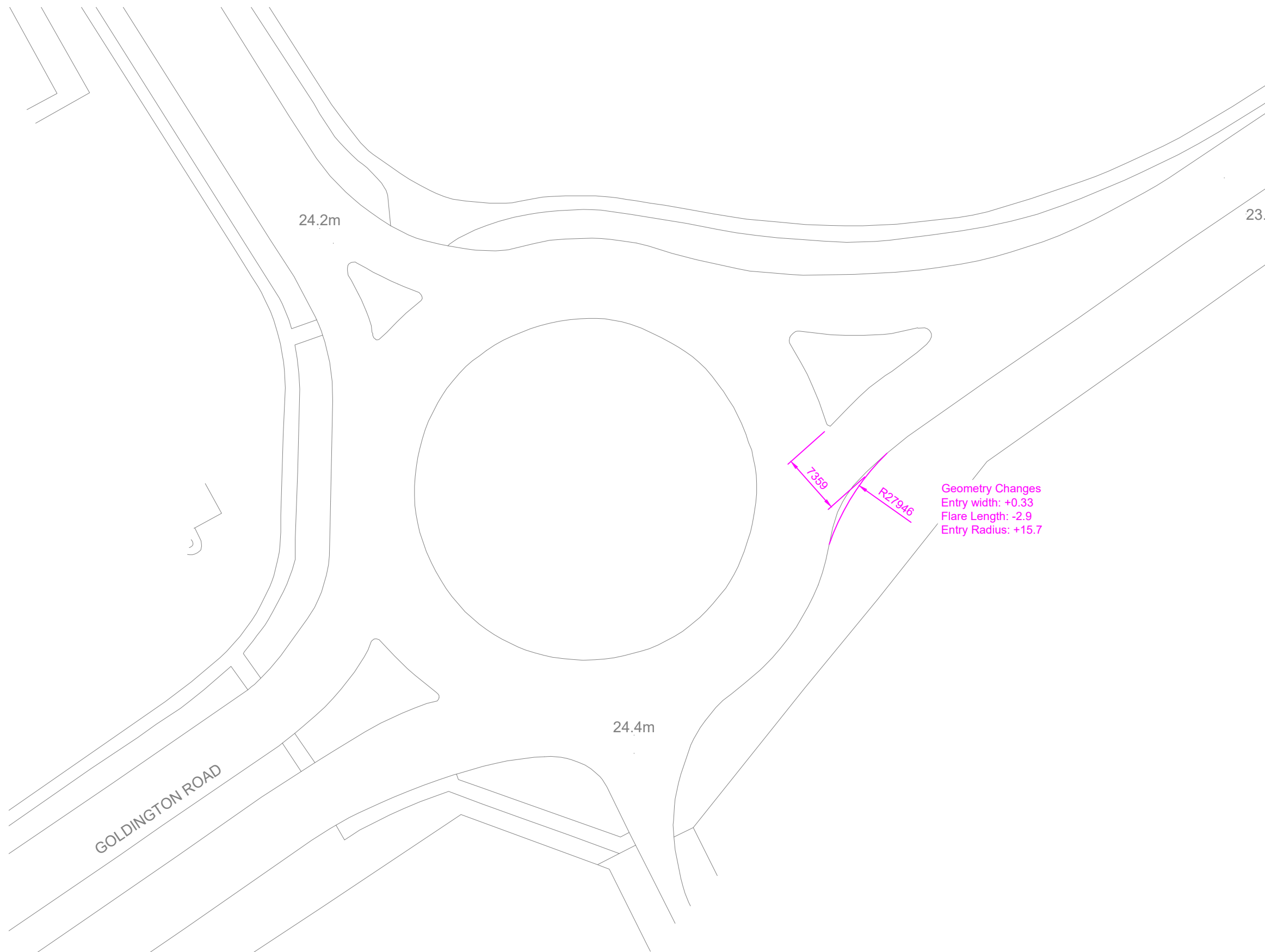
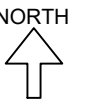
18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1299	325	253	1729	0.752	1674	826	97.3	3.7	102.232	F
B	11	3	1922	12	0.916	11	5	11.2	11.2	3807.628	F
C	722	180	900	1718	0.420	723	1032	1.0	0.7	3.656	A
D	614	154	464	1610	0.382	615	1160	0.9	0.6	3.676	A



Appendix R

J3 – Nil Detriment Improvements
MAC drawing no. 248-TA20




Notes

- 1. Based on Ordnance Survey mapping. ©Crown Copyright and database rights 2019 OS 100019980

Key

— Nil Detriment Improvements

 T: 01604 340544 Northampton Office E: info@mac-ltd.co.uk W: mac-ltd.co.uk Martin Andrews Consulting Ltd	<ul style="list-style-type: none">• Transport Assessments• Flood Risk Assessments• Highway Advice• Access Design• Drainage Strategies• Vehicle tracking	Client: Manor Oak Homes	Project: Land North of Hookhams Lane, Salph End	
		Title: J3 - Nil Detriment Improvements		Date: 25/07/19
				Drw: MJA
				Chk: MJA
		Drawing No: 248-TA20	Revision: -	
			Scale: 1:500	
			Size: A3	



Appendix S

J3 – Nil Detriment: Analysis – Input and Results

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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: J3-St Neots_Norse Rd-Jan 2020-Nil Det.j9
Path: C:\Users\Martin\OneDrive - Martin Andrews Consulting Ltd\Projects 200 - 299\248 - Salph End, Bedford\Reports\TA\Junction Analysis
Report generation date: 17/01/2020 14:00:10

- »2030-Base+Comm+Dev, AM
- »2030-Base+Comm+Dev, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2030-Base+Comm+Dev								
Arm A	29.2	60.34	1.00	F	85.5	144.00	1.08	F
Arm B	5.6	1582.22	999999999.00	F	11.2	2358.29	999999999.00	F
Arm C	1.2	4.63	0.54	A	1.7	5.68	0.62	A
Arm D	7.8	22.82	0.90	C	1.5	6.21	0.60	A

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

File summary

File Description

Title	J3
Location	St Neots _ Putnoe
Site number	
Date	24/07/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DESKTOP-2HPI2P9\Martin
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

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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)	Run automatically
D5	2030-Base+Comm+Dev	AM	ONE HOUR	07:45	09:15	15	✓
D6	2030-Base+Comm+Dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2030-Base+Comm+Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
3	St Neots _ Putnoe	Standard Roundabout		A, B, C, D	39.12	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	St Neots Rd	
B	Southern Access	
C	Goldington Rd	
D	Norse Rd	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	3.79	7.36	27.9	29.7	60.8	25.0	
B	2.00	5.39	2.0	10.0	60.8	34.0	
C	7.82	7.91	0.1	14.7	60.8	34.0	
D	5.03	6.44	8.0	32.4	60.8	21.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.609	1980
B	0.367	717
C	0.648	2302
D	0.598	1887

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2030-Base+Comm+Dev	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1573	100.000
B		ONE HOUR	✓	10	100.000
C		ONE HOUR	✓	854	100.000
D		ONE HOUR	✓	1187	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To				
	A	B	C	D	
A	0	2	754	817	
B	5	0	2	3	
C	648	2	0	204	
D	819	1	367	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To				
	A	B	C	D	
A	0	0	1	2	
B	0	0	0	0	
C	2	0	0	1	
D	1	0	3	0	

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	1.00	60.34	29.2	F	1443	2165
B	999999999.00	1582.22	5.6	F	9	14
C	0.54	4.63	1.2	A	784	1175
D	0.90	22.82	7.8	C	1089	1634

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1184	296	277	1811	0.654	1177	1103	0.0	1.9	5.696	A
B	8	2	1450	185	0.041	7	4	0.0	0.0	20.252	C
C	643	161	617	1902	0.338	641	840	0.0	0.5	2.900	A
D	894	223	491	1593	0.561	888	766	0.0	1.3	5.167	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1414	354	331	1778	0.795	1407	1320	1.9	3.8	9.653	A
B	9	2	1734	81	0.111	9	4	0.0	0.1	49.711	E
C	768	192	738	1824	0.421	767	1005	0.5	0.7	3.462	A
D	1067	267	588	1536	0.695	1063	916	1.3	2.3	7.699	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1732	433	401	1735	0.998	1665	1600	3.8	20.5	35.647	E
B	11	3	2061	0	999999999.000	0	5	0.1	2.9	1582.222	F
C	940	235	865	1741	0.540	938	1196	0.7	1.2	4.552	A
D	1307	327	714	1460	0.895	1287	1089	2.3	7.2	19.332	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1732	433	407	1732	1.000	1697	1613	20.5	29.2	60.342	F
B	11	3	2098	0	999999999.000	0	5	2.9	5.6	-8466.800	?
C	940	235	882	1731	0.543	940	1217	1.2	1.2	4.634	A
D	1307	327	716	1459	0.896	1304	1106	7.2	7.8	22.815	C

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1414	354	339	1773	0.798	1514	1350	29.2	4.3	19.005	C
B	9	2	1848	39	0.232	30	5	5.6	0.5	381.155	F
C	768	192	810	1777	0.432	769	1068	1.2	0.8	3.640	A
D	1067	267	600	1528	0.698	1089	979	7.8	2.4	8.734	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1184	296	280	1809	0.655	1194	1113	4.3	2.0	6.022	A
B	8	2	1470	178	0.042	9	4	0.5	0.0	21.546	C
C	643	161	627	1895	0.339	644	852	0.8	0.5	2.931	A
D	894	223	495	1591	0.562	898	776	2.4	1.3	5.324	A

2030-Base+Comm+Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
3	St Neots _ Putnoe	Standard Roundabout		A, B, C, D	83.09	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2030-Base+Comm+Dev	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1726	100.000
B		ONE HOUR	✓	14	100.000
C		ONE HOUR	✓	959	100.000
D		ONE HOUR	✓	816	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	2	801	923
	B	5	0	7	2
	C	606	4	0	349
	D	484	0	332	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	1
	B	0	0	0	0
	C	1	0	0	1
	D	1	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	1.08	144.00	85.5	F	1584	2376
B	999999999.00	2358.29	11.2	F	13	19
C	0.62	5.68	1.7	A	880	1320
D	0.60	6.21	1.5	A	749	1123

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1299	325	252	1826	0.712	1290	821	0.0	2.4	6.634	A
B	11	3	1537	153	0.069	10	4	0.0	0.1	25.176	D
C	722	180	695	1851	0.390	719	853	0.0	0.6	3.205	A
D	614	154	461	1611	0.381	612	953	0.0	0.6	3.643	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1552	388	302	1796	0.864	1538	983	2.4	5.8	13.389	B
B	13	3	1834	44	0.288	11	5	0.1	0.3	108.621	F
C	862	216	828	1765	0.488	861	1018	0.6	1.0	4.015	A
D	734	183	552	1557	0.471	732	1138	0.6	0.9	4.420	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1900	475	369	1755	1.083	1732	1197	5.8	48.0	65.396	F
B	15	4	2094	0	999999999.000	0	6	0.3	4.2	2358.287	F
C	1056	264	926	1702	0.620	1053	1168	1.0	1.6	5.582	A
D	898	225	670	1487	0.604	896	1309	0.9	1.5	6.154	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1900	475	370	1754	1.083	1750	1200	48.0	85.5	143.998	F
B	15	4	2114	0	999999999.000	0	6	4.2	8.1	1585.795	F
C	1056	264	936	1695	0.623	1056	1178	1.6	1.7	5.683	A
D	898	225	672	1486	0.605	898	1320	1.5	1.5	6.215	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1552	388	303	1795	0.864	1774	983	85.5	29.8	119.942	F
B	13	3	2072	0	999999999.000	0	6	8.1	11.2	801.604	F
C	862	216	949	1687	0.511	864	1123	1.7	1.1	4.434	A
D	734	183	550	1558	0.471	736	1263	1.5	0.9	4.453	A

18:00 - 18:15

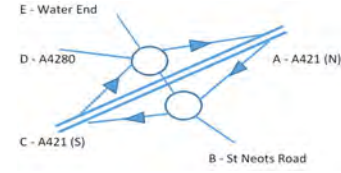
Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	1299	325	253	1825	0.712	1409	842	29.8	2.6	11.162	B
B	11	3	1657	109	0.097	55	5	11.2	0.1	120.659	F
C	722	180	781	1796	0.402	724	932	1.1	0.7	3.397	A
D	614	154	480	1600	0.384	615	1024	0.9	0.6	3.709	A



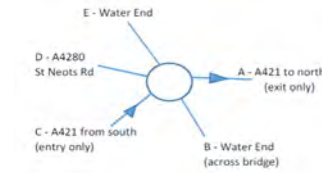
Appendix T

J4 – A421 / St Neots Road / A4280: Analysis – Input and Results

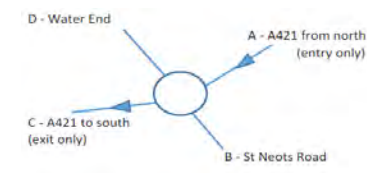
J4: A421 (N) / St Neots Rd / A421 (S) / A4280



J4: Roundabout 1 - North



J4: Roundabout 2 - South



Roundabout 1

Background 2019					
AM	A	B	C	D	E
A	0	0	0	0	0
B	1	0	0	590	34
C	0	206	83	593	53
D	366	837	0	0	23
E	10	120	0	42	0

Background 2019					
PM	A	B	C	D	E
A	0	0	0	0	0
B	4	0	0	624	31
C	0	390	112	756	95
D	109	785	0	0	15
E	5	54	0	9	0

Tempro 2019-2030					
AM	A	B	C	D	E
A	1.1369	1.1369	1.1369	1.1369	1.1369
B	1.1369	1.1369	1.1369	1.1369	1.1369
C	1.1369	1.1369	1.1369	1.1369	1.1369
D	1.1369	1.1369	1.1369	1.1369	1.1369
E	1.1369	1.1369	1.1369	1.1369	1.1369

Tempro 2019-2030					
PM	A	B	C	D	E
A	1.1554	1.1554	1.1554	1.1554	1.1554
B	1.1554	1.1554	1.1554	1.1554	1.1554
C	1.1554	1.1554	1.1554	1.1554	1.1554
D	1.1554	1.1554	1.1554	1.1554	1.1554
E	1.1554	1.1554	1.1554	1.1554	1.1554

Background 2030					
AM	A	B	C	D	E
A	0	0	0	0	0
B	1	0	0	671	39
C	0	234	94	674	60
D	417	951	0	0	26
E	11	137	0	47	0

Background 2030					
PM	A	B	C	D	E
A	0	0	0	0	0
B	5	0	0	721	36
C	0	450	129	874	110
D	126	907	0	0	17
E	6	62	0	10	0

Committed Development					
AM	A	B	C	D	E
A	0	0	0	0	0
B	0	0	0	0	0
C	0	0	0	0	0
D	1	1	0	0	0
E	0	0	0	0	0

Committed Development					
PM	A	B	C	D	E
A	0	0	0	0	0
B	0	0	0	1	0
C	0	0	0	1	0
D	0	0	0	0	0
E	0	0	0	0	0

Background 2030 + Committed					
AM	A	B	C	D	E
A	0	0	0	0	0
B	1	0	0	671	39
C	1	236	94	674	60
D	417	951	0	0	26
E	11	137	0	47	0

Background 2030 + Committed					
PM	A	B	C	D	E
A	0	0	0	1	0
B	5	0	0	721	36
C	0	450	129	874	110
D	126	907	0	0	17
E	6	62	0	10	0

Development					
AM	A	B	C	D	E
A	0	0	0	0	0
B	0	0	0	7	7
C	0	0	0	7	7
D	18	38	0	0	0
E	18	38	0	0	0

Development					
PM	A	B	C	D	E
A	0	0	0	0	0
B	0	0	0	20	20
C	0	0	0	22	22
D	6	13	0	0	0
E	6	13	0	0	0

Background 2030 + Development					
AM	A	B	C	D	E
A	0	0	0	0	0
B	1	0	0	678	45
C	1	236	94	681	67
D	434	989	0	0	26
E	29	174	0	47	0

Background 2030 + Development					
PM	A	B	C	D	E
A	0	0	0	1	0
B	5	0	0	741	56
C	0	450	129	896	132
D	132	919	0	0	17
E	12	75	0	10	0

Roundabout 2

Background 2019				
PM	A	B	C	D
A	0	1	0	353
B	0	0	220	272
C	0	0	0	0
D	0	343	820	0

Background 2019				
PM	A	B	C	D
A	0	3	0	409
B	0	0	134	250
C	0	0	0	0
D	0	658	570	0

Tempro 2019-2030				
AM	A	B	C	D
A	1.1369	1.1369	1.1369	1.1369
B	1.1369	1.1369	1.1369	1.1369
C	1.1369	1.1369	1.1369	1.1369
D	1.1369	1.1369	1.1369	1.1369

Tempro 2019-2030				
PM	A	B	C	D
A	1.1554	1.1554	1.1554	1.1554
B	1.1554	1.1554	1.1554	1.1554
C	1.1554	1.1554	1.1554	1.1554
D	1.1554	1.1554	1.1554	1.1554

Background 2030				
AM	A	B	C	D
A	0	1	0	401
B	0	0	250	310
C	0	0	0	0
D	0	390	932	0
E	0	0	0	0

Background 2030				
PM	A	B	C	D
A	0	3	0	473
B	0	0	155	288
C	0	0	0	0
D	0	760	659	0
E	0	0	0	0

Committed Development				
AM	A	B	C	D
A	0	0	0	0
B	0	0	0	0
C	0	0	0	0
D	0	0	1	0

Committed Development				
PM	A	B	C	D
A	0	0	0	0
B	0	0	0	0
C	0	0	0	0
D	0	0	1	0

Background 2030 + Committed				
AM	A	B	C	D
A	0	1	0	401
B	0	0	250	310
C	0	0	1	0
D	0	390	932	0

Background 2030 + Committed				
PM	A	B	C	D
A	0	3	0	473
B	0	0	155	288
C	0	0	1	0
D	0	760	659	0

Development				
AM	A	B	C	D
A	0	0	0	4
B	0	0	0	2
C	0	0	0	0
D	0	9	29	0

Development				
PM	A	B	C	D
A	0	0	0	13
B	0	0	0	7
C	0	0	0	0
D	0	3	10	0

Background 2030 + Development				
AM	A	B	C	D
A	0	1	0	406
B	0	0	250	312
C	0	0	1	0
D	0	399	961	0

Background 2030 + Development				
PM	A	B	C	D
A	0	3	0	486
B	0	0	155	295
C	0	0	1	0
D	0	763	668	0

HGV %age

AM	A	B	C	D	E
A	0%	0%	0%	0%	0%
B	0%	0%	0%	1%	0%
C	0%	0%	0%	1%	0%
D	2%	2%	0%	0%	0%
E	0%	1%	0%	3%	0%

HGV %age

PM	A	B	C	D
A	0%	0%	0%	3%
B	0%	0%	1%	2%
C	0%	0%	0%	0%
D	0%	3%	1%	0%

HGV %age

PM	A	B	C	D	E
A	0%	0%	0%	0%	0%
B	0%	0%	0%	1%	0%
C	0%	0%	0%	1%	0%
D	0%	1%	0%	0%	0%
E	0%	2%	0%	0%	0%

HGV %age

PM	A	B	C	D
A	0%	0%	0%	1%
B	0%	0%	0%	0%
C	0%	0%	0%	0%
D	0%	1%	1%	0%

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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Filename: J4 A421 (N) _ St Neots Rd _ A421 (S) _ A4280-Jan 2020.j9
Path: C:\Users\Martin\OneDrive - Martin Andrews Consulting Ltd\Projects 200 - 299\248 - Salph End, Bedford\Reports\TA\Junction Analysis
Report generation date: 17/01/2020 15:22:31

- »2019-Base, AM
- »2019-Base, PM
- »2030-Base+Comm, AM
- »2030-Base+Comm, PM
- »2030-Base+Comm+Dev, AM
- »2030-Base+Comm+Dev, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2019-Base								
Junction J4-1 - Arm 1-B	0.4	2.06	0.28	A	0.5	2.24	0.34	A
Junction J4-1 - Arm 1-C	0.6	2.12	0.38	A	1.9	3.91	0.65	A
Junction J4-1 - Arm 1-D	2.7	7.28	0.73	A	2.4	7.63	0.71	A
Junction J4-1 - Arm 1-E	0.3	6.59	0.26	A	0.1	6.20	0.13	A
Junction J4-2 - Arm 2-A	0.3	3.22	0.25	A	0.4	3.52	0.31	A
Junction J4-2 - Arm 2-B	1.0	6.90	0.51	A	0.5	4.59	0.35	A
Junction J4-2 - Arm 2-D	1.1	3.09	0.52	A	1.2	3.25	0.55	A
2030-Base+Comm								
Junction J4-1 - Arm 1-B	0.5	2.19	0.32	A	0.5	2.24	0.34	A
Junction J4-1 - Arm 1-C	0.8	2.44	0.44	A	1.9	3.91	0.65	A
Junction J4-1 - Arm 1-D	5.3	12.81	0.84	B	2.4	7.63	0.71	A
Junction J4-1 - Arm 1-E	0.5	8.84	0.34	A	0.1	6.20	0.13	A
Junction J4-2 - Arm 2-A	0.5	3.85	0.31	A	0.7	4.55	0.40	A
Junction J4-2 - Arm 2-B	1.8	10.82	0.65	B	0.8	5.91	0.44	A
Junction J4-2 - Arm 2-D	1.5	3.62	0.59	A	1.7	4.01	0.63	A
2030-Base+Comm+Dev								
Junction J4-1 - Arm 1-B	0.5	2.21	0.33	A	0.6	2.29	0.36	A
Junction J4-1 - Arm 1-C	0.8	2.48	0.45	A	2.1	4.28	0.68	A
Junction J4-1 - Arm 1-D	7.0	16.52	0.88	C	2.7	8.45	0.73	A
Junction J4-1 - Arm 1-E	0.8	11.23	0.46	B	0.2	6.54	0.16	A
Junction J4-2 - Arm 2-A	0.5	4.00	0.33	A	0.7	4.69	0.41	A
Junction J4-2 - Arm 2-B	2.0	11.72	0.67	B	0.8	6.14	0.46	A
Junction J4-2 - Arm 2-D	1.6	3.78	0.61	A	1.8	4.07	0.64	A

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

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

File summary

File Description

Title	
Location	
Site number	
Date	24/07/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DESKTOP-2HPI2P9\Martin
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

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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)	Run automatically
D1	2019-Base	AM	ONE HOUR	07:45	09:15	15	✓
D2	2019-Base	PM	ONE HOUR	16:45	18:15	15	✓
D3	2030-Base+Comm	AM	ONE HOUR	07:45	09:15	15	✓
D4	2030-Base+Comm	PM	ONE HOUR	16:45	18:15	15	✓
D5	2030-Base+Comm+Dev	AM	ONE HOUR	07:45	09:15	15	✓
D6	2030-Base+Comm+Dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2019-Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Junction J4-1 - Arm 1-C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Junction J4-1 - Arm 1-D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J4-1	North roundabout	Standard Roundabout		1-A, 1-B, 1-C, 1-D, 1-E	4.50	A
J4-2	South roundabout	Standard Roundabout		2-A, 2-B, 2-C, 2-D	4.04	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Junction	Arm	Name	Description
J4-1	1-A	A421 - Exit Only	
	1-B	Water End - Bridge	
	1-C	A421 (S)	
	1-D	A4280 St Neots Road	
	1-E	Water End	
J4-2	2-A	A421 (N)	
	2-B	St Neots Road	
	2-C	A421 (S) Exit only	
	2-D	Water End	

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
J4-1	1-A							✓
	1-B	7.28	8.84	8.8	30.0	68.8	30.0	
	1-C	7.53	11.85	30.3	20.4	68.8	19.0	
	1-D	3.85	8.01	33.5	23.2	68.8	29.0	
	1-E	3.38	6.52	9.1	40.3	68.8	18.0	
J4-2	2-A	7.05	8.64	9.7	39.3	49.9	27.0	
	2-B	3.67	9.05	15.1	40.2	49.9	31.0	
	2-C							✓
	2-D	7.31	8.12	7.2	37.6	49.9	28.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
J4-1	1-A		
	1-B	0.650	2548
	1-C	0.775	3305
	1-D	0.575	2090
	1-E	0.507	1574
J4-2	2-A	0.777	2537
	2-B	0.655	1913
	2-C		
	2-D	0.763	2467

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019-Base	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
J4-1	1-A					
	1-B		ONE HOUR	✓	625	100.000
	1-C		ONE HOUR	✓	935	100.000
	1-D		ONE HOUR	✓	1226	100.000
	1-E		ONE HOUR	✓	172	100.000
J4-2	2-A		ONE HOUR	✓	354	100.000
	2-B		ONE HOUR	✓	492	100.000
	2-C					
	2-D		ONE HOUR	✓	1163	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction J4-1

		To				
		1-A	1-B	1-C	1-D	1-E
From	1-A	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	1-B	1	0	0	590	34
	1-C	0	206	83	593	53
	1-D	366	837	0	0	23
	1-E	10	120	0	42	0

Demand (PCU/hr)

Junction J4-2

		To			
		2-A	2-B	2-C	2-D
From	2-A	0	1	0	353
	2-B	0	0	220	272
	2-C	Exit-only	Exit-only	Exit-only	Exit-only
	2-D	0	343	820	0

Vehicle Mix

Heavy Vehicle Percentages

Junction J4-1

		To				
		1-A	1-B	1-C	1-D	1-E
From	1-A	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	1-B	0	0	0	2	0
	1-C	0	0	0	1	0
	1-D	1	1	0	0	8
	1-E	0	1	0	0	0

Heavy Vehicle Percentages

Junction J4-2

		To			
		2-A	2-B	2-C	2-D
From	2-A	0	0	0	3
	2-B	0	0	1	1
	2-C	Exit-only	Exit-only	Exit-only	Exit-only
	2-D	0	3	1	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
J4-1	1-A						
	1-B	0.28	2.06	0.4	A	574	860
	1-C	0.38	2.12	0.6	A	858	1287
	1-D	0.73	7.28	2.7	A	1125	1687
	1-E	0.26	6.59	0.3	A	158	237
J4-2	2-A	0.25	3.22	0.3	A	325	487
	2-B	0.51	6.90	1.0	A	451	677
	2-C						
	2-D	0.52	3.09	1.1	A	1067	1601

Main Results for each time segment

07:45 - 08:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			966				283				
	1-B	471	118	94	2487	0.189	470	872	0.0	0.2	1.811	A
	1-C	704	176	501	2916	0.241	703	62	0.0	0.3	1.634	A
	1-D	923	231	283	1927	0.479	919	920	0.0	0.9	3.608	A
	1-E	129	32	1120	1006	0.129	129	83	0.0	0.1	4.140	A
J4-2	2-A	267	67	873	1858	0.143	266	0	0.0	0.2	2.327	A
	2-B	370	93	881	1336	0.277	369	258	0.0	0.4	3.742	A
	2-C			469				781				
	2-D	876	219	0	2467	0.355	873	469	0.0	0.6	2.295	A

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1156				338				
	1-B	562	140	112	2475	0.227	562	1044	0.2	0.3	1.908	A
	1-C	841	210	599	2840	0.296	840	75	0.3	0.4	1.808	A
	1-D	1102	276	339	1895	0.582	1100	1101	0.9	1.4	4.581	A
	1-E	155	39	1340	895	0.173	154	99	0.1	0.2	4.908	A
J4-2	2-A	318	80	1045	1725	0.185	318	0	0.2	0.2	2.635	A
	2-B	442	111	1054	1223	0.362	442	309	0.4	0.6	4.639	A
	2-C			561				934				
	2-D	1046	261	0	2467	0.424	1045	561	0.6	0.7	2.573	A

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1414				414				
	1-B	688	172	137	2459	0.280	688	1277	0.3	0.4	2.063	A
	1-C	1029	257	734	2736	0.376	1029	91	0.4	0.6	2.118	A
	1-D	1350	337	415	1851	0.729	1345	1348	1.4	2.7	7.136	A
	1-E	189	47	1639	743	0.255	189	121	0.2	0.3	6.549	A
J4-2	2-A	390	97	1279	1543	0.253	389	0	0.2	0.3	3.212	A
	2-B	542	135	1290	1068	0.507	540	378	0.6	1.0	6.846	A
	2-C			687				1143				
	2-D	1280	320	0	2467	0.519	1279	687	0.7	1.1	3.080	A

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1418				415				
	1-B	688	172	138	2459	0.280	688	1280	0.4	0.4	2.063	A
	1-C	1029	257	734	2735	0.376	1029	91	0.6	0.6	2.120	A
	1-D	1350	337	415	1851	0.729	1350	1349	2.7	2.7	7.275	A
	1-E	189	47	1644	741	0.256	189	121	0.3	0.3	6.589	A
J4-2	2-A	390	97	1280	1542	0.253	390	0	0.3	0.3	3.218	A
	2-B	542	135	1291	1067	0.508	542	379	1.0	1.0	6.904	A
	2-C			688				1145				
	2-D	1280	320	0	2467	0.519	1280	688	1.1	1.1	3.085	A

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1162				340				
	1-B	562	140	113	2475	0.227	562	1049	0.4	0.3	1.909	A
	1-C	841	210	600	2840	0.296	841	75	0.6	0.4	1.810	A
	1-D	1102	276	339	1895	0.582	1107	1102	2.7	1.4	4.663	A
	1-E	155	39	1347	891	0.174	155	99	0.3	0.2	4.942	A
J4-2	2-A	318	80	1047	1723	0.185	319	0	0.3	0.2	2.640	A
	2-B	442	111	1056	1221	0.362	444	310	1.0	0.6	4.676	A
	2-C			563				937				
	2-D	1046	261	0	2467	0.424	1047	563	1.1	0.8	2.582	A

09:00 - 09:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			971				284				
	1-B	471	118	94	2487	0.189	471	877	0.3	0.2	1.811	A
	1-C	704	176	502	2915	0.241	704	63	0.4	0.3	1.638	A
	1-D	923	231	284	1926	0.479	925	923	1.4	0.9	3.652	A
	1-E	129	32	1126	1003	0.129	130	83	0.2	0.2	4.161	A
J4-2	2-A	267	67	876	1856	0.144	267	0	0.2	0.2	2.335	A
	2-B	370	93	884	1334	0.278	371	259	0.6	0.4	3.771	A
	2-C			471				784				
	2-D	876	219	0	2467	0.355	876	471	0.8	0.6	2.304	A

2019-Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Junction J4-1 - Arm 1-C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Junction J4-1 - Arm 1-D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J4-1	North roundabout	Standard Roundabout		1-A, 1-B, 1-C, 1-D, 1-E	4.72	A
J4-2	South roundabout	Standard Roundabout		2-A, 2-B, 2-C, 2-D	3.56	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2019-Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
J4-1	1-A					
	1-B		ONE HOUR	✓	762	100.000
	1-C		ONE HOUR	✓	1563	100.000
	1-D		ONE HOUR	✓	1050	100.000
	1-E		ONE HOUR	✓	78	100.000
J4-2	2-A		ONE HOUR	✓	412	100.000
	2-B		ONE HOUR	✓	384	100.000
	2-C					
	2-D		ONE HOUR	✓	1228	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction J4-1

		To				
		1-A	1-B	1-C	1-D	1-E
From	1-A	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	1-B	5	0	0	721	36
	1-C	0	450	129	874	110
	1-D	126	907	0	0	17
	1-E	6	62	0	10	0

Demand (PCU/hr)

Junction J4-2

		To			
		2-A	2-B	2-C	2-D
From	2-A	0	3	0	409
	2-B	0	0	134	250
	2-C	Exit-only	Exit-only	Exit-only	Exit-only
	2-D	0	658	570	0

Vehicle Mix

Heavy Vehicle Percentages

Junction J4-1

		To				
		1-A	1-B	1-C	1-D	1-E
From	1-A	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	1-B	0	0	0	0	0
	1-C	0	0	0	1	0
	1-D	0	0	0	1	1
	1-E	2	1	0	0	0

Heavy Vehicle Percentages

Junction J4-2

		To			
		2-A	2-B	2-C	2-D
From	2-A	0	0	0	1
	2-B	0	0	0	0
	2-C	Exit-only	Exit-only	Exit-only	Exit-only
	2-D	0	1	1	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
J4-1	1-A						
	1-B	0.34	2.24	0.5	A	699	1049
	1-C	0.65	3.91	1.9	A	1434	2151
	1-D	0.71	7.63	2.4	A	963	1445
	1-E	0.13	6.20	0.1	A	72	107
J4-2	2-A	0.31	3.52	0.4	A	378	567
	2-B	0.35	4.59	0.5	A	352	529
	2-C						
	2-D	0.55	3.25	1.2	A	1127	1690

Main Results for each time segment

16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1169				103				
	1-B	574	143	104	2480	0.231	572	1065	0.0	0.3	1.886	A
	1-C	1177	294	580	2855	0.412	1174	97	0.0	0.7	2.146	A
	1-D	790	198	548	1774	0.446	787	1206	0.0	0.8	3.636	A
	1-E	59	15	1213	959	0.061	58	122	0.0	0.1	4.035	A
J4-2	2-A	310	78	922	1820	0.170	309	0	0.0	0.2	2.405	A
	2-B	289	72	735	1431	0.202	288	496	0.0	0.3	3.145	A
	2-C			495				529				
	2-D	925	231	0	2467	0.375	922	495	0.0	0.6	2.345	A

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1399				123				
	1-B	685	171	125	2467	0.278	685	1274	0.3	0.4	2.019	A
	1-C	1405	351	694	2767	0.508	1404	116	0.7	1.0	2.649	A
	1-D	944	236	656	1712	0.551	942	1442	0.8	1.2	4.664	A
	1-E	70	18	1452	838	0.084	70	146	0.1	0.1	4.732	A
J4-2	2-A	370	93	1103	1679	0.221	370	0	0.2	0.3	2.776	A
	2-B	345	86	879	1337	0.258	345	594	0.3	0.3	3.629	A
	2-C			592				632				
	2-D	1104	276	0	2467	0.448	1103	592	0.6	0.8	2.658	A

17:15 - 17:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1710				150				
	1-B	839	210	153	2449	0.343	838	1557	0.4	0.5	2.235	A
	1-C	1721	430	849	2646	0.650	1718	142	1.0	1.8	3.879	A
	1-D	1156	289	802	1628	0.710	1151	1765	1.2	2.4	7.481	A
	1-E	86	21	1775	675	0.127	86	179	0.1	0.1	6.172	A
J4-2	2-A	454	113	1350	1487	0.305	453	0	0.3	0.4	3.514	A
	2-B	423	106	1077	1208	0.350	422	727	0.3	0.5	4.579	A
	2-C			724				774				
	2-D	1352	338	0	2467	0.548	1350	724	0.8	1.2	3.245	A

17:30 - 17:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1715				151				
	1-B	839	210	153	2449	0.343	839	1562	0.5	0.5	2.235	A
	1-C	1721	430	850	2646	0.650	1721	142	1.8	1.9	3.907	A
	1-D	1156	289	804	1627	0.710	1156	1767	2.4	2.4	7.634	A
	1-E	86	21	1780	672	0.128	86	179	0.1	0.1	6.205	A
J4-2	2-A	454	113	1352	1486	0.305	454	0	0.4	0.4	3.521	A
	2-B	423	106	1078	1207	0.350	423	728	0.5	0.5	4.591	A
	2-C			726				775				
	2-D	1352	338	0	2467	0.548	1352	726	1.2	1.2	3.253	A

17:45 - 18:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1406				124				
	1-B	685	171	125	2467	0.278	686	1281	0.5	0.4	2.021	A
	1-C	1405	351	695	2766	0.508	1408	116	1.9	1.0	2.667	A
	1-D	944	236	658	1711	0.552	949	1445	2.4	1.2	4.749	A
	1-E	70	18	1459	834	0.084	70	147	0.1	0.1	4.759	A
J4-2	2-A	370	93	1106	1677	0.221	371	0	0.4	0.3	2.785	A
	2-B	345	86	881	1336	0.258	346	595	0.5	0.4	3.642	A
	2-C			594				634				
	2-D	1104	276	0	2467	0.448	1106	594	1.2	0.8	2.669	A

18:00 - 18:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1175				103				
	1-B	574	143	105	2480	0.231	574	1070	0.4	0.3	1.887	A
	1-C	1177	294	582	2854	0.412	1178	97	1.0	0.7	2.159	A
	1-D	790	198	550	1773	0.446	792	1209	1.2	0.8	3.679	A
	1-E	59	15	1220	956	0.061	59	123	0.1	0.1	4.054	A
J4-2	2-A	310	78	925	1817	0.171	310	0	0.3	0.2	2.412	A
	2-B	289	72	738	1430	0.202	289	498	0.4	0.3	3.157	A
	2-C			497				531				
	2-D	925	231	0	2467	0.375	925	497	0.8	0.6	2.354	A

2030-Base+Comm, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Junction J4-1 - Arm 1-C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Junction J4-1 - Arm 1-D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J4-1	North roundabout	Standard Roundabout		1-A, 1-B, 1-C, 1-D, 1-E	7.05	A
J4-2	South roundabout	Standard Roundabout		2-A, 2-B, 2-C, 2-D	5.42	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2030-Base+Comm	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
J4-1	1-A					
	1-B		ONE HOUR	✓	711	100.000
	1-C		ONE HOUR	✓	1065	100.000
	1-D		ONE HOUR	✓	1394	100.000
	1-E		ONE HOUR	✓	195	100.000
J4-2	2-A		ONE HOUR	✓	402	100.000
	2-B		ONE HOUR	✓	560	100.000
	2-C					
	2-D		ONE HOUR	✓	1322	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction J4-1

		To				
		1-A	1-B	1-C	1-D	1-E
From	1-A	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	1-B	1	0	0	671	39
	1-C	1	236	94	674	60
	1-D	417	951	0	0	26
	1-E	11	137	0	47	0

Demand (PCU/hr)

Junction J4-2

		To			
		2-A	2-B	2-C	2-D
From	2-A	0	1	0	401
	2-B	0	0	250	310
	2-C	Exit-only	Exit-only	Exit-only	Exit-only
	2-D	0	390	932	0

Vehicle Mix

Heavy Vehicle Percentages

Junction J4-1

		To				
		1-A	1-B	1-C	1-D	1-E
From	1-A	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	1-B	0	0	0	2	0
	1-C	0	0	0	1	0
	1-D	1	1	0	0	8
	1-E	0	1	0	0	0

Heavy Vehicle Percentages

Junction J4-2

		To			
		2-A	2-B	2-C	2-D
From	2-A	0	0	0	3
	2-B	0	0	1	1
	2-C	Exit-only	Exit-only	Exit-only	Exit-only
	2-D	0	3	1	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
J4-1	1-A						
	1-B	0.32	2.19	0.5	A	652	979
	1-C	0.44	2.44	0.8	A	977	1466
	1-D	0.84	12.81	5.3	B	1279	1919
	1-E	0.34	8.84	0.5	A	179	268
J4-2	2-A	0.31	3.85	0.5	A	369	553
	2-B	0.65	10.82	1.8	B	514	771
	2-C						
	2-D	0.59	3.62	1.5	A	1213	1820

Main Results for each time segment

07:45 - 08:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1098				322				
	1-B	535	134	106	2480	0.216	534	993	0.0	0.3	1.878	A
	1-C	802	200	569	2863	0.280	800	71	0.0	0.4	1.754	A
	1-D	1049	262	324	1903	0.551	1045	1046	0.0	1.2	4.225	A
	1-E	147	37	1275	928	0.158	146	94	0.0	0.2	4.645	A
J4-2	2-A	303	76	993	1765	0.171	302	0	0.0	0.2	2.532	A
	2-B	422	105	1001	1257	0.335	420	294	0.0	0.5	4.318	A
	2-C			533				887				
	2-D	995	249	0	2467	0.403	993	533	0.0	0.7	2.479	A

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1314				386				
	1-B	639	160	127	2466	0.259	639	1188	0.3	0.4	2.000	A
	1-C	957	239	681	2777	0.345	957	84	0.4	0.5	1.988	A
	1-D	1253	313	387	1867	0.671	1250	1251	1.2	2.0	5.884	A
	1-E	175	44	1525	801	0.219	175	112	0.2	0.3	5.801	A
J4-2	2-A	361	90	1187	1614	0.224	361	0	0.2	0.3	2.959	A
	2-B	503	126	1197	1129	0.446	502	351	0.5	0.8	5.779	A
	2-C			638				1061				
	2-D	1188	297	0	2467	0.482	1187	638	0.7	0.9	2.859	A

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1603				470				
	1-B	783	196	155	2448	0.320	782	1449	0.4	0.5	2.194	A
	1-C	1173	293	834	2658	0.441	1172	103	0.5	0.8	2.433	A
	1-D	1535	384	474	1817	0.845	1523	1531	2.0	5.1	11.928	B
	1-E	215	54	1859	632	0.340	214	137	0.3	0.5	8.682	A
J4-2	2-A	443	111	1454	1407	0.315	442	0	0.3	0.5	3.839	A
	2-B	617	154	1466	953	0.647	613	430	0.8	1.8	10.542	B
	2-C			780				1298				
	2-D	1456	364	0	2467	0.590	1454	780	0.9	1.4	3.605	A

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1612				473				
	1-B	783	196	155	2447	0.320	783	1457	0.5	0.5	2.194	A
	1-C	1173	293	835	2658	0.441	1173	103	0.8	0.8	2.435	A
	1-D	1535	384	475	1817	0.845	1534	1533	5.1	5.3	12.812	B
	1-E	215	54	1871	626	0.343	215	138	0.5	0.5	8.842	A
J4-2	2-A	443	111	1456	1406	0.315	443	0	0.5	0.5	3.850	A
	2-B	617	154	1468	951	0.648	616	430	1.8	1.8	10.816	B
	2-C			783				1301				
	2-D	1456	364	0	2467	0.590	1456	783	1.4	1.5	3.619	A

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1327				390				
	1-B	639	160	127	2466	0.259	640	1200	0.5	0.4	2.001	A
	1-C	957	239	682	2776	0.345	958	85	0.8	0.5	1.993	A
	1-D	1253	313	388	1867	0.671	1266	1253	5.3	2.1	6.197	A
	1-E	175	44	1541	793	0.221	176	113	0.5	0.3	5.905	A
J4-2	2-A	361	90	1190	1611	0.224	362	0	0.5	0.3	2.970	A
	2-B	503	126	1200	1126	0.447	507	352	1.8	0.8	5.894	A
	2-C			642				1066				
	2-D	1188	297	0	2467	0.482	1190	642	1.5	1.0	2.874	A

09:00 - 09:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1106				325				
	1-B	535	134	106	2479	0.216	536	999	0.4	0.3	1.882	A
	1-C	802	200	571	2862	0.280	802	71	0.5	0.4	1.756	A
	1-D	1049	262	325	1903	0.552	1053	1049	2.1	1.3	4.310	A
	1-E	147	37	1283	924	0.159	147	94	0.3	0.2	4.686	A
J4-2	2-A	303	76	996	1762	0.172	303	0	0.3	0.2	2.540	A
	2-B	422	105	1005	1255	0.336	423	295	0.8	0.5	4.364	A
	2-C			536				891				
	2-D	995	249	0	2467	0.403	996	536	1.0	0.7	2.491	A

2030-Base+Comm, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Junction J4-1 - Arm 1-C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Junction J4-1 - Arm 1-D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J4-1	North roundabout	Standard Roundabout		1-A, 1-B, 1-C, 1-D, 1-E	4.72	A
J4-2	South roundabout	Standard Roundabout		2-A, 2-B, 2-C, 2-D	4.48	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2030-Base+Comm	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
J4-1	1-A					
	1-B		ONE HOUR	✓	762	100.000
	1-C		ONE HOUR	✓	1563	100.000
	1-D		ONE HOUR	✓	1050	100.000
	1-E		ONE HOUR	✓	78	100.000
J4-2	2-A		ONE HOUR	✓	476	100.000
	2-B		ONE HOUR	✓	443	100.000
	2-C					
	2-D		ONE HOUR	✓	1419	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction J4-1

		To				
		1-A	1-B	1-C	1-D	1-E
From	1-A	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	1-B	5	0	0	721	36
	1-C	0	450	129	874	110
	1-D	126	907	0	0	17
	1-E	6	62	0	10	0

Demand (PCU/hr)

Junction J4-2

		To			
		2-A	2-B	2-C	2-D
From	2-A	0	3	0	473
	2-B	0	0	155	288
	2-C	Exit-only	Exit-only	Exit-only	Exit-only
	2-D	0	760	659	0

Vehicle Mix

Heavy Vehicle Percentages

Junction J4-1

		To				
		1-A	1-B	1-C	1-D	1-E
From	1-A	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	1-B	0	0	0	0	0
	1-C	0	0	0	1	0
	1-D	0	0	0	1	1
	1-E	2	1	0	0	0

Heavy Vehicle Percentages

Junction J4-2

		To			
		2-A	2-B	2-C	2-D
From	2-A	0	0	0	1
	2-B	0	0	0	0
	2-C	Exit-only	Exit-only	Exit-only	Exit-only
	2-D	0	1	1	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
J4-1	1-A						
	1-B	0.34	2.24	0.5	A	699	1049
	1-C	0.65	3.91	1.9	A	1434	2151
	1-D	0.71	7.63	2.4	A	963	1445
	1-E	0.13	6.20	0.1	A	72	107
J4-2	2-A	0.40	4.55	0.7	A	437	655
	2-B	0.44	5.91	0.8	A	407	610
	2-C						
	2-D	0.63	4.01	1.7	A	1302	1953

Main Results for each time segment
16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1169				103				
	1-B	574	143	104	2480	0.231	572	1065	0.0	0.3	1.886	A
	1-C	1177	294	580	2855	0.412	1174	97	0.0	0.7	2.146	A
	1-D	790	198	548	1774	0.446	787	1206	0.0	0.8	3.636	A
	1-E	59	15	1213	959	0.061	58	122	0.0	0.1	4.035	A
J4-2	2-A	358	90	1065	1709	0.210	357	0	0.0	0.3	2.686	A
	2-B	334	83	850	1356	0.246	332	573	0.0	0.3	3.510	A
	2-C			571				611				
	2-D	1068	267	0	2467	0.433	1065	571	0.0	0.8	2.583	A

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1399				123				
	1-B	685	171	125	2467	0.278	685	1274	0.3	0.4	2.019	A
	1-C	1405	351	694	2767	0.508	1404	116	0.7	1.0	2.649	A
	1-D	944	236	656	1712	0.551	942	1442	0.8	1.2	4.664	A
	1-E	70	18	1452	838	0.084	70	146	0.1	0.1	4.732	A
J4-2	2-A	428	107	1274	1546	0.277	427	0	0.3	0.4	3.247	A
	2-B	398	100	1017	1247	0.319	398	685	0.3	0.5	4.236	A
	2-C			683				731				
	2-D	1276	319	0	2467	0.517	1274	683	0.8	1.1	3.039	A

17:15 - 17:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1710				150				
	1-B	839	210	153	2449	0.343	838	1557	0.4	0.5	2.235	A
	1-C	1721	430	849	2646	0.650	1718	142	1.0	1.8	3.879	A
	1-D	1156	289	802	1628	0.710	1151	1765	1.2	2.4	7.481	A
	1-E	86	21	1775	675	0.127	86	179	0.1	0.1	6.172	A
J4-2	2-A	524	131	1560	1325	0.396	523	0	0.4	0.7	4.531	A
	2-B	488	122	1244	1098	0.444	486	839	0.5	0.8	5.876	A
	2-C			836				895				
	2-D	1562	391	0	2467	0.633	1560	836	1.1	1.7	3.988	A

17:30 - 17:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1715				151				
	1-B	839	210	153	2449	0.343	839	1562	0.5	0.5	2.235	A
	1-C	1721	430	850	2646	0.650	1721	142	1.8	1.9	3.907	A
	1-D	1156	289	804	1627	0.710	1156	1767	2.4	2.4	7.634	A
	1-E	86	21	1780	672	0.128	86	179	0.1	0.1	6.205	A
J4-2	2-A	524	131	1562	1323	0.396	524	0	0.7	0.7	4.553	A
	2-B	488	122	1246	1096	0.445	488	840	0.8	0.8	5.914	A
	2-C			838				896				
	2-D	1562	391	0	2467	0.633	1562	838	1.7	1.7	4.010	A

17:45 - 18:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1406				124				
	1-B	685	171	125	2467	0.278	686	1281	0.5	0.4	2.021	A
	1-C	1405	351	695	2766	0.508	1408	116	1.9	1.0	2.667	A
	1-D	944	236	658	1711	0.552	949	1445	2.4	1.2	4.749	A
	1-E	70	18	1459	834	0.084	70	147	0.1	0.1	4.759	A
J4-2	2-A	428	107	1278	1543	0.277	429	0	0.7	0.4	3.265	A
	2-B	398	100	1020	1245	0.320	400	687	0.8	0.5	4.266	A
	2-C			686				733				
	2-D	1276	319	0	2467	0.517	1278	686	1.7	1.1	3.057	A

18:00 - 18:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1175				103				
	1-B	574	143	105	2480	0.231	574	1070	0.4	0.3	1.887	A
	1-C	1177	294	582	2854	0.412	1178	97	1.0	0.7	2.159	A
	1-D	790	198	550	1773	0.446	792	1209	1.2	0.8	3.679	A
	1-E	59	15	1220	956	0.061	59	123	0.1	0.1	4.054	A
J4-2	2-A	358	90	1070	1705	0.210	359	0	0.4	0.3	2.702	A
	2-B	334	83	853	1354	0.246	334	575	0.5	0.3	3.533	A
	2-C			574				614				
	2-D	1068	267	0	2467	0.433	1070	574	1.1	0.8	2.597	A

2030-Base+Comm+Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Junction J4-1 - Arm 1-C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Junction J4-1 - Arm 1-D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J4-1	North roundabout	Standard Roundabout		1-A, 1-B, 1-C, 1-D, 1-E	8.85	A
J4-2	South roundabout	Standard Roundabout		2-A, 2-B, 2-C, 2-D	5.73	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2030-Base+Comm+Dev	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
J4-1	1-A					
	1-B		ONE HOUR	✓	724	100.000
	1-C		ONE HOUR	✓	1079	100.000
	1-D		ONE HOUR	✓	1447	100.000
	1-E		ONE HOUR	✓	248	100.000
J4-2	2-A		ONE HOUR	✓	406	100.000
	2-B		ONE HOUR	✓	562	100.000
	2-C					
	2-D		ONE HOUR	✓	1360	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction J4-1

		To				
		1-A	1-B	1-C	1-D	1-E
From	1-A	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	1-B	1	0	0	678	45
	1-C	1	236	94	681	67
	1-D	432	989	0	0	26
	1-E	27	174	0	47	0

Demand (PCU/hr)

Junction J4-2

		To			
		2-A	2-B	2-C	2-D
From	2-A	0	1	0	405
	2-B	0	0	250	312
	2-C	Exit-only	Exit-only	Exit-only	Exit-only
	2-D	0	399	961	0

Vehicle Mix

Heavy Vehicle Percentages

Junction J4-1

		To				
		1-A	1-B	1-C	1-D	1-E
From	1-A	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	1-B	0	0	0	2	0
	1-C	0	0	0	1	0
	1-D	1	1	0	0	8
	1-E	0	1	0	0	0

Heavy Vehicle Percentages

Junction J4-2

		To			
		2-A	2-B	2-C	2-D
From	2-A	0	0	0	3
	2-B	0	0	1	1
	2-C	Exit-only	Exit-only	Exit-only	Exit-only
	2-D	0	3	1	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
J4-1	1-A						
	1-B	0.33	2.21	0.5	A	664	997
	1-C	0.45	2.48	0.8	A	990	1485
	1-D	0.88	16.52	7.0	C	1328	1992
	1-E	0.46	11.23	0.8	B	228	341
J4-2	2-A	0.33	4.00	0.5	A	373	559
	2-B	0.67	11.72	2.0	B	516	774
	2-C						
	2-D	0.61	3.78	1.6	A	1248	1872

Main Results for each time segment

07:45 - 08:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1154				345				
	1-B	545	136	106	2480	0.220	544	1048	0.0	0.3	1.887	A
	1-C	812	203	579	2856	0.284	811	71	0.0	0.4	1.769	A
	1-D	1089	272	334	1898	0.574	1084	1056	0.0	1.3	4.454	A
	1-E	187	47	1314	908	0.206	186	104	0.0	0.3	5.025	A
J4-2	2-A	306	76	1021	1743	0.175	305	0	0.0	0.2	2.576	A
	2-B	423	106	1025	1241	0.341	421	300	0.0	0.5	4.411	A
	2-C			538				909				
	2-D	1024	256	0	2467	0.415	1021	538	0.0	0.7	2.527	A

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1381				413				
	1-B	651	163	127	2466	0.264	651	1255	0.3	0.4	2.012	A
	1-C	970	242	693	2768	0.350	969	84	0.4	0.5	2.012	A
	1-D	1301	325	399	1860	0.699	1297	1263	1.3	2.3	6.435	A
	1-E	223	56	1572	777	0.287	222	124	0.3	0.4	6.544	A
J4-2	2-A	365	91	1222	1587	0.230	365	0	0.2	0.3	3.032	A
	2-B	505	126	1227	1109	0.456	504	359	0.5	0.8	5.980	A
	2-C			644				1087				
	2-D	1223	306	0	2467	0.496	1222	644	0.7	1.0	2.937	A

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1682				502				
	1-B	797	199	155	2448	0.326	797	1527	0.4	0.5	2.213	A
	1-C	1188	297	848	2647	0.449	1187	103	0.5	0.8	2.477	A
	1-D	1593	398	488	1809	0.881	1576	1547	2.3	6.6	14.706	B
	1-E	273	68	1913	604	0.452	271	152	0.4	0.8	10.862	B
J4-2	2-A	447	112	1495	1375	0.325	446	0	0.3	0.5	3.990	A
	2-B	619	155	1502	929	0.666	614	440	0.8	1.9	11.366	B
	2-C			786				1330				
	2-D	1497	374	0	2467	0.607	1495	786	1.0	1.6	3.761	A

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1694				507				
	1-B	797	199	155	2447	0.326	797	1539	0.5	0.5	2.213	A
	1-C	1188	297	849	2647	0.449	1188	103	0.8	0.8	2.480	A
	1-D	1593	398	489	1808	0.881	1592	1548	6.6	7.0	16.521	C
	1-E	273	68	1929	597	0.458	273	152	0.8	0.8	11.228	B
J4-2	2-A	447	112	1497	1373	0.326	447	0	0.5	0.5	4.003	A
	2-B	619	155	1504	928	0.667	619	440	1.9	2.0	11.720	B
	2-C			789				1333				
	2-D	1497	374	0	2467	0.607	1497	789	1.6	1.6	3.775	A

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1399				420				
	1-B	651	163	127	2466	0.264	651	1272	0.5	0.4	2.015	A
	1-C	970	242	694	2767	0.351	971	85	0.8	0.5	2.015	A
	1-D	1301	325	400	1860	0.699	1319	1265	7.0	2.4	6.967	A
	1-E	223	56	1594	766	0.291	225	124	0.8	0.4	6.737	A
J4-2	2-A	365	91	1225	1585	0.230	366	0	0.5	0.3	3.042	A
	2-B	505	126	1230	1107	0.456	510	360	2.0	0.9	6.115	A
	2-C			648				1092				
	2-D	1223	306	0	2467	0.496	1225	648	1.6	1.0	2.952	A

09:00 - 09:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1163				348				
	1-B	545	136	106	2479	0.220	545	1057	0.4	0.3	1.891	A
	1-C	812	203	581	2854	0.285	813	71	0.5	0.4	1.774	A
	1-D	1089	272	334	1897	0.574	1094	1059	2.4	1.4	4.562	A
	1-E	187	47	1324	903	0.207	187	104	0.4	0.3	5.083	A
J4-2	2-A	306	76	1025	1740	0.176	306	0	0.3	0.2	2.585	A
	2-B	423	106	1030	1238	0.342	424	301	0.9	0.5	4.461	A
	2-C			541				913				
	2-D	1024	256	0	2467	0.415	1025	541	1.0	0.7	2.540	A

2030-Base+Comm+Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Junction J4-1 - Arm 1-C - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Junction J4-1 - Arm 1-D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
J4-1	North roundabout	Standard Roundabout		1-A, 1-B, 1-C, 1-D, 1-E	5.14	A
J4-2	South roundabout	Standard Roundabout		2-A, 2-B, 2-C, 2-D	4.59	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2030-Base+Comm+Dev	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
J4-1	1-A					
	1-B		ONE HOUR	✓	800	100.000
	1-C		ONE HOUR	✓	1607	100.000
	1-D		ONE HOUR	✓	1068	100.000
	1-E		ONE HOUR	✓	96	100.000
J4-2	2-A		ONE HOUR	✓	488	100.000
	2-B		ONE HOUR	✓	450	100.000
	2-C					
	2-D		ONE HOUR	✓	1431	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction J4-1

		To				
		1-A	1-B	1-C	1-D	1-E
From	1-A	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	1-B	5	0	0	740	55
	1-C	0	450	129	896	132
	1-D	132	919	0	0	17
	1-E	11	75	0	10	0

Demand (PCU/hr)

Junction J4-2

		To			
		2-A	2-B	2-C	2-D
From	2-A	0	3	0	485
	2-B	0	0	155	295
	2-C	Exit-only	Exit-only	Exit-only	Exit-only
	2-D	0	763	668	0

Vehicle Mix

Heavy Vehicle Percentages

Junction J4-1

		To				
		1-A	1-B	1-C	1-D	1-E
From	1-A	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	1-B	0	0	0	0	0
	1-C	0	0	0	1	0
	1-D	0	0	0	1	1
	1-E	2	1	0	0	0

Heavy Vehicle Percentages

Junction J4-2

		To			
		2-A	2-B	2-C	2-D
From	2-A	0	0	0	1
	2-B	0	0	0	0
	2-C	Exit-only	Exit-only	Exit-only	Exit-only
	2-D	0	1	1	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
J4-1	1-A						
	1-B	0.36	2.29	0.6	A	734	1101
	1-C	0.68	4.28	2.1	A	1475	2212
	1-D	0.73	8.45	2.7	A	980	1470
	1-E	0.16	6.54	0.2	A	88	132
J4-2	2-A	0.41	4.69	0.7	A	448	672
	2-B	0.46	6.14	0.8	A	413	619
	2-C						
	2-D	0.64	4.07	1.8	A	1313	1970

Main Results for each time segment

16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1188				111				
	1-B	602	151	104	2480	0.243	601	1083	0.0	0.3	1.915	A
	1-C	1210	302	608	2833	0.427	1207	97	0.0	0.7	2.219	A
	1-D	804	201	579	1757	0.458	801	1236	0.0	0.8	3.755	A
	1-E	72	18	1227	952	0.076	72	153	0.0	0.1	4.130	A
J4-2	2-A	367	92	1074	1702	0.216	366	0	0.0	0.3	2.719	A
	2-B	339	85	865	1346	0.252	337	575	0.0	0.3	3.564	A
	2-C			585				618				
	2-D	1077	269	0	2467	0.437	1074	585	0.0	0.8	2.599	A

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1421				133				
	1-B	719	180	125	2467	0.292	719	1296	0.3	0.4	2.059	A
	1-C	1445	361	728	2741	0.527	1443	116	0.7	1.1	2.783	A
	1-D	960	240	692	1691	0.568	958	1479	0.8	1.3	4.900	A
	1-E	86	22	1467	830	0.104	86	183	0.1	0.1	4.888	A
J4-2	2-A	439	110	1285	1538	0.285	438	0	0.3	0.4	3.304	A
	2-B	405	101	1035	1235	0.328	404	688	0.3	0.5	4.331	A
	2-C			700				739				
	2-D	1286	322	0	2467	0.521	1285	700	0.8	1.1	3.067	A

17:15 - 17:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1737				162				
	1-B	881	220	153	2449	0.360	880	1584	0.4	0.6	2.295	A
	1-C	1769	442	891	2614	0.677	1765	142	1.1	2.1	4.240	A
	1-D	1176	294	847	1602	0.734	1170	1810	1.3	2.7	8.128	A
	1-E	106	26	1793	665	0.159	105	224	0.1	0.2	6.496	A
J4-2	2-A	537	134	1573	1314	0.409	536	0	0.4	0.7	4.666	A
	2-B	495	124	1267	1083	0.458	494	842	0.5	0.8	6.100	A
	2-C			857				904				
	2-D	1576	394	0	2467	0.639	1573	857	1.1	1.8	4.045	A

17:30 - 17:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1743				163				
	1-B	881	220	153	2449	0.360	881	1590	0.6	0.6	2.295	A
	1-C	1769	442	892	2613	0.677	1769	142	2.1	2.1	4.281	A
	1-D	1176	294	849	1601	0.734	1176	1812	2.7	2.7	8.450	A
	1-E	106	26	1800	662	0.160	106	225	0.2	0.2	6.540	A
J4-2	2-A	537	134	1576	1312	0.409	537	0	0.7	0.7	4.691	A
	2-B	495	124	1269	1081	0.458	495	843	0.8	0.8	6.145	A
	2-C			859				906				
	2-D	1576	394	0	2467	0.639	1576	859	1.8	1.8	4.069	A

17:45 - 18:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1429				134				
	1-B	719	180	125	2467	0.292	720	1304	0.6	0.4	2.062	A
	1-C	1445	361	729	2740	0.527	1449	116	2.1	1.1	2.806	A
	1-D	960	240	695	1690	0.568	966	1482	2.7	1.3	5.010	A
	1-E	86	22	1477	826	0.105	87	184	0.2	0.1	4.925	A
J4-2	2-A	439	110	1289	1535	0.286	440	0	0.7	0.4	3.323	A
	2-B	405	101	1039	1232	0.328	406	690	0.8	0.5	4.364	A
	2-C			703				742				
	2-D	1286	322	0	2467	0.521	1289	703	1.8	1.1	3.086	A

18:00 - 18:15

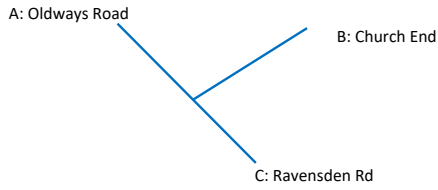
Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
J4-1	1-A			1194				112				
	1-B	602	151	105	2480	0.243	603	1089	0.4	0.3	1.919	A
	1-C	1210	302	610	2832	0.427	1211	97	1.1	0.8	2.233	A
	1-D	804	201	581	1755	0.458	806	1240	1.3	0.9	3.802	A
	1-E	72	18	1233	949	0.076	72	154	0.1	0.1	4.151	A
J4-2	2-A	367	92	1079	1698	0.216	368	0	0.4	0.3	2.735	A
	2-B	339	85	869	1344	0.252	339	577	0.5	0.3	3.589	A
	2-C			588				620				
	2-D	1077	269	0	2467	0.437	1079	588	1.1	0.8	2.614	A



Appendix U

J5: Ravensden Rd / Oldways Rd / Church End: Analysis – Input and Results

J5: Ravensden Rd / Oldways Rd / Church End



Background 2019

AM	A	B	C
A	0	48	300
B	30	0	36
C	123	37	0

Tempo 2019-2030

AM	A	B	C
A	1.1369	1.1369	1.1369
B	1.1369	1.1369	1.1369
C	1.1369	1.1369	1.1369

Background 2030

AM	A	B	C
A	0	55	341
B	34	0	41
C	139	42	0

Committed Development

AM	A	B	C
A	0	0	0
B	0	0	0
C	1	0	0

Background 2030 + Committed

AM	A	B	C
A	0	55	341
B	34	0	41
C	140	42	0

Development

AM	A	B	C
A	0	0	8
B	0	0	0
C	33	0	0

Background 2030 + Development

AM	A	B	C
A	0	55	350
B	34	0	41
C	174	42	0

Background 2019

PM	A	B	C
A	0	14	101
B	17	0	25
C	235	26	0

Tempo 2019-2030

PM	A	B	C
A	1.1554	1.1554	1.1554
B	1.1554	1.1554	1.1554
C	1.1554	1.1554	1.1554

Background 2030

PM	A	B	C
A	0	16	116
B	20	0	28
C	272	30	0

Committed Development

PM	A	B	C
A	0	0	1
B	0	0	0
C	0	0	0

Background 2030 + Committed

PM	A	B	C
A	0	16	117
B	20	0	28
C	272	30	0

Development

PM	A	B	C
A	0	0	25
B	0	0	0
C	11	0	0

Background 2030 + Development

PM	A	B	C
A	0	16	142
B	20	0	28
C	284	30	0

HGV%age

AM	A	B	C
A	0.0%	0.0%	0.7%
B	3.4%	0.0%	2.9%
C	0.0%	0.0%	0.0%

HGV%age

PM	A	B	C
A	0.0%	0.0%	1.0%
B	0.0%	0.0%	0.0%
C	0.0%	4.0%	0.0%

Junctions 9
PICADY 9 - Priority Intersection Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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Filename: (new file)
 Path:
 Report generation date: 17/01/2020 15:37:34

- »2019, AM
- »2019, PM
- »2030-Background+Comm, AM
- »2030-Background+Comm, PM
- »2030-Background+Comm+Dev, AM
- »2030-Background+Comm+Dev, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2019								
Stream B-C	0.1	6.92	0.07	A	0.0	5.84	0.04	A
Stream B-A	0.1	9.34	0.08	A	0.0	7.88	0.04	A
Stream C-AB	0.1	6.00	0.08	A	0.1	5.12	0.05	A
2030-Background+Comm								
Stream B-C	0.1	7.19	0.08	A	0.1	5.94	0.05	A
Stream B-A	0.1	9.90	0.09	A	0.0	8.17	0.05	A
Stream C-AB	0.1	6.09	0.09	A	0.1	5.04	0.06	A
2030-Background+Comm+Dev								
Stream B-C	0.1	7.23	0.08	A	0.1	6.01	0.05	A
Stream B-A	0.1	10.14	0.09	B	0.1	8.35	0.05	A
Stream C-AB	0.2	5.89	0.10	A	0.1	5.03	0.07	A

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

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

File summary

File Description

Title	J5: Oldways Rd_Church End_Ravensden Rd
Location	
Site number	J5
Date	17/01/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DESKTOP-2HPI2P9\Martin
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

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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)	Run automatically
D1	2019	AM	ONE HOUR	07:45	09:15	15	✓
D2	2019	PM	ONE HOUR	16:45	18:15	15	✓
D3	2030-Background+Comm	AM	ONE HOUR	07:45	09:15	15	✓
D4	2030-Background+Comm	PM	ONE HOUR	16:45	18:15	15	✓
D5	2030-Background+Comm+Dev	AM	ONE HOUR	07:45	09:15	15	✓
D6	2030-Background+Comm+Dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2019, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J5	J5: Oldways Rd_Church End_Ravensden Rd	T-Junction	Two-way		1.39	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Oldways Rd		Major
B	Church End		Minor
C	Ravensden Rd		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	5.50			146.0	✓	0.00

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 (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B	Two lanes	2.57	2.80	74	140

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
J5	B-A	561	0.104	0.264	0.166	0.377
J5	B-C	681	0.107	0.270	-	-
J5	C-B	659	0.261	0.261	-	-

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)	Run automatically
D1	2019	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	348	100.000
B		ONE HOUR	✓	66	100.000
C		ONE HOUR	✓	160	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	48	300
	B	30	0	36
	C	123	37	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	1
	B	3	0	3
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.07	6.92	0.1	A	33	50
B-A	0.08	9.34	0.1	A	28	41
C-AB	0.08	6.00	0.1	A	41	62
C-A					105	158
A-B					44	66
A-C					275	413

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	27	7	609	0.044	27	0.0	0.0	6.366	A
B-A	23	6	471	0.048	22	0.0	0.1	8.256	A
C-AB	32	8	652	0.050	32	0.0	0.1	5.803	A
C-A	88	22			88				
A-B	36	9			36				
A-C	226	56			226				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	32	8	595	0.054	32	0.0	0.1	6.589	A
B-A	27	7	454	0.059	27	0.1	0.1	8.682	A
C-AB	40	10	652	0.061	40	0.1	0.1	5.881	A
C-A	104	26			104				
A-B	43	11			43				
A-C	270	67			270				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	40	10	575	0.069	40	0.1	0.1	6.921	A
B-A	33	8	430	0.077	33	0.1	0.1	9.337	A
C-AB	51	13	652	0.079	51	0.1	0.1	5.993	A
C-A	125	31			125				
A-B	53	13			53				
A-C	330	83			330				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	40	10	575	0.069	40	0.1	0.1	6.921	A
B-A	33	8	430	0.077	33	0.1	0.1	9.341	A
C-AB	52	13	652	0.079	52	0.1	0.1	5.995	A
C-A	125	31			125				
A-B	53	13			53				
A-C	330	83			330				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	32	8	595	0.054	32	0.1	0.1	6.591	A
B-A	27	7	454	0.059	27	0.1	0.1	8.690	A
C-AB	40	10	652	0.062	40	0.1	0.1	5.887	A
C-A	104	26			104				
A-B	43	11			43				
A-C	270	67			270				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	27	7	609	0.044	27	0.1	0.0	6.373	A
B-A	23	6	471	0.048	23	0.1	0.1	8.268	A
C-AB	33	8	652	0.050	33	0.1	0.1	5.810	A
C-A	88	22			88				
A-B	36	9			36				
A-C	226	56			226				

2019, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J5	J5: Oldways Rd_Church End_Ravensden Rd	T-Junction	Two-way		1.12	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2019	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	115	100.000
B		ONE HOUR	✓	42	100.000
C		ONE HOUR	✓	261	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	14	101
	B	17	0	25
	C	235	26	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	0	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.04	5.84	0.0	A	23	34
B-A	0.04	7.88	0.0	A	16	23
C-AB	0.05	5.12	0.1	A	33	50
C-A					206	309
A-B					13	19
A-C					93	139

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	19	5	656	0.029	19	0.0	0.0	5.653	A
B-A	13	3	503	0.025	13	0.0	0.0	7.345	A
C-AB	26	6	750	0.034	25	0.0	0.0	5.115	A
C-A	171	43			171				
A-B	11	3			11				
A-C	76	19			76				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	22	6	650	0.035	22	0.0	0.0	5.732	A
B-A	15	4	491	0.031	15	0.0	0.0	7.561	A
C-AB	32	8	769	0.042	32	0.0	0.1	5.031	A
C-A	202	51			202				
A-B	13	3			13				
A-C	91	23			91				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	28	7	643	0.043	27	0.0	0.0	5.845	A
B-A	19	5	476	0.039	19	0.0	0.0	7.875	A
C-AB	43	11	794	0.054	42	0.1	0.1	4.919	A
C-A	245	61			245				
A-B	15	4			15				
A-C	111	28			111				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	28	7	643	0.043	28	0.0	0.0	5.845	A
B-A	19	5	476	0.039	19	0.0	0.0	7.876	A
C-AB	43	11	794	0.054	43	0.1	0.1	4.916	A
C-A	245	61			245				
A-B	15	4			15				
A-C	111	28			111				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	22	6	650	0.035	23	0.0	0.0	5.735	A
B-A	15	4	491	0.031	15	0.0	0.0	7.565	A
C-AB	32	8	769	0.042	32	0.1	0.1	5.025	A
C-A	202	51			202				
A-B	13	3			13				
A-C	91	23			91				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	19	5	656	0.029	19	0.0	0.0	5.656	A
B-A	13	3	503	0.025	13	0.0	0.0	7.350	A
C-AB	26	6	750	0.034	26	0.1	0.0	5.115	A
C-A	171	43			171				
A-B	11	3			11				
A-C	76	19			76				

2030-Background+Comm, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J5	J5: Oldways Rd_Church End_Ravensden Rd	T-Junction	Two-way		1.46	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2030-Background+Comm	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	396	100.000
B		ONE HOUR	✓	75	100.000
C		ONE HOUR	✓	182	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	55	341
	B	34	0	41
	C	140	42	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	3	0	3
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.08	7.19	0.1	A	38	56
B-A	0.09	9.90	0.1	A	31	47
C-AB	0.09	6.09	0.1	A	48	73
C-A					119	178
A-B					50	76
A-C					313	469

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	599	0.052	31	0.0	0.1	6.521	A
B-A	26	6	459	0.056	25	0.0	0.1	8.544	A
C-AB	38	9	652	0.058	37	0.0	0.1	5.852	A
C-A	99	25			99				
A-B	41	10			41				
A-C	257	64			257				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	37	9	583	0.063	37	0.1	0.1	6.788	A
B-A	31	8	439	0.070	31	0.1	0.1	9.069	A
C-AB	47	12	652	0.072	47	0.1	0.1	5.947	A
C-A	117	29			117				
A-B	49	12			49				
A-C	307	77			307				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	45	11	561	0.081	45	0.1	0.1	7.193	A
B-A	37	9	412	0.091	37	0.1	0.1	9.892	A
C-AB	61	15	652	0.093	61	0.1	0.1	6.083	A
C-A	140	35			140				
A-B	61	15			61				
A-C	375	94			375				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	45	11	561	0.081	45	0.1	0.1	7.194	A
B-A	37	9	412	0.091	37	0.1	0.1	9.898	A
C-AB	61	15	652	0.093	61	0.1	0.1	6.088	A
C-A	140	35			140				
A-B	61	15			61				
A-C	375	94			375				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	37	9	583	0.063	37	0.1	0.1	6.790	A
B-A	31	8	439	0.070	31	0.1	0.1	9.078	A
C-AB	47	12	652	0.072	47	0.1	0.1	5.952	A
C-A	117	29			117				
A-B	49	12			49				
A-C	307	77			307				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	599	0.052	31	0.1	0.1	6.525	A
B-A	26	6	459	0.056	26	0.1	0.1	8.560	A
C-AB	38	9	652	0.058	38	0.1	0.1	5.863	A
C-A	99	25			99				
A-B	41	10			41				
A-C	257	64			257				

2030-Background+Comm, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J5	J5: Oldways Rd_Church End_Ravensden Rd	T-Junction	Two-way		1.15	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2030-Background+Comm	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	133	100.000
B		ONE HOUR	✓	48	100.000
C		ONE HOUR	✓	302	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	16	117
	B	20	0	28
	C	272	30	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	0	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.05	5.94	0.1	A	26	39
B-A	0.05	8.17	0.0	A	18	28
C-AB	0.06	5.04	0.1	A	41	61
C-A					236	354
A-B					15	22
A-C					107	161

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	21	5	651	0.032	21	0.0	0.0	5.708	A
B-A	15	4	494	0.031	15	0.0	0.0	7.519	A
C-AB	31	8	765	0.040	31	0.0	0.1	5.041	A
C-A	197	49			197				
A-B	12	3			12				
A-C	88	22			88				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	25	6	645	0.039	25	0.0	0.0	5.803	A
B-A	18	4	480	0.037	18	0.0	0.0	7.783	A
C-AB	39	10	787	0.050	39	0.1	0.1	4.952	A
C-A	232	58			232				
A-B	14	4			14				
A-C	105	26			105				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	637	0.048	31	0.0	0.1	5.937	A
B-A	22	6	462	0.048	22	0.0	0.0	8.171	A
C-AB	52	13	817	0.064	52	0.1	0.1	4.831	A
C-A	280	70			280				
A-B	18	4			18				
A-C	129	32			129				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	637	0.048	31	0.1	0.1	5.937	A
B-A	22	6	462	0.048	22	0.0	0.0	8.173	A
C-AB	52	13	817	0.064	52	0.1	0.1	4.828	A
C-A	280	70			280				
A-B	18	4			18				
A-C	129	32			129				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	25	6	645	0.039	25	0.1	0.0	5.804	A
B-A	18	4	480	0.037	18	0.0	0.0	7.785	A
C-AB	39	10	787	0.050	39	0.1	0.1	4.942	A
C-A	232	58			232				
A-B	14	4			14				
A-C	105	26			105				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	21	5	651	0.032	21	0.0	0.0	5.714	A
B-A	15	4	493	0.031	15	0.0	0.0	7.525	A
C-AB	31	8	765	0.040	31	0.1	0.1	5.040	A
C-A	196	49			196				
A-B	12	3			12				
A-C	88	22			88				

2030-Background+Comm+Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J5	J5: Oldways Rd_Church End_Ravensden Rd	T-Junction	Two-way		1.39	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2030-Background+Comm+Dev	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	405	100.000
B		ONE HOUR	✓	75	100.000
C		ONE HOUR	✓	216	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	55	350
	B	34	0	41
	C	174	42	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	3	0	3
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.08	7.23	0.1	A	38	56
B-A	0.09	10.14	0.1	B	31	47
C-AB	0.10	5.89	0.2	A	51	77
C-A					147	221
A-B					50	76
A-C					321	482

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	597	0.052	31	0.0	0.1	6.543	A
B-A	26	6	453	0.057	25	0.0	0.1	8.665	A
C-AB	39	10	668	0.059	39	0.0	0.1	5.721	A
C-A	123	31			123				
A-B	41	10			41				
A-C	263	66			263				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	37	9	581	0.063	37	0.1	0.1	6.817	A
B-A	31	8	432	0.071	30	0.1	0.1	9.232	A
C-AB	49	12	671	0.073	49	0.1	0.1	5.789	A
C-A	145	36			145				
A-B	49	12			49				
A-C	315	79			315				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	45	11	558	0.081	45	0.1	0.1	7.234	A
B-A	37	9	403	0.093	37	0.1	0.1	10.129	B
C-AB	65	16	676	0.096	64	0.1	0.2	5.886	A
C-A	173	43			173				
A-B	61	15			61				
A-C	385	96			385				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	45	11	558	0.081	45	0.1	0.1	7.234	A
B-A	37	9	403	0.093	37	0.1	0.1	10.137	B
C-AB	65	16	676	0.096	65	0.2	0.2	5.891	A
C-A	173	43			173				
A-B	61	15			61				
A-C	385	96			385				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	37	9	581	0.063	37	0.1	0.1	6.822	A
B-A	31	8	432	0.071	31	0.1	0.1	9.240	A
C-AB	49	12	671	0.074	50	0.2	0.1	5.794	A
C-A	145	36			145				
A-B	49	12			49				
A-C	315	79			315				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	597	0.052	31	0.1	0.1	6.547	A
B-A	26	6	453	0.057	26	0.1	0.1	8.679	A
C-AB	39	10	668	0.059	40	0.1	0.1	5.732	A
C-A	123	31			123				
A-B	41	10			41				
A-C	263	66			263				

2030-Background+Comm+Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J5	J5: Oldways Rd_Church End_Ravensden Rd	T-Junction	Two-way		1.08	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2030-Background+Comm+Dev	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	158	100.000
B		ONE HOUR	✓	48	100.000
C		ONE HOUR	✓	314	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	16	142
	B	20	0	28
	C	284	30	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	0	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.05	6.01	0.1	A	26	39
B-A	0.05	8.35	0.1	A	18	28
C-AB	0.07	5.03	0.1	A	42	62
C-A					246	370
A-B					15	22
A-C					130	195

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	21	5	646	0.033	21	0.0	0.0	5.755	A
B-A	15	4	487	0.031	15	0.0	0.0	7.622	A
C-AB	31	8	767	0.041	31	0.0	0.1	5.032	A
C-A	205	51			205				
A-B	12	3			12				
A-C	107	27			107				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	25	6	639	0.039	25	0.0	0.0	5.861	A
B-A	18	4	473	0.038	18	0.0	0.0	7.915	A
C-AB	40	10	789	0.051	40	0.1	0.1	4.940	A
C-A	242	61			242				
A-B	14	4			14				
A-C	128	32			128				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	630	0.049	31	0.0	0.1	6.012	A
B-A	22	6	453	0.049	22	0.0	0.1	8.350	A
C-AB	54	13	819	0.065	53	0.1	0.1	4.819	A
C-A	292	73			292				
A-B	18	4			18				
A-C	156	39			156				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	630	0.049	31	0.1	0.1	6.012	A
B-A	22	6	453	0.049	22	0.1	0.1	8.352	A
C-AB	54	13	819	0.065	54	0.1	0.1	4.818	A
C-A	292	73			292				
A-B	18	4			18				
A-C	156	39			156				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	25	6	639	0.039	25	0.1	0.0	5.864	A
B-A	18	4	473	0.038	18	0.1	0.0	7.918	A
C-AB	40	10	789	0.051	40	0.1	0.1	4.931	A
C-A	242	61			242				
A-B	14	4			14				
A-C	128	32			128				

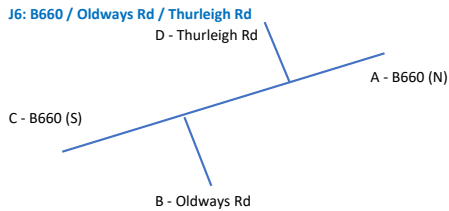
18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	21	5	646	0.033	21	0.0	0.0	5.761	A
B-A	15	4	487	0.031	15	0.0	0.0	7.628	A
C-AB	31	8	767	0.041	31	0.1	0.1	5.032	A
C-A	205	51			205				
A-B	12	3			12				
A-C	107	27			107				



Appendix V

J6: B660 / Oldaways Road / Thurleigh Road: Analysis – Input and Results



Background 2019

AM	A	B	C	D
A	0	39	182	19
B	12	0	39	100
C	78	56	0	119
D	18	254	213	0

Tempo 2019-2030

AM	A	B	C	D
A	1.1369	1.1369	1.1369	1.1369
B	1.1369	1.1369	1.1369	1.1369
C	1.1369	1.1369	1.1369	1.1369
D	1.1369	1.1369	1.1369	1.1369

Background 2030

AM	A	B	C	D
A	0	44	207	22
B	14	0	44	114
C	89	64	0	135
D	21	288	242	0

Committed Development

AM	A	B	C	D
A	0	0	0	0
B	1	0	0	0
C	0	0	0	0
D	0	0	0	0

Background 2030 + Committed

AM	A	B	C	D
A	0	44	207	22
B	14	0	44	114
C	89	64	0	135
D	21	288	242	0

Development

AM	A	B	C	D
A	0	5	0	0
B	20	0	0	13
C	0	0	0	0
D	0	3	0	0

Background 2030 + Development

AM	A	B	C	D
A	0	49	207	22
B	35	0	44	127
C	89	64	0	135
D	21	292	242	0

Background 2019

PM	A	B	C	D
A	0	9	78	17
B	22	0	35	216
C	130	20	0	162
D	16	82	81	0

Tempo 2019-2030

PM	A	B	C	D
A	1.1554	1.1554	1.1554	1.1554
B	1.1554	1.1554	1.1554	1.1554
C	1.1554	1.1554	1.1554	1.1554
D	1.1554	1.1554	1.1554	1.1554

Background 2030

PM	A	B	C	D
A	0	10	90	20
B	25	0	40	250
C	150	23	0	188
D	18	94	94	0

Committed Development

PM	A	B	C	D
A	0	1	0	0
B	0	0	0	0
C	0	0	0	0
D	0	0	0	0

Background 2030 + Committed

PM	A	B	C	D
A	0	11	90	20
B	25	0	40	250
C	150	23	0	188
D	18	95	94	0

Development

PM	A	B	C	D
A	0	16	0	0
B	7	0	0	4
C	0	0	0	0
D	0	10	0	0

Background 2030 + Development

PM	A	B	C	D
A	0	26	90	20
B	32	0	40	255
C	150	23	0	188
D	18	104	94	0

HGV%age

AM	A	B	C	D
A	0.0	0.0	0.0	0.0
B	0.0	0.0	0.0	0.0
C	0.0	0.0	0.0	0.0
D	0.1	0.0	0.0	0.0

HGV%age

PM	A	B	C	D
A	0.0%	0.0%	1.3%	0.0%
B	0.0%	0.0%	0.0%	0.0%
C	0.8%	0.0%	0.0%	0.6%
D	0.0%	1.3%	0.0%	0.0%

Junctions 9
PICADY 9 - Priority Intersection Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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Filename: J6.j9
Path: C:\Users\Martin\OneDrive - Martin Andrews Consulting Ltd\Projects 200 - 299\248 - Salph End, Bedford\Reports\TA\Junction Analysis
Report generation date: 21/01/2020 13:27:35

- »2019, AM
- »2019, PM
- »2030-Background+Committed, AM
- »2030-Background+Committed, PM
- »2030-Background+Committed+Dev, AM
- »2030-Background+Committed+Dev, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2019								
Stream B-ACD	0.9	20.99	0.49	C	2.6	33.12	0.74	D
Stream A-BCD	0.1	5.19	0.04	A	0.1	6.45	0.04	A
Stream D-A	2.5	550.73	1.11	F	0.0	8.44	0.04	A
Stream D-BC	30.0	203.02	1.09	F	0.6	12.97	0.39	B
Stream C-ABD	0.3	6.94	0.16	A	0.1	4.90	0.05	A
2030-Background+Committed								
Stream B-ACD	1.6	32.42	0.64	D	6.0	66.80	0.89	F
Stream A-BCD	0.1	5.16	0.05	A	0.1	6.67	0.05	A
Stream D-A	4.1	837.36	1.09	F	0.0	9.06	0.05	A
Stream D-BC	73.9	557.60	1.27	F	0.9	15.54	0.47	C
Stream C-ABD	0.4	7.61	0.20	A	0.1	4.83	0.06	A
2030-Background+Committed+Dev								
Stream B-ACD	3.1	52.42	0.79	F	7.9	84.78	0.93	F
Stream A-BCD	0.1	5.19	0.05	A	0.1	6.58	0.05	A
Stream D-A	4.4	911.74	1.12	F	0.1	9.28	0.05	A
Stream D-BC	83.8	633.37	1.30	F	1.0	16.65	0.50	C
Stream C-ABD	0.4	7.73	0.21	A	0.1	4.85	0.06	A

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

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

File summary

File Description

Title	J6: B660 / Oldways Rd / Thurleigh Rd
Location	
Site number	
Date	17/01/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DESKTOP-2HPI2P9\Martin
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

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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)	Run automatically
D1	2019	AM	ONE HOUR	07:45	09:15	15	✓
D2	2019	PM	ONE HOUR	16:45	18:15	15	✓
D3	2030-Background+Committed	AM	ONE HOUR	07:45	09:15	15	✓
D4	2030-Background+Committed	PM	ONE HOUR	16:45	18:15	15	✓
D5	2030-Background+Committed+Dev	AM	ONE HOUR	07:45	09:15	15	✓
D6	2030-Background+Committed+Dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2019, 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	Right-Left Stagger	Two-way		96.18	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	B660 N		Major
B	Oldways Road		Minor
C	B660 S		Major
D	Thurleigh Road		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A	6.50			150.0	✓	0.00
C	6.50			150.0	✓	0.00

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)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.90								19	22
D	One lane plus flare		10.00	8.90	5.90	5.07	5.07	✓	3.00	0	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-B	Slope for D-C
1	A-D	661	-	-	-	0.250	0.250	0.250	-	0.250	-	-
1	B-AD	490	0.087	0.221	-	-	-	0.139	0.315	0.139	0.087	0.221
1	B-C	631	0.095	0.239	-	-	-	-	-	-	0.095	0.239
1	C-B	661	0.250	0.250	-	-	-	-	-	-	0.250	0.250
1	D-A	564	-	-	-	0.214	0.085	0.214	-	0.085	-	-
1	D-BC	571	0.162	0.162	0.368	0.257	0.102	0.257	-	0.102	-	-

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)	Run automatically
D1	2019	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	240	100.000
B		ONE HOUR	✓	151	100.000
C		ONE HOUR	✓	253	100.000
D		ONE HOUR	✓	485	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	A	B	C	D	
From	A	0	39	182	19
	B	12	0	39	100
	C	78	56	0	119
	D	18	254	213	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.49	20.99	0.9	C	139	208
ABCD	0.04	5.19	0.1	A	24	37
A-B					35	52
A-C					161	242
D-A	1.11	550.73	2.5	F	17	25
D-BC	1.09	203.02	30.0	F	429	643
C-ABD	0.16	6.94	0.3	A	74	111
C-D					96	144
C-A					63	94

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	114	28	403	0.282	112	0.0	0.4	12.294	B
ABCD	19	5	713	0.026	19	0.0	0.0	5.182	A
A-B	29	7			29				
A-C	133	33			133				
D-A	14	3	373	0.036	13	0.0	0.0	10.010	B
D-BC	352	88	505	0.696	343	0.0	2.1	21.280	C
C-ABD	55	14	636	0.087	54	0.0	0.1	6.191	A
C-D	82	20			82				
C-A	54	13			54				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	136	34	379	0.358	135	0.4	0.5	14.707	B
ABCD	24	6	724	0.033	24	0.0	0.0	5.136	A
A-B	34	8			34				
A-C	158	40			158				
D-A	16	4	216	0.075	16	0.0	0.1	17.971	C
D-BC	420	105	492	0.854	410	2.1	4.6	39.777	E
C-ABD	70	18	631	0.111	70	0.1	0.2	6.416	A
C-D	95	24			95				
C-A	62	16			62				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	166	42	346	0.481	165	0.5	0.9	19.736	C
ABCD	31	8	741	0.042	31	0.0	0.1	5.073	A
A-B	41	10			41				
A-C	192	48			192				
D-A	20	5	18	1.106	12	0.1	2.0	434.724	F
D-BC	514	129	474	1.085	458	4.6	18.5	111.164	F
C-ABD	95	24	627	0.151	94	0.2	0.3	6.755	A
C-D	111	28			111				
C-A	73	18			73				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	166	42	337	0.493	166	0.9	0.9	20.986	C
ABCD	31	8	741	0.042	31	0.1	0.1	5.077	A
A-B	41	10			41				
A-C	192	48			192				
D-A	20	5	22	0.886	18	2.0	2.5	550.728	F
D-BC	514	129	473	1.087	468	18.5	30.0	203.024	F
C-ABD	96	24	615	0.155	96	0.3	0.3	6.939	A
C-D	110	28			110				
C-A	72	18			72				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	136	34	362	0.375	137	0.9	0.6	16.100	C
ABCD	24	6	724	0.033	24	0.1	0.0	5.140	A
A-B	34	8			34				
A-C	158	40			158				
D-A	16	4	24	0.679	16	2.5	2.5	394.296	F
D-BC	420	105	491	0.855	475	30.0	16.2	180.533	F
C-ABD	71	18	606	0.118	72	0.3	0.2	6.742	A
C-D	94	24			94				
C-A	62	15			62				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	114	28	393	0.289	114	0.6	0.4	12.948	B
ABCD	19	5	713	0.026	19	0.0	0.0	5.189	A
A-B	29	7			29				
A-C	133	33			133				
D-A	14	3	271	0.050	23	2.5	0.1	15.063	C
D-BC	352	88	503	0.699	406	16.2	2.6	50.970	F
C-ABD	56	14	621	0.090	56	0.2	0.1	6.376	A
C-D	81	20			81				
C-A	53	13			53				

2019, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way		13.33	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2019	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	104	100.000
B		ONE HOUR	✓	273	100.000
C		ONE HOUR	✓	312	100.000
D		ONE HOUR	✓	179	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	9	78	17
	B	22	0	35	216
	C	130	20	0	162
	D	16	82	81	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	1	0
	B	0	0	0	0
	C	1	0	0	1
	D	0	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.74	33.12	2.6	D	251	376
ABCD	0.04	6.45	0.1	A	18	27
A-B					8	12
A-C					69	104
D-A	0.04	8.44	0.0	A	15	22
D-BC	0.39	12.97	0.6	B	150	224
C-ABD	0.05	4.90	0.1	A	28	43
C-D					143	215
C-A					115	172

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	206	51	438	0.469	202	0.0	0.9	15.031	C
ABCD	14	4	606	0.024	14	0.0	0.0	6.090	A
A-B	7	2			7				
A-C	57	14			57				
D-A	12	3	488	0.025	12	0.0	0.0	7.553	A
D-BC	123	31	493	0.249	121	0.0	0.3	9.699	A
C-ABD	21	5	759	0.028	21	0.0	0.0	4.895	A
C-D	119	30			119				
C-A	95	24			95				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	245	61	425	0.577	244	0.9	1.3	19.605	C
ABCD	18	4	595	0.030	18	0.0	0.0	6.235	A
A-B	8	2			8				
A-C	68	17			68				
D-A	14	4	471	0.031	14	0.0	0.0	7.889	A
D-BC	147	37	479	0.306	146	0.3	0.4	10.867	B
C-ABD	27	7	779	0.035	27	0.0	0.0	4.805	A
C-D	141	35			141				
C-A	113	28			113				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	301	75	407	0.738	296	1.3	2.5	30.906	D
ABCD	22	6	582	0.039	22	0.0	0.1	6.441	A
A-B	10	2			10				
A-C	83	21			83				
D-A	18	4	445	0.040	18	0.0	0.0	8.423	A
D-BC	179	45	459	0.391	179	0.4	0.6	12.878	B
C-ABD	37	9	807	0.045	37	0.0	0.1	4.688	A
C-D	170	43			170				
C-A	137	34			137				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	301	75	407	0.738	300	2.5	2.6	33.119	D
ABCD	22	6	581	0.039	22	0.1	0.1	6.455	A
A-B	10	2			10				
A-C	83	21			83				
D-A	18	4	444	0.040	18	0.0	0.0	8.438	A
D-BC	179	45	458	0.392	179	0.6	0.6	12.969	B
C-ABD	37	9	807	0.045	37	0.1	0.1	4.693	A
C-D	170	43			170				
C-A	137	34			137				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	245	61	425	0.577	250	2.6	1.4	21.109	C
ABCD	18	4	594	0.030	18	0.1	0.0	6.258	A
A-B	8	2			8				
A-C	68	17			68				
D-A	14	4	470	0.031	14	0.0	0.0	7.910	A
D-BC	147	37	478	0.307	147	0.6	0.5	10.969	B
C-ABD	27	7	778	0.035	27	0.1	0.0	4.811	A
C-D	141	35			141				
C-A	113	28			113				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	206	51	438	0.469	208	1.4	0.9	15.757	C
ABCD	14	4	605	0.024	14	0.0	0.0	6.107	A
A-B	7	2			7				
A-C	57	14			57				
D-A	12	3	487	0.025	12	0.0	0.0	7.577	A
D-BC	123	31	493	0.249	123	0.5	0.3	9.809	A
C-ABD	21	5	758	0.028	21	0.0	0.0	4.901	A
C-D	119	30			119				
C-A	95	24			95				

2030-Background+Committed, 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	Right-Left Stagger	Two-way		248.92	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2030-Background+Committed	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	273	100.000
B		ONE HOUR	✓	172	100.000
C		ONE HOUR	✓	288	100.000
D		ONE HOUR	✓	551	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	44	207	22
	B	14	0	44	114
	C	89	64	0	135
	D	21	288	242	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.64	32.42	1.6	D	158	237
A-BCD	0.05	5.16	0.1	A	30	45
A-B					39	58
A-C					182	273
D-A	1.09	837.36	4.1	F	19	29
D-BC	1.27	557.60	73.9	F	486	730
C-ABD	0.20	7.61	0.4	A	91	137
C-D					104	156
C-A					69	103

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	129	32	387	0.335	128	0.0	0.5	13.771	B
A-BCD	22	6	721	0.031	22	0.0	0.0	5.152	A
A-B	32	8			32				
A-C	151	38			151				
D-A	16	4	287	0.055	16	0.0	0.1	13.237	B
D-BC	399	100	495	0.805	385	0.0	3.5	29.722	D
C-ABD	66	16	634	0.104	65	0.0	0.2	6.322	A
C-D	91	23			91				
C-A	60	15			60				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	155	39	359	0.431	154	0.5	0.7	17.472	C
A-BCD	29	7	734	0.039	29	0.0	0.1	5.103	A
A-B	38	10			38				
A-C	179	45			179				
D-A	19	5	19	1.008	12	0.1	1.8	399.631	F
D-BC	476	119	481	0.991	448	3.5	10.6	75.002	F
C-ABD	85	21	629	0.135	85	0.2	0.2	6.616	A
C-D	105	26			105				
C-A	69	17			69				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	189	47	318	0.596	187	0.7	1.4	26.942	D
ABCD	38	10	753	0.051	38	0.1	0.1	5.038	A
A-B	46	11			46				
A-C	216	54			216				
D-A	23	6	22	1.045	18	1.8	2.9	599.766	F
D-BC	584	146	459	1.270	456	10.6	42.4	227.820	F
C-ABD	117	29	622	0.188	117	0.2	0.4	7.129	A
C-D	120	30			120				
C-A	79	20			79				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	189	47	298	0.636	188	1.4	1.6	32.415	D
ABCD	38	10	753	0.051	38	0.1	0.1	5.041	A
A-B	46	11			46				
A-C	216	54			216				
D-A	23	6	21	1.087	19	2.9	4.0	794.162	F
D-BC	584	146	459	1.270	459	42.4	73.6	462.740	F
C-ABD	121	30	595	0.204	121	0.4	0.4	7.611	A
C-D	118	30			118				
C-A	78	19			78				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	155	39	315	0.491	157	1.6	1.0	23.111	C
ABCD	29	7	733	0.039	29	0.1	0.1	5.111	A
A-B	38	9			38				
A-C	179	45			179				
D-A	19	5	22	0.870	18	4.0	4.1	837.360	F
D-BC	476	119	480	0.993	475	73.6	73.9	557.603	F
C-ABD	90	22	567	0.158	90	0.4	0.3	7.568	A
C-D	102	25			102				
C-A	67	17			67				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	129	32	341	0.379	131	1.0	0.6	17.232	C
ABCD	23	6	720	0.031	23	0.1	0.0	5.160	A
A-B	32	8			32				
A-C	151	38			151				
D-A	16	4	23	0.689	19	4.1	3.3	754.455	F
D-BC	399	100	494	0.807	488	73.9	51.6	465.185	F
C-ABD	69	17	567	0.121	69	0.3	0.2	7.242	A
C-D	89	22			89				
C-A	59	15			59				

2030-Background+Committed, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way		24.39	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2030-Background+Committed	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	121	100.000
B		ONE HOUR	✓	315	100.000
C		ONE HOUR	✓	361	100.000
D		ONE HOUR	✓	207	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	11	90	20
	B	25	0	40	250
	C	150	23	0	188
	D	18	95	94	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	1	0
	B	0	0	0	0
	C	1	0	0	1
	D	0	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.89	66.80	6.0	F	289	434
ABCD	0.05	6.67	0.1	A	22	33
A-B					10	15
A-C					79	119
D-A	0.05	9.06	0.0	A	17	25
D-BC	0.47	15.54	0.9	C	173	260
C-ABD	0.06	4.83	0.1	A	35	53
C-D					165	247
C-A					131	197

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	237	59	428	0.554	232	0.0	1.2	18.015	C
ABCD	17	4	598	0.029	17	0.0	0.0	6.200	A
A-B	8	2			8				
A-C	66	16			66				
D-A	14	3	474	0.029	13	0.0	0.0	7.807	A
D-BC	142	36	482	0.295	141	0.0	0.4	10.554	B
C-ABD	26	6	775	0.033	26	0.0	0.0	4.820	A
C-D	137	34			137				
C-A	109	27			109				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	283	71	413	0.686	280	1.2	2.0	26.431	D
ABCD	21	5	586	0.036	21	0.0	0.0	6.379	A
A-B	10	2			10				
A-C	78	19			78				
D-A	16	4	453	0.036	16	0.0	0.0	8.245	A
D-BC	170	42	465	0.365	169	0.4	0.6	12.212	B
C-ABD	33	8	799	0.042	33	0.0	0.1	4.723	A
C-D	162	40			162				
C-A	129	32			129				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	347	87	392	0.885	334	2.0	5.1	53.378	F
A-BCD	27	7	571	0.048	27	0.0	0.1	6.632	A
A-B	12	3			12				
A-C	94	24			94				
D-A	20	5	419	0.047	20	0.0	0.0	9.014	A
D-BC	208	52	442	0.471	207	0.6	0.9	15.315	C
C-ABD	46	11	833	0.055	46	0.1	0.1	4.595	A
C-D	196	49			196				
C-A	156	39			156				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	347	87	392	0.885	344	5.1	6.0	66.804	F
A-BCD	27	7	568	0.048	27	0.1	0.1	6.670	A
A-B	12	3			12				
A-C	94	24			94				
D-A	20	5	417	0.048	20	0.0	0.0	9.058	A
D-BC	208	52	441	0.472	208	0.9	0.9	15.544	C
C-ABD	46	11	832	0.055	46	0.1	0.1	4.601	A
C-D	196	49			196				
C-A	156	39			156				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	283	71	412	0.687	297	6.0	2.4	34.314	D
A-BCD	21	5	582	0.037	21	0.1	0.1	6.432	A
A-B	10	2			10				
A-C	78	19			78				
D-A	16	4	450	0.036	16	0.0	0.0	8.294	A
D-BC	170	42	463	0.367	171	0.9	0.6	12.444	B
C-ABD	34	8	798	0.042	34	0.1	0.1	4.729	A
C-D	162	40			162				
C-A	129	32			129				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	237	59	427	0.555	242	2.4	1.3	19.791	C
A-BCD	17	4	596	0.029	17	0.1	0.0	6.229	A
A-B	8	2			8				
A-C	66	16			66				
D-A	14	3	473	0.029	14	0.0	0.0	7.840	A
D-BC	142	36	481	0.296	143	0.6	0.4	10.730	B
C-ABD	26	6	774	0.033	26	0.1	0.0	4.829	A
C-D	137	34			137				
C-A	109	27			109				

2030-Background+Committed+Dev, 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	Right-Left Stagger	Two-way		278.15	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2030-Background+Committed+Dev	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	278	100.000
B		ONE HOUR	✓	206	100.000
C		ONE HOUR	✓	288	100.000
D		ONE HOUR	✓	555	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	A	B	C	D	
From	A	0	49	207	22
	B	35	0	44	127
	C	89	64	0	135
	D	21	292	242	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.79	52.42	3.1	F	189	284
ABCD	0.05	5.19	0.1	A	30	45
AB					43	65
AC					182	273
D-A	1.12	911.74	4.4	F	19	29
D-BC	1.30	633.37	83.8	F	490	735
C-ABD	0.21	7.73	0.4	A	92	138
C-D					104	156
C-A					69	103

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	155	39	381	0.407	152	0.0	0.7	15.596	C
ABCD	23	6	718	0.032	22	0.0	0.0	5.178	A
AB	36	9			36				
AC	151	38			151				
D-A	16	4	270	0.059	16	0.0	0.1	14.129	B
D-BC	402	101	490	0.821	387	0.0	3.8	31.539	D
C-ABD	66	16	633	0.104	65	0.0	0.2	6.340	A
C-D	91	23			91				
C-A	60	15			60				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	185	46	352	0.526	184	0.7	1.1	21.175	C
ABCD	29	7	730	0.040	29	0.0	0.1	5.133	A
AB	42	11			42				
AC	179	45			179				
D-A	19	5	18	1.032	12	0.1	1.8	413.084	F
D-BC	480	120	474	1.013	447	3.8	12.1	83.554	F
C-ABD	85	21	627	0.136	85	0.2	0.2	6.643	A
C-D	105	26			105				
C-A	69	17			69				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	227	57	310	0.731	222	1.1	2.4	38.504	E
ABCD	39	10	749	0.052	39	0.1	0.1	5.071	A
A-B	51	13			51				
A-C	216	54			216				
D-A	23	6	21	1.076	18	1.8	3.1	633.625	F
D-BC	588	147	451	1.304	449	12.1	46.9	255.414	F
C-ABD	118	29	619	0.190	117	0.2	0.4	7.184	A
C-D	120	30			120				
C-A	79	20			79				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	227	57	289	0.786	224	2.4	3.1	52.421	F
ABCD	39	10	748	0.052	39	0.1	0.1	5.081	A
A-B	51	13			51				
A-C	216	54			216				
D-A	23	6	21	1.125	18	3.1	4.2	852.006	F
D-BC	588	147	451	1.305	450	46.9	81.4	518.421	F
C-ABD	122	30	589	0.207	122	0.4	0.4	7.727	A
C-D	118	29			118				
C-A	78	19			78				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	185	46	304	0.609	191	3.1	1.7	33.076	D
ABCD	29	7	728	0.040	29	0.1	0.1	5.148	A
A-B	42	11			42				
A-C	179	45			179				
D-A	19	5	21	0.899	18	4.2	4.4	911.737	F
D-BC	480	120	472	1.017	470	81.4	83.8	633.372	F
C-ABD	91	23	558	0.162	91	0.4	0.3	7.724	A
C-D	101	25			101				
C-A	67	17			67				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	155	39	329	0.471	158	1.7	0.9	21.362	C
ABCD	23	6	717	0.032	23	0.1	0.0	5.189	A
A-B	36	9			36				
A-C	151	38			151				
D-A	16	4	22	0.714	18	4.4	3.8	836.807	F
D-BC	402	101	489	0.823	483	83.8	63.6	551.142	F
C-ABD	69	17	557	0.125	70	0.3	0.2	7.406	A
C-D	89	22			89				
C-A	59	15			59				

2030-Background+Committed+Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way		30.32	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2030-Background+Committed+Dev	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	136	100.000
B		ONE HOUR	✓	327	100.000
C		ONE HOUR	✓	361	100.000
D		ONE HOUR	✓	216	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	26	90	20
	B	32	0	40	255
	C	150	23	0	188
	D	18	104	94	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	1	0
	B	0	0	0	0
	C	1	0	0	1
	D	0	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.93	84.78	7.9	F	300	450
ABCD	0.05	6.58	0.1	A	23	34
A-B					23	34
A-C					79	119
D-A	0.05	9.28	0.1	A	17	25
D-BC	0.50	16.65	1.0	C	182	273
C-ABD	0.06	4.85	0.1	A	35	53
C-D					165	247
C-A					131	197

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	246	62	426	0.578	241	0.0	1.3	19.005	C
ABCD	18	4	604	0.029	17	0.0	0.0	6.143	A
A-B	19	5			19				
A-C	66	16			66				
D-A	14	3	470	0.029	13	0.0	0.0	7.876	A
D-BC	149	37	479	0.311	147	0.0	0.4	10.863	B
C-ABD	26	6	771	0.034	26	0.0	0.0	4.846	A
C-D	137	34			137				
C-A	109	27			109				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	294	73	410	0.717	290	1.3	2.3	29.004	D
ABCD	22	5	593	0.037	22	0.0	0.1	6.308	A
A-B	23	6			23				
A-C	78	19			78				
D-A	16	4	447	0.036	16	0.0	0.0	8.350	A
D-BC	178	44	461	0.386	177	0.4	0.6	12.727	B
C-ABD	34	8	794	0.042	34	0.0	0.1	4.750	A
C-D	162	40			162				
C-A	129	32			129				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	360	90	389	0.926	343	2.3	6.4	63.121	F
A-BCD	28	7	580	0.049	28	0.1	0.1	6.538	A
A-B	27	7			27				
A-C	94	24			94				
D-A	20	5	410	0.048	20	0.0	0.1	9.220	A
D-BC	218	55	437	0.499	217	0.6	1.0	16.325	C
C-ABD	46	12	827	0.056	46	0.1	0.1	4.628	A
C-D	195	49			195				
C-A	156	39			156				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	360	90	389	0.926	354	6.4	7.9	84.783	F
A-BCD	28	7	576	0.049	28	0.1	0.1	6.582	A
A-B	27	7			27				
A-C	94	24			94				
D-A	20	5	408	0.049	20	0.1	0.1	9.282	A
D-BC	218	55	435	0.501	218	1.0	1.0	16.646	C
C-ABD	46	12	827	0.056	46	0.1	0.1	4.634	A
C-D	195	49			195				
C-A	156	39			156				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	294	73	410	0.718	314	7.9	2.8	43.003	E
A-BCD	22	5	588	0.037	22	0.1	0.1	6.375	A
A-B	22	6			22				
A-C	78	19			78				
D-A	16	4	444	0.036	16	0.1	0.0	8.417	A
D-BC	178	44	458	0.389	179	1.0	0.7	13.040	B
C-ABD	34	8	794	0.042	34	0.1	0.1	4.760	A
C-D	162	40			162				
C-A	129	32			129				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	246	62	425	0.579	252	2.8	1.4	21.371	C
A-BCD	18	4	602	0.029	18	0.1	0.0	6.176	A
A-B	19	5			19				
A-C	66	16			66				
D-A	14	3	468	0.029	14	0.0	0.0	7.915	A
D-BC	149	37	477	0.312	150	0.7	0.5	11.074	B
C-ABD	26	6	771	0.034	26	0.1	0.0	4.855	A
C-D	137	34			137				
C-A	109	27			109				



Appendix W

Road Safety Audit: Scenario 1 Access Only



safer roads for everyone

**Land North of Hookhams Lane,
Renhold, Bedford**

(Drawing No. 248-TA11)

Road Safety Audit Stage 1

**on behalf of Martin Andrews Consulting Ltd
(Manor Oak Homes)**

TMS reference no: 15386

Date: 9th December 2019

Land North of Hookhams Lane, Renhold Lane, Bedford

Drawing No. 248-TA11

Road Safety Audit Stage 1

1. Introduction

- 1.1 This report describes a Stage 1 Road Safety Audit carried out on a proposed priority junction at Land North of Hookhams Lane, Renhold, Bedford, on behalf of Martin Andrews Consulting Ltd (Manor Oak Homes). This audit relates to drawing number 248-TA11. The audit was carried out on 9th December 2019 in the offices of TMS Consultancy.
- 1.2 The audit team members were as follows:

Audit Team Leader

Darren Newbold – MSc, BSc (Hons), MCIHT, MSoRSA
Highways England Approved RSA Certificate of Competency
Principal Engineer, TMS Consultancy

Audit Team Member

Richard Cook - BA (Hons)
Graduate Engineer, TMS Consultancy

- 1.3 The audit comprised an examination of the documents listed in **Appendix A**.
- 1.4 The site was visited by the Audit Team on 9th December 2019 at 11.25 am. The weather was fine and dry. Traffic flows were very light. No pedestrian and cycle flows were observed.
- 1.5 The terms of reference of the Road Safety Audit are as described in GG 119 (GG 119 superseded HD 19/15 in November 2018). The team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the design to any other criteria.
- 1.6 All of the problems described in this report are considered by the audit team to require action in order to improve the safety of the scheme and minimise collision occurrence.

- 1.7 A scheme drawing is included in **Appendix B**, where the locations of specific problems are referenced. A location plan of the scheme is also included in this Appendix.
- 1.8 The scheme consists of proposed priority junction access for land at 25 Hookhams Lane, Renhold, Bedford consisting of 400 dwellings and a two-form entry Primary School.
- 1.9 **Road Safety Audit Response Report**

Following the completion of the road safety audit, the design team should prepare a road safety audit response report in collaboration with the Overseeing Organisation.

The response report should incorporate the following:

- **Decision Log** spreadsheet, where each Problem and Recommendation in the Safety Audit report is reiterated
- In the Decision Log, a response should be provided by the Design Team and Overseeing Organisation for each problem raised in the RSA report, together with an agreed action

Further information is provided in **GG 119 Sections 4.11 to 4.19** and **Appendix F** (where a road safety audit response report template is available).

The response report should be produced and finalised within *one month* of the issue of the RSA report. A copy of the response report should be issued to the Safety Audit Team for information.

2. Items resulting from this Stage 1 Audit

2.1 PROBLEM

Location – Hookhams Lane; site access junction

Summary: Potential darkness related vehicle collisions

There is no existing street lighting within the vicinity of the proposed site access at No. 25 Hookhams Lane. Given the introduction of the junction and a significant amount of additional traffic (and new turning manoeuvres), the lack of illumination may increase the potential for darkness related vehicle collisions.

RECOMMENDATION

At the detailed design stage, the site access junction should be illuminated.

2.2 PROBLEM

Location – Hookhams Lane

Summary: Potential trip hazard to pedestrians

There are shops on the south side of Hookhams Lane within the vicinity of the proposed site access junction, which is likely to introduce a pedestrian desire line to and from the development. Pedestrians wishing to cross Hookhams Lane will have to do so via full height kerbs, which may be a potential trip hazard to pedestrians, particularly to those with visual and mobility impairments.

RECOMMENDATION

At the detailed design stage, an uncontrolled pedestrian crossing point with dropped kerbs and tactile paving should be provided across Hookhams Lane adjacent to the site access junction.

Also, at the detailed design stage, an uncontrolled pedestrian crossing should be provided across the site access road adjacent to the junction with Hookhams Lane.

2.3 OTHER ISSUE

There is an existing BT cover and telegraph pole within the footway that will both be located within the proposed junction area. At the detailed design stage, both the service cover and telegraph poles should be appropriately relocated out of the carriageway into the footway.

3. **Audit Team Statement**

We certify that the terms of reference of the road safety audit are as described in GG 119 (formerly HD 19/15).

Audit Team Leader

Darren Newbold – MSc, BSc (Hons), MCIHT, MSoRSA
Highways England Approved RSA Certificate of Competency
Principal Engineer, TMS Consultancy

Signed



Date 9th December 2019

Audit Team Member

Richard Cook - BA (Hons)
Graduate Engineer, TMS Consultancy

Signed



Date 9th December 2019

TMS Consultancy

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CV4 7EZ



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Appendix A

Documents Examined:

- 248-TA13-Hookhams Access--Both Accesses.pdf
- Salph End ACCIDENT PLAN.pdf
- Salph End ACCIDENT REPORTS.pdf
- 18+02496+MAF+V13-Transport Statement.pdf
- 18+02496+MAF+V26..pdf
- 18+02496+MAF+V26A..pdf
- 18+02496+MAF+V27..pdf
- 248-TA-01-0-Salph End.pdf
- 248-TA01A-Location Plan.pdf
- 248-TA11A-No. 25 Hookhams Lane Access Option 1.pdf

Other Information Provided:

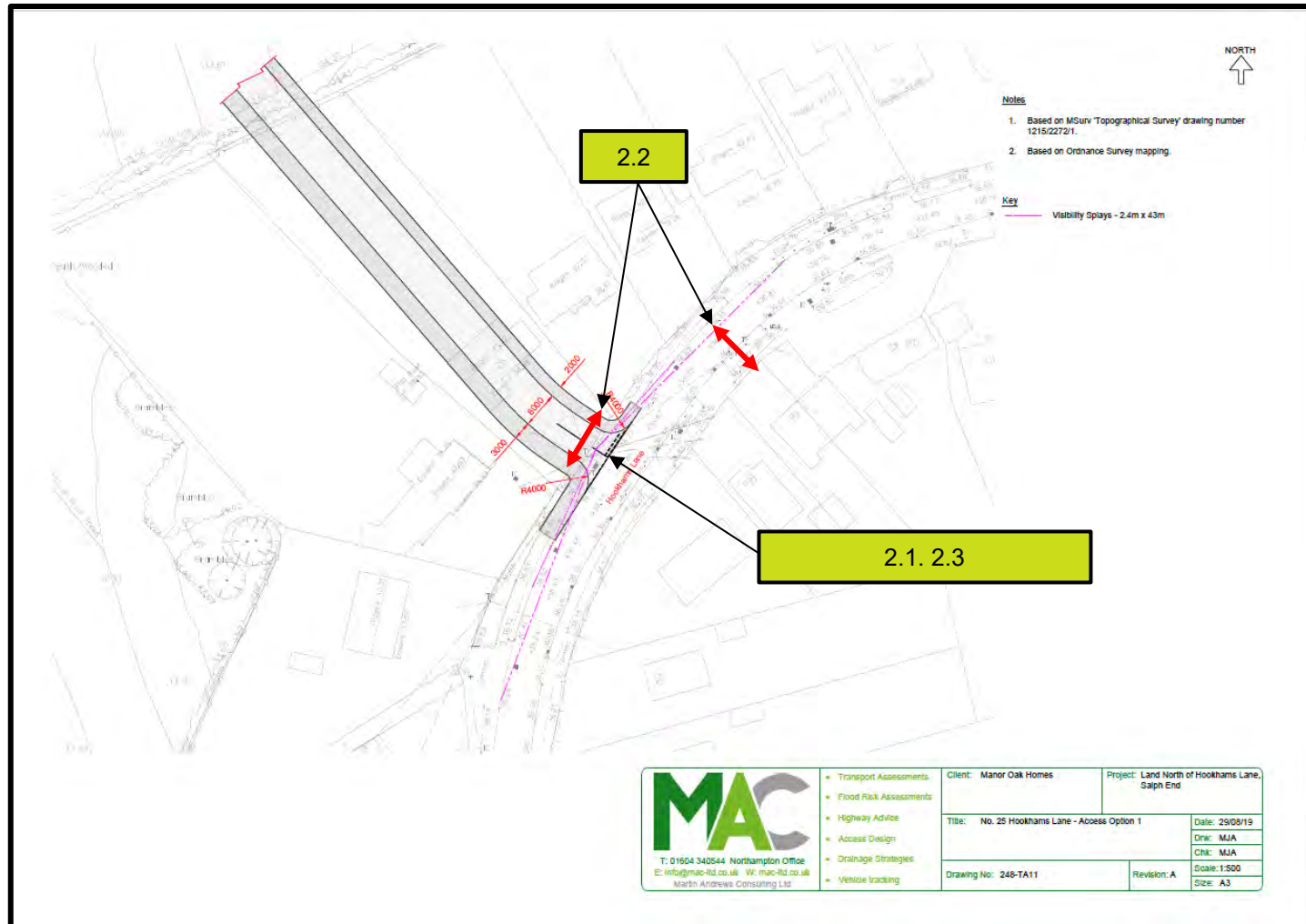
- RSA1 - Checklist of Information Required.docx

Appendix B

Please refer to the following page for a plan illustrating the locations of the problems identified as part of this audit (location numbers refer to paragraph numbers in the report).

The location of the scheme is shown below:







Appendix X

J Road Safety Audit: Scenario 1 Both Accesses



safer roads for everyone

**Land North of Hookhams Lane,
Renhold, Bedford**

(Drawing No. 248-TA13)

Road Safety Audit Stage 1

**on behalf of Martin Andrews Consulting Ltd
(Manor Oak Homes)**

TMS reference no: 15387

Date: 9th December 2019

Land North of Hookhams Lane, Renhold, Bedford

(Drawing No. 248-T13)

Road Safety Audit Stage 1

1. Introduction

- 1.1 This report describes a Stage 1 Road Safety Audit carried out on a proposed priority junction at Land North of Hookhams Lane, Renhold, Bedford, on behalf of Martin Andrews Consulting Ltd (Manor Oak Homes). This audit relates to drawing number 248-TA13. The audit was carried out on 9th December 2019 in the offices of TMS Consultancy.
- 1.2 The audit team members were as follows:

Audit Team Leader

Darren Newbold – MSc, BSc (Hons), MCIHT, MSoRSA
Highways England Approved RSA Certificate of Competency
Principal Engineer, TMS Consultancy

Audit Team Member

Richard Cook - BA (Hons)
Graduate Engineer, TMS Consultancy

- 1.3 The audit comprised an examination of the documents listed in **Appendix A**.
- 1.4 The site was visited by the Audit Team on 9th December 2019 at 11.25 am. The weather was fine and dry. Traffic flows were very light. No pedestrian and cycle flows were observed.
- 1.5 The terms of reference of the Road Safety Audit are as described in GG 119 (GG 119 superseded HD 19/15 in November 2018). The team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the design to any other criteria.
- 1.6 All of the problems described in this report are considered by the audit team to require action in order to improve the safety of the scheme and minimise collision occurrence.

- 1.7 A scheme drawing is included in **Appendix B**, where the locations of specific problems are referenced. A location plan of the scheme is also included in this Appendix.
- 1.8 The scheme consists of a proposed access for land at 27 Hookhams Lane, consisting of 14 dwellings. If planning consent is given, the proposed access will be located directly south of another proposed access (TMS Audit No. 15386). This audit assesses both proposed accesses and their proximity to each other.
- 1.9 **Road Safety Audit Response Report**

Following the completion of the road safety audit, the design team should prepare a road safety audit response report in collaboration with the Overseeing Organisation.

The response report should incorporate the following:

- **Decision Log** spreadsheet, where each Problem and Recommendation in the Safety Audit report is reiterated
- In the Decision Log, a response should be provided by the Design Team and Overseeing Organisation for each problem raised in the RSA report, together with an agreed action

Further information is provided in **GG 119 Sections 4.11 to 4.19** and **Appendix F** (where a road safety audit response report template is available).

The response report should be produced and finalised within *one month* of the issue of the RSA report. A copy of the response report should be issued to the Safety Audit Team for information.

2. Items resulting from this Stage 1 Audit

2.1 PROBLEM

Location – Hookhams Lane; site access junctions

Summary: Potential vehicle collisions

The two proposed site access junctions are very closely located. Given the proximity, it may be easy for drivers using the junction to misinterpret indicator signals of other approaching vehicles, which in turn may result in shunt, pull-out and turning type vehicle collisions.

RECOMMENDATION

The feasibility of rationalising the two access junctions into one should be investigated, by means of realigning the access road from the development at No. 27 to form a priority (or vehicle crossover) onto the site access road at No. 25.

2.2 PROBLEM

Location – Hookhams Lane; site access junction

Summary: Potential darkness related vehicle collisions

There is no existing street lighting within the vicinity of the proposed site access at No. 25 and No. 27 Hookhams Lane. Given the introduction of the junction and a significant amount of additional traffic (and new turning manoeuvres), the lack of illumination may increase the potential for darkness related vehicle collisions.

RECOMMENDATION

At the detailed design stage, the site access junctions should be illuminated.

2.3 PROBLEM

Location – Hookhams Lane

Summary: Potential trip hazard to pedestrians

There are shops on the south side of Hookhams Lane within the vicinity of the proposed site access junction, which is likely to introduce a pedestrian desire line to and from the development. Pedestrians wishing to cross Hookhams Lane will have to do so via full height kerbs, which may be a potential trip hazard to pedestrians, particularly to those with visual and mobility impairments.

RECOMMENDATION

At the detailed design stage, an uncontrolled pedestrian crossing point with dropped kerbs and tactile paving should be provided across Hookhams Lane adjacent to the site access junction.

Also, at the detailed design stage, an uncontrolled pedestrian crossing should be provided across both site access roads adjacent to the junction with Hookhams Lane.

2.4 PROBLEM

Location – Hookhams Lane; site access at No. 27

Summary: Potential skid hazard to vehicles

There is a metal service cover on Hookhams Lane that will be located along the give way line of the proposed site access junction at No. 27. The metal cover may be a potential skid hazard to vehicles, particularly two wheeled vehicles, making turning manoeuvres at the junction. This issue may be exacerbated during wet or icy conditions.

RECOMMENDATION

If practicable, the service cover should be relocated into the adjacent footway. Alternatively, the metal cover should be treated with a non-slip surface with similar skid resistance to the surrounding carriageway.

2.5 OTHER ISSUE

There is an existing BT cover and telegraph pole within the footway that will both be located within the proposed junction area (No. 25). At the detailed design stage, both the service cover and telegraph poles should be appropriately relocated out of the carriageway into the footway.

3. **Audit Team Statement**

We certify that the terms of reference of the road safety audit are as described in GG 119 (formerly HD 19/15).

Audit Team Leader

Darren Newbold – MSc, BSc (Hons), MCIHT, MSoRSA
Highways England Approved RSA Certificate of Competency
Principal Engineer, TMS Consultancy

Signed



Date 9th December 2019

Audit Team Member

Richard Cook - BA (Hons)
Graduate Engineer, TMS Consultancy

Signed



Date 9th December 2019

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Appendix A

Documents Examined:

- 248-TA13-Hookhams Access--Both Accesses.pdf
- Salph End ACCIDENT PLAN.pdf
- Salph End ACCIDENT REPORTS.pdf
- 18+02496+MAF+V13-Transport Statement.pdf
- 18+02496+MAF+V26..pdf
- 18+02496+MAF+V26A..pdf
- 18+02496+MAF+V27..pdf
- 248-TA-01-0-Salph End.pdf
- 248-TA01A-Location Plan.pdf
- 248-TA11A-No. 25 Hookhams Lane Access Option 1.pdf

Other Information Provided:

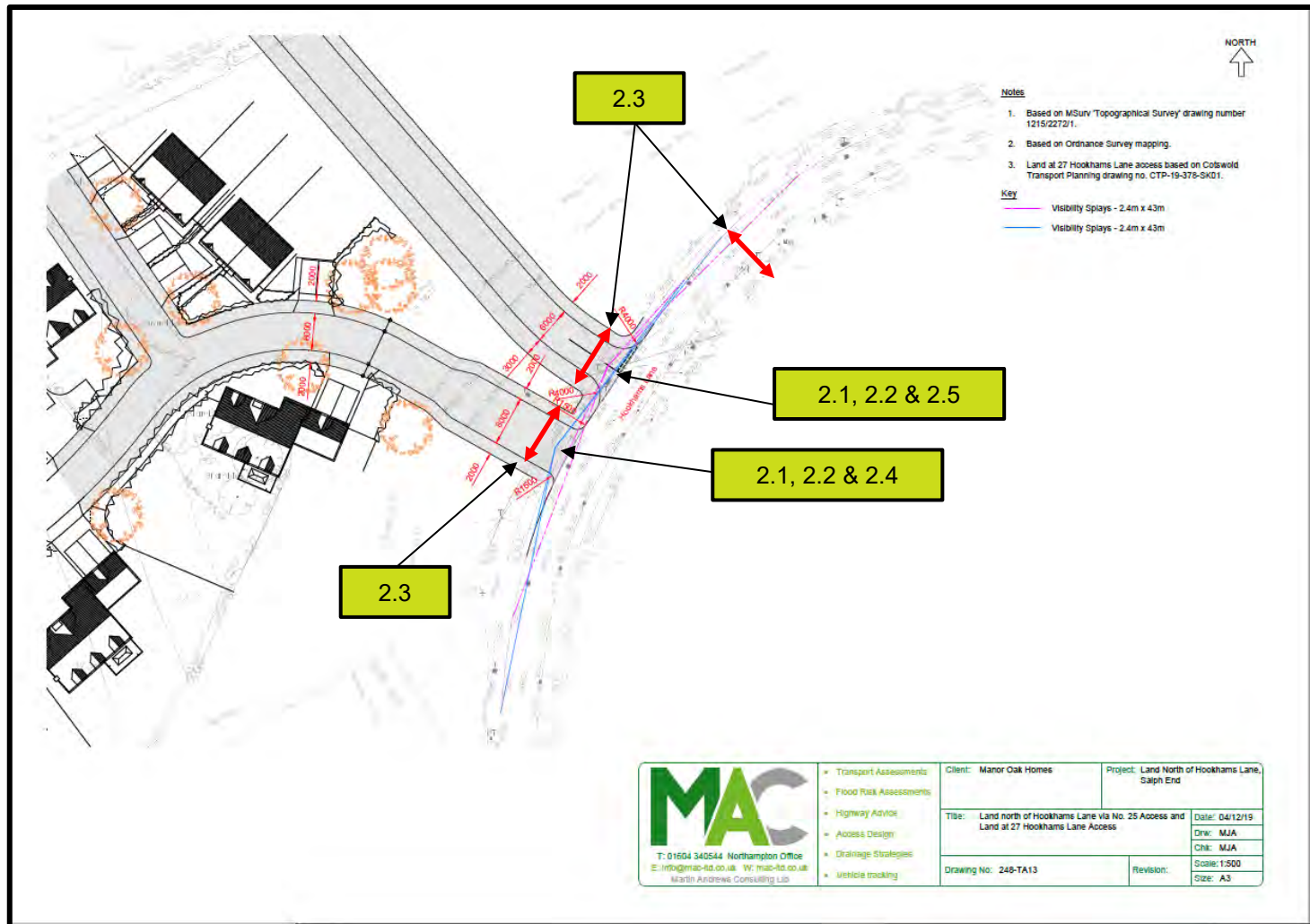
- RSA1 - Checklist of Information Required.docx

Appendix B

Please refer to the following page for a plan illustrating the locations of the problems identified as part of this audit (location numbers refer to paragraph numbers in the report).

The location of the scheme is shown below:

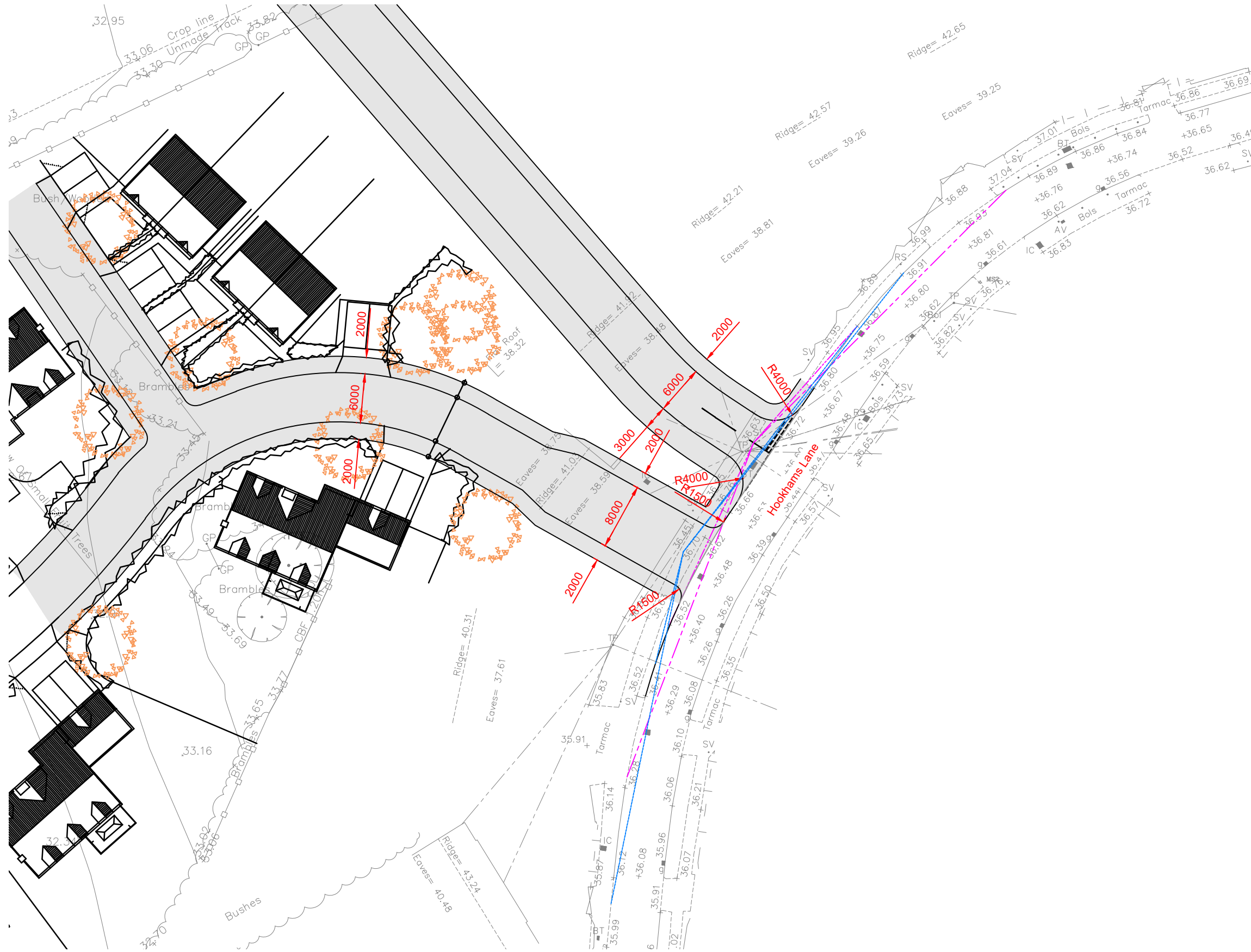
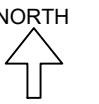






Appendix Y

Land North off Hookhams Lane via No. 25 Access and Land at 27 Hookhams Lane Access
MAC drawing no. 248-TA13



Notes

1. Based on MSurv 'Topographical Survey' drawing number 1215/2272/1.
2. Based on Ordnance Survey mapping.
3. Land at 27 Hookhams Lane access based on Cotswold Transport Planning drawing no. CTP-19-378-SK01.

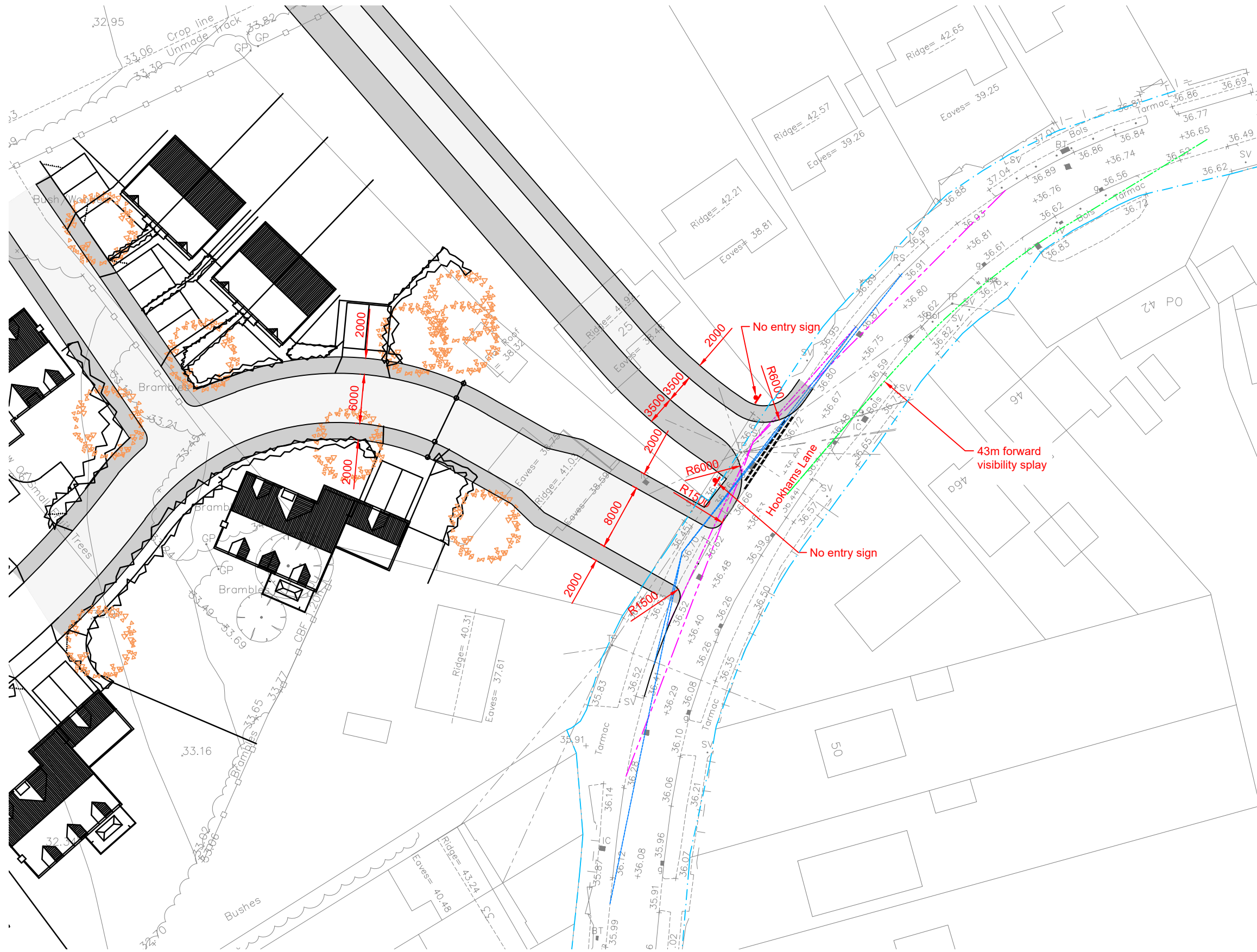
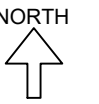
Key

- Visibility Splays - 2.4m x 43m
- Visibility Splays - 2.4m x 43m

<p>T: 01604 340544 Northampton Office E: info@mac-ltd.co.uk W: mac-ltd.co.uk Martin Andrews Consulting Ltd</p>	<ul style="list-style-type: none"> • Transport Assessments • Flood Risk Assessments • Highway Advice • Access Design • Drainage Strategies • Vehicle tracking 	Client: Manor Oak Homes	Project: Land North of Hookhams Lane, Salph End	
		Title: Land north of Hookhams Lane via No. 25 Access and Land at 27 Hookhams Lane Access		Date: 04/12/19
		Drawing No: 248-TA13		Revision:
				Scale: 1:500 Size: A3

Appendix Z

Egress for Land to the North off Hookhams Lane via
No. 25 and Access for Land at 27 Hookhams Lane
MAC drawing no. 248-TA14A




Notes

1. Based on MSurv 'Topographical Survey' drawing number 1215/2272/1.
2. Based on Ordnance Survey mapping.
3. Land at 27 Hookhams Lane access based on Cotswold Transport Planning drawing no. CTP-19-378-SK01.

Key

- Visibility Splays - 2.4m x 43m
- - - Forward visibility splay - 43m
- - - Highway boundary

 T: 01604 340544 Northampton Office E: info@mac-ltd.co.uk W: mac-ltd.co.uk Martin Andrews Consulting Ltd	<ul style="list-style-type: none"> • Transport Assessments • Flood Risk Assessments • Highway Advice • Access Design • Drainage Strategies • Vehicle tracking 	Client: Manor Oak Homes	Project: Land North of Hookhams Lane, Salph End		
		Title: Egress for Land to the North off Hookhams Lane via 25 and Access for Land at 27 Hookhams Lane		Date: 18/01/20	
				Drw: MJA	Chk: MJA
		Drawing No: 248-TA14		Revision: A	Scale: 1:500 Size: A3