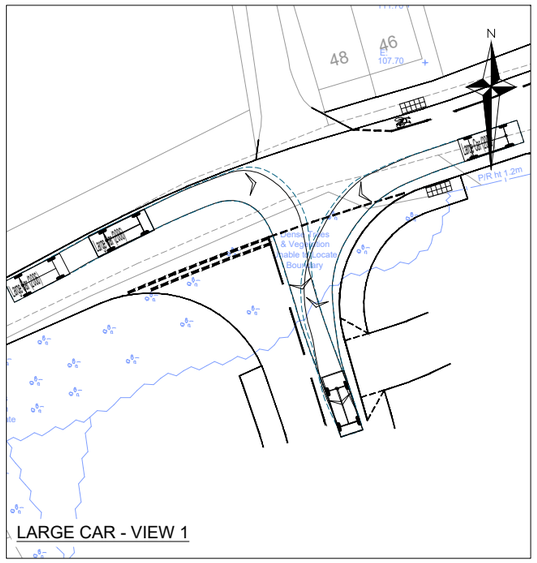
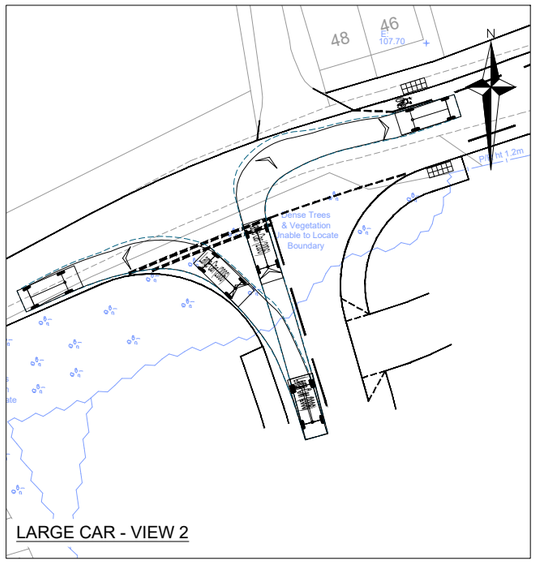
Appendix H

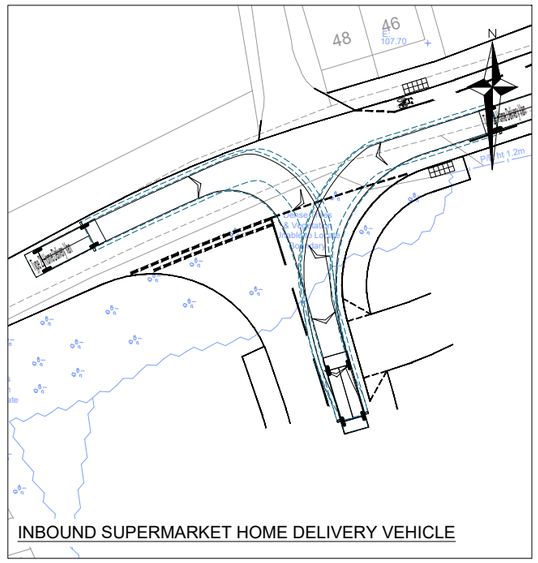
Site Access Swept Path Assessment



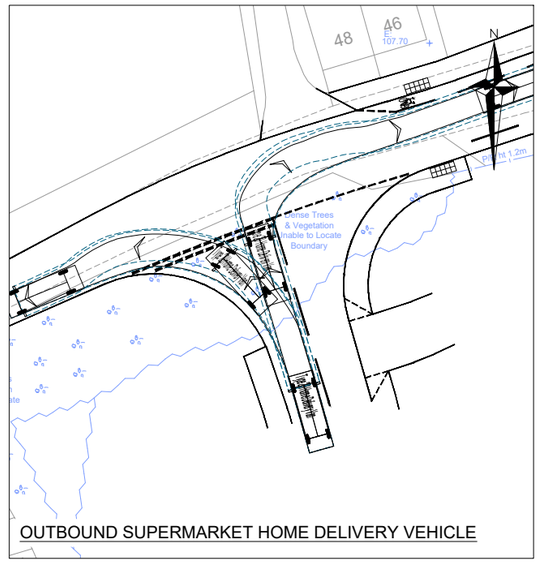
LARGE CAR - VIEW 1



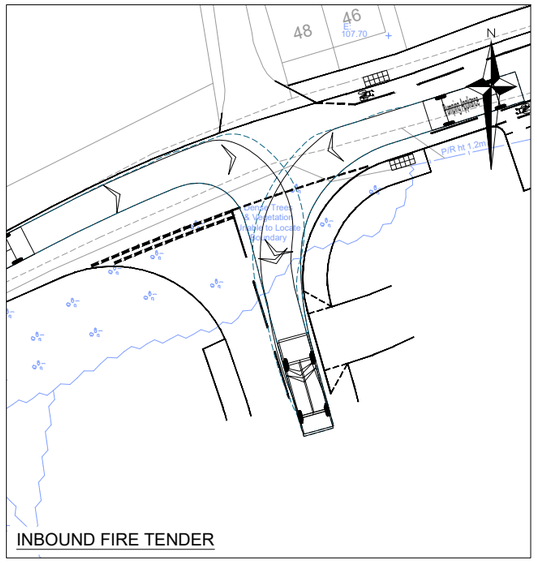
LARGE CAR - VIEW 2



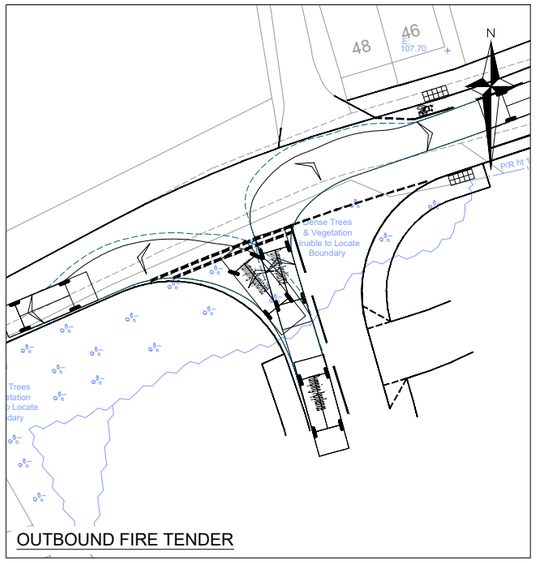
INBOUND SUPERMARKET HOME DELIVERY VEHICLE



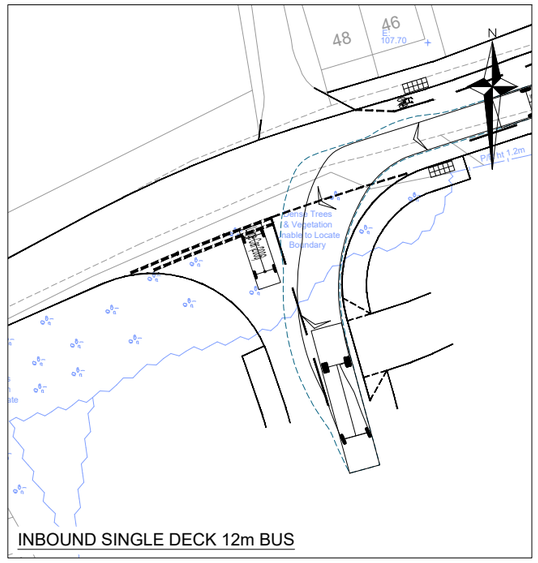
OUTBOUND SUPERMARKET HOME DELIVERY VEHICLE



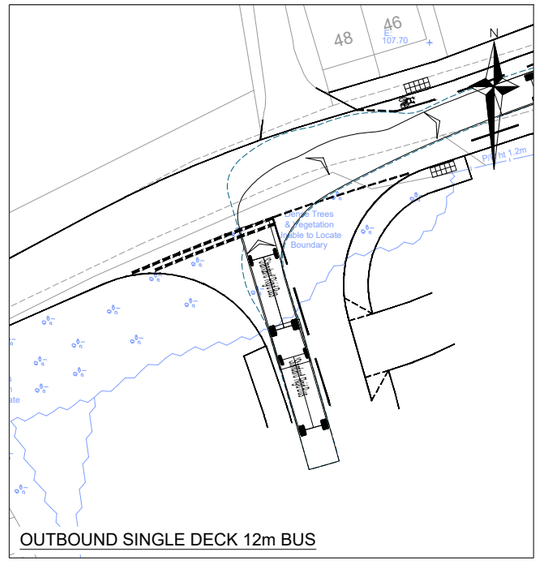
INBOUND FIRE TENDER



OUTBOUND FIRE TENDER



INBOUND SINGLE DECK 12m BUS



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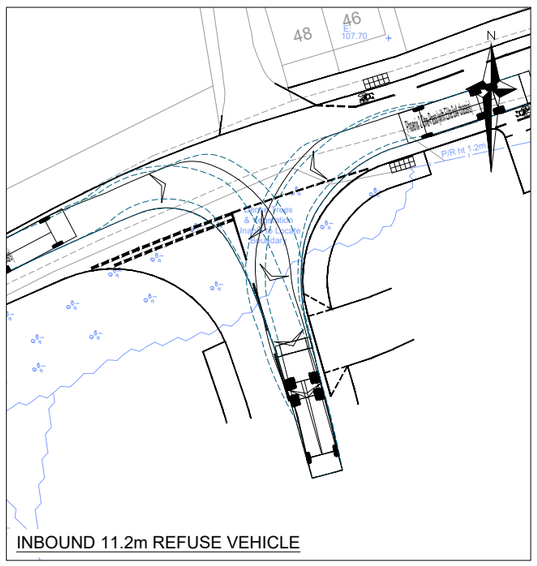
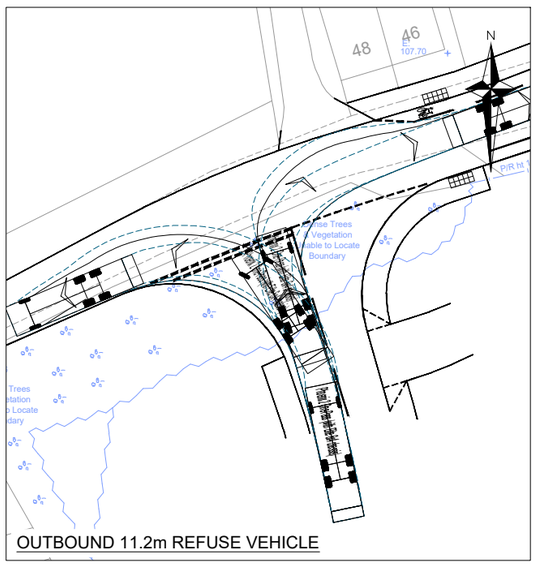


INBOUND 11.2m REFUSE VEHICLE



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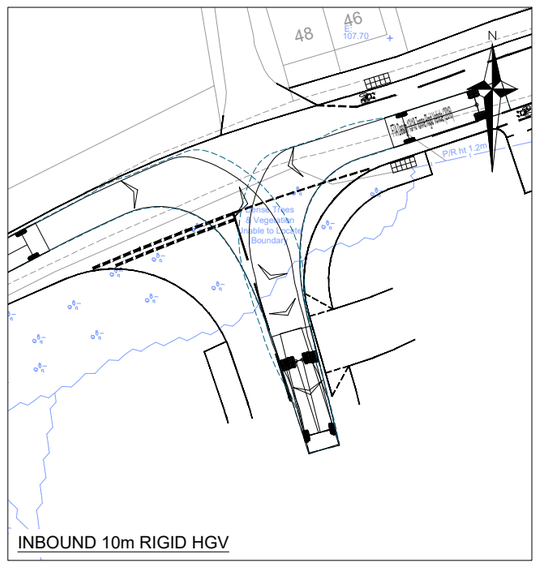
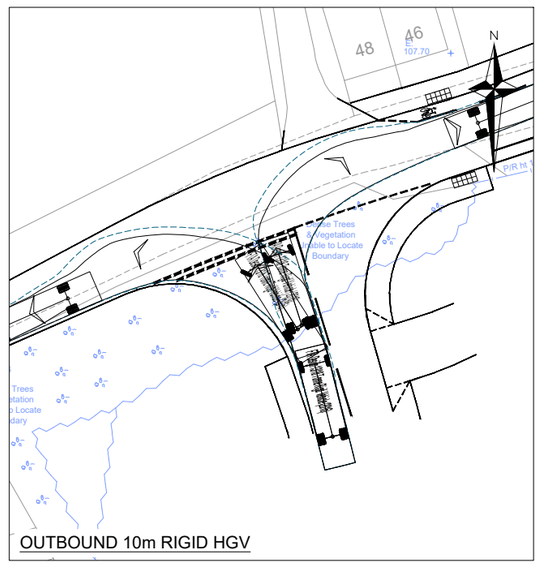


INBOUND 10m RIGID HGV



OUTBOUND 10m RIGID HGV

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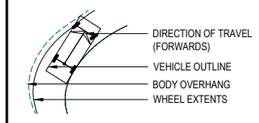
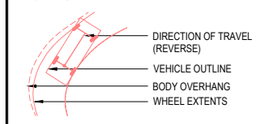
KEY

TOPOGRAPHICAL SURVEY

PROPOSED JUNCTION





TECHNICAL DATA OF VEHICLES USED

Large Car (2006)

Overall Length	5.079m
Overall Width	1.872m
Overall Body Height	1.525m
Min Body Ground Clearance	0.310m
Track Width	1.831m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	5.900m

Type 29 Home Delivery Van

Overall Length	6.433m
Overall Width	2.042m
Overall Body Height	2.586m
Min Body Ground Clearance	0.359m
Track Width	1.900m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	6.000m

Pumping Appliance

Overall Length	7.900m
Overall Width	2.500m
Overall Body Height	3.300m
Min Body Ground Clearance	0.140m
Track Width	2.500m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	7.750m

Phoenix 2 One-Pass (with Elite 6x4 chassis)

Overall Length	11.180m
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Overall Body Height	3.760m
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Track Width	2.350m
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FTA Design 13/18 Tonne Rigid Vehicle (2016)

Overall Length	10.000m
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Overall Body Height	3.645m
Min Body Ground Clearance	0.440m
Track Width	2.470m
Lock to Lock Time	3.00s
Kerb to Kerb Turning Radius	11.000m

FOR INFORMATION ONLY

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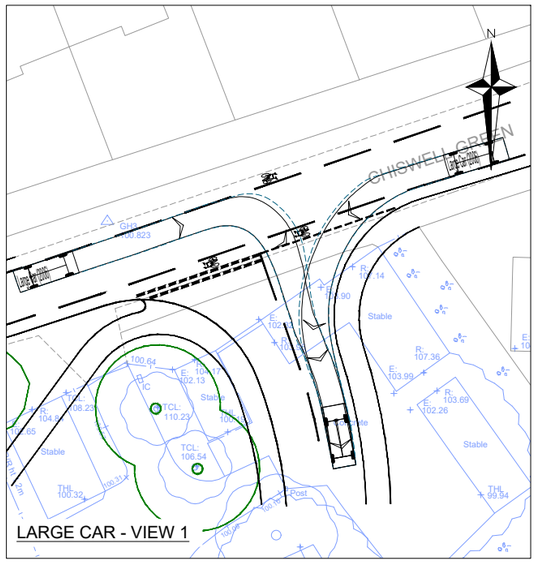
Client :
CALA HOMES &
REDINGTON CAPITAL

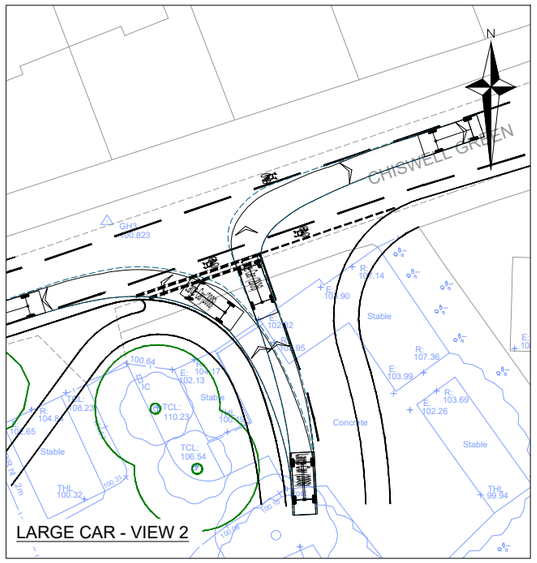
Project :
LAND WEST OF CHISWELL GREEN

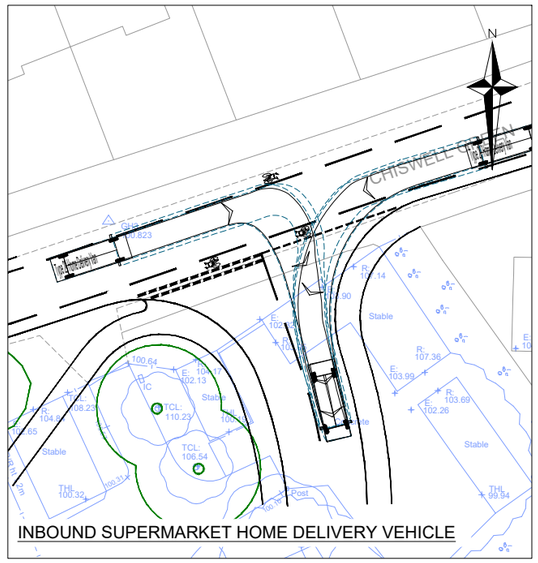
Title :
SWEPT PATH ASSESSMENT
- NORTHERN SITE ACCESS (WEST)

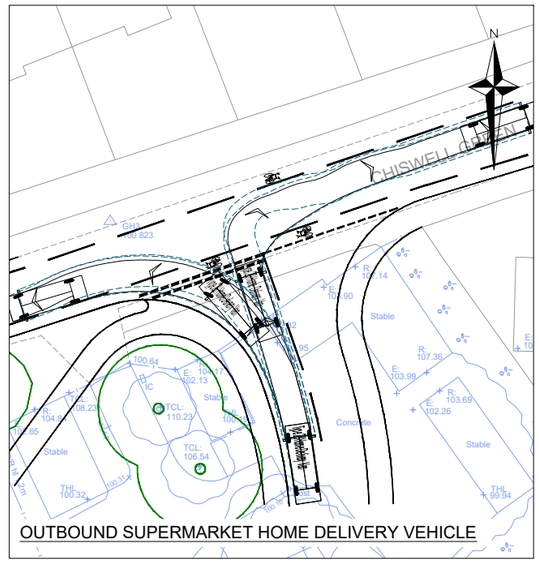
Project Engineer :	DK	Scale :	1:200 @ A3
Project Director :	JB	Date :	FEBRUARY 2022
Status :	INFORMATION		

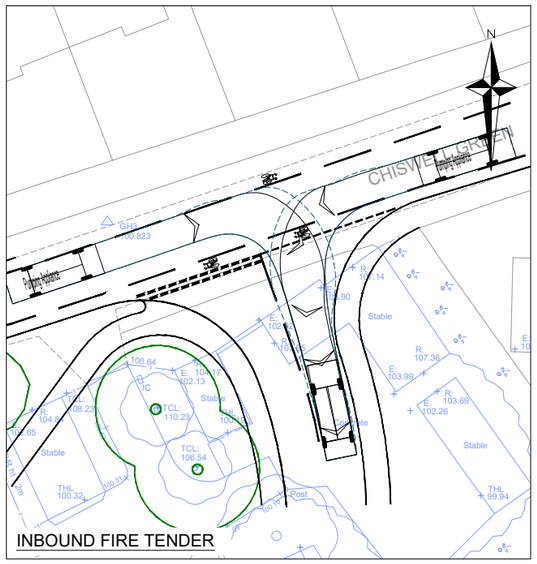
Drawing No. 8210856_2006 Rev I2

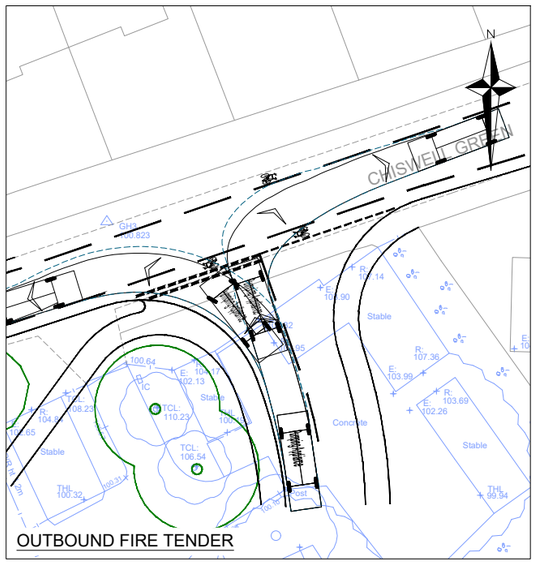


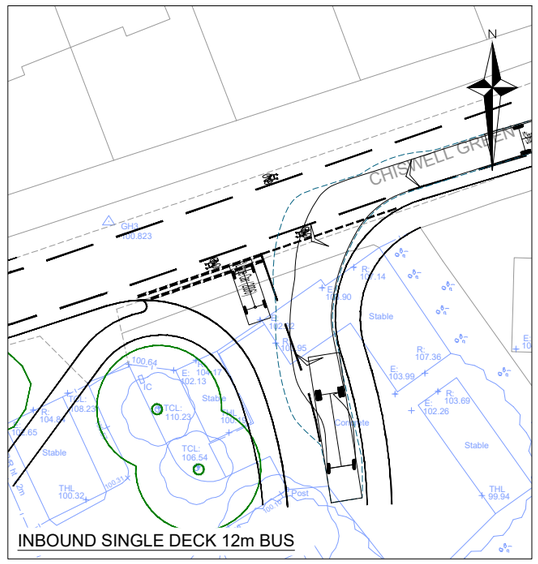


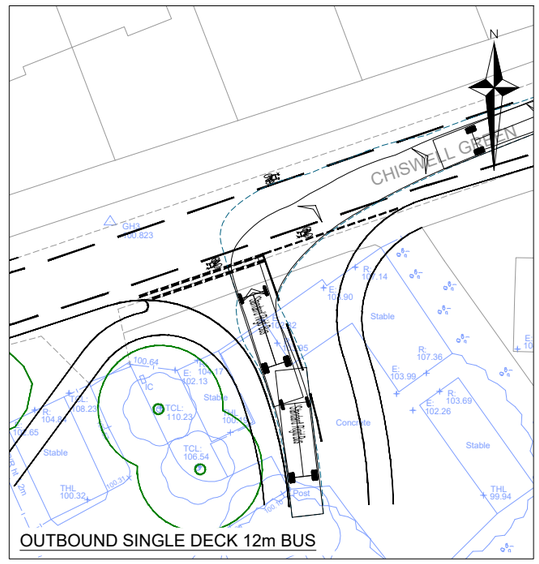


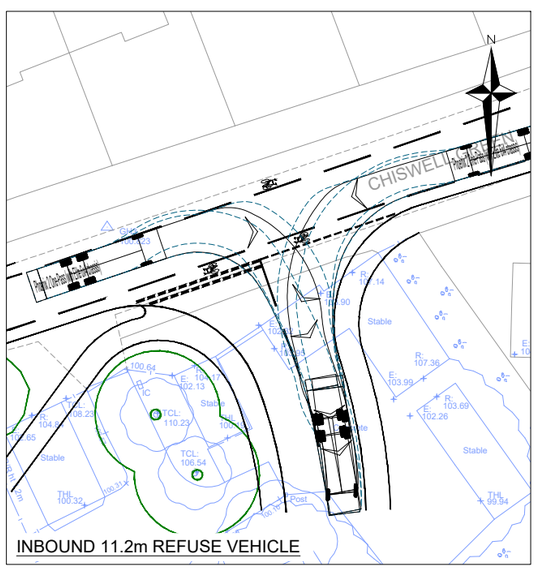


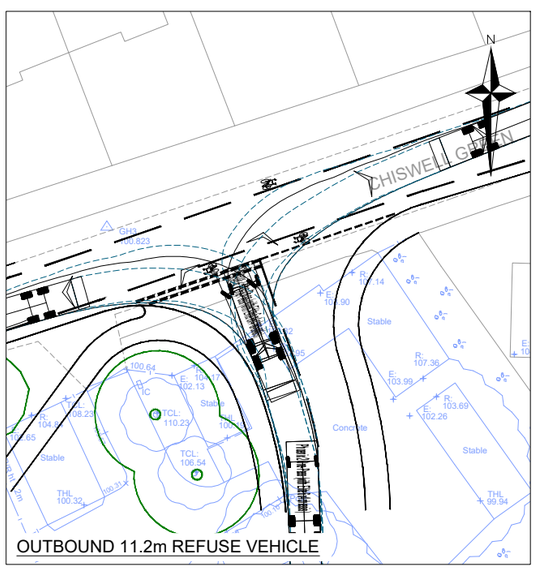


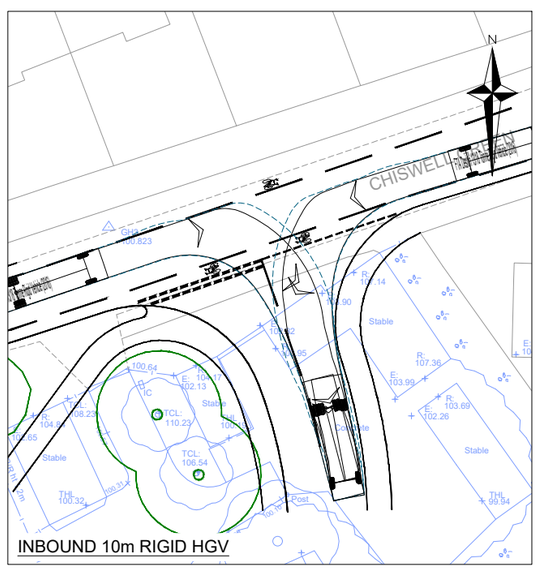


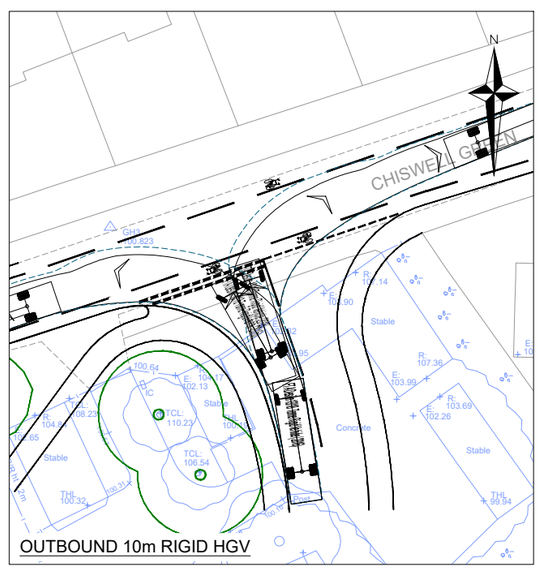












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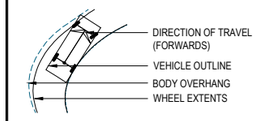

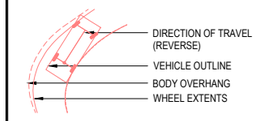

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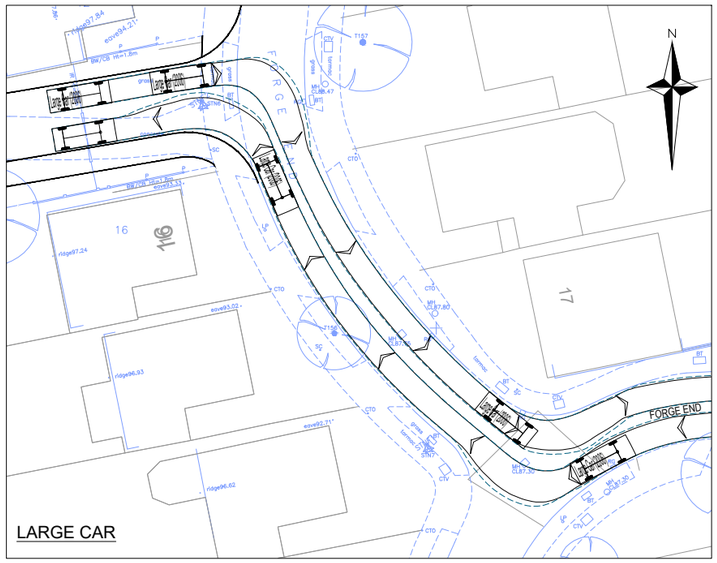
Client : CALA HOMES & REDINGTON CAPITAL

Project : LAND WEST OF CHISWELL GREEN

Title : SWEPT PATH ASSESSMENT - NORTHERN SITE ACCESS (EAST)

Project Engineer :	DK	Scale :	1:200 @ A3
Project Director :	JB	Date :	FEBRUARY 2022
Status :	INFORMATION		

Drawing No. 8210856_2007 Rev I2



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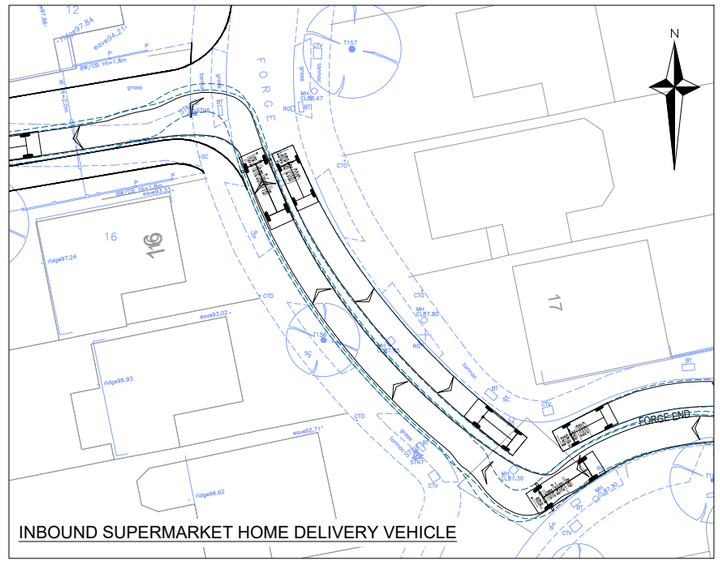

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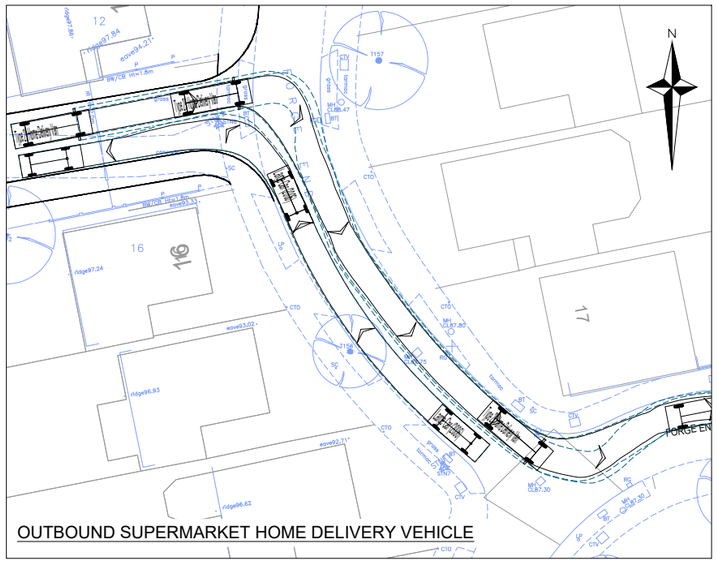

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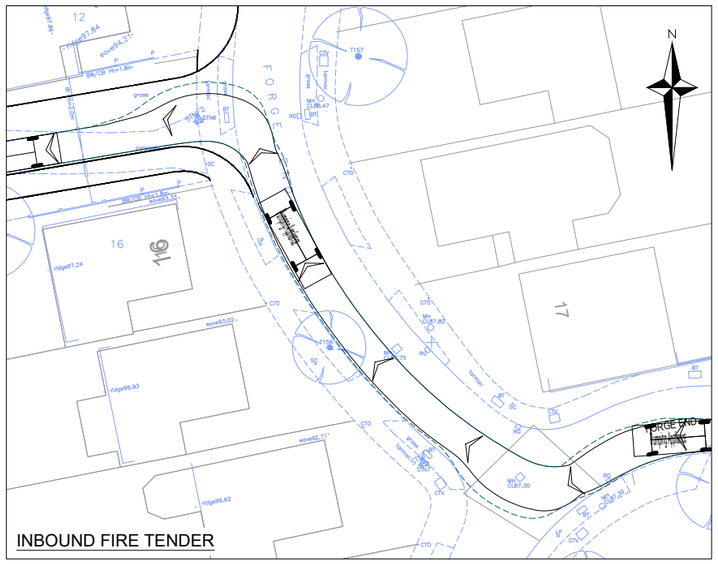

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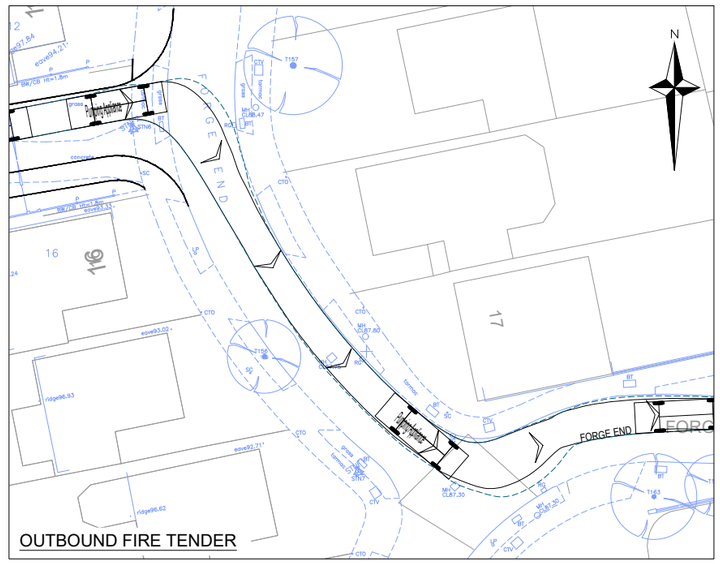

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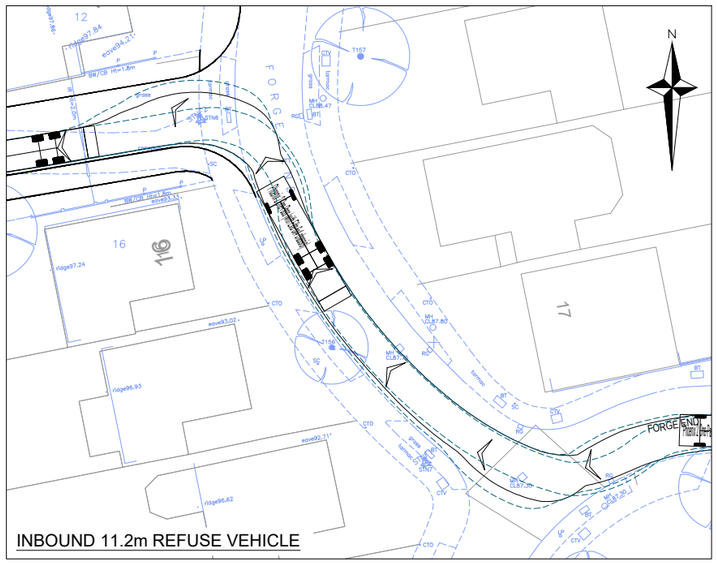

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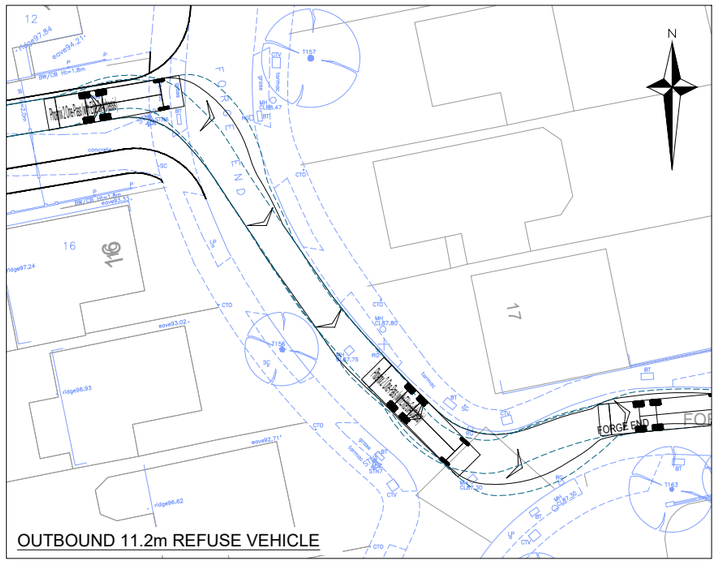

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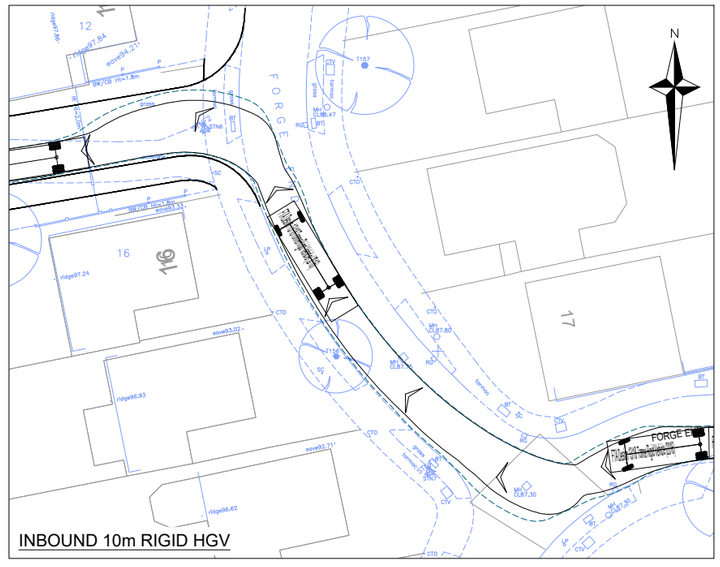

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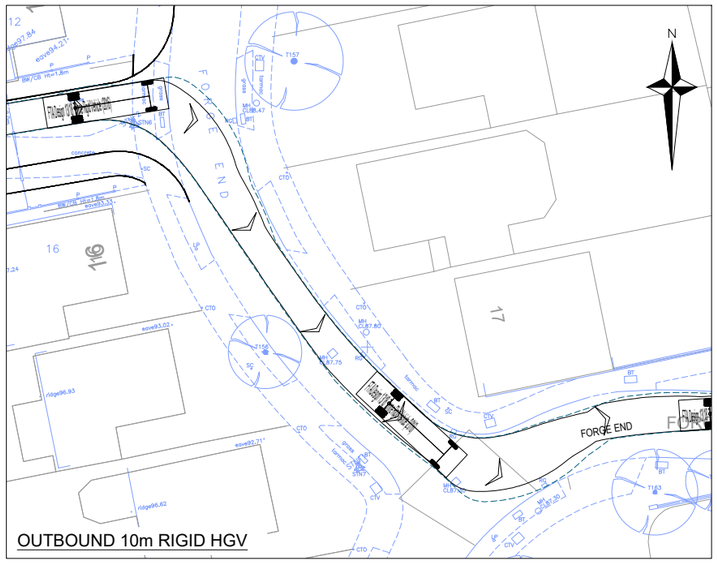

OUTBOUND 10m RIGID HGV

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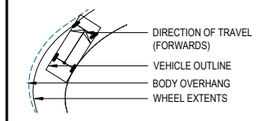

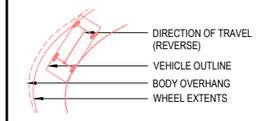

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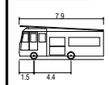

Overall Length	7.900m
Overall Width	2.500m
Overall Body Height	3.300m
Min Body Ground Clearance	0.140m
Track Width	2.500m
Lock to Lock Time	4.00s
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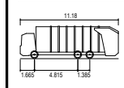
Phoenix 2 One-Pass (with Elite 6x4 chassis)



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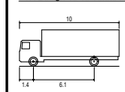

Overall Length	10.000m
Overall Width	2.550m
Overall Body Height	3.645m
Min Body Ground Clearance	0.440m
Track Width	2.470m
Lock to Lock Time	3.00s
Kerb to Kerb Turning Radius	11.000m

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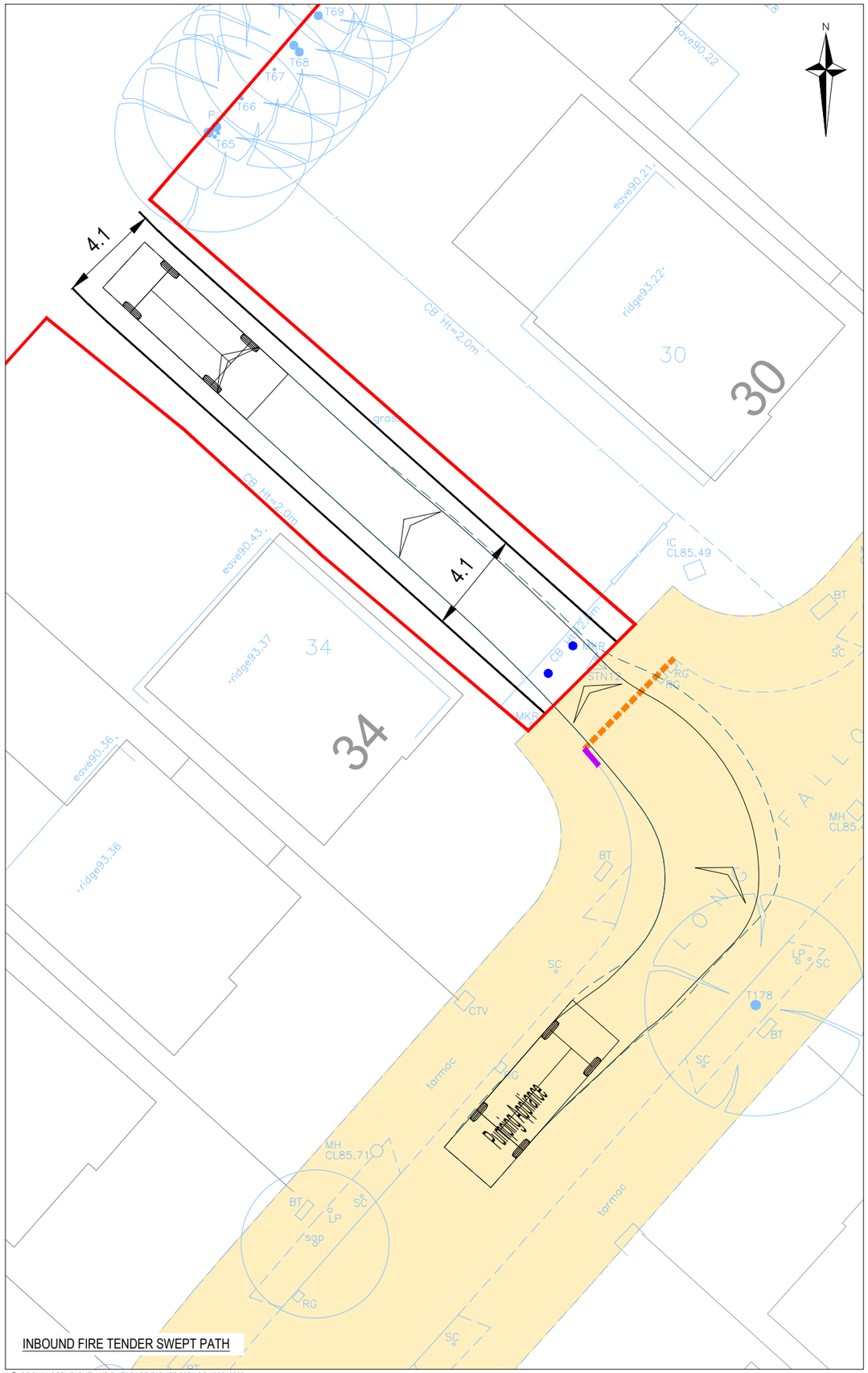
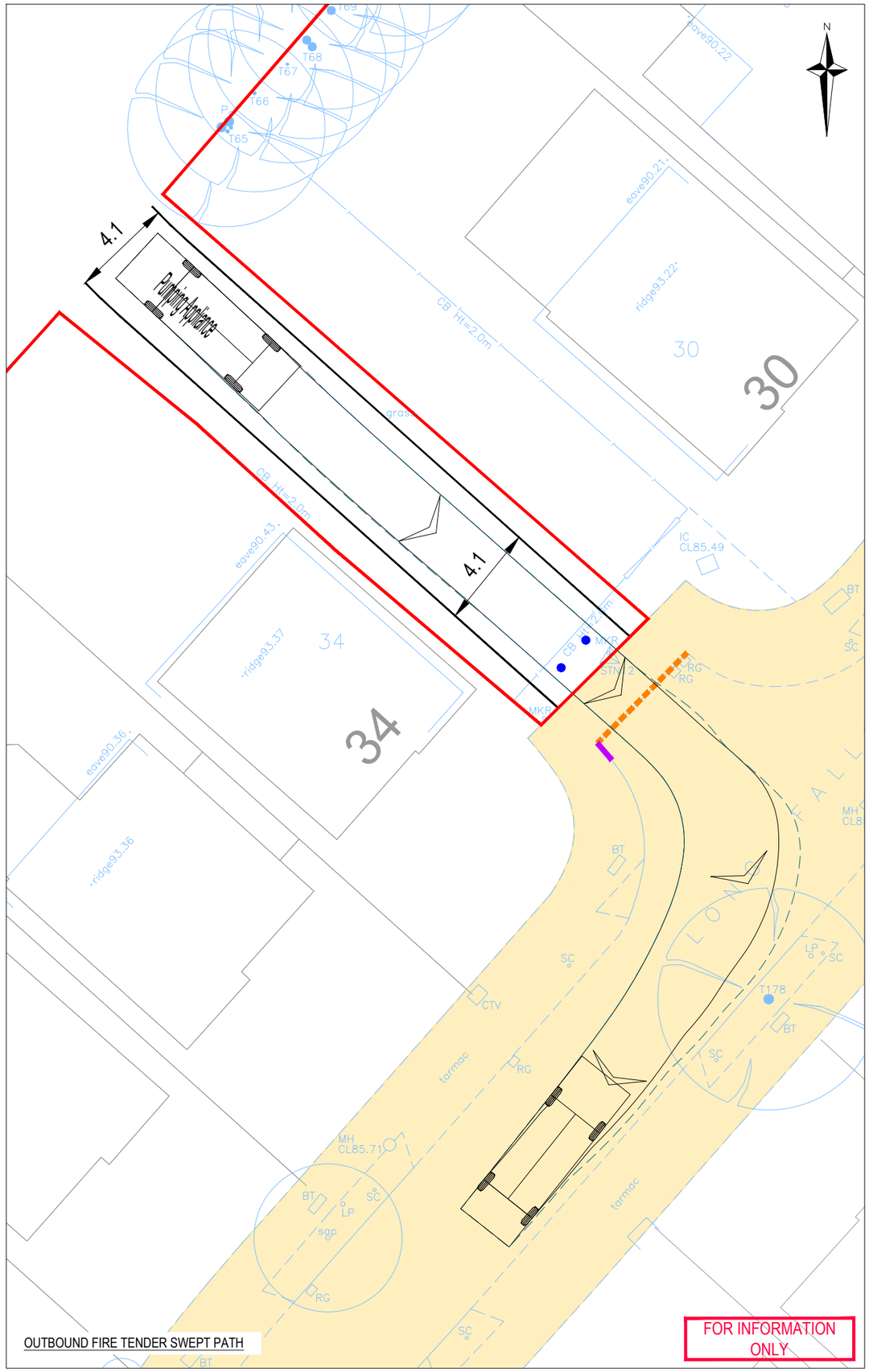
Status :	INFORMATION		

Drawing No. 8210856_2008 Rev I2



INBOUND FIRE TENDER SWEPT PATH



OUTBOUND FIRE TENDER SWEPT PATH

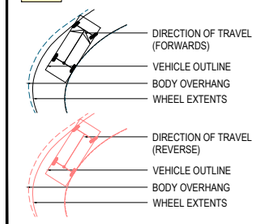
FOR INFORMATION ONLY

NOTES

1. DO NOT SCALE FROM THIS DRAWING. WORK TO FIGURED DIMENSIONS ONLY.
2. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNLESS SPECIFICALLY STATED AS 'FOR CONSTRUCTION' IN THE DRAWING STATUS.
3. THE SITE LAYOUT IS TO BE CONFIRMED AS PART OF THE RESERVED MATTERS APPLICATION.

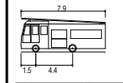
KEY

- SITE BOUNDARY
- OS BASE
- TOPOGRAPHICAL SURVEY
- PROPOSED FOOTWAY / CYCLEWAY
- DROPPED KERB
- TRANSITION KERB
- REMOVABLE BOLLARD
- ADOPTED HIGHWAY

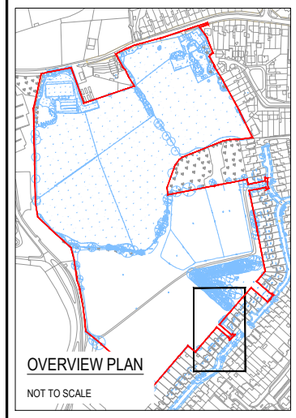


TECHNICAL DATA OF VEHICLES USED

Pumping Appliance



Overall Length	7.900m
Overall Width	2.500m
Overall Body Height	3.300m
Min Body Ground Clearance	0.140m
Track Width	2.500m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	7.750m



Rev.	Description	Date	Chkd
I2	LAYOUT MOVED TO DRAWING 8210856-1021	10/03/2022 DK	JB
I1	FIRST ISSUE	10/03/2022 DK	JB

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Client : CALA HOMES (CHILTERN) & REDINGTON CAPITAL

Project : LAND WEST OF CHISWELL GREEN

Title : PROPOSED LONG FALLOW PEDESTRIAN / CYCLE ACCESS SWEPT PATHS

Project Engineer :	DK	Scale :	1:200 @ A3
Project Director :	JB	Date :	MARCH 2022
Status :	INFORMATION		

Drawing No. 8210856-1022 Rev I2

Appendix I

Through Link Assessment

POTENTIAL THROUGH LINK ASSESSMENT

Land West of Chiswell Green, St Albans

Prepared for: CALA Homes (Chiltern) and Redington Capital
Ref: 003_8210856_DK
Issue 2: 26 January 2022

Document History

Issue	Date	Description	Prepared By	Checked By
1	20 Jan 2022	First Issue	David Kemp	John Birch
2	26 Jan 2022	Updated to reflect comments	David Kemp	John Birch

Glanville

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Contents

Appendices

1.0 Introduction

1.1 Glanville has been appointed by CALA Homes and Redington Capital, hereafter referred to as CALA and Redington, to provide transport support for an Outline planning application associated with a residential development on land to the west of Chiswell Green, near St Albans. The proposals include the provision of around 370 dwellings and a 2 Form Entry (2FE) Primary School with a capacity for 420 pupils. The site's location is shown within Appendix A, whilst the indicative site layout is shown within Appendix B.

1.2 The site has previously been identified for allocation within the St Albans New Local Plan and supported by draft Policy S6x, for the development of a minimum of 365 dwellings and a 2FE Primary School. Following the withdrawal of the draft Local Plan in November 2020, CALA and Redington are keen to progress the development of the site outside of the Local Plan process.

1.3 The site is currently split into two parcels with the northern parcel containing 191 dwellings (55% of the total) and the primary school accessed via Chiswell Green Lane. The southern parcel, containing 180 dwellings, is to be accessed via a cul-de-sac on Forge End. It is not currently proposed to provide an all-purpose vehicular link through the site linking the northern and southern parcels, so both parts of the development are proposed to operate independently.

1.4 A pre-application meeting was held with Officers of Hertfordshire County Council on 14 December 2021. At this meeting, the Highways Officer (James Dale) suggested that to justify the access strategy it would be useful to consider the assignment of development traffic flows with and without vehicular connectivity between the two land parcels. This may prove useful in demonstrating to residents living on Forge End and Chiswell Green Lane that they would be no worse off due to the chosen approach than would be the case if the parcels were connected via an all-purpose vehicle link.

1.5 Therefore, an assessment has been undertaken to assess the potential off-site traffic impact of the development both with and without an all-purpose vehicle link between the northern and southern land parcels. This report provides a summary of the findings of the assessment.

2.0 Development Proposals

2.1 As discussed within Chapter 1, it is currently proposed that the development will consist of around 370 dwellings plus a 2 Form Entry (2FE). An indicative masterplan is shown within Appendix 2, but this is still evolving and so may change in advance of the formal application.

2.2 It is currently proposed to split the development into two halves, separated by a public open space at its centre. There will be no vehicle access between the two sites, except for emergency vehicles. The northern half of the site will contain around 55% of the proposed dwellings (191) and the primary school. The southern half will compromise the remaining 45% of the dwellings (180), however, the quantum of development and precise north/south split is still to be finalised.

2.3 The reason for this split is to spread the development traffic across two accesses to provide a wider distribution around the immediate off-site highway network so that the impact of the additional traffic would not be focused on any individual point on the adjoining network or approach to any off-site junction. The intention is to minimise the impact on the local community, as there will be more certainty as to the quantum of vehicle traffic using each access, and this will enable walking and cycling permeability through the development to be prioritised.

2.4 It is currently proposed to provide two access onto Chiswell Green Lane for the northern land parcel and the primary school. However, as the development proposals are refined, this may reduce to a single access. These accesses will be formed of priority T-junctions without right turn lanes.

2.5 The southern part of the site will be served via a new priority T-junction connecting onto Forge End via an existing cul-de-sac between numbers 12 and 16 Forge End.

2.6 The site will be highly permeable with good pedestrian and cycle links between the two land parcels. In addition to the site access on Forge End, there will also be a pedestrian / cycle access onto Long Fallow which will ensure that there is connectivity between Chiswell Green Lane and Watford Road through the site.

2.7 The lack of a vehicle link will also not prevent the provision of a bus route within the development that will ensure that all residents are within the recommended walking distance of a bus stop.

Potential Through Link

2.8 HCC has requested that the potential off-site traffic impact of the development be assessed both with and without an all-purpose vehicle link between the northern and southern land parcels. This may prove useful in demonstrating to residents living on Forge End and Chiswell Green Lane that they would be no worse off due to the chosen approach than would be the case if the parcels were connected via an all-purpose vehicle link. Consequently, the remainder of this report assesses the potential change in distribution of development related traffic resulting from at least one vehicle connection between the two land parcels.

3.0 Proposed Development Trip Distribution

3.1 As outlined within the Transport Scoping Report (ref. 002_8210856_DK, dated 3 December 2021), the development trip distribution has been estimated based on the 2021 Census journey to work information. This showed the following destinations and associated trip distribution:

- Watford Road North **23%**
  - St Albans City Centre *23%*
- Tippendell Lane **27.5%**
  - Chiswell Green / Park Street *11%*
  - Luton *4%*
  - Stevenage, Welwyn, Hatfield *7%*
  - Hertsmere (60%) *5.5%*
- Watford Road South **44.5%**
  - London, Watford, Three Rivers, Barnet *41%*
  - Hertsmere (40%) *3.5%*
- Chiswell Green via Stanley Avenue **5%**

3.2 The resultant distribution and trip assignment for the current development proposals, i.e. the 'two site' option, is shown within Appendix C. It should be noted that the red numbers within the trip assignment figure reflects the development traffic, whilst the black numbers reflect the '2027 base plus development' flows.

3.3 It is considered that the destinations and the volume of residential traffic heading to each destination would not change if a through link is provided. The only change would therefore be which junction residents use to access the wider highway network and the resultant impact on the off-site junctions in the vicinity of the site.

4.0 Potential Development Trip Re-distribution

4.1 This section reviews the potential impact of having a vehicular link through the site connecting the proposed accesses on Chiswell Green Lane and Forge End.

4.2 The assessment is based on assumptions as to how traffic would be split between the accesses. This is based on experience and the junction capacity modelling undertaken in December 2021 as part of the Transport Scoping Report. Should a more detailed assessment need to be undertaken of dynamic assignment based on junction capacity and journey times, the effect of providing a link through the site would need to be assessed using a strategic traffic model or microsimulation.

Development Traffic

4.3 It is considered that residents will utilise the access which is the easiest to arrive and depart from and if there are any time savings resulting from driving through the site. Based on Google Earth journey times, existing peak hour journey times between the proposed site access locations on Chiswell Green Lane and Forge End and the North Orbital Road / Tippendell Lane roundabout remain around the same. Similarly, journey times between the aforementioned site accesses and the North Orbital Road / Watford Road junction would also remain the same. Consequently, the off-site routing is unlikely to impact residents' decision making, although it is not known how the long-term impact of COVID or the removal of all travel restrictions will impact off-site journey times.

4.4 It is important to consider, however, how the proposed increase in traffic resulting from both the proposed development and the current planning application (St Albans City & District Council reference 5/2021/3194) which is currently under consideration to the north of Chiswell Green Lane will add additional traffic to Chiswell Green Lane. Consequently, there is likely to be additional delay at the Chiswell Green Lane / Watford Road junction which may encourage more traffic heading to/from Watford Road South to use the Forge End access in preference to Chiswell Green Lane.

4.5 The potential revised distribution for each of the site's two development parcels is discussed below, whilst the revised distribution is shown in Appendix D.

Northern Land Parcel

4.6 For traffic heading to/from St Albans City Centre via Watford Road North and to the A404 via Tippendell Lane, it is considered that residents living within the northern land parcel would continue to utilise Chiswell Green Lane (see Appendix D1). This is because it is unlikely that residents would travel south through the site just to have to double back to head north on Watford Road. There is the potential, however, that some residents may prefer to utilise the Forge End junction if there are delays / queueing at the Watford Road / Chiswell Green Lane mini-roundabout, but due to the additional time having to negotiate the development and the diversion away from the direct route, it is considered unlikely to be a popular route.

4.7 Residents heading to/from Watford to the south, will have a choice of access junctions. It is considered that all traffic arriving at the development will utilise the Forge End access in order to avoid any delays / queueing at the Chiswell Green Lane / Watford Road mini-roundabout (see Appendix D1).

4.8 For residents departing the site to the south, it has been assumed that two thirds (29.8% of the total 44.5% using Watford Road South) will utilise the Forge End junction with one third (14.7%) using Chiswell Green Lane. The latter is due to the potential attractiveness of turning right at a mini-roundabout rather than a priority T-junction, whilst residents along Chiswell Green Lane are unlikely to want to travel through the development to reach Watford Road when they live adjacent to Chiswell Green Lane. As the junction capacity modelling within the Transport Scoping Report indicates that queueing and delay for traffic turning right out of Forge End would be minimal, it is considered that the southern access would be the most popular route for residents heading south and so this is reflected within the distribution.

4.9 All traffic generated by the northern land parcel of the site using Stanley Avenue would use the Chiswell Green Lane site access(es).

4.10 The school will also be accessible from the southern parcel if there is a through link. It is therefore considered that all traffic arriving at the school from the south during the peak hours would use Forge End to drop off at the school. When departing, it is considered that the majority (75%) would depart via the Chiswell Green Lane access(es) to save having to turn around. The remaining 25% would turn around within the site and depart via Forge End. Traffic heading to and from the north (St Albans and Tippendell Lane) and Stanley Avenue would not change and would continue to utilise Chiswell Green Lane to avoid travelling through the development. The revised distribution is shown within Appendix D2.

4.11 The revised trip distribution for the northern land parcel and the trip assignment is shown within Appendix D.

Southern Land Parcel

4.12 For traffic departing the southern land parcel towards St Albans via Watford Road North and the A405 via Tippendell Lane, it is considered that residents would continue to utilise the Forge End access (see Appendix D1). This is because it would be easier and quicker for residents to turn left at the priority T-junction onto Watford Road than traversing the site to use the Chiswell Green Lane mini-roundabout.

4.13 For traffic arriving at the development from the north (St Albans and A405), residents would have a choice between access junctions. Whilst the junction capacity modelling within the Transport Scoping Report indicates that the Forge End junction would operate with minimal queueing and delay, it is considered that two thirds of trips (33.8% of the total 50.5% arriving from the north) would utilise Chiswell Green Lane to avoid turning right into Forge End. This is because they would have priority over traffic heading northbound on Watford Road at the mini-roundabout. The remaining third of trips (16.7%) would utilise the Forge End T-junction (see Appendix D1).

4.14 Similarly, traffic departing the site would have a choice between accesses. It is considered that the Forge End junction would be the most popular route as it is the most direct, but some residents may prefer to use Chiswell Green Lane to avoid having to turn right at a priority T-junction. This is because, at the Chiswell Green Lane mini-roundabout, they would have priority over southbound traffic on Watford Road. Consequently, for the purposes of this assessment, it has been assumed that one third of trips heading south (14.7% out of the total 44.5% heading south towards Watford) would utilise Chiswell Green Lane.

4.15 It is considered that all traffic in the southern land parcel heading to/from Stanley Avenue would use the Chiswell Green Lane site accesses.

4.16 The revised trip distribution for the southern land parcel and the trip assignment is shown within Appendix D.

Impact on Development Trip Distribution

4.17 The revised trip distribution outlined above would result in a small increase in vehicle trips using the Forge End cul-de-sac (67 two-way trips in the AM peak hour and 13 in the PM peak hour). This would increase the impact on the existing Forge End residents; however, it is considered likely that the junction would continue to operate within capacity, but this would be subject to further junction capacity modelling.

4.18 Whilst traffic using Forge End itself would increase, the total amount of traffic passing through the Forge End / Watford Road junction would slightly decrease due to some of the traffic heading north to St Albans and the A414 using Chiswell Green Lane rather than via Watford Road. The difference in traffic volumes passing through the whole junction is shown within Table 1.

4.19 There would be a reduction in trips using the Chiswell Green Lane access junctions of 67 in the AM peak hour and 13 in the PM peak hour as traffic heading to/ from the south diverts via Forge End. This would assist in reducing the impact of the development on Chiswell Green Lane, but there would potentially be a re-distribution of traffic onto other arms at the mini-roundabout with Watford Road. However, as this traffic would still pass the Forge End junction on Watford Road if there were two separate land parcels, this re-distribution of the northern parcel flows would not result in a difference within the total Forge End junction flows shown in Table 1, despite more traffic using the southern access junction.

4.20 Following the reduction in development traffic accessing the northern land parcel, the total traffic experienced at the Chiswell Green Lane / Site Access(es) and Watford Road / Chiswell Green Lane junctions would decrease (see Table 1).

Table 1: Resultant Changes in Two-way Flows at the Affected Junction

Junction	Scenario	AM Peak Hour		PM Peak Hour	
		Development Flows	Total Flows	Development Flows	Total Flows
Chiswell Green Lane / Site Access	Separate Parcels	305	573	96	361
	Single Parcel	238	506	83	348
	Difference	-67	-67	-13	-13
Chiswell Green Lane / Watford Road	Separate Parcels	283	1,990	123	1,781
	Single Parcel	194	1,901	93	1,751
	Difference	-89	-89	-30	-30
Watford Road / Forge End	Separate Parcels	207	1,719	106	1,617
	Single Parcel	195	1,707	88	1,599
	Difference	-12	-12	-18	-18

Non-development traffic

4.21 It is considered that the provision of a link through the site could increase the potential for rat-running through the development. The potential would be greater if the Chiswell Green Lane / Watford Road junction was experiencing long queues and delays. The provision of this route would encourage traffic heading towards St Albans City Centre to bypass the aforementioned junction to access Stanley Avenue to re-join Watford Road at the Ragged Hall Lane junction to the north.

4.22 Similarly, the development would provide a connection between the potential new development to the north of Chiswell Green Lane and the North Orbital Road / Watford Road roundabout to the south. This would potentially increase the volume of traffic passing through the development via the Forge End cul-de-sac which could have a significant adverse impact on existing residents and the safety of pupils using the new primary school.

4.23 Consequently, ensuring that there is no through link would ensure that rat-running is not introduced. This will create a more pedestrian / cycle friendly environment which will help encourage active travel as much as possible amongst residents. Some rat-running, however, may be accepted to ease capacity constraints at the double mini-roundabout junction on Watford Road, but this would need to be managed in a way to minimise the impact on the existing residents, for example by having a convoluted internal road layout designed with a low design speed to reduce the attractiveness of the through route for the majority of external users.

5.0 Summary and Conclusion

5.1 This report summarises the results of an assessment undertaken to assess the potential off-site traffic impact of the development both with and without an all-purpose vehicle link between the northern and southern land parcels to inform a decision on the proposed access strategy.

5.2 The provision of a through link within the site would result in the reassignment of traffic at the following junctions only:

- Chiswell Green Lane / Site Access 1 junction
- Chiswell Green Lane / Watford Road mini-roundabout
- Watford Road / Forge End junction

5.3 The assessment estimates that a through link would increase the amount of development traffic using the existing Forge End cul-de-sac when travelling to/from Watford Road. This would result in an increased impact on the existing Forge End residents. However, it is considered that the junction would continue to operate within capacity as there would be a small decrease in total traffic at the junction due to the re-distribution of development trips on Watford Road.

5.4 The re-distribution of traffic would result in a reduced volume of vehicles using Chiswell Green Lane which would potentially benefit the operation of the Chiswell Green Lane / Watford Road mini-roundabout. However, there would likely be a re-distribution of traffic across the approaches at the junction, the impact of which would need to be assessed in further detail.

5.5 It is considered that the provision of a through link would increase the potential for rat-running as non-development traffic may try to avoid the double mini-roundabout on Watford Road. This could potentially have a significant adverse impact on the local residents of both Forge End and Chiswell Green Lane. It would, however, help to ease any capacity pressures on the double mini-roundabout but the potential for rat-running would need to be controlled through a convoluted layout of estate roads within the development site to minimise its attractiveness for non-development traffic.

5.6 The site will be highly permeable for pedestrians and cyclists even without the vehicular link as there will be direct connections through the site to Chiswell Green Lane, Forge End and Long Fallow which will be accessible to all residents and the local community. The lack of a vehicle link through the site will not prevent the provision of improvements to bus accessibility to ensure that all dwellings are within the recommended walking distance of a bus stop. The lack of a through link will also help create a more pedestrian / cycle friendly environment through the prevention of any rat running. This will help encourage residents to partake in active travel as much as possible.

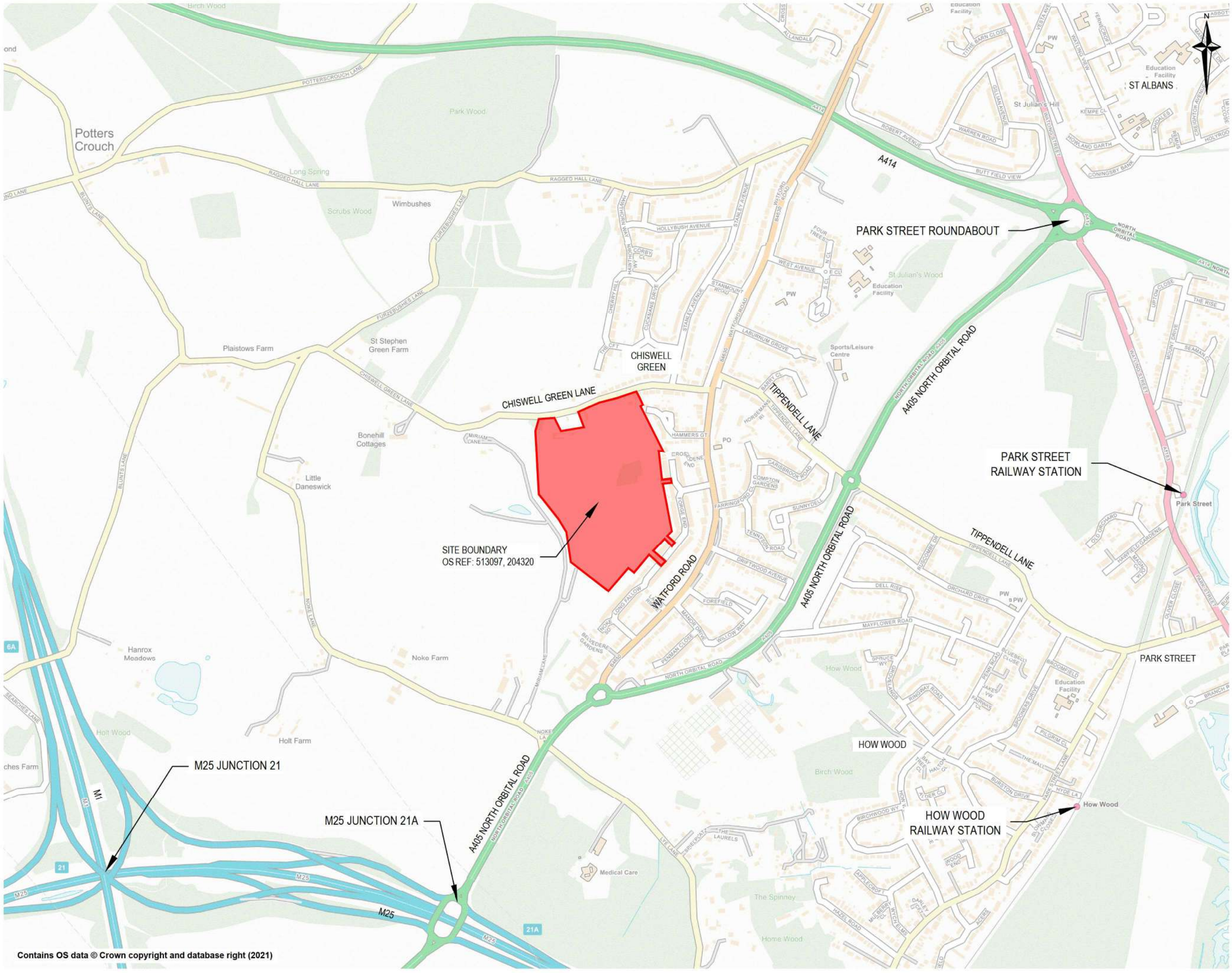
5.7 It is concluded that the provision of an all-purpose vehicle link between the northern and southern land parcels may be of benefit to the operation of the Watford Road / Chiswell Green Lane mini-roundabout as less traffic would access the local road network via Chiswell Green Lane, but consequentially there would be an increased adverse impact on existing residential roads to the south, particularly Forge End.

5.8 It is considered that the impacts of a scheme either with or without a through link could be adequately mitigated through the promotion of sustainable transport modes, and safe and suitable access could be achieved to the development, thus complying with the requirements of paragraph 110 and 111 of the National Planning Policy Framework, 2021. However, on balance Chiswell Green Lane is considered better able to accommodate additional traffic, so the current access strategy of splitting the site into two parcels with no interconnecting link is considered preferable.

Appendices

Appendix A

Site Location



KEY

SITE LOCATION

FOR INFORMATION ONLY

Rev.	Description	Date	Chkd
I1	FIRST ISSUE	02/12/2021 DK	JB

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Client : CALA HOMES & REDLINGTON CAPITAL

Project : LAND WEST OF CHISWELL GREEN

Title : SITE LOCATION

Project Engineer :	DK	Scale :	1:10,000 @ A3
Project Director :	JB	Date :	DECEMBER 2021
Status :	INFORMATION		

Drawing No. 4210332-SK030 Rev I1

Appendix B

Illustrative Site Layout

Key:

1&2. Drainage strategy: SUDS/Swale

3. Community play areas

Vehicular Access

Pedestrian and Cycle Access

0 10 20 40 100m

Concept Plan SK01
Land at Chiswell Green
St Albans

A1

JOB N°: LHG61860
DATE: 13.10.2021
SCALE: 1:1000
DRAWING N°: XXXX-MCB-ZZ-ZZ-DR-A-SK01-S3-P1
Concept plan SK01

DRAWN BY: PO'R
REVIEWED BY: -
APPROVED BY: -

REVISION:
13.10.2021 |P1 Issued for comments

Note: This drawing and schedule is based on the information supplied by others, the accuracy of which we cannot guarantee. No consultation has taken place with the planning authority and as such the above proposal should not be used as a basis for financial or commercial transactions.

CLIENT:

McBains

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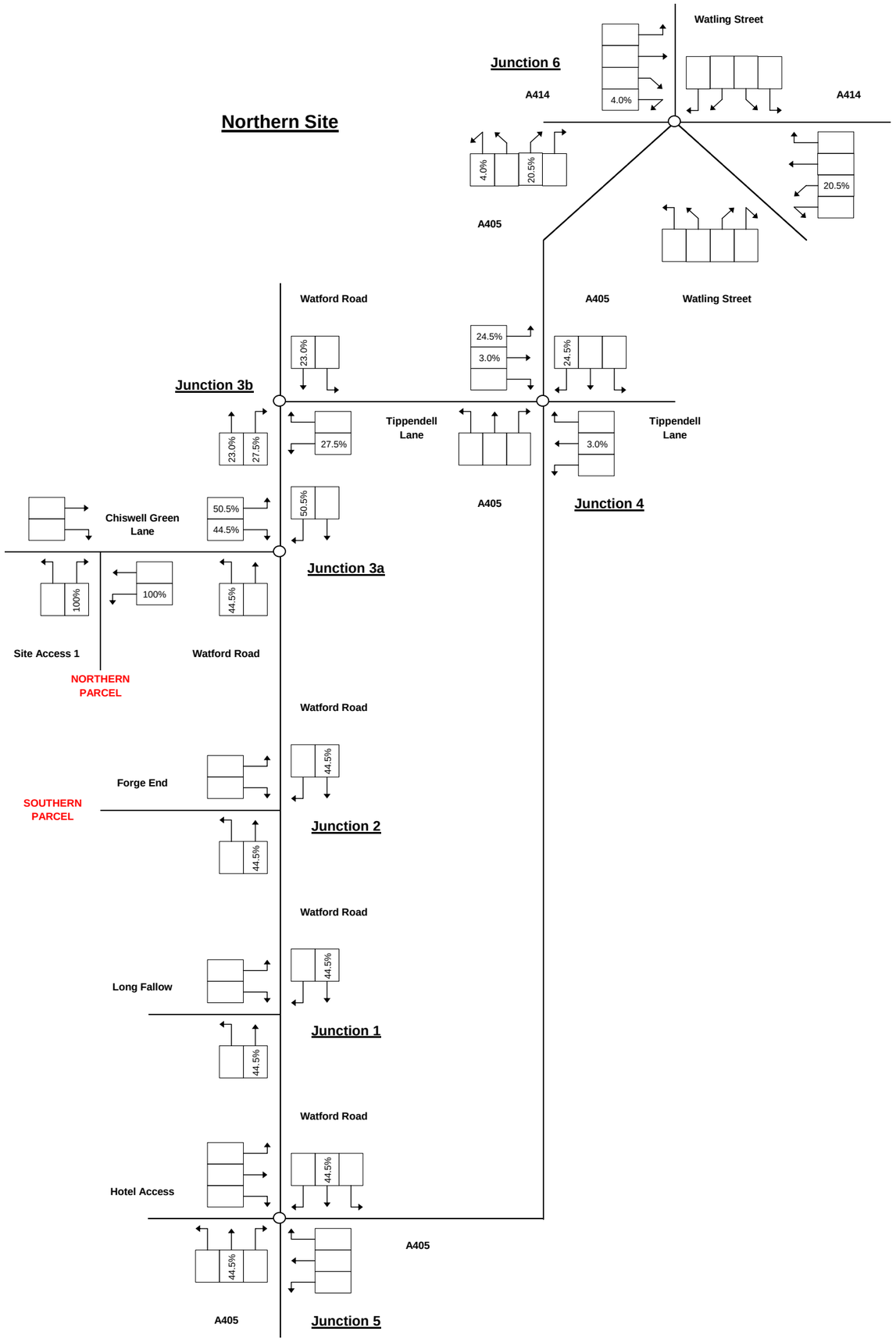
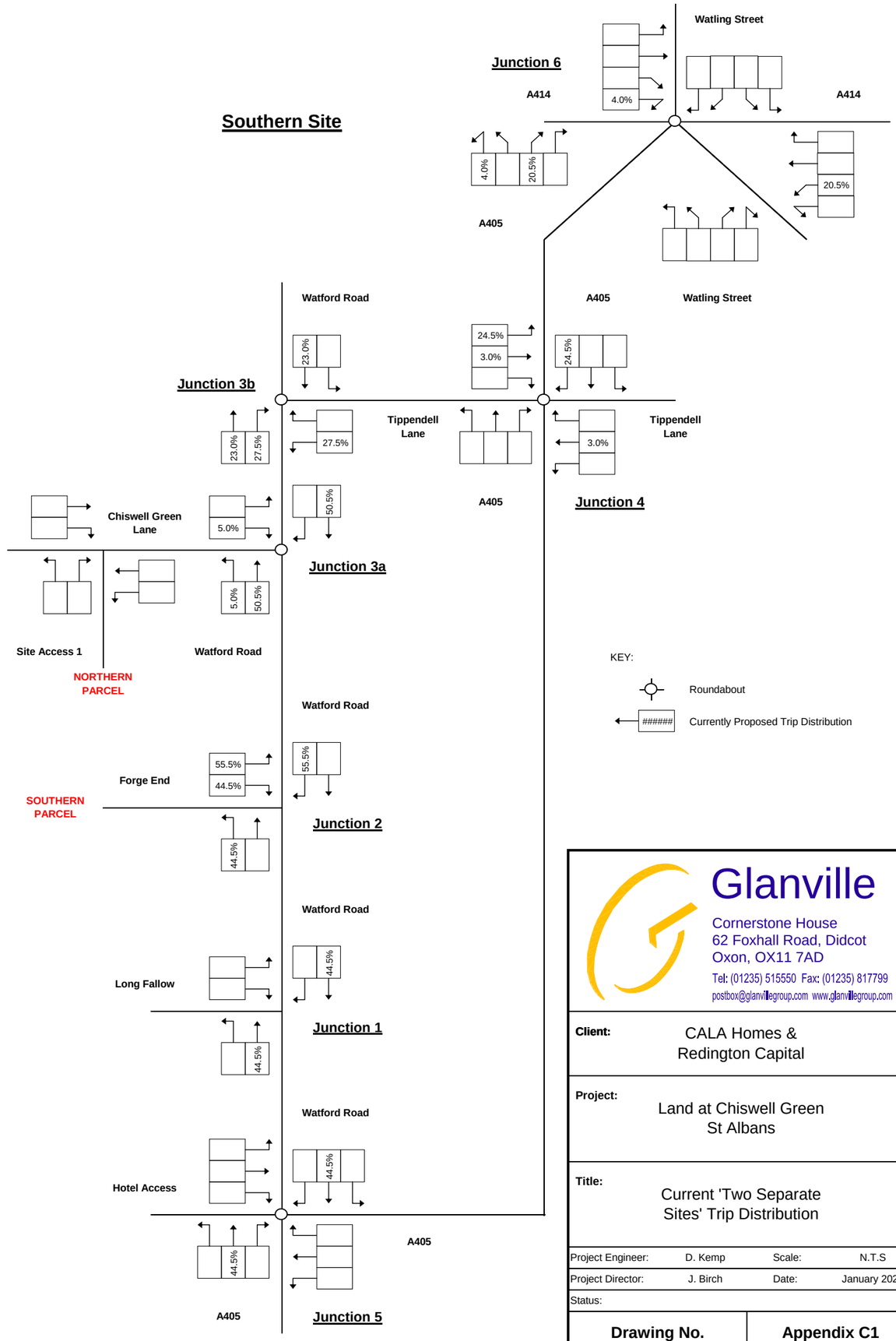
Appendix C

Existing 'Two Site' Trip Distribution & Trip Assignement





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Client: CALA Homes & Redington Capital

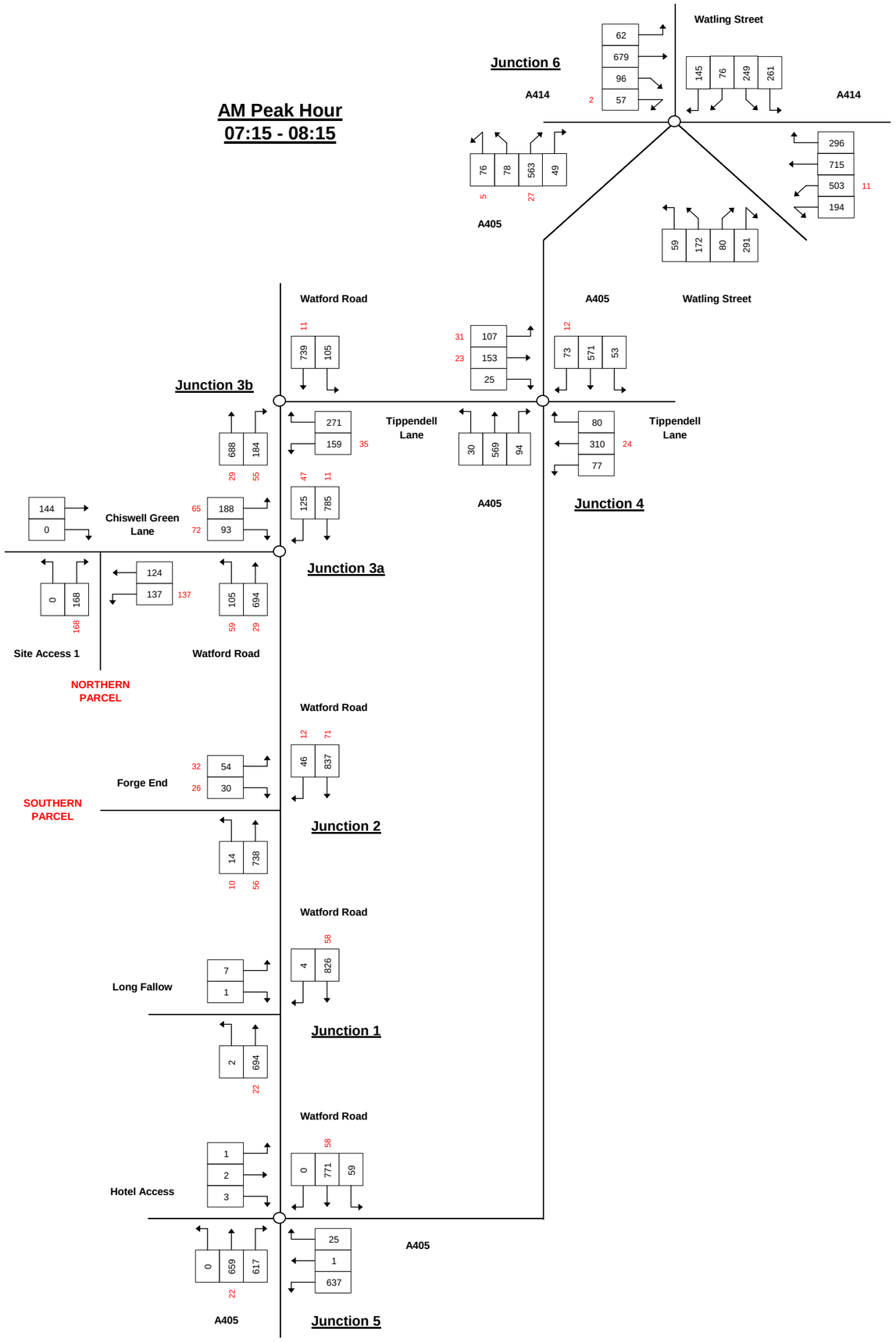
Project: Land at Chiswell Green St Albans

Title: Current 'Two Separate Sites' Trip Distribution

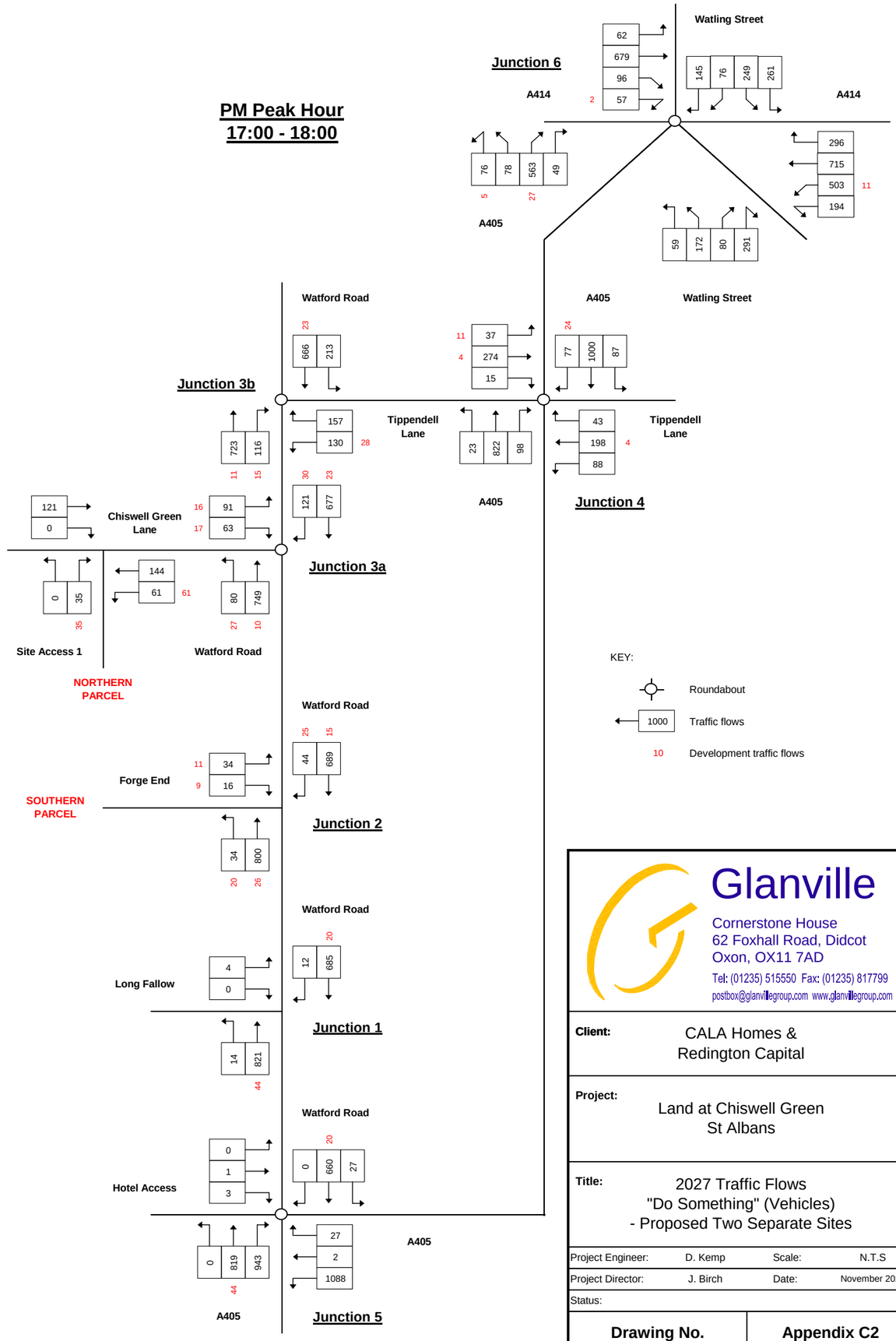
Project Engineer:	D. Kemp	Scale:	N.T.S
Project Director:	J. Birch	Date:	January 2022
Status:			

Drawing No. **Appendix C1**

AM Peak Hour
07:15 - 08:15



PM Peak Hour
17:00 - 18:00



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Client:	CALA Homes & Redington Capital
Project:	Land at Chiswell Green St Albans
Title:	2027 Traffic Flows "Do Something" (Vehicles) - Proposed Two Separate Sites

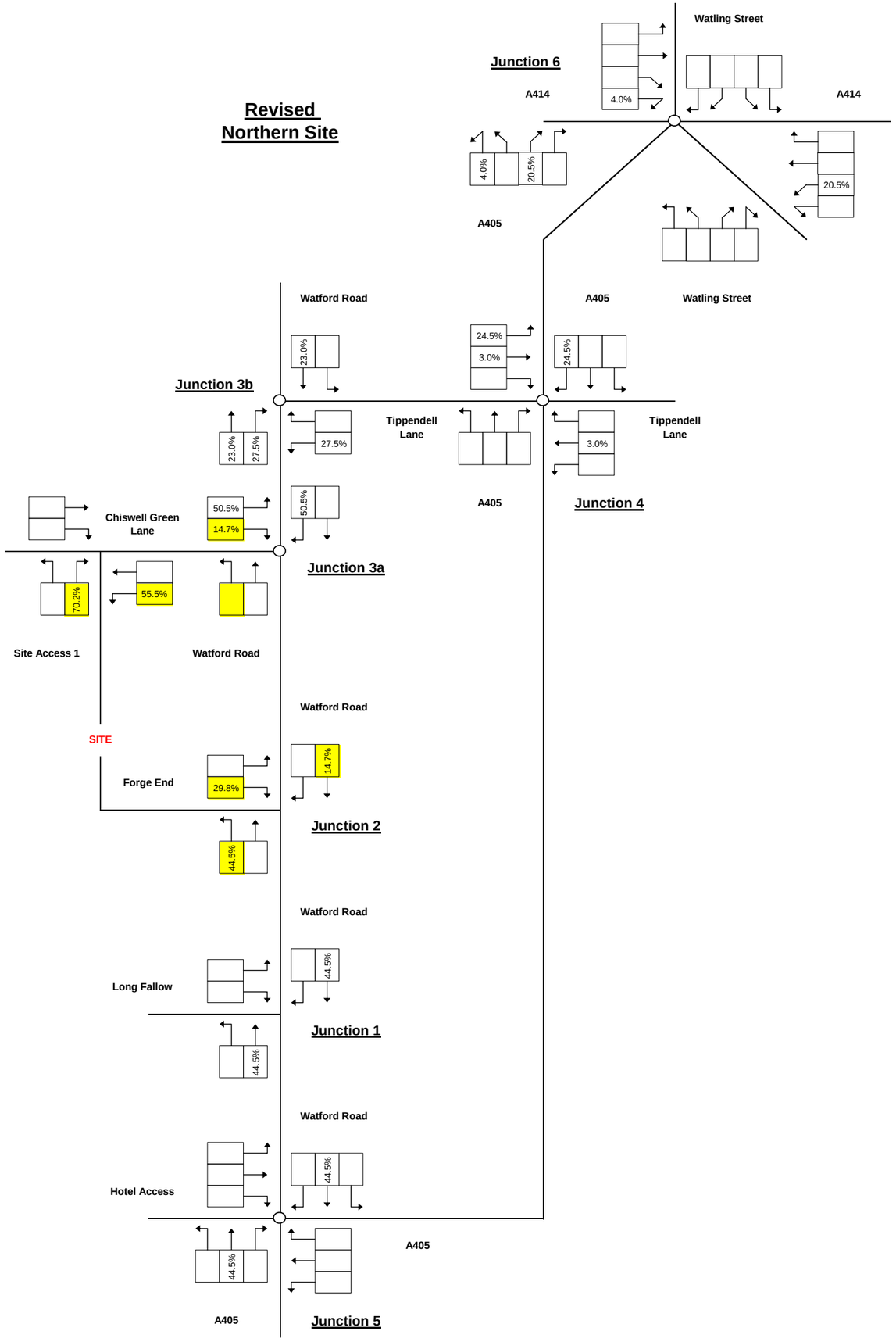
Project Engineer:	D. Kemp	Scale:	N.T.S
Project Director:	J. Birch	Date:	November 2021
Status:			

Drawing No. **Appendix C2**

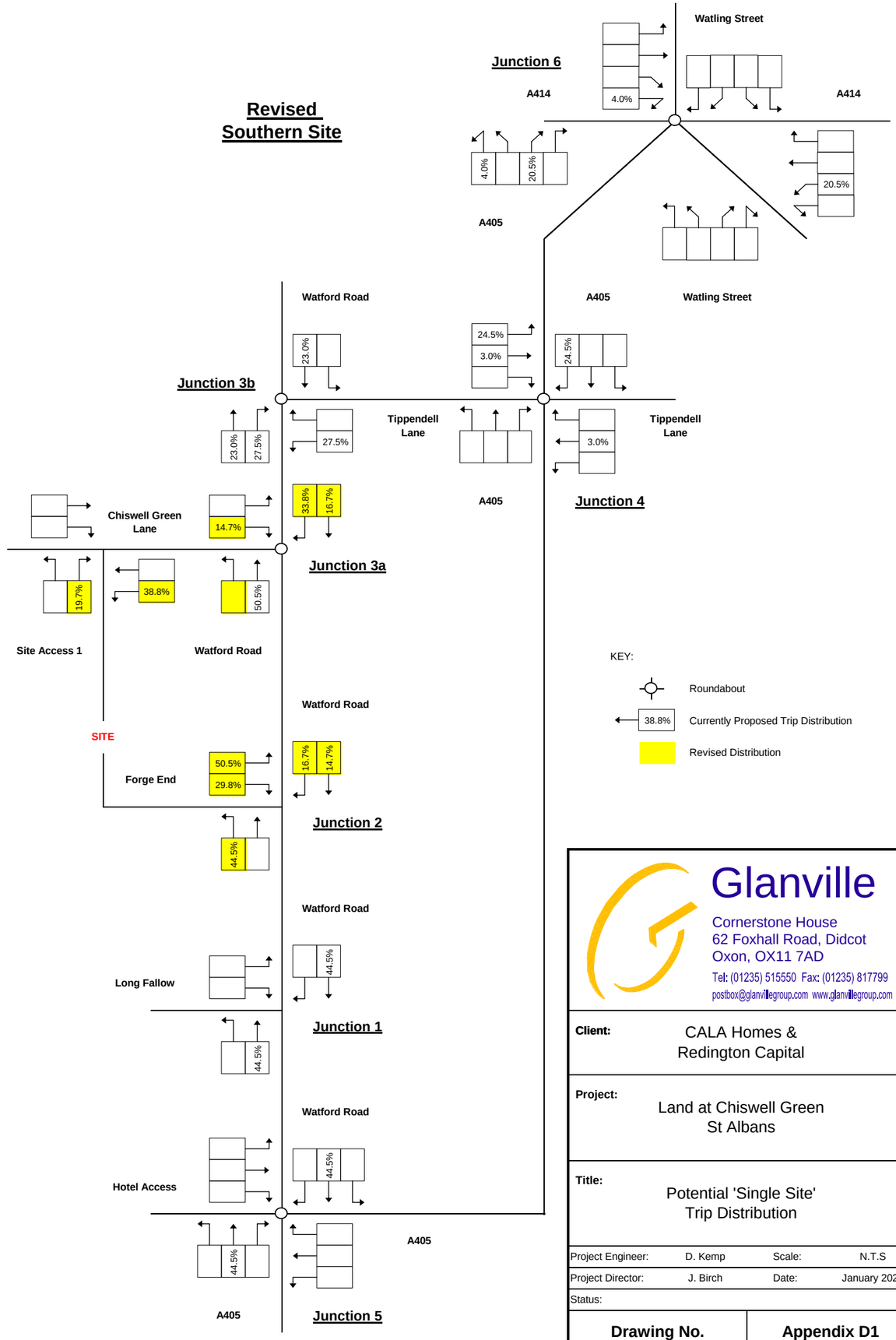
Appendix D

Revised 'Single Site' Trip Distribution & Trip Assignement

Revised Northern Site



Revised Southern Site



KEY:

- Roundabout
- 38.8% — Currently Proposed Trip Distribution
- Revised Distribution

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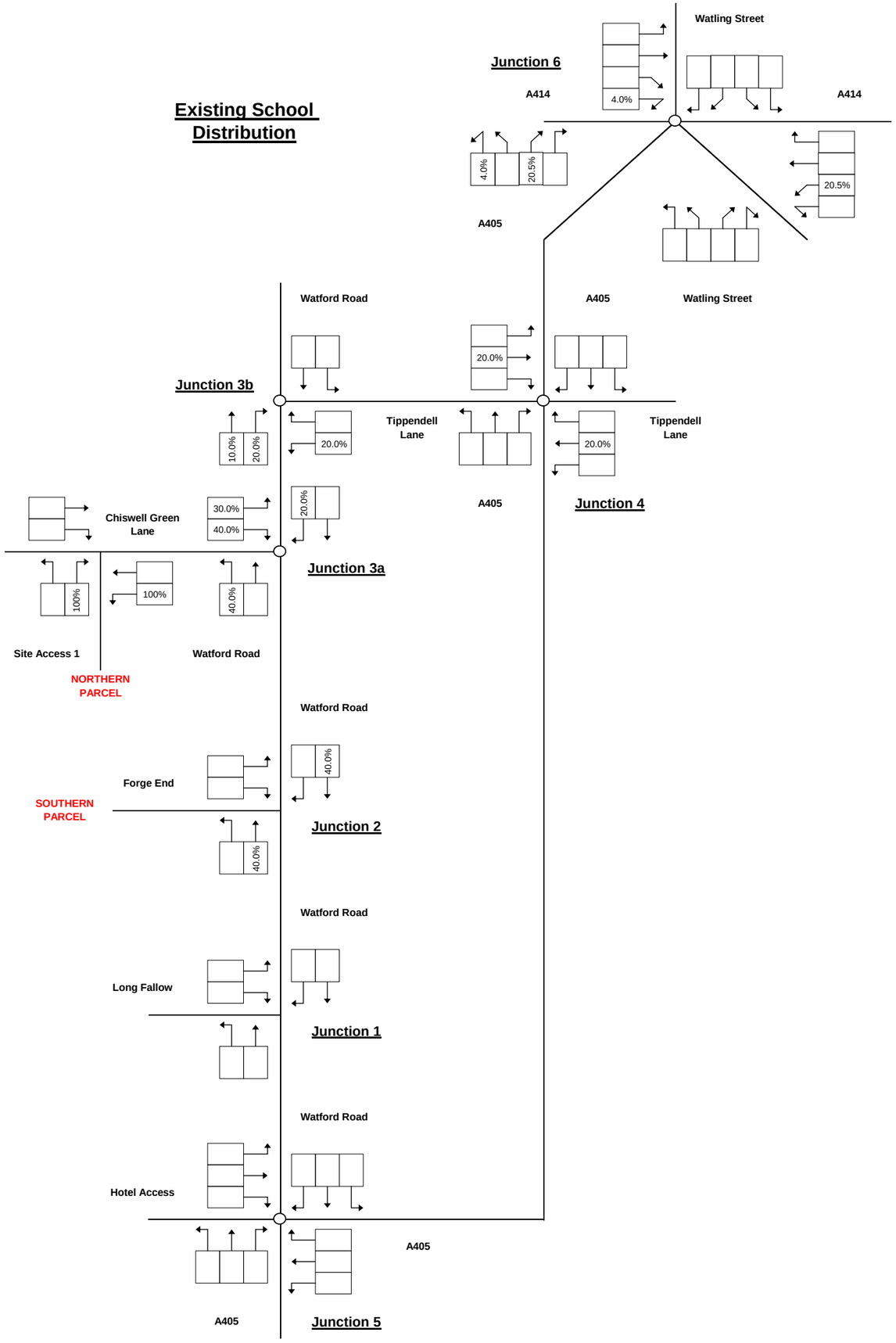
Client:	CALA Homes & Redington Capital
Project:	Land at Chiswell Green St Albans
Title:	Potential 'Single Site' Trip Distribution

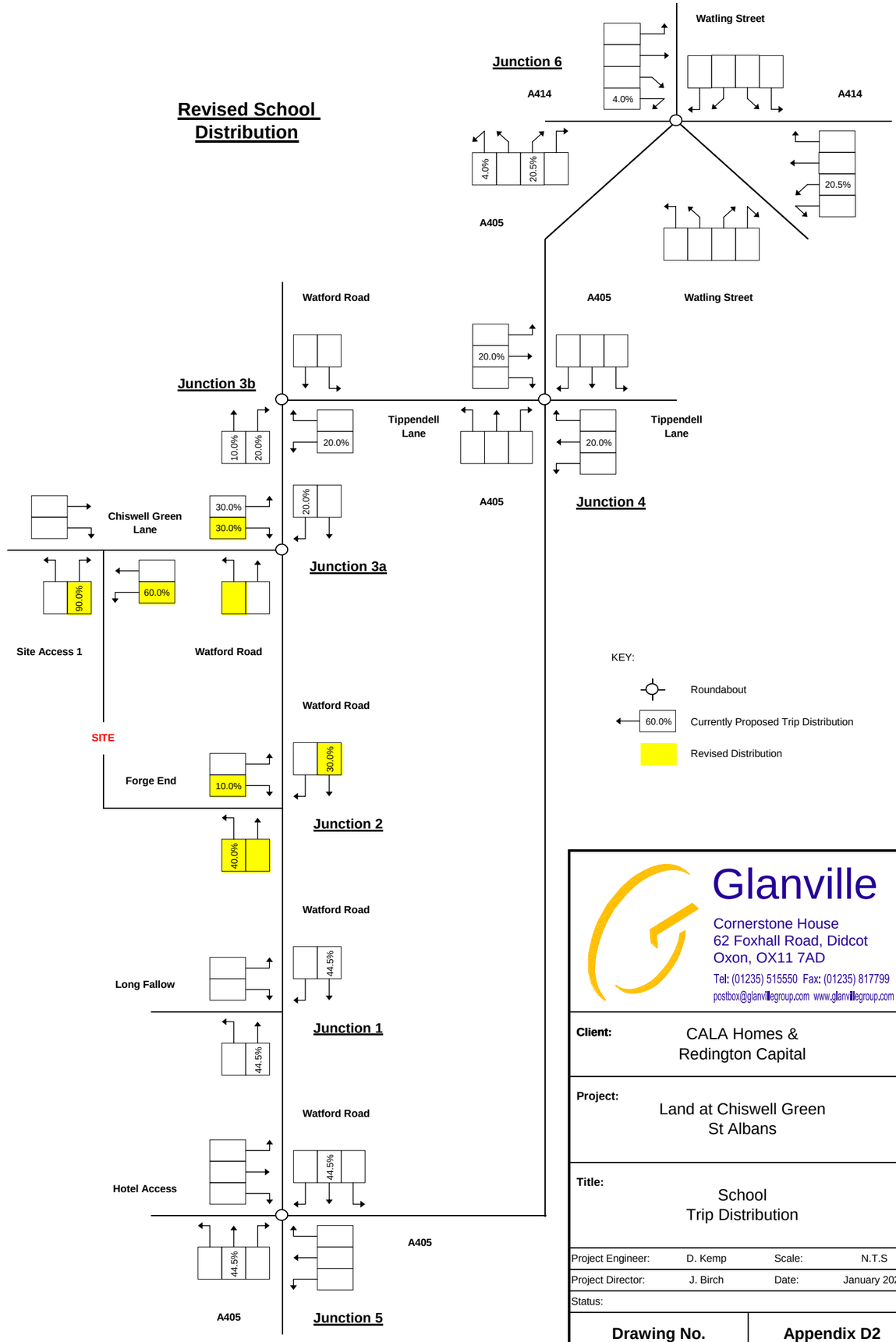
Project Engineer:	D. Kemp	Scale:	N.T.S
Project Director:	J. Birch	Date:	January 2022
Status:			

Drawing No.	**Appendix D1**

Existing School Distribution



Revised School Distribution



KEY:

- Roundabout
- 60.0% — Currently Proposed Trip Distribution
- Revised Distribution

Glanville

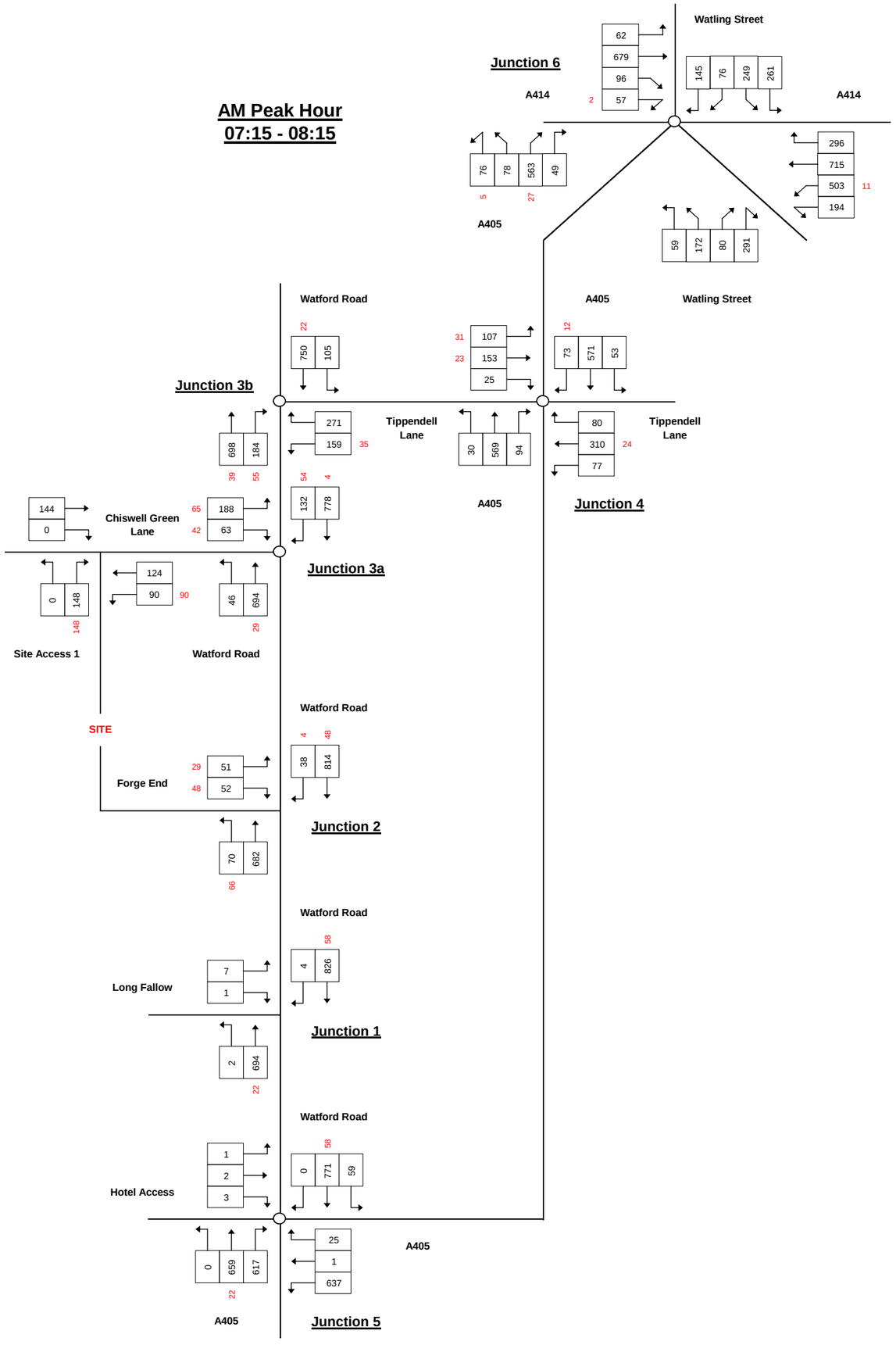
Cornerstone House
62 Foxhall Road, Didcot
Oxon, OX11 7AD
Tel: (01235) 515550 Fax: (01235) 817799
postbox@glanvillegroup.com www.glanvillegroup.com

Client:	CALA Homes & Redington Capital
Project:	Land at Chiswell Green St Albans
Title:	School Trip Distribution

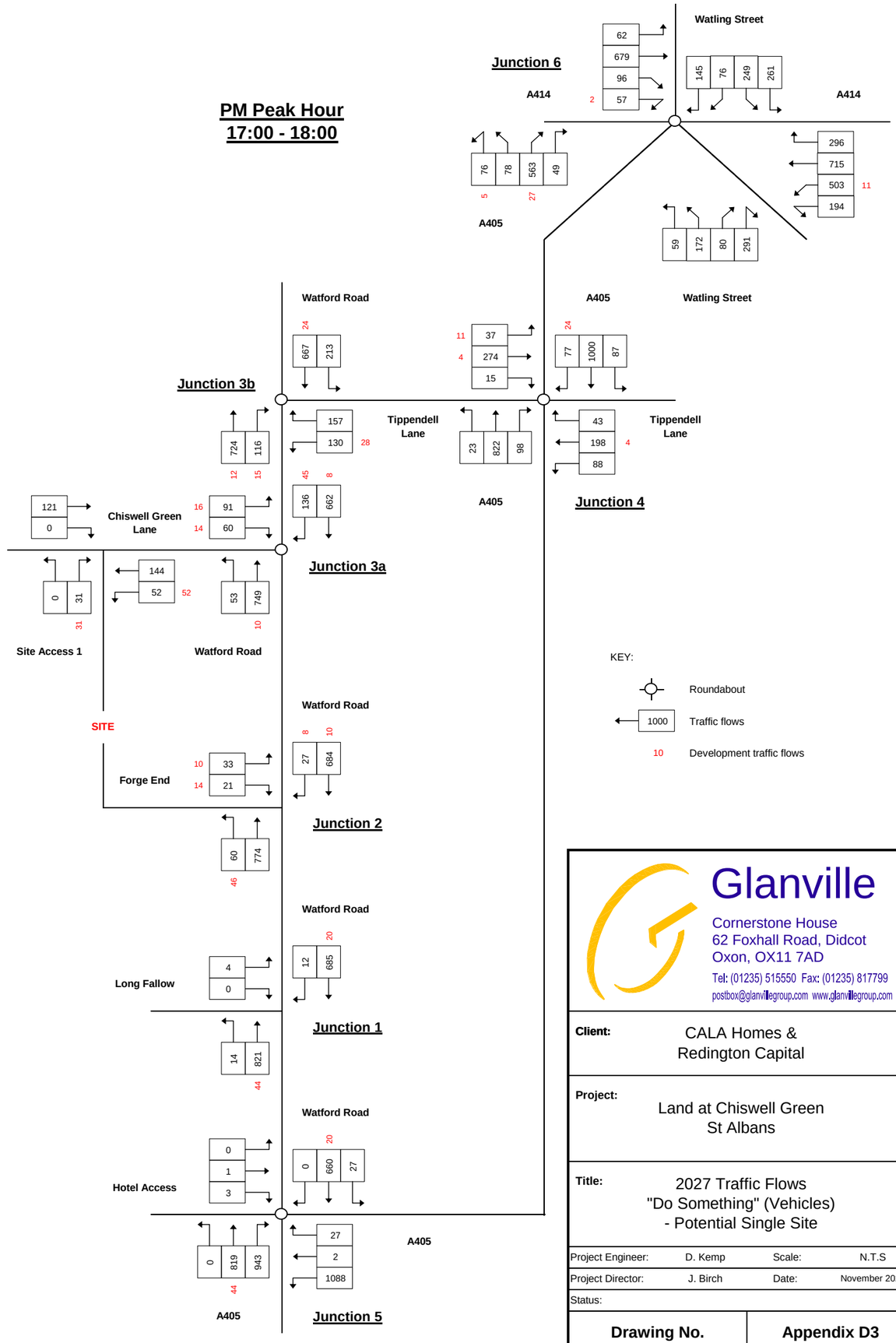
Project Engineer:	D. Kemp	Scale:	N.T.S
Project Director:	J. Birch	Date:	January 2022
Status:			

Drawing No. **Appendix D2**

AM Peak Hour
07:15 - 08:15



PM Peak Hour
17:00 - 18:00



KEY:

Roundabout

1000 Traffic flows

10 Development traffic flows

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postbox@glanvillegroup.com www.glanvillegroup.com

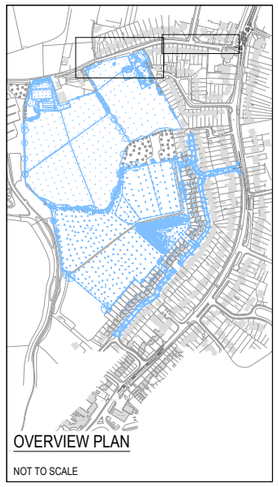
Client:	CALA Homes & Redington Capital
Project:	Land at Chiswell Green St Albans
Title:	2027 Traffic Flows "Do Something" (Vehicles) - Potential Single Site

Project Engineer:	D. Kemp	Scale:	N.T.S
Project Director:	J. Birch	Date:	November 2021
Status:			

Drawing No. **Appendix D3**

Appendix J

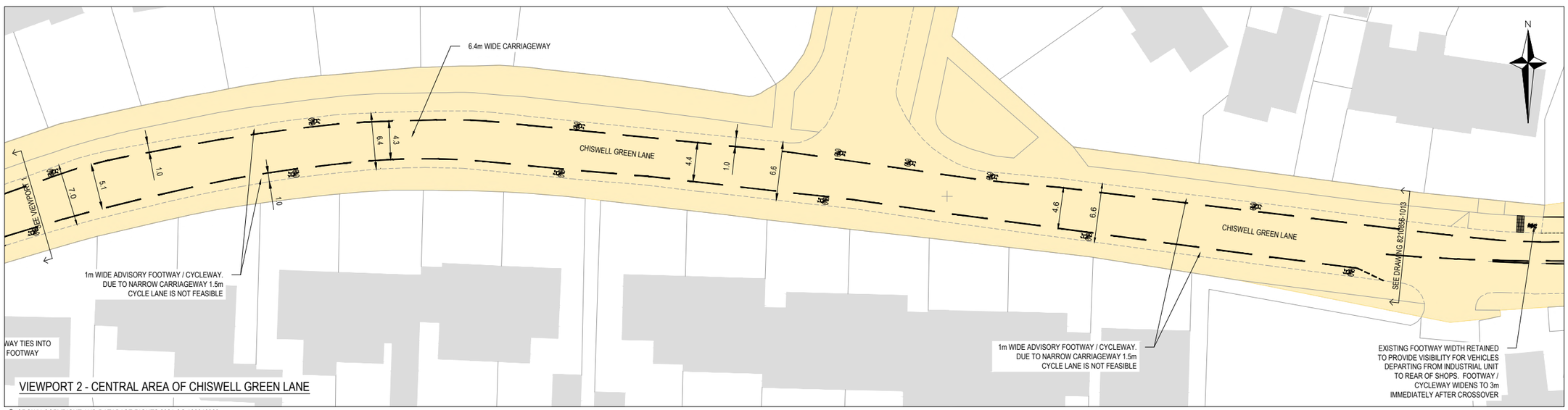
Sustainable Transport Improvements



OVERVIEW PLAN

NOT TO SCALE

VIEWPORT 1 - WESTERN END OF CHISWELL GREEN LANE



VIEWPORT 2 - CENTRAL AREA OF CHISWELL GREEN LANE

NOTES

1. DO NOT SCALE FROM THIS DRAWING. WORK TO FIGURED DIMENSIONS ONLY.
2. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNLESS SPECIFICALLY STATED AS 'FOR CONSTRUCTION' IN THE DRAWING STATUS.
3. THE JUNCTION ARRANGEMENT IS BASE DON THE OS BASE MAPPING AND WILL NEED TO BE CHECKED AGAINST A TOPOGRAPHICAL SURVEY.
4. THE EXTENT OF ADOPTED HIGHWAY AT THE FORGE END JUNCTION WILL NEED TO BE CHECKED TO CONFIRM THAT THE PROPOSALS ARE WITHIN THE ADOPTED HIGHWAY.

KEY

- SITE BOUNDARY
- OS BASE
- TOPOGRAPHICAL SURVEY
- PROPOSED JUNCTION
- 2.4m x 47.9m (32.2mph) JUNCTION VISIBILITY
- 2.4m x 46.0m (31.3mph) JUNCTION VISIBILITY
- EXISTING TREES TO BE RETAINED
- ADOPTED HIGHWAY

FOR INFORMATION ONLY

Rev.	Description	Date	Chkd
I4	INTERNAL SITE LAYOUT REMOVED	30/03/2022 DK	JB
I3	SITE BOUNDARY & LABELS UPDATED	11/03/2022 DK	JB
I2	PROPOSALS UPDATED	11/02/2022 DK	JB

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www.glanvillegroup.com

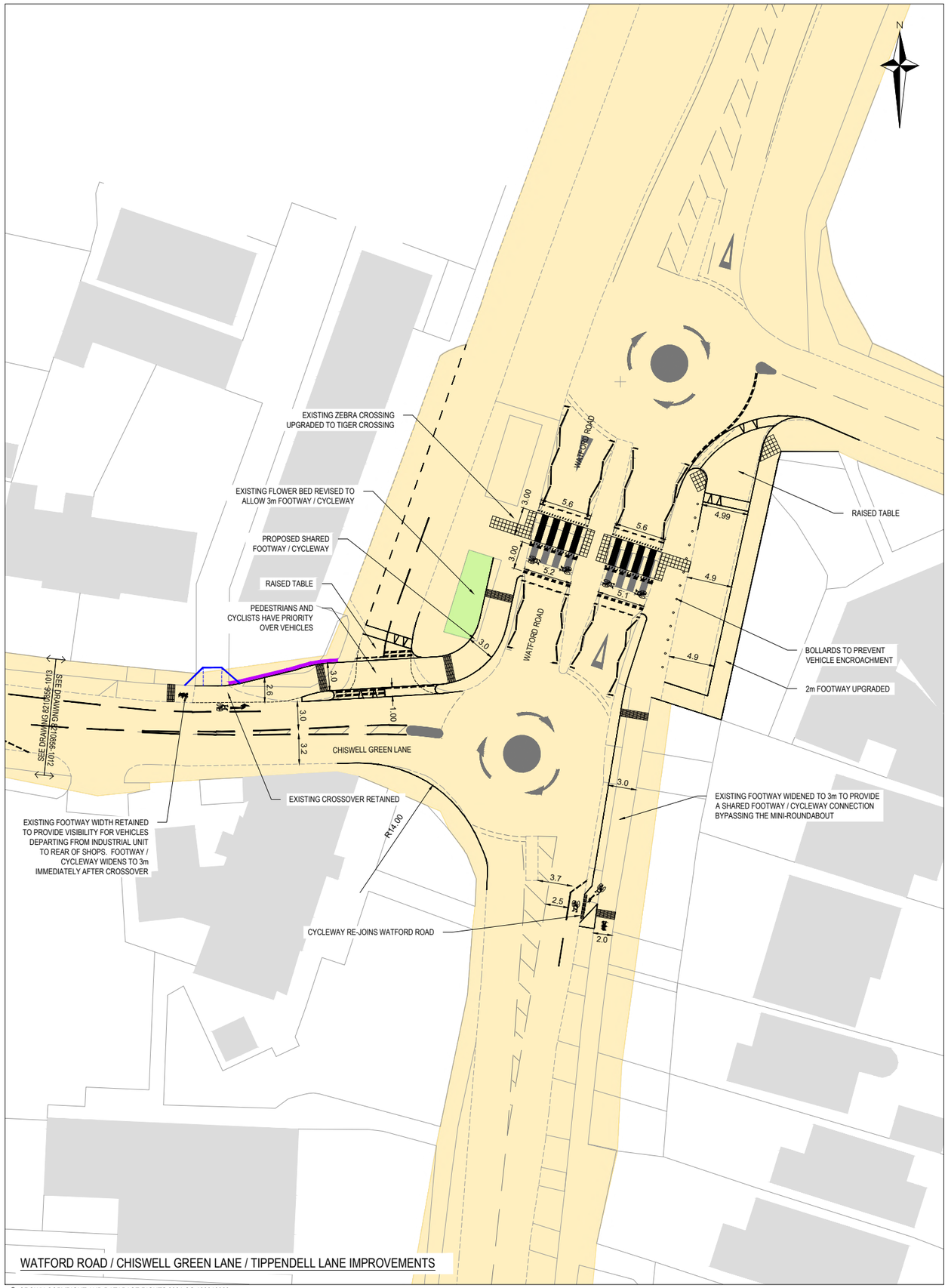
Client : CALA HOMES (CHILTERN) & REDINGTON CAPITAL

Project : LAND WEST OF CHISWELL GREEN

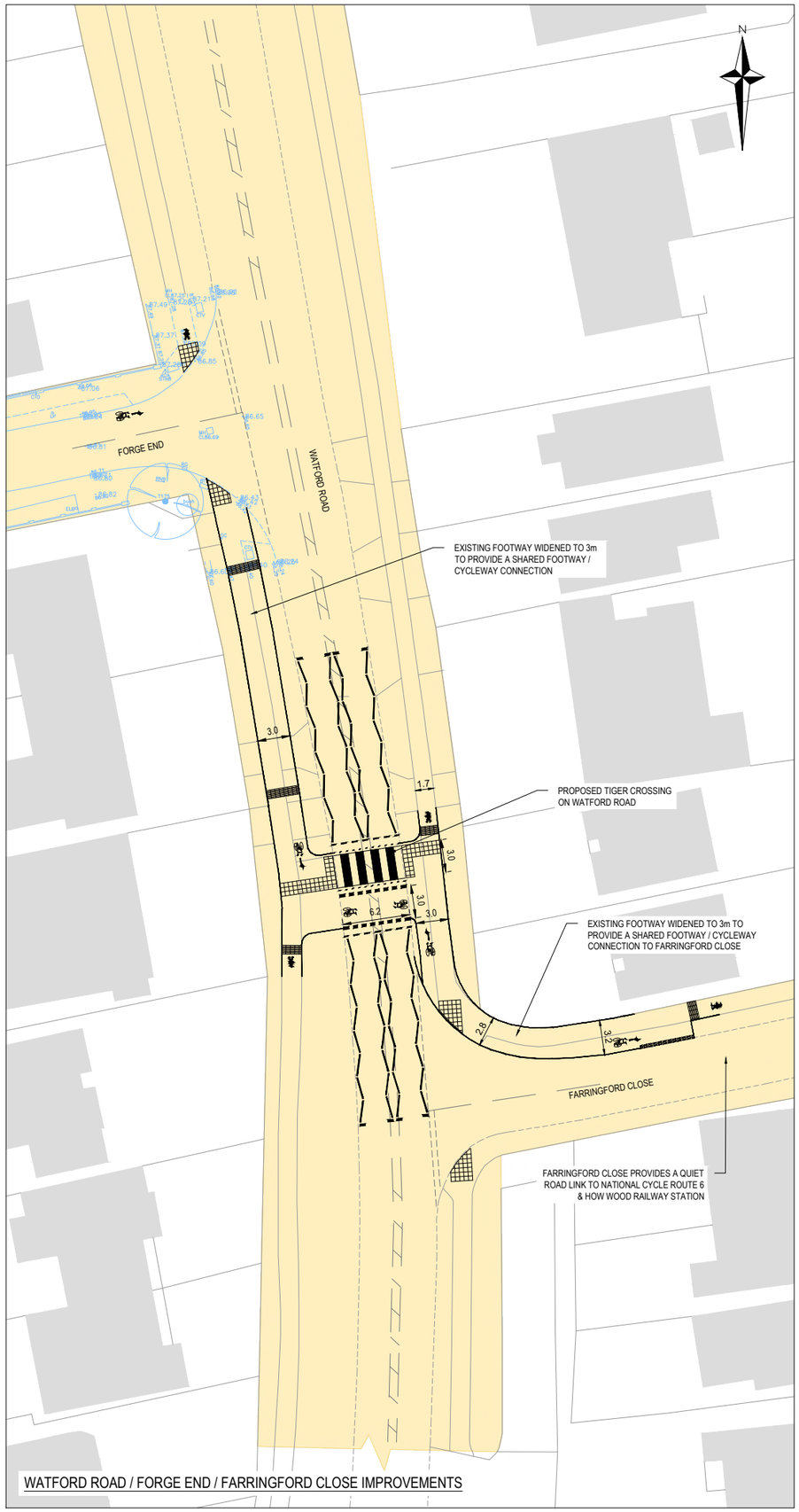
Title : PROPOSED SUSTAINABLE TRAVEL IMPROVEMENTS - CHISWELL GREEN LANE

Project Engineer :	DK	Scale :	1:500 @ A3
Project Director :	JB	Date :	FEBRUARY 2022
Status :	INFORMATION		

Drawing No. 8210856-1012 Rev I4



WATFORD ROAD / CHISWELL GREEN LANE / TIPPENDELL LANE IMPROVEMENTS



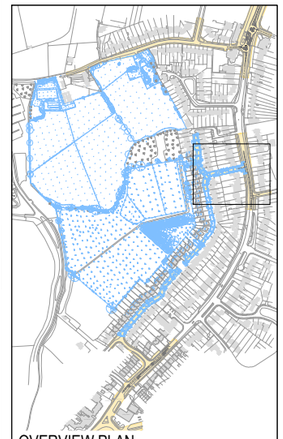
WATFORD ROAD / FORGE END / FARRINGFORD CLOSE IMPROVEMENTS

NOTES

1. DO NOT SCALE FROM THIS DRAWING. WORK TO FIGURED DIMENSIONS ONLY.
2. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNLESS SPECIFICALLY STATED AS 'FOR CONSTRUCTION' IN THE DRAWING STATUS.
3. THE JUNCTION ARRANGEMENT IS BASE DON THE OS BASE MAPPING AND WILL NEED TO BE CHECKED AGAINST A TOPOGRAPHICAL SURVEY.
4. THE EXTENT OF ADOPTED HIGHWAY AT THE FORGE END JUNCTION WILL NEED TO BE CHECKED TO CONFIRM THAT THE PROPOSALS ARE WITHIN THE ADOPTED HIGHWAY.

KEY

- OS BASE MAPPING
- PROPOSED IMPROVEMENTS
- TACTILE PAVING / CORDUROY PAVING
- ADOPTED HIGHWAY
- 2m x 2m FOOTWAY VISIBILITY SPLAY
- POTENTIAL RETAINING WALL



OVERVIEW PLAN

NOT TO SCALE

FOR INFORMATION ONLY

Rev.	Description	Date	Chkd
I3	TIGER CROSSING & ADOPTED HIGHWAY ADDED	11/03/2022 DK	JB
I2	PROPOSALS UPDATED	11/02/2022 DK	JB
I1	FIRST ISSUE	08/02/2022 DK	JB

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Tel: (01442) 835999 Fax: (01442) 258924
postbox@glanvillegroup.com
www.glanvillegroup.com

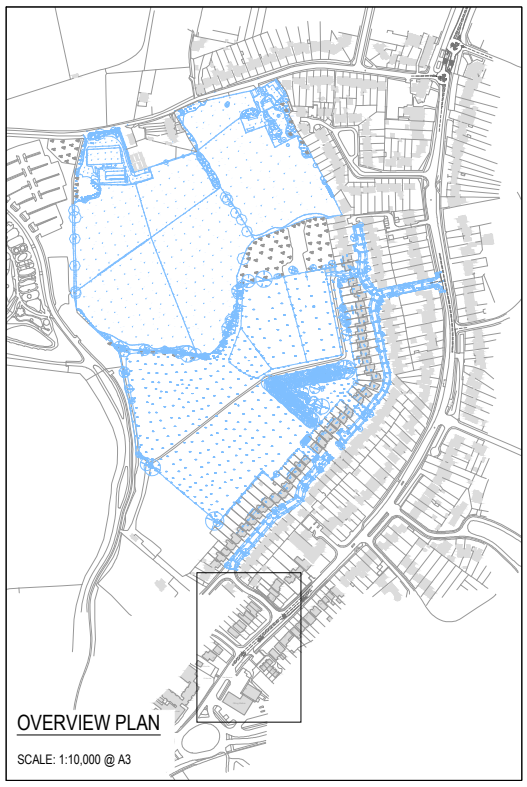
Client : CALA HOMES (CHILTERN) & REDINGTON CAPITAL

Project : LAND WEST OF CHISWELL GREEN

Title : PROPOSED SUSTAINABLE TRAVEL IMPROVEMENTS - WATFORD ROAD & FORGE END

Project Engineer :	DK	Scale :	1:500 @ A3
Project Director :	JB	Date :	FEBRUARY 2022
Status :	INFORMATION		

Drawing No. 8210856-1013 Rev I3



OVERVIEW PLAN

SCALE: 1:10,000 @ A3

N

POTENTIAL FOOTWAY / CYCLEWAY LINK TO LONG FALLOW. EXISTING FOOTWAY TO BE WIDENED TO 3m

EXISTING MATURE TREE TO BE RETAINED

UNCONTROLLED CROSSING TO CONNECT ACCESS ON LONG FALLOW TO NEW FOOTWAY / CYCLEWAY. CONTROLLED CROSSING NOT FEASIBLE DUE TO PROXIMITY OF PRIVATE DRIVEWAYS

1.2m WIDE REFUGE ISLAND TO ASSIST ACCESS TO DRIVEWAYS BUT GHOST ISLAND RIGHT TURN LANE PROVIDES CLEARANCE TO THROUGH TRAFFIC

EXISTING BT / CABLE TV BOX AND TELEGRAPH POLE TO BE AVOIDED

EXISTING FOOTWAY WIDENED TO 3m TO PROVIDE SHARED FOOTWAY / CYCLEWAY. EXTENT OF ADOPTED HIGHWAY TO BE CONFIRMED.

CYCLE LOGOS PROVIDED TO WARN DRIVERS ENTERING THE PETROL STATION ABOUT CYCLISTS

EXISTING FOOTWAY WIDENED TO 3m TO PROVIDE SHARED FOOTWAY / CYCLEWAY. EXTENT OF ADOPTED HIGHWAY TO BE CONFIRMED.

CYCLE LOGOS PROVIDED TO WARN DRIVERS ENTERING THE PETROL STATION ABOUT CYCLISTS

EXISTING FOOTWAY / CYCLEWAY

LONG FALLOW

WATFORD ROAD

BUS STOP

330 334 346 350 352 535a 537 543 543a 545 545a 547 547a 551

El Sub Sta

Gas Governor

El Sub Sta

LB

Filling Station

3.0 1.7 3.1 2.7 3.1 4.0 1.2 3.0 2.1 2.0 2.2 3.0 1.7 3.0

PROPOSED FOOTWAY / CYCLEWAY AT WATFORD ROAD / LONG FALLOW JUNCTION

SCALE: 1:500 @ A3

NOTES

1. DO NOT SCALE FROM THIS DRAWING. WORK TO FIGURED DIMENSIONS ONLY.
2. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNLESS SPECIFICALLY STATED AS 'FOR CONSTRUCTION' IN THE DRAWING STATUS.
3. THE JUNCTION ARRANGEMENT IS BASE DON THE OS BASE MAPPING AND WILL NEED TO BE CHECKED AGAINST A TOPOGRAPHICAL SURVEY.
4. THE EXTENT OF ADOPTED HIGHWAY WILL NEED TO BE CHECKED AND CONFIRMED THAT THE PROPOSALS ARE WITHIN THE ADOPTED HIGHWAY.

KEY

- OS BASE MAPPING
- PROPOSED IMPROVEMENTS
- TACTILE PAVING / CORDUROY PAVING
- ADOPTED HIGHWAY

FOR INFORMATION ONLY

Rev.	Description	Date	Chkd
I3	ADOPTED HIGHWAY ADDED	11/03/2022 DK	JB
I2	PROPOSALS UPDATED	11/02/2022 DK	JB
I1	FIRST ISSUE	08/02/2022 DK	JB

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postbox@glanvillegroup.com
www.glanvillegroup.com

Client : CALA HOMES (CHILTERN) & REDINGTON CAPITAL

Project : LAND WEST OF CHISWELL GREEN

Title : PROPOSED SUSTAINABLE TRAVEL IMPROVEMENTS - LONG FALLOW

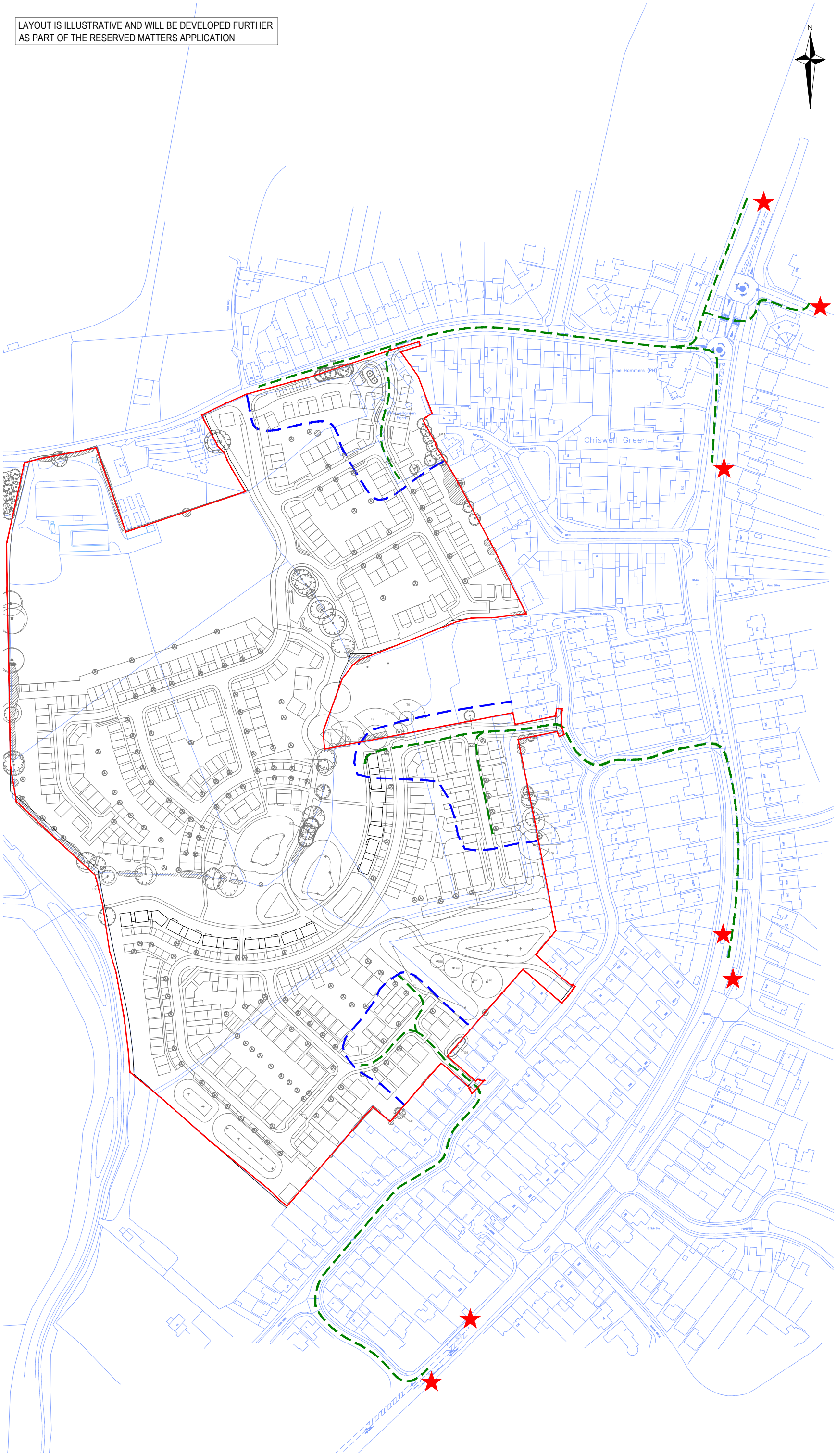
Project Engineer :	DK	Scale :	AS SHOWN @ A3
Project Director :	JB	Date :	FEBRUARY 2022
Status :	INFORMATION		

Drawing No. 8210856-1014 Rev I3

Appendix K

Existing Bus Stop Accessibility

LAYOUT IS ILLUSTRATIVE AND WILL BE DEVELOPED FURTHER AS PART OF THE RESERVED MATTERS APPLICATION



NOTES

1. DO NOT SCALE FROM THIS DRAWING. WORK TO FIGURED DIMENSIONS ONLY.
2. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNLESS SPECIFICALLY STATED AS 'FOR CONSTRUCTION' IN THE DRAWING STATUS.

KEY

- SITE BOUNDARY
- OS BASE
- PRELIMINARY SITE LAYOUT
- EXISTING BUS STOPS
- EXTENT OF 5 MINUTE WALK FROM EXISTING BUS STOPS (400m)
- WALKING JOURNEY BETWEEN SITE AND THE EXISTING BUS STOPS

FOR INFORMATION ONLY

Rev.	Description	Date	Chkd
I3	SITE LAYOUT UPDATED	29/03/2022 DK	JB
I2	SITE LAYOUT UPDATED	07/03/2022 DK	JB
I1	FIRST ISSUE	21/12/2021 DK	JB

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postbox@glanvillegroup.com
www.glanvillegroup.com

Client : CALA HOMES (CHILTERN) & REDLINGTON CAPITAL

Project : LAND WEST OF CHISWELL GREEN

Title : ACCESSIBILITY TO EXISTING BUS STOPS

Project Engineer :	DK	Scale :	1:2,500 @ A3
Project Director :	HG	Date :	DECEMBER 2021
Status :	INFORMATION		

Drawing No. 8210856-1008 Rev I3

Appendix L

Proposed Diverted Bus Route

LAYOUT IS ILLUSTRATIVE AND WILL BE DEVELOPED FURTHER AS PART OF THE RESERVED MATTERS APPLICATION

POTENTIAL NEW BUS STOP COULD ALSO SERVE EXISTING RESIDENTS ON CHISWELL GREEN LANE, HOWEVER ALL DWELLINGS WITHIN THE NEW DEVELOPMENT ARE WITHIN 400m OF THE CENTRAL BUS STOPS AND SO IT IS NOT REQUIRED FOR THE DEVELOPMENT.

N

NOTES

1. DO NOT SCALE FROM THIS DRAWING. WORK TO FIGURED DIMENSIONS ONLY.
2. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNLESS SPECIFICALLY STATED AS 'FOR CONSTRUCTION' IN THE DRAWING STATUS.

KEY

- SITE BOUNDARY
- OS BASE
- PRELIMINARY SITE LAYOUT
- EXISTING BUS STOP
- EXTENT OF 5 MINUTE WALK FROM EXISTING BUS STOPS (400m)
- POTENTIAL NEW BUS STOP
- POTENTIAL NEW BUS ROUTE
- WALKING JOURNEY (VARIOUS COLOURS) TO THE PROPOSED BUS STOPS (400m)

FOR INFORMATION ONLY

Rev.	Description	Date	Chkd
I3	SITE LAYOUT UPDATED	29/03/2022 DK	JB
I2	SITE LAYOUT UPDATED	07/03/2022 DK	JB
I1	FIRST ISSUE	21/12/2021 DK	JB

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Hemel Hempstead, Herts. HP2 7TE
Tel: (01442) 835999 Fax: (01442) 258924
postbox@glanvillegroup.com
www.glanvillegroup.com

Client : CALA HOMES (CHILTERN) & REDLINGTON CAPITAL

Project : LAND WEST OF CHISWELL GREEN

Title : POTENTIAL FUTURE BUS ROUTE & BUS STOPS

Project Engineer : DK | Scale : 1:1,000 @ A3

Project Director : HG | Date : DECEMBER 2021

Status : INFORMATION

Drawing No. 8210856-1009 | Rev I3

Appendix M

TRICS Outputs

Filtering Summary

Land Use	03/A	RESIDENTIAL/HOUSES PRIVATELY OWNED
Selected Trip Rate Calculation Parameter Range	150-500 DWELLS	
Actual Trip Rate Calculation Parameter Range	151-371 DWELLS	
Date Range	Minimum: 01/01/13	Maximum: 16/06/21
Parking Spaces Range	All Surveys Included	
Parking Spaces Per Dwelling Range:	All Surveys Included	
Bedrooms Per Dwelling Range:	All Surveys Included	
Percentage of dwellings privately owned:	All Surveys Included	
Days of the week selected	Monday	3
	Tuesday	1
	Wednesday	2
	Thursday	3
Main Location Types selected	Edge of Town	9
Population within 500m	All Surveys Included	
Population <1 Mile ranges selected	5,001 to 10,000	3
	10,001 to 15,000	5
	20,001 to 25,000	1
Population <5 Mile ranges selected	50,001 to 75,000	1
	75,001 to 100,000	3
	125,001 to 250,000	5
Car Ownership <5 Mile ranges selected	0.6 to 1.0	2
	1.1 to 1.5	6
	1.6 to 2.0	1
PTAL Rating	No PTAL Present	9

Calculation Reference: AUDIT-225601-211201-1247

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED
TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	1 days
	KC	KENT	1 days
	SC	SURREY	1 days
	WS	WEST SUSSEX	3 days
04	EAST ANGLIA		
	NF	NORFOLK	1 days
05	EAST MIDLANDS		
	DS	DERBYSHIRE	1 days
06	WEST MIDLANDS		
	ST	STAFFORDSHIRE	1 days

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

Primary 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: No of Dwellings
Actual Range: 151 to 371 (units:)
Range Selected by User: 150 to 500 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/13 to 16/06/21

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	3 days
Tuesday	1 days
Wednesday	2 days
Thursday	3 days

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

Selected survey types:

Manual count	9 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 undertaking using machines.

Selected Locations:

Edge of Town	9

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	9

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	9 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 500m Range:

All Surveys Included

Population within 1 mile:

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

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

Population within 5 miles:

50,001 to 75,000	1 days
75,001 to 100,000	3 days
125,001 to 250,000	5 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	2 days
1.1 to 1.5	6 days
1.6 to 2.0	1 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	5 days
No	4 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	9 days

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

LIST OF SITES relevant to selection parameters

Site(1):	DS-03-A-02	Site area:	16.45 hect
Development Name:	MIXED HOUSES	No of Dwellings:	371
Location:	DERBY	Housing density:	36
Postcode:	DE22 4HH	Total Bedrooms:	1402
Main Location Type:	Edge of Town	Survey Date:	10/07/18
Sub-Location Type:	Residential Zone	Survey Day:	Tuesday
PTAL:	n/a	Parking Spaces:	1083
Site(2):	ES-03-A-03	Site area:	9.91 hect
Development Name:	MIXED HOUSES & FLATS	No of Dwellings:	212
Location:	POLEGATE	Housing density:	63
Postcode:	BN26 6HR	Total Bedrooms:	649
Main Location Type:	Edge of Town	Survey Date:	11/07/16
Sub-Location Type:	Residential Zone	Survey Day:	Monday
PTAL:	n/a	Parking Spaces:	357
Site(3):	KC-03-A-07	Site area:	9.46 hect
Development Name:	MIXED HOUSES	No of Dwellings:	288
Location:	HERNE BAY	Housing density:	40
Postcode:	CT6 6HZ	Total Bedrooms:	934
Main Location Type:	Edge of Town	Survey Date:	27/09/17
Sub-Location Type:	Residential Zone	Survey Day:	Wednesday
PTAL:	n/a	Parking Spaces:	891
Site(4):	NF-03-A-06	Site area:	9.27 hect
Development Name:	MIXED HOUSES	No of Dwellings:	275
Location:	GREAT YARMOUTH	Housing density:	32
Postcode:	NR31 9FT	Total Bedrooms:	767
Main Location Type:	Edge of Town	Survey Date:	23/09/19
Sub-Location Type:	Residential Zone	Survey Day:	Monday
PTAL:	n/a	Parking Spaces:	586
Site(5):	SC-03-A-05	Site area:	7.20 hect
Development Name:	MIXED HOUSES	No of Dwellings:	207
Location:	HORLEY	Housing density:	38
Postcode:	RH6 8NT	Total Bedrooms:	592
Main Location Type:	Edge of Town	Survey Date:	01/04/19
Sub-Location Type:	Residential Zone	Survey Day:	Monday
PTAL:	n/a	Parking Spaces:	649
Site(6):	ST-03-A-07	Site area:	9.00 hect
Development Name:	DETACHED & SEMI-DETACHED	No of Dwellings:	248
Location:	STAFFORD	Housing density:	173
Postcode:	ST16 1GZ	Total Bedrooms:	821
Main Location Type:	Edge of Town	Survey Date:	22/11/17
Sub-Location Type:	Residential Zone	Survey Day:	Wednesday
PTAL:	n/a	Parking Spaces:	881
Site(7):	WS-03-A-04	Site area:	5.45 hect
Development Name:	MIXED HOUSES	No of Dwellings:	151
Location:	HORSHAM	Housing density:	46
Postcode:	RH12 1EP	Total Bedrooms:	465
Main Location Type:	Edge of Town	Survey Date:	11/12/14
Sub-Location Type:	Residential Zone	Survey Day:	Thursday
PTAL:	n/a	Parking Spaces:	345
Site(8):	WS-03-A-08	Site area:	8.86 hect
Development Name:	MIXED HOUSES	No of Dwellings:	180
Location:	ANGMERING	Housing density:	41
Postcode:	BN16 4PQ	Total Bedrooms:	586
Main Location Type:	Edge of Town	Survey Date:	19/04/18
Sub-Location Type:	Residential Zone	Survey Day:	Thursday
PTAL:	n/a	Parking Spaces:	527
Site(9):	WS-03-A-09	Site area:	5.36 hect
Development Name:	MIXED HOUSES & FLATS	No of Dwellings:	197
Location:	WORTHING	Housing density:	52
Postcode:	BN12 6FE	Total Bedrooms:	591
Main Location Type:	Edge of Town	Survey Date:	05/07/18
Sub-Location Type:	Residential Zone	Survey Day:	Thursday
PTAL:	n/a	Parking Spaces:	380

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	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	9	237	0.090	9	237	0.350	9	237	0.440
08:00 - 09:00	9	237	0.140	9	237	0.400	9	237	0.540
09:00 - 10:00	9	237	0.141	9	237	0.182	9	237	0.323
10:00 - 11:00	9	237	0.125	9	237	0.144	9	237	0.269
11:00 - 12:00	9	237	0.134	9	237	0.146	9	237	0.280
12:00 - 13:00	9	237	0.161	9	237	0.150	9	237	0.311
13:00 - 14:00	9	237	0.164	9	237	0.147	9	237	0.311
14:00 - 15:00	9	237	0.171	9	237	0.194	9	237	0.365
15:00 - 16:00	9	237	0.269	9	237	0.174	9	237	0.443
16:00 - 17:00	9	237	0.284	9	237	0.162	9	237	0.446
17:00 - 18:00	9	237	0.374	9	237	0.143	9	237	0.517
18:00 - 19:00	9	237	0.314	9	237	0.171	9	237	0.485
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.367			2.363			4.730

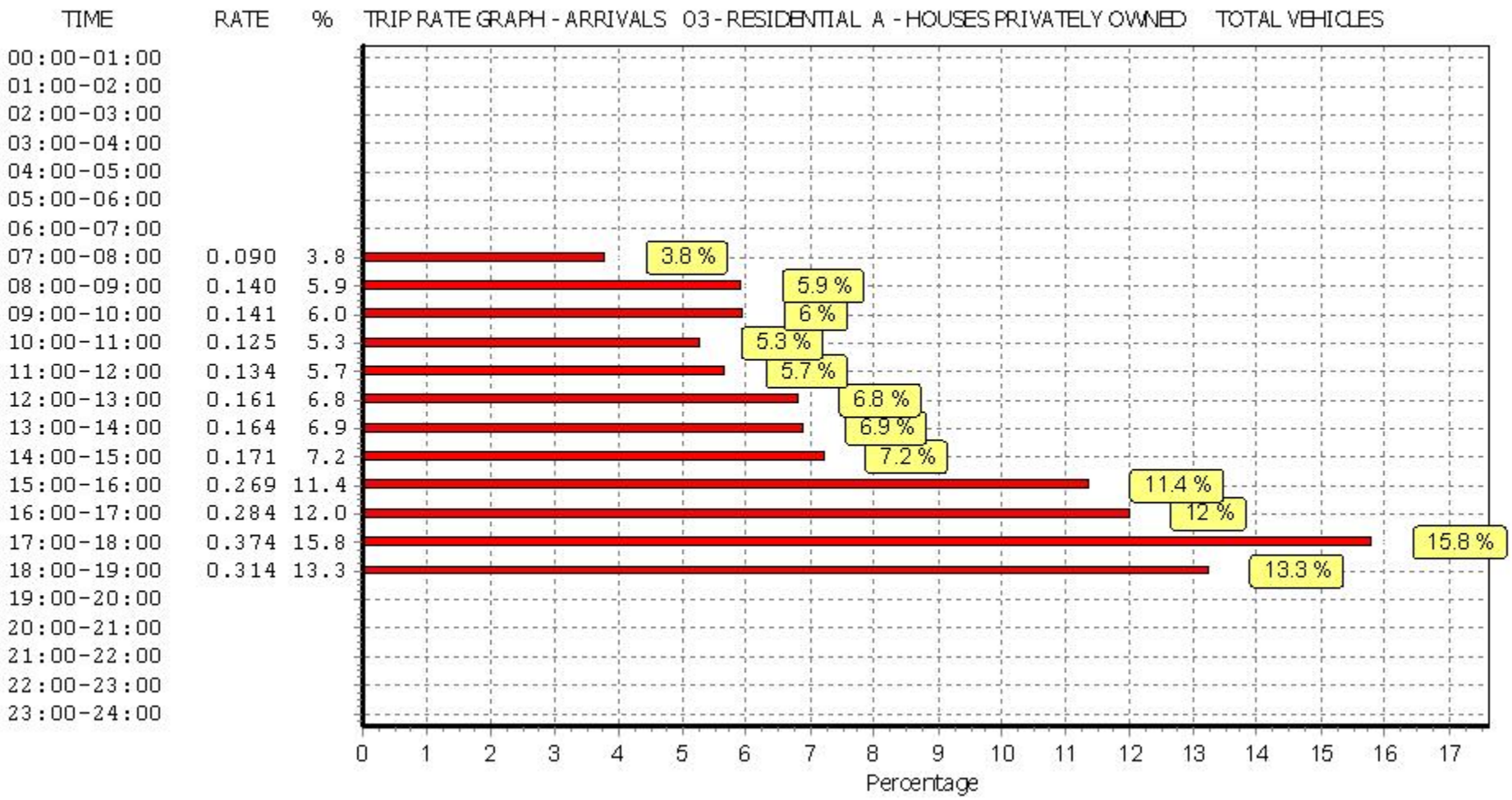
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are 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.*

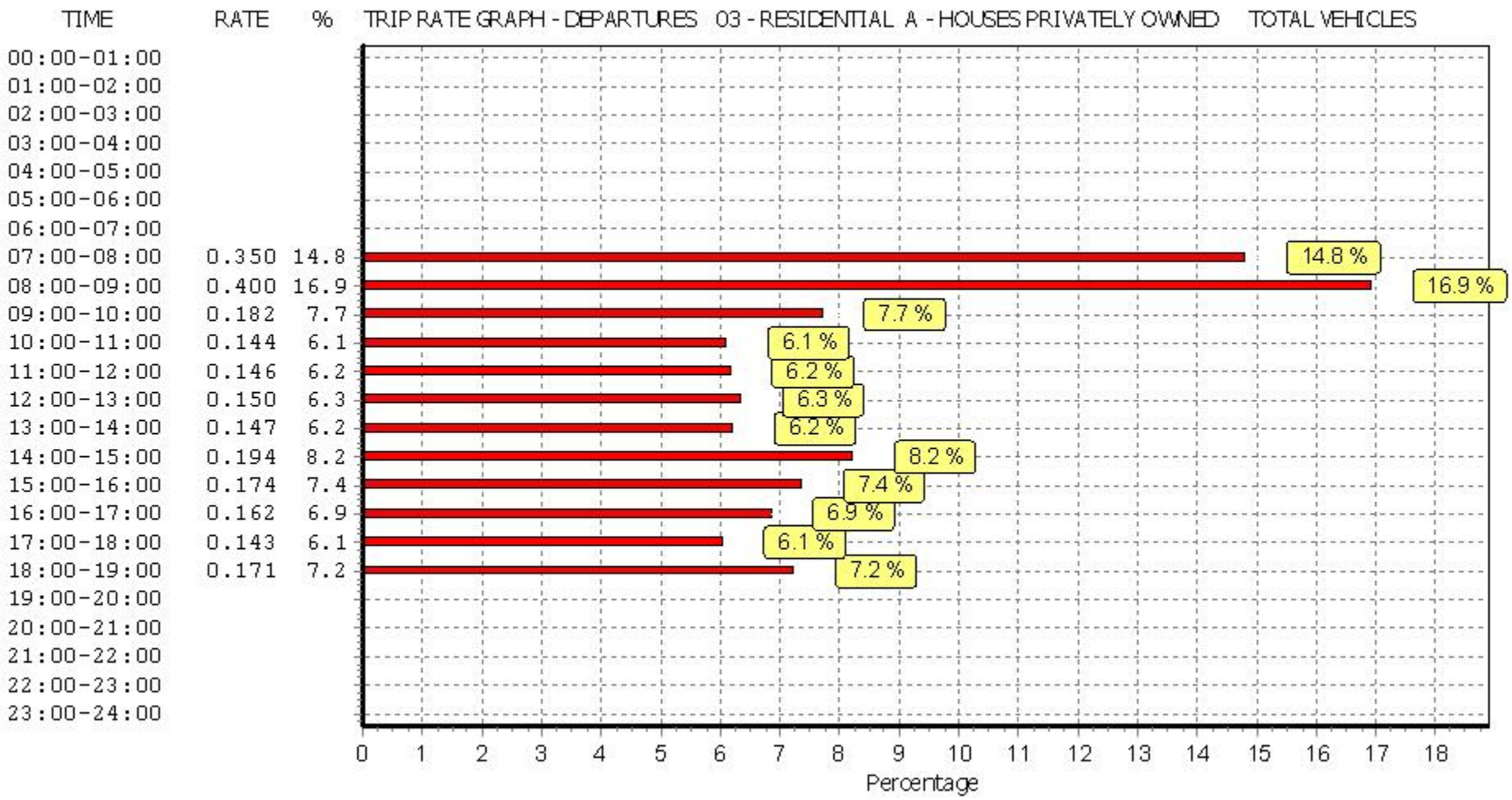
Parameter summary

Trip rate parameter range selected:	151 - 371 (units:)
Survey date date range:	01/01/13 - 16/06/21
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	2
Surveys manually removed from selection:	0

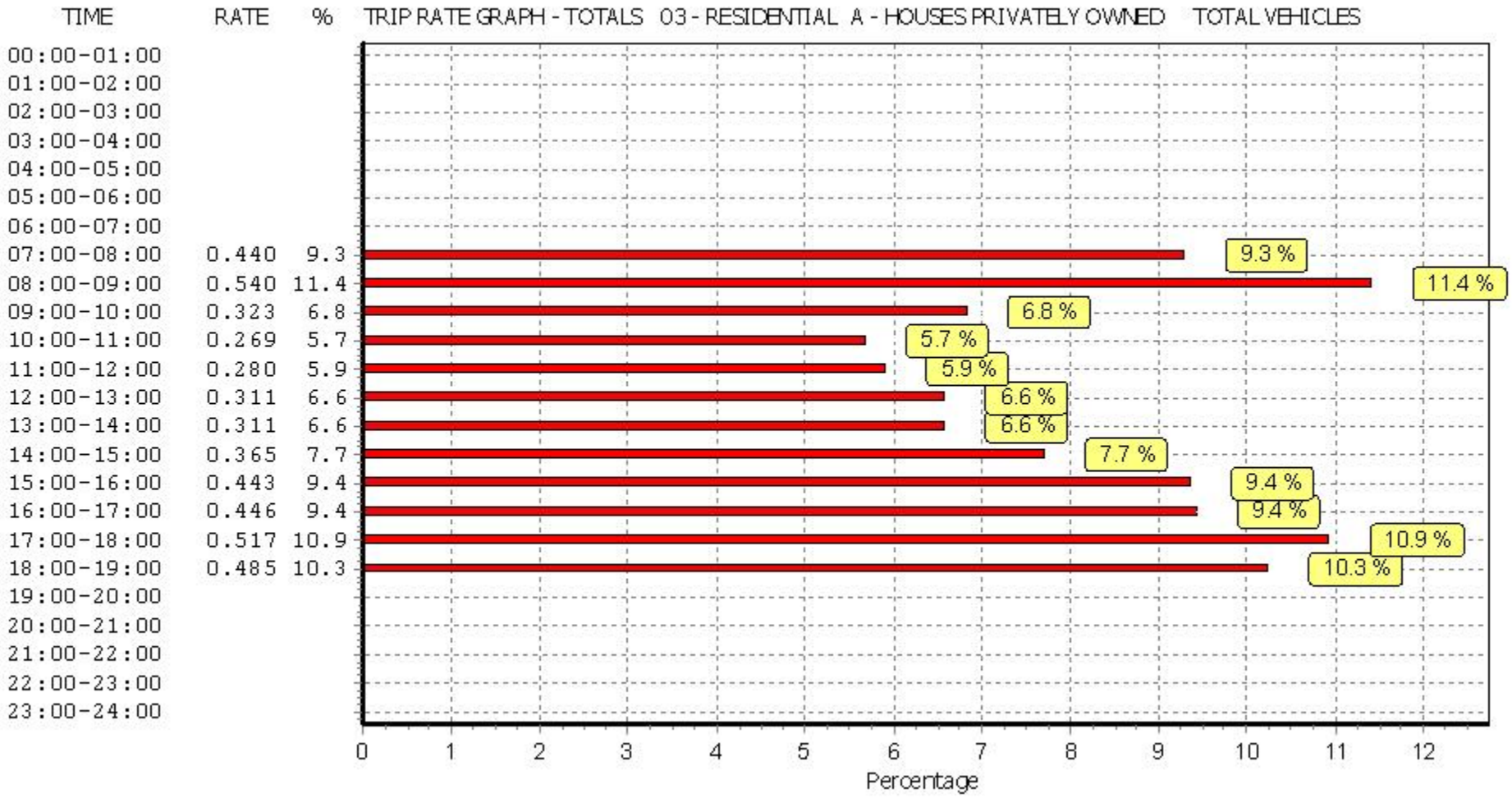
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected 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.



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.

Filtering Summary

Land Use	03/B	RESIDENTIAL/AFFORDABLE/LOCAL AUTHORITY HOUS
Selected Trip Rate Calculation Parameter Range	14-280 DWELLS	
Actual Trip Rate Calculation Parameter Range	16-80 DWELLS	
Date Range	Minimum: 01/01/13	Maximum: 19/10/18
Parking Spaces Range	All Surveys Included	
Parking Spaces Per Dwelling Range:	All Surveys Included	
Bedrooms Per Dwelling Range:	All Surveys Included	
Percentage of dwellings privately owned:	All Surveys Included	
Days of the week selected	Monday	1
	Tuesday	2
	Friday	1
Main Location Types selected	Edge of Town	4
Population within 500m	All Surveys Included	
Population <1 Mile ranges selected	1,001 to 5,000	1
	5,001 to 10,000	1
	10,001 to 15,000	1
	15,001 to 20,000	1
Population <5 Mile ranges selected	5,001 to 25,000	1
	75,001 to 100,000	1
	125,001 to 250,000	2
Car Ownership <5 Mile ranges selected	0.6 to 1.0	2
	1.1 to 1.5	2
PTAL Rating	No PTAL Present	4

Calculation Reference: AUDIT-225601-211201-1207

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : B - AFFORDABLE/LOCAL AUTHORITY HOUSES
TOTAL VEHICLES

Selected regions and areas:

07	YORKSHIRE & NORTH LINCOLNSHIRE		
	WY	WEST YORKSHIRE	2 days
08	NORTH WEST		
	CH	CHESHIRE	1 days
	MS	MERSEYSIDE	1 days

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

Primary 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: No of Dwellings
Actual Range: 16 to 80 (units:)
Range Selected by User: 14 to 280 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/13 to 19/10/18

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	1 days
Tuesday	2 days
Friday	1 days

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

Selected survey types:

Manual count	4 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 undertaking using machines.

Selected Locations:

Edge of Town	4

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	4

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	4 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 500m Range:

All Surveys Included

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	1 days
10,001 to 15,000	1 days
15,001 to 20,000	1 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
75,001 to 100,000	1 days
125,001 to 250,000	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	2 days
1.1 to 1.5	2 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:

No	4 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	4 days

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

LIST OF SITES relevant to selection parameters

Site(1):	CH-03-B-01	Site area:	1.74 hect
Development Name:	HOUSES & FLATS	No of Dwellings:	80
Location:	CHESTER	Housing density:	66
Postcode:	CH1 5UP	Total Bedrooms:	204
Main Location Type:	Edge of Town	Survey Date:	17/11/14
Sub-Location Type:	Residential Zone	Survey Day:	Monday
PTAL:	n/a	Parking Spaces:	189
Site(2):	MS-03-B-01	Site area:	0.20 hect
Development Name:	TERRACED	No of Dwellings:	16
Location:	LIVERPOOL	Housing density:	107
Postcode:	L24 0SS	Total Bedrooms:	36
Main Location Type:	Edge of Town	Survey Date:	18/06/13
Sub-Location Type:	Residential Zone	Survey Day:	Tuesday
PTAL:	n/a	Parking Spaces:	32
Site(3):	WY-03-B-02	Site area:	1.53 hect
Development Name:	MIXED HOUSES	No of Dwellings:	54
Location:	HUDDERSFIELD	Housing density:	39
Postcode:	HD2 1LU	Total Bedrooms:	144
Main Location Type:	Edge of Town	Survey Date:	17/09/13
Sub-Location Type:	Residential Zone	Survey Day:	Tuesday
PTAL:	n/a	Parking Spaces:	60
Site(4):	WY-03-B-04	Site area:	0.71 hect
Development Name:	TERRACED HOUSES	No of Dwellings:	17
Location:	BATLEY	Housing density:	36
Postcode:	WF17 0PR	Total Bedrooms:	43
Main Location Type:	Edge of Town	Survey Date:	19/10/18
Sub-Location Type:	Residential Zone	Survey Day:	Friday
PTAL:	n/a	Parking Spaces:	50

TRIP RATE for Land Use 03 - RESIDENTIAL/B - AFFORDABLE/LOCAL AUTHORITY HOUSES
TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	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	4	42	0.042	4	42	0.120	4	42	0.162
08:00 - 09:00	4	42	0.120	4	42	0.269	4	42	0.389
09:00 - 10:00	4	42	0.174	4	42	0.246	4	42	0.420
10:00 - 11:00	4	42	0.174	4	42	0.180	4	42	0.354
11:00 - 12:00	4	42	0.162	4	42	0.120	4	42	0.282
12:00 - 13:00	4	42	0.204	4	42	0.132	4	42	0.336
13:00 - 14:00	4	42	0.126	4	42	0.138	4	42	0.264
14:00 - 15:00	4	42	0.180	4	42	0.144	4	42	0.324
15:00 - 16:00	4	42	0.198	4	42	0.126	4	42	0.324
16:00 - 17:00	4	42	0.114	4	42	0.108	4	42	0.222
17:00 - 18:00	4	42	0.114	4	42	0.090	4	42	0.204
18:00 - 19:00	4	42	0.138	4	42	0.078	4	42	0.216
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.746			1.751			3.497

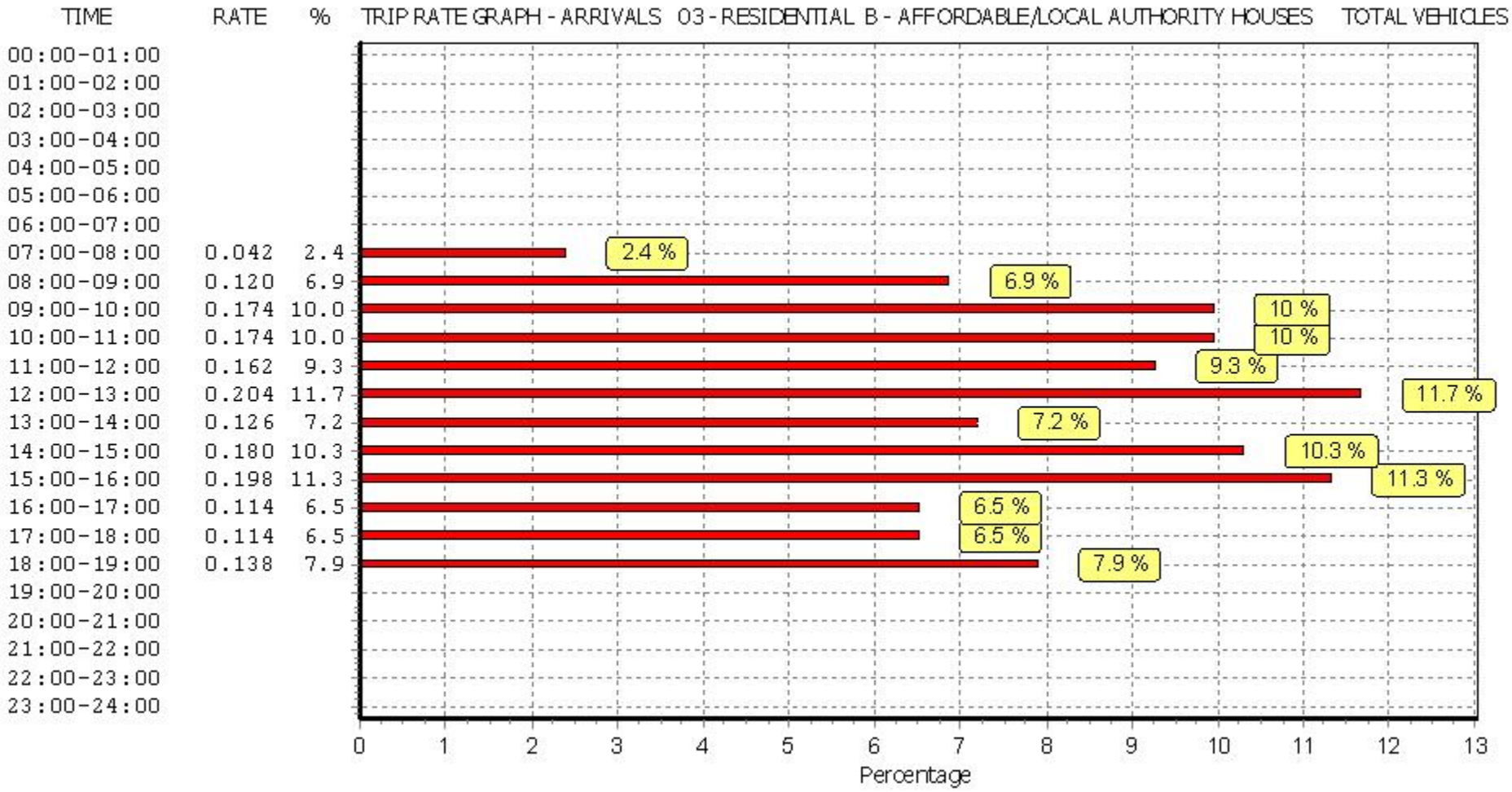
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are 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.*

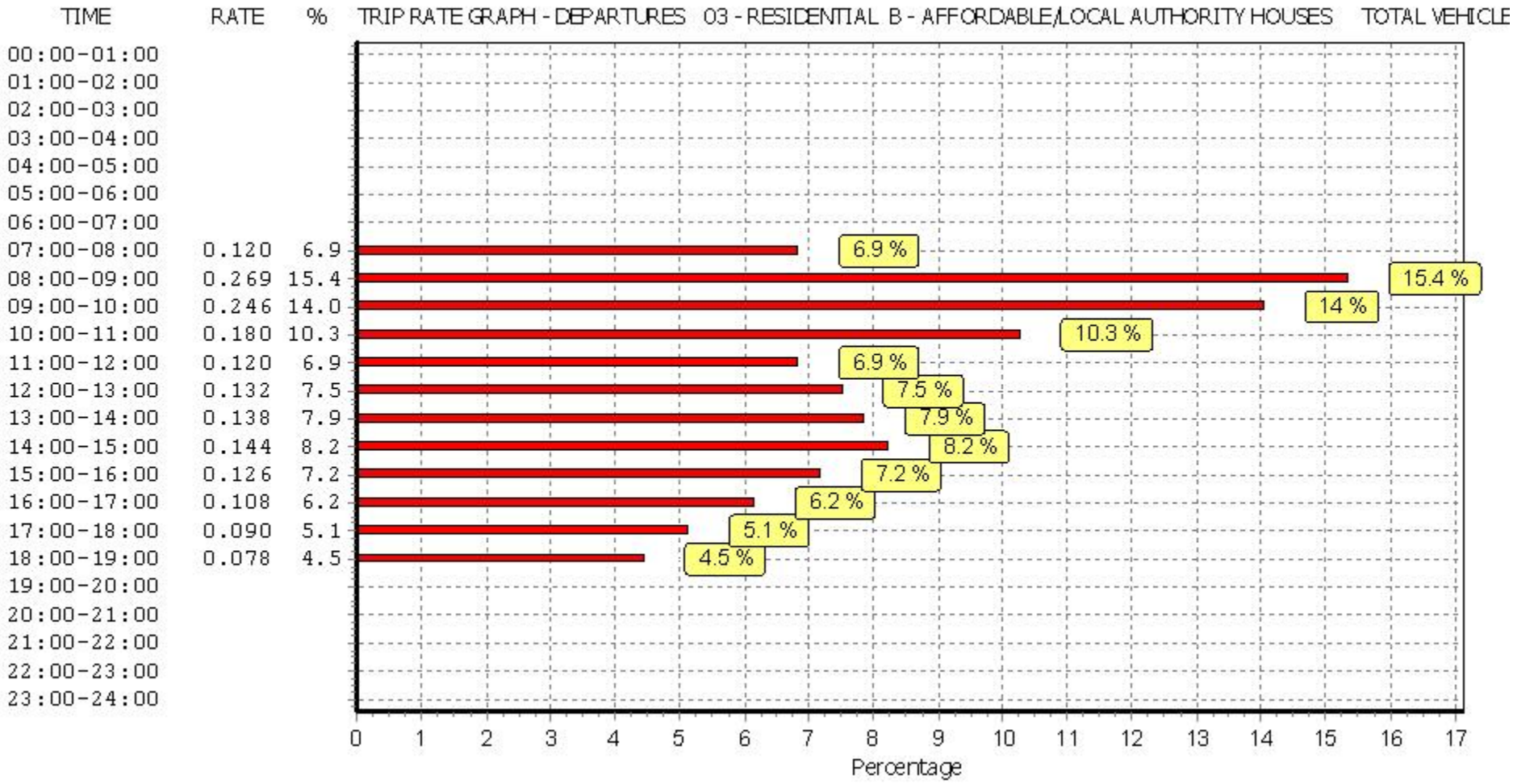
Parameter summary

Trip rate parameter range selected:	16 - 80 (units:)
Survey date date range:	01/01/13 - 19/10/18
Number of weekdays (Monday-Friday):	4
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.

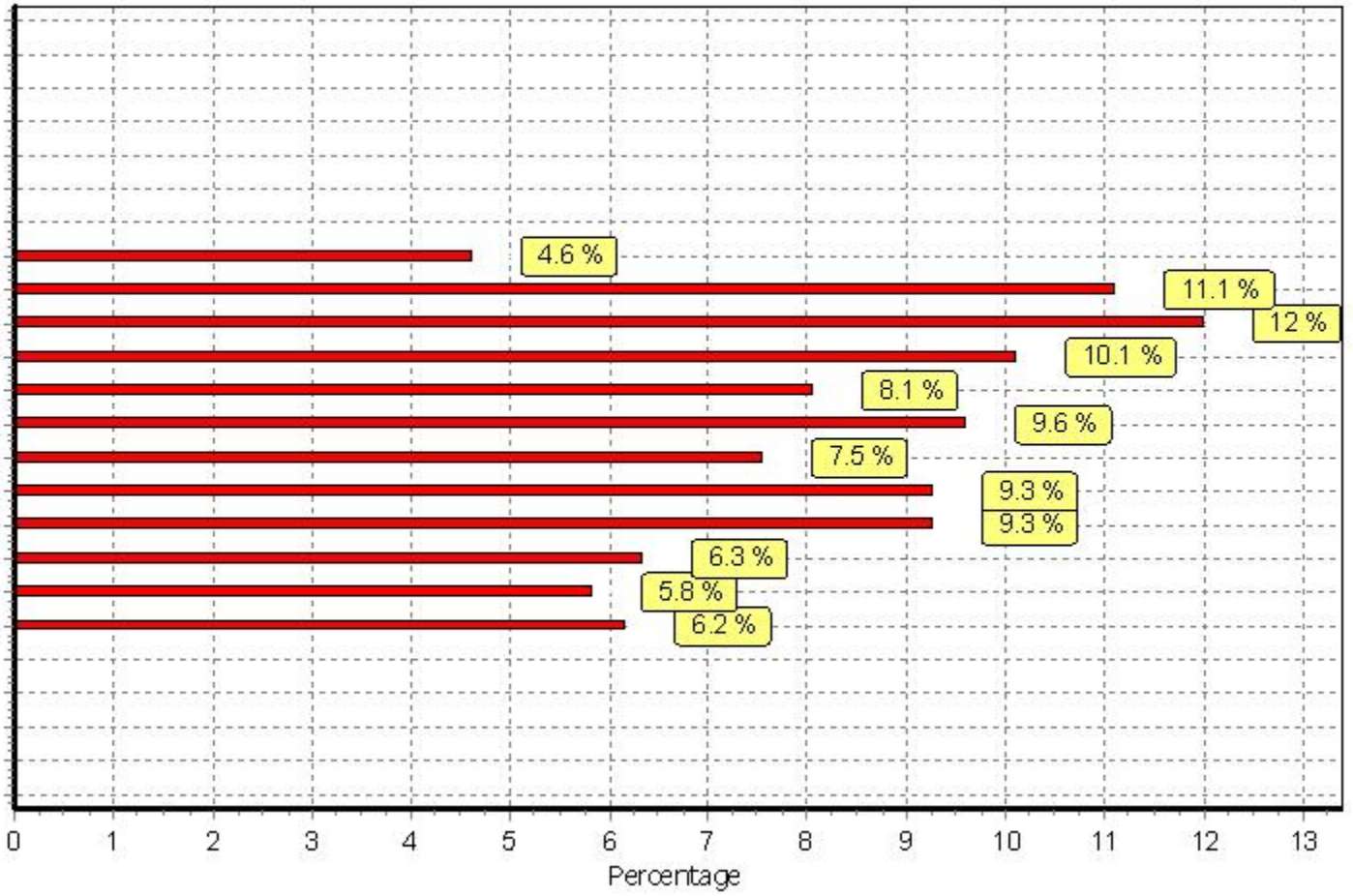


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through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

TIME	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	0.162	4.6
08:00-09:00	0.389	11.1
09:00-10:00	0.420	12.0
10:00-11:00	0.354	10.1
11:00-12:00	0.282	8.1
12:00-13:00	0.336	9.6
13:00-14:00	0.264	7.5
14:00-15:00	0.324	9.3
15:00-16:00	0.324	9.3
16:00-17:00	0.222	6.3
17:00-18:00	0.204	5.8
18:00-19:00	0.216	6.2
19:00-20:00		
20:00-21:00		
21:00-22:00		
22:00-23:00		
23:00-24:00		



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.

Filtering Summary

Land Use	04/A	EDUCATION/PRIMARY
Selected Trip Rate Calculation Parameter Range	350-450 PUPILS	
Actual Trip Rate Calculation Parameter Range	380-400 PUPILS	
Date Range	Minimum: 01/01/13	Maximum: 24/03/16
Parking Spaces Range	All Surveys Included	
Days of the week selected	Thursday	3
Main Location Types selected	Suburban Area (PPS6 Out of Centre) Edge of Town	1 2
Population within 500m	All Surveys Included	
Population <1 Mile ranges selected	5,001 to 10,000 15,001 to 20,000	1 2
Population <5 Mile ranges selected	125,001 to 250,000 250,001 to 500,000	1 2
Car Ownership <5 Mile ranges selected	0.6 to 1.0 1.1 to 1.5	1 2
PTAL Rating	No PTAL Present	3

Calculation Reference: AUDIT-225601-211201-1255

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 04 - EDUCATION
Category : A - PRIMARY
TOTAL VEHICLES

Selected regions and areas:

05	EAST MIDLANDS		
	DS	DERBYSHIRE	1 days
	LE	LEICESTERSHIRE	1 days
	NR	NORTHAMPTONSHIRE	1 days

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

Primary 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: 380 to 400 (units:)
Range Selected by User: 350 to 450 (units:)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/13 to 24/03/16

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:

Thursday	3 days

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

Selected survey types:

Manual count	3 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 undertaking using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	1
Edge of Town	2

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	3

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:

F1(a)	3 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 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

5,001 to 10,000	1 days
15,001 to 20,000	2 days

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

Population within 5 miles:

125,001 to 250,000	1 days
250,001 to 500,000	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	1 days
1.1 to 1.5	2 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:

No	3 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	3 days

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

LIST OF SITES relevant to selection parameters

Site(1):	DS-04-A-01	Gross floor area:	1600 sqm
Development Name:	PRIMARY SCHOOL	Number of pupils:	387
Location:	DERBY		
Postcode:	DE3 0EY	No of Employees:	53
Main Location Type:	Edge of Town	Survey Date:	25/06/15
Sub-Location Type:	Residential Zone	Survey Day:	Thursday
PTAL:	n/a	Parking Spaces:	34
Site(2):	LE-04-A-02	Gross floor area:	1750 sqm
Development Name:	PRIMARY SCHOOL	Number of pupils:	380
Location:	LEICESTER		
Postcode:	LE2 4TY	No of Employees:	56
Main Location Type:	Edge of Town	Survey Date:	30/10/14
Sub-Location Type:	Residential Zone	Survey Day:	Thursday
PTAL:	n/a	Parking Spaces:	35
Site(3):	NR-04-A-03	Gross floor area:	2635 sqm
Development Name:	PRIMARY SCHOOL	Number of pupils:	400
Location:	NORTHAMPTON		
Postcode:	NN3 6JQ	No of Employees:	121
Main Location Type:	Suburban Area (PPS6 Out of Centre)	Survey Date:	24/03/16
Sub-Location Type:	Residential Zone	Survey Day:	Thursday
PTAL:	n/a	Parking Spaces:	47

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
TOTAL VEHICLES
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	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	3	389	0.054	3	389	0.038	3	389	0.092
08:00 - 09:00	3	389	0.262	3	389	0.230	3	389	0.492
09:00 - 10:00	3	389	0.029	3	389	0.028	3	389	0.057
10:00 - 11:00	3	389	0.012	3	389	0.010	3	389	0.022
11:00 - 12:00	3	389	0.013	3	389	0.007	3	389	0.020
12:00 - 13:00	3	389	0.018	3	389	0.027	3	389	0.045
13:00 - 14:00	3	389	0.010	3	389	0.011	3	389	0.021
14:00 - 15:00	3	389	0.040	3	389	0.025	3	389	0.065
15:00 - 16:00	3	389	0.199	3	389	0.216	3	389	0.415
16:00 - 17:00	3	389	0.052	3	389	0.087	3	389	0.139
17:00 - 18:00	3	389	0.014	3	389	0.024	3	389	0.038
18:00 - 19:00	3	389	0.001	3	389	0.002	3	389	0.003
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.704			0.705			1.409

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.

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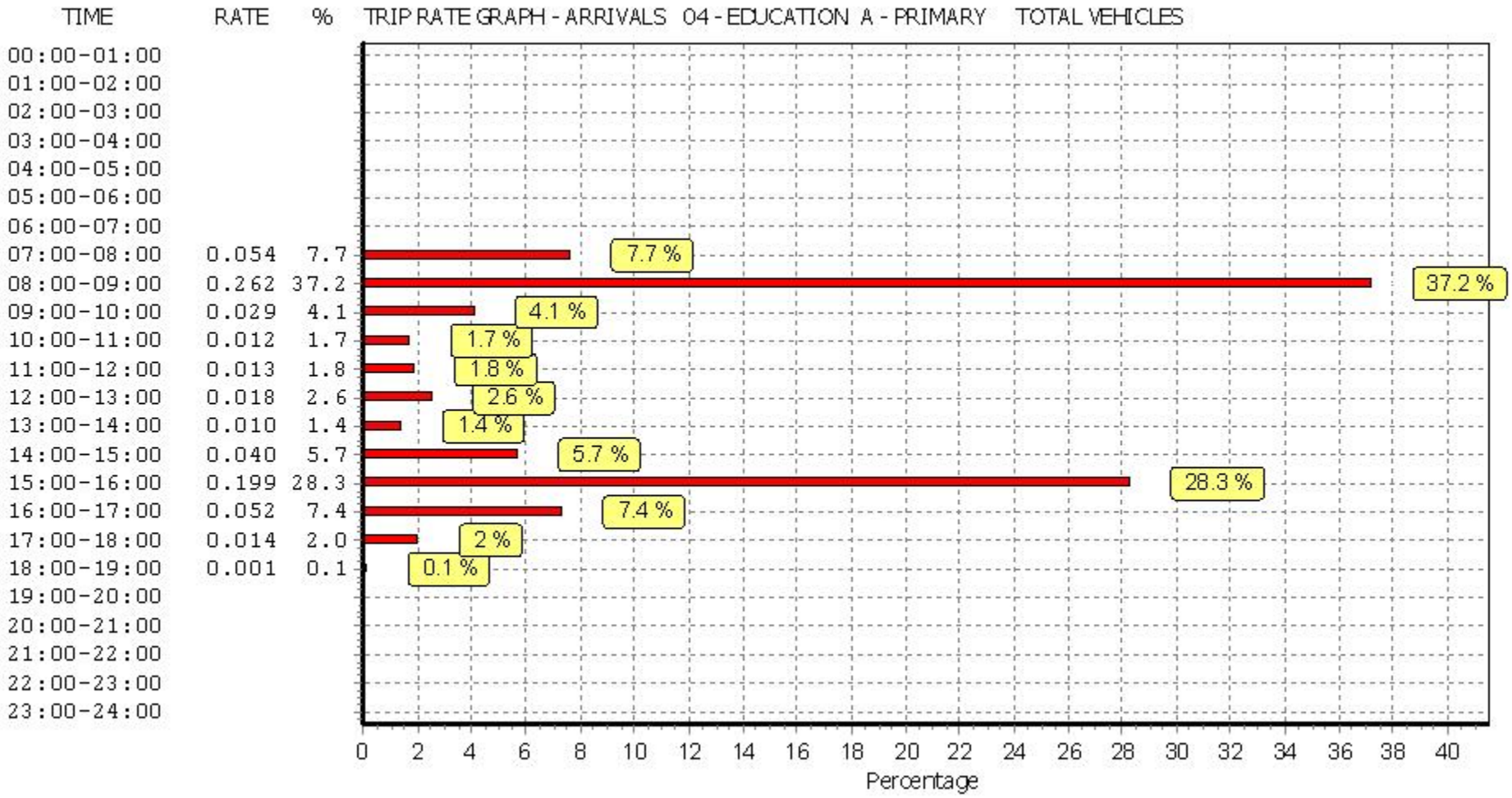
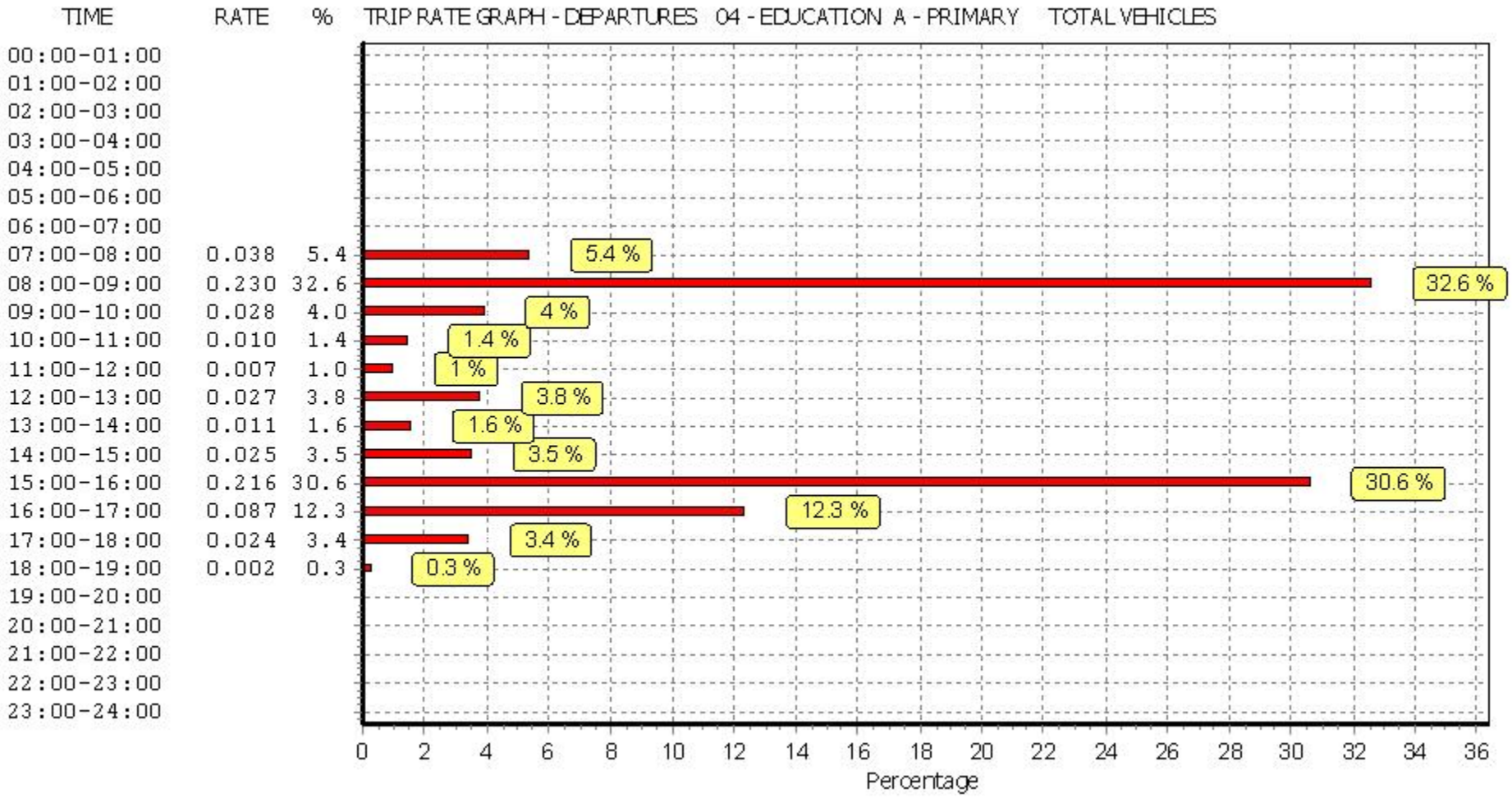
Parameter summary

Trip rate parameter range selected:	380 - 400 (units:)
Survey date date range:	01/01/13 - 24/03/16
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

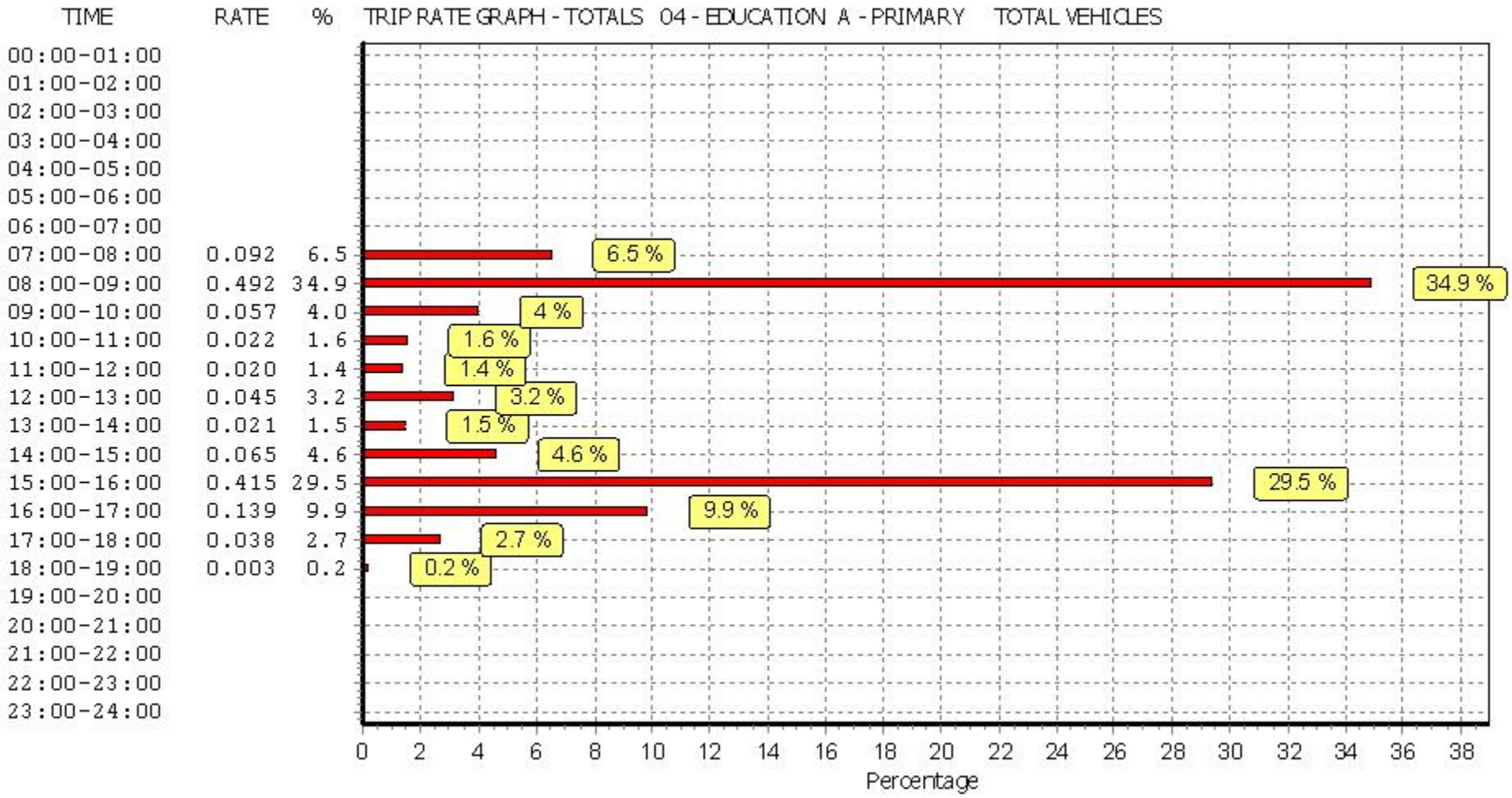
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected 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.



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.



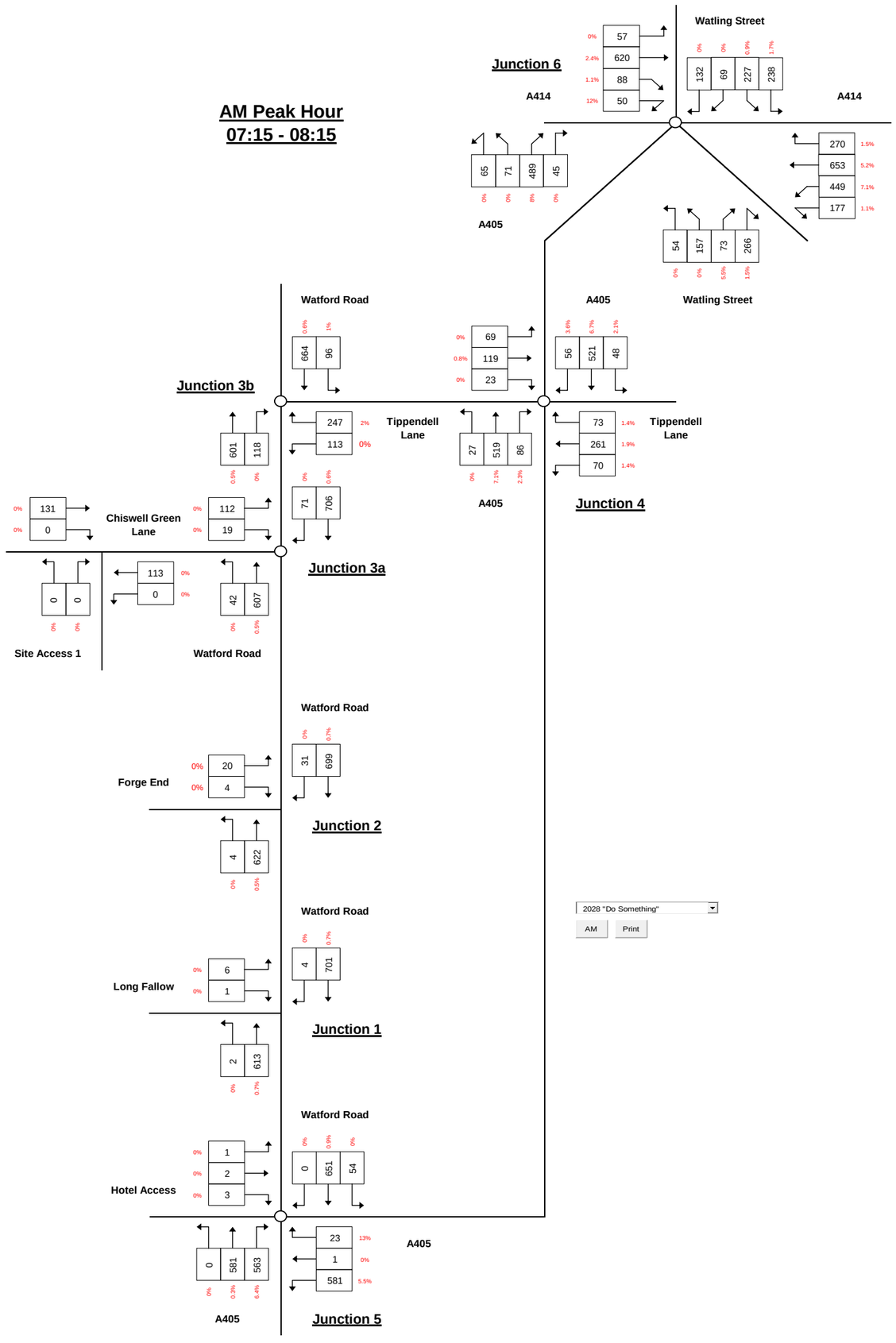
This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through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

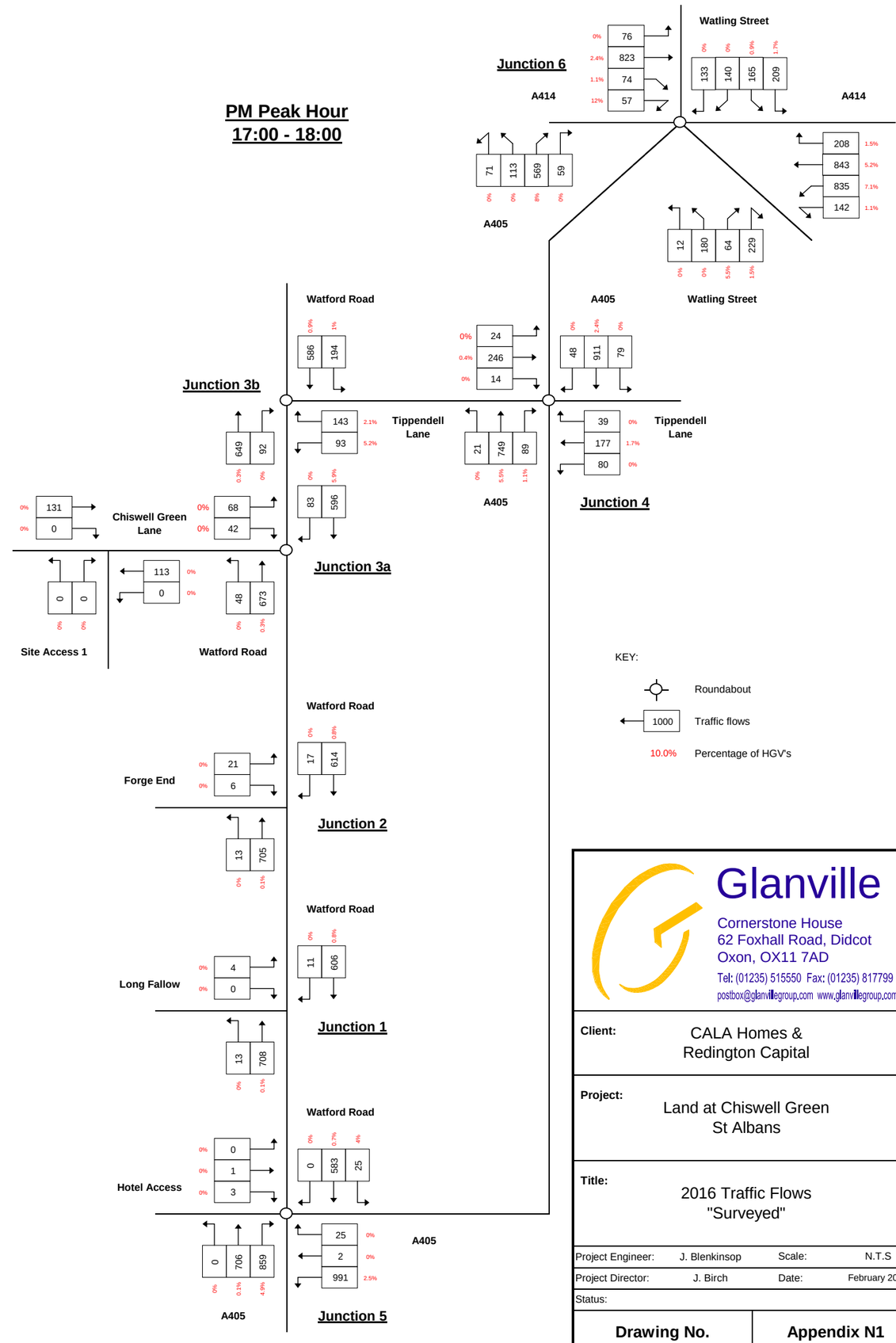


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through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

Appendix N

Traffic Flow Diagrams





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Tel: (01235) 515550 Fax: (01235) 817799
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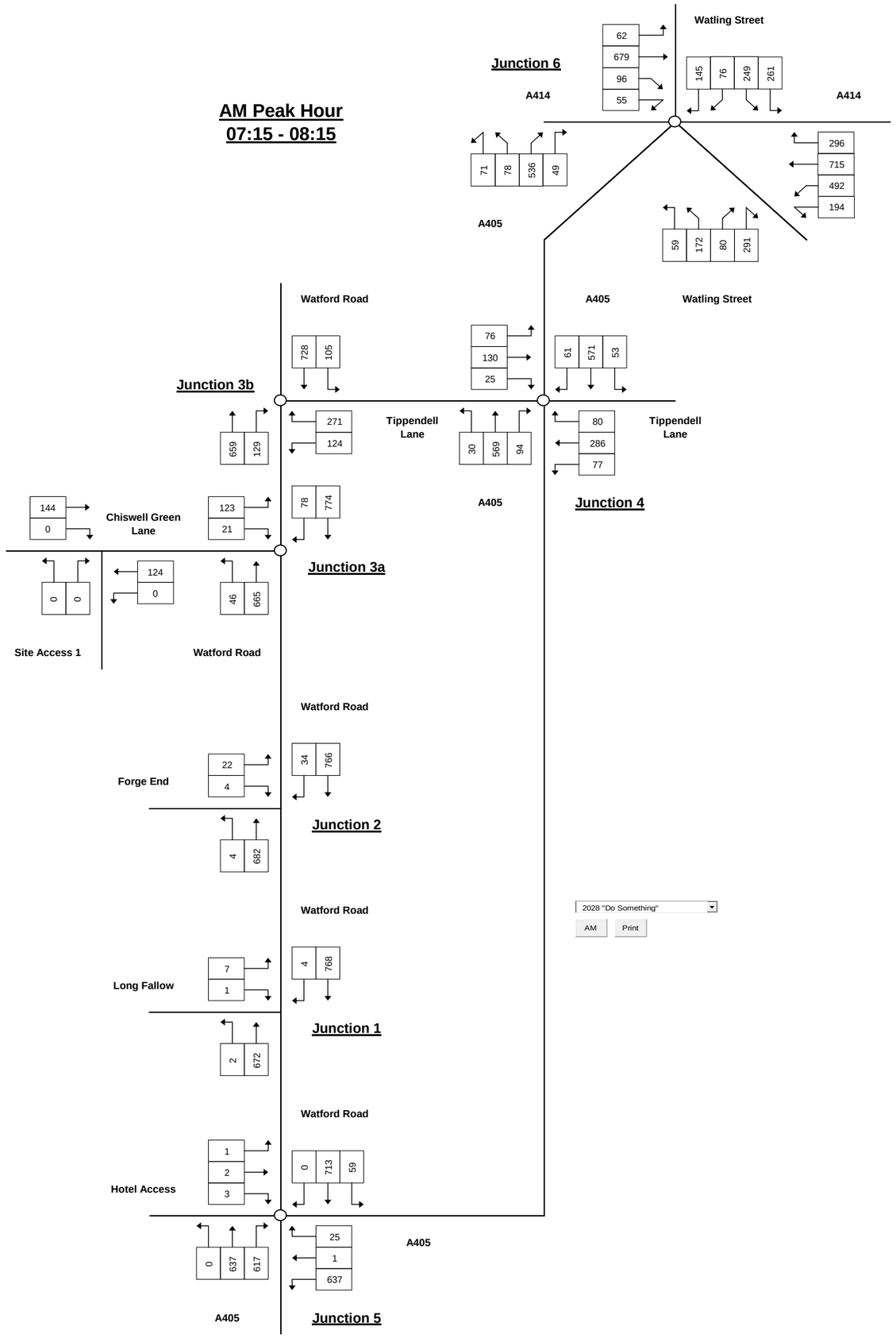
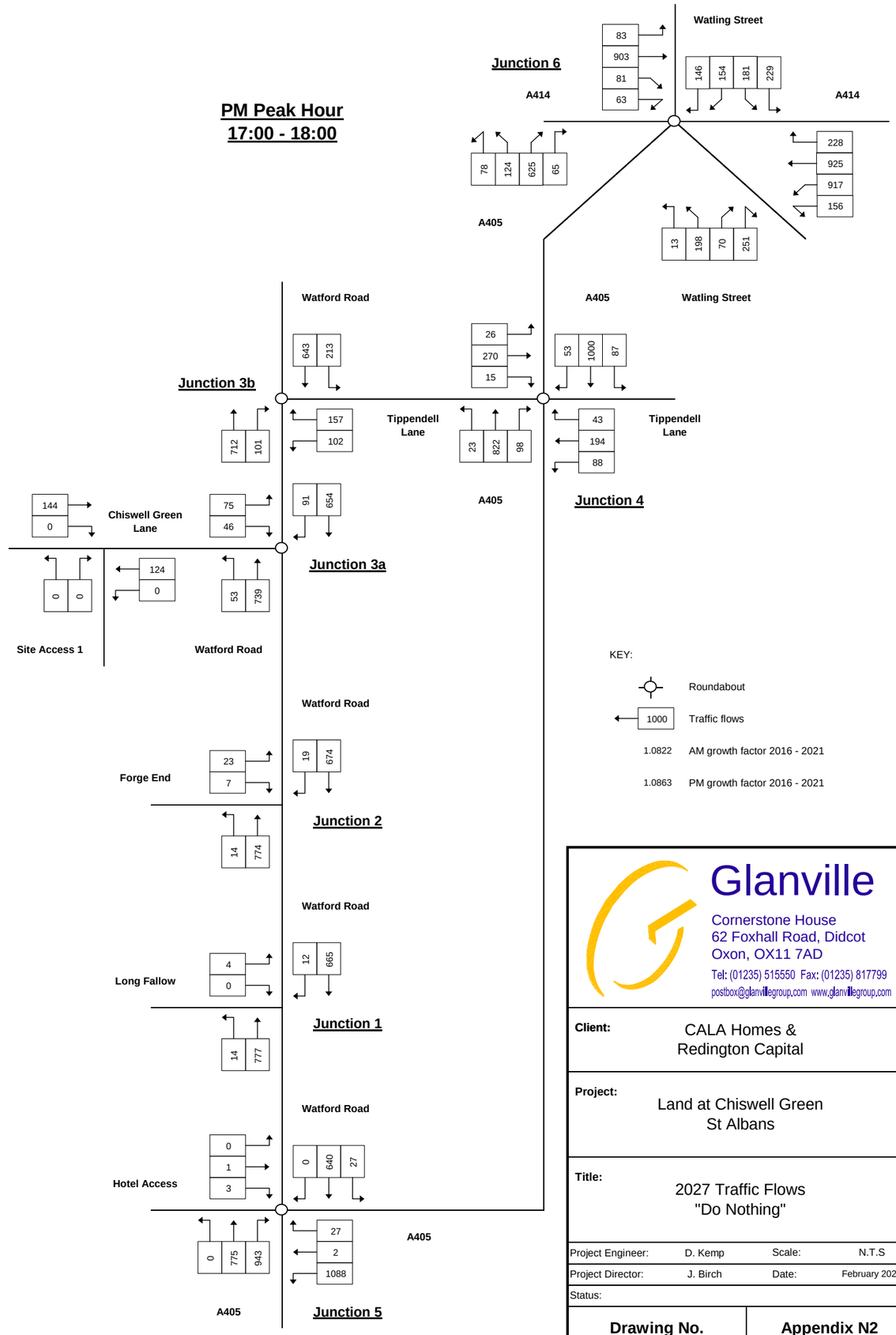
Client:	CALA Homes & Redington Capital
Project:	Land at Chiswell Green St Albans
Title:	2016 Traffic Flows "Surveyed"

Project Engineer:	J. Blenkinsop	Scale:	N.T.S
Project Director:	J. Birch	Date:	February 2022
Status:			

Drawing No.	**Appendix N1**





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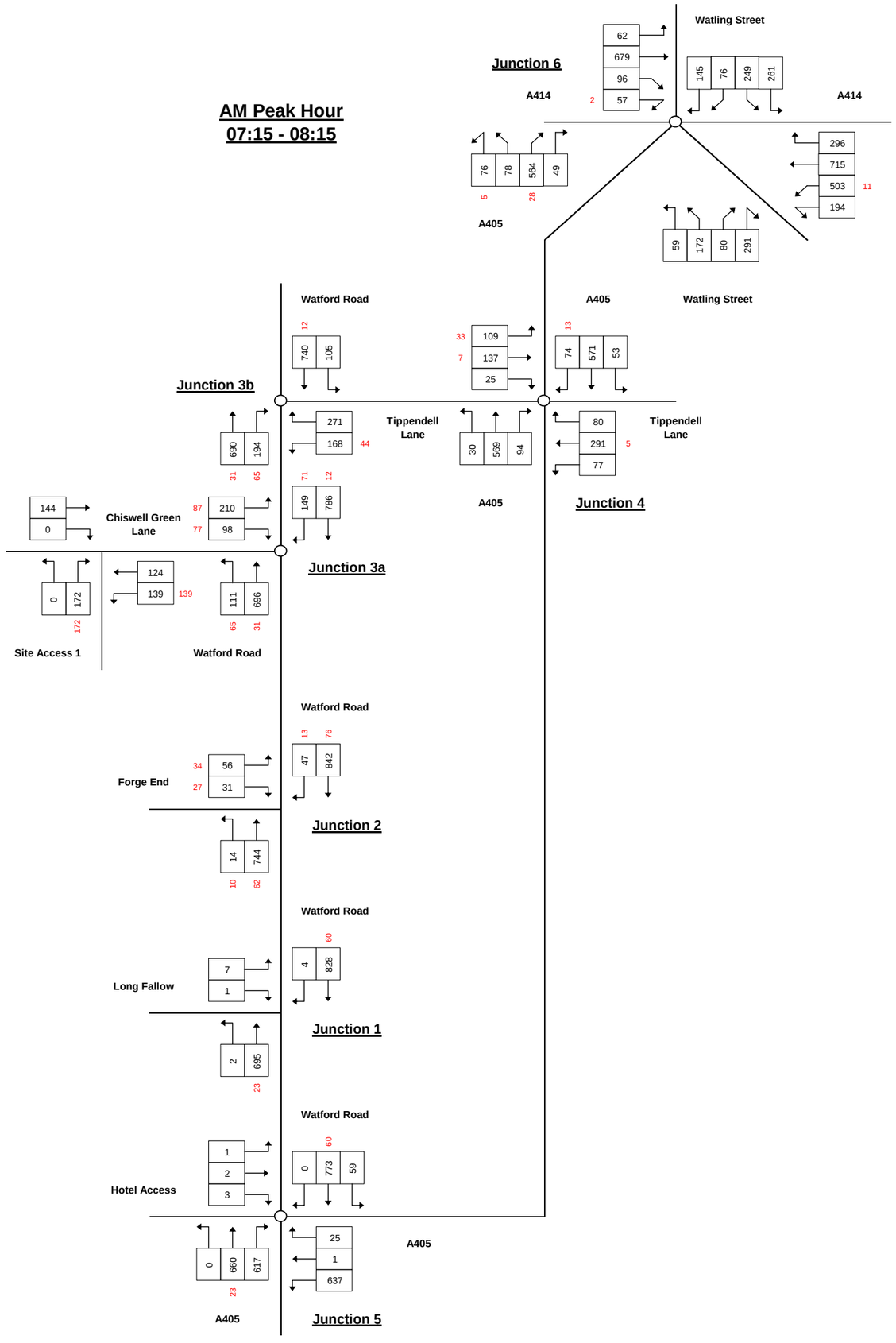
Client: CALA Homes & Redington Capital

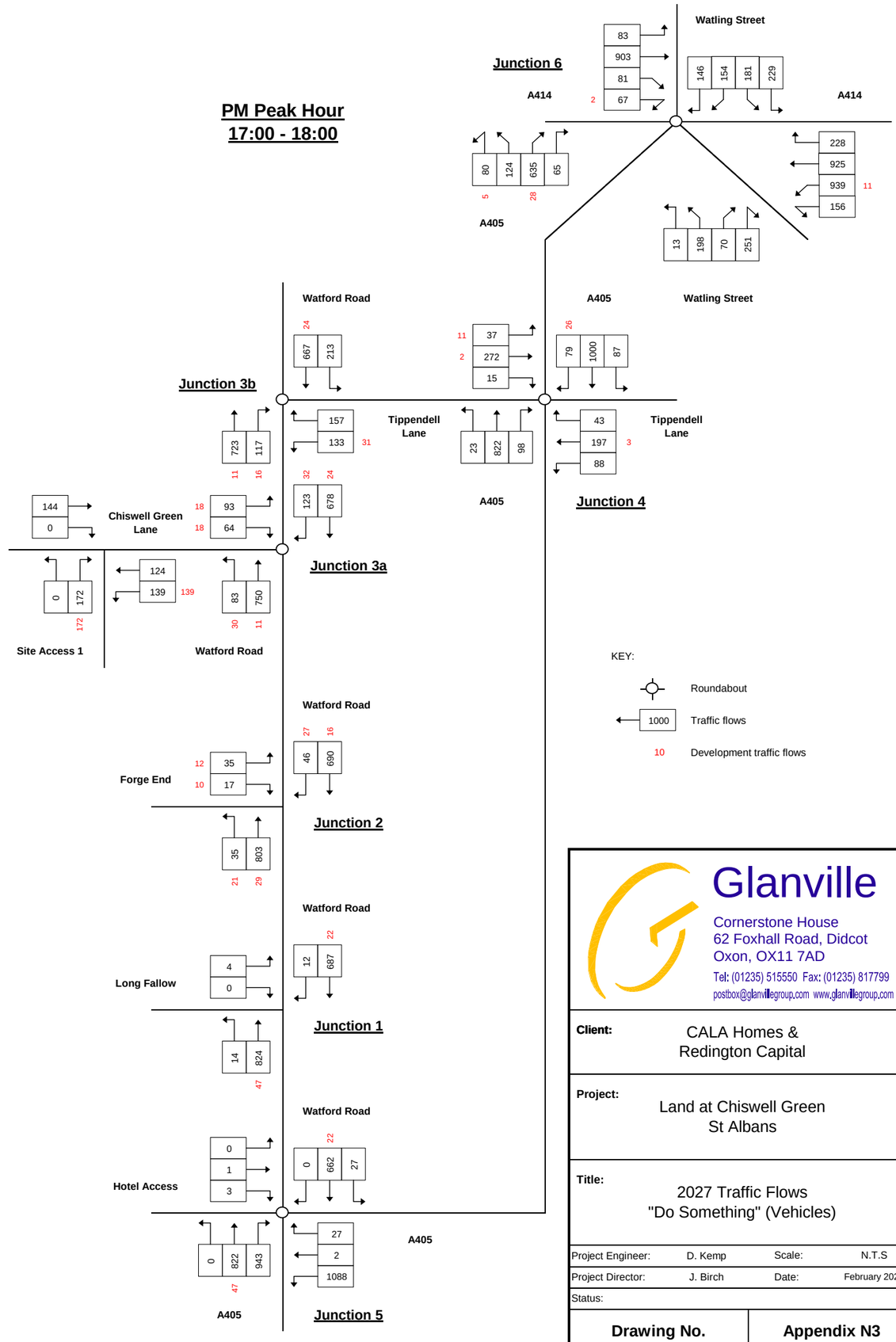
Project: Land at Chiswell Green St Albans

Title: 2027 Traffic Flows "Do Nothing"

Project Engineer:	D. Kemp	Scale:	N.T.S
Project Director:	J. Birch	Date:	February 2022
Status:			

Drawing No. **Appendix N2**





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Client: CALA Homes & Redington Capital

Project: Land at Chiswell Green St Albans

Title: 2027 Traffic Flows "Do Something" (Vehicles)

Project Engineer:	D. Kemp	Scale:	N.T.S
Project Director:	J. Birch	Date:	February 2022
Status:			

Drawing No. **Appendix N3**

Appendix O

PICADY Outputs

Junctions 9

PICADY 9 - Priority Intersection Module

Filename: Western Site Access ((391 dwellings).j9
Path: \\gc-did-fs01\CAD\2021\8210856\(6)_Transport\(1)_Planning\(4)_Modelling\Feb 2022 - TA
Report generation date: 20/02/2022 20:12:00

»Proposed Layout - 2027 - Do Something, AM
»Proposed Layout - 2027 - Do Something, PM

Summary of junction performance

	AM					PM				
	Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)
	Proposed Layout - 2027 - Do Something									
Stream B-C	0.0	0.00	0.00	A	1.87	0.0	0.00	0.00	A	0.48
Stream B-A	0.2	9.09	0.18	A		0.0	7.68	0.04	A	
Stream C-AB	0.0	0.00	0.00	A		0.0	0.00	0.00	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. Junction LOS and Junction Delay are demand-weighted averages.

File summary

File Description

Title	Northern Parcel Western Site Access (391 Dwellings)
Location	Chiswell Green
Site number	
Date	20/02/2022
Version	
Status	(new file)
Identifier	
Client	CALA Homes & Redington Capital
Jobnumber	8210856
Enumerator	UK\JBlenkinsop
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	mph	Veh	Veh	perTimeSegment	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 period length (min)	Time segment length (min)	Run automatically
D5	2027 - Do Something	AM	DIRECT	08:00	09:00	60	15	✓
D6	2027 - Do Something	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

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

Proposed Layout - 2027 - Do Something, 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.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Western Site Access	T-Junction	Two-way	1.87	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Chiswell Green Lane (East)		Major
B	Main Site Access		Minor
C	Chiswell Green Lane (West)		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)
Chiswell Green Lane (West)	6.10			177.0	✓	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)
Main Site Access	One lane plus flare	10.00	5.10	3.50	3.37	3.37	✓	1.00	21	34

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	138.416	0.100	0.254	0.160	0.363
1	B-C	154.067	0.094	0.238	-	-
1	C-B	169.116	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 period length (min)	Time segment length (min)	Run automatically
D5	2027 - Do Something	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Chiswell Green Lane (East)		DIRECT	✓	100.000
Main Site Access		DIRECT	✓	100.000
Chiswell Green Lane (West)		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (Veh/TS)

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0.00	18.00	27.00
	Main Site Access	22.00	0.00	0.00
	Chiswell Green Lane (West)	39.00	0.00	0.00

08:15 - 08:30

Demand (Veh/TS)

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0.00	18.00	24.00
	Main Site Access	22.00	0.00	0.00
	Chiswell Green Lane (West)	36.00	0.00	0.00

08:30 - 08:45

Demand (Veh/TS)

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0.00	18.00	31.00
	Main Site Access	22.00	0.00	0.00
	Chiswell Green Lane (West)	37.00	0.00	0.00

08:45 - 09:00

Demand (Veh/TS)

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0.00	18.00	42.00
	Main Site Access	22.00	0.00	0.00
	Chiswell Green Lane (West)	31.00	0.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0	0	0
	Main Site Access	0	0	0
	Chiswell Green Lane (West)	0	0	0

Heavy Vehicle Percentages

08:15 - 08:30

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0	0	0
	Main Site Access	0	0	0
	Chiswell Green Lane (West)	0	0	0

Heavy Vehicle Percentages

08:30 - 08:45

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0	0	0
	Main Site Access	0	0	0
	Chiswell Green Lane (West)	0	0	0

Heavy Vehicle Percentages

08:45 - 09:00

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0	0	0
	Main Site Access	0	0	0
	Chiswell Green Lane (West)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.00	0.00	0.0	A	0.00	0.00
B-A	0.18	9.09	0.2	A	22.00	88.00
C-AB	0.00	0.00	0.0	A	0.00	0.00
C-A					35.75	143.00
A-B					18.00	72.00
A-C					31.00	124.00

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	0.00	0.00	139.46	0.000	0.00	0.0	0.0	0.000	A
B-A	22.00	22.00	123.53	0.178	21.79	0.0	0.2	8.827	A
C-AB	0.00	0.00	157.37	0.000	0.00	0.0	0.0	0.000	A
C-A	39.00	39.00			39.00				
A-B	18.00	18.00			18.00				
A-C	27.00	27.00			27.00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	0.00	0.00	140.14	0.000	0.00	0.0	0.0	0.000	A
B-A	22.00	22.00	124.77	0.176	22.00	0.2	0.2	8.758	A
C-AB	0.00	0.00	158.16	0.000	0.00	0.0	0.0	0.000	A
C-A	36.00	36.00			36.00				
A-B	18.00	18.00			18.00				
A-C	24.00	24.00			24.00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	0.00	0.00	138.45	0.000	0.00	0.0	0.0	0.000	A
B-A	22.00	22.00	122.83	0.179	22.00	0.2	0.2	8.925	A
C-AB	0.00	0.00	156.33	0.000	0.00	0.0	0.0	0.000	A
C-A	37.00	37.00			37.00				
A-B	18.00	18.00			18.00				
A-C	31.00	31.00			31.00				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	0.00	0.00	135.85	0.000	0.00	0.0	0.0	0.000	A
B-A	22.00	22.00	121.00	0.182	22.00	0.2	0.2	9.090	A
C-AB	0.00	0.00	153.46	0.000	0.00	0.0	0.0	0.000	A
C-A	31.00	31.00			31.00				
A-B	18.00	18.00			18.00				
A-C	42.00	42.00			42.00				

Proposed Layout - 2027 - Do Something, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Western Site Access	T-Junction	Two-way	0.48	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 period length (min)	Time segment length (min)	Run automatically
D6	2027 - Do Something	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Chiswell Green Lane (East)		DIRECT	✓	100.000
Main Site Access		DIRECT	✓	100.000
Chiswell Green Lane (West)		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (Veh/TS)

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0.00	9.00	41.00
	Main Site Access	5.00	0.00	0.00
	Chiswell Green Lane (West)	31.00	0.00	0.00

17:15 - 17:30

Demand (Veh/TS)

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0.00	9.00	40.00
	Main Site Access	5.00	0.00	0.00
	Chiswell Green Lane (West)	30.00	0.00	0.00

Demand (Veh/TS)

17:30 - 17:45

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0.00	9.00	31.00
	Main Site Access	5.00	0.00	0.00
	Chiswell Green Lane (West)	24.00	0.00	0.00

Demand (Veh/TS)

17:45 - 18:00

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0.00	9.00	33.00
	Main Site Access	5.00	0.00	0.00
	Chiswell Green Lane (West)	36.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

17:00 - 17:15

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0	0	0
	Main Site Access	0	0	0
	Chiswell Green Lane (West)	0	0	0

Heavy Vehicle Percentages

17:15 - 17:30

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0	0	0
	Main Site Access	0	0	0
	Chiswell Green Lane (West)	0	0	0

Heavy Vehicle Percentages

17:30 - 17:45

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0	0	0
	Main Site Access	0	0	0
	Chiswell Green Lane (West)	0	0	0

Heavy Vehicle Percentages

17:45 - 18:00

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0	0	0
	Main Site Access	0	0	0
	Chiswell Green Lane (West)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.00	0.00	0.0	A	0.00	0.00
B-A	0.04	7.68	0.0	A	5.00	20.00
C-AB	0.00	0.00	0.0	A	0.00	0.00
C-A					30.25	121.00
A-B					9.00	36.00
A-C					36.25	145.00

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	0.00	0.00	142.00	0.000	0.00	0.0	0.0	0.000	A
B-A	5.00	5.00	122.16	0.041	4.96	0.0	0.0	7.677	A
C-AB	0.00	0.00	156.07	0.000	0.00	0.0	0.0	0.000	A
C-A	31.00	31.00			31.00				
A-B	9.00	9.00			9.00				
A-C	41.00	41.00			41.00				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	0.00	0.00	142.23	0.000	0.00	0.0	0.0	0.000	A
B-A	5.00	5.00	122.57	0.041	5.00	0.0	0.0	7.653	A
C-AB	0.00	0.00	156.33	0.000	0.00	0.0	0.0	0.000	A
C-A	30.00	30.00			30.00				
A-B	9.00	9.00			9.00				
A-C	40.00	40.00			40.00				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	0.00	0.00	144.39	0.000	0.00	0.0	0.0	0.000	A
B-A	5.00	5.00	125.81	0.040	5.00	0.0	0.0	7.448	A
C-AB	0.00	0.00	158.68	0.000	0.00	0.0	0.0	0.000	A
C-A	24.00	24.00			24.00				
A-B	9.00	9.00			9.00				
A-C	31.00	31.00			31.00				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	0.00	0.00	143.89	0.000	0.00	0.0	0.0	0.000	A
B-A	5.00	5.00	123.39	0.041	5.00	0.0	0.0	7.601	A
C-AB	0.00	0.00	158.16	0.000	0.00	0.0	0.0	0.000	A
C-A	36.00	36.00			36.00				
A-B	9.00	9.00			9.00				
A-C	33.00	33.00			33.00				

Junctions 9

PICADY 9 - Priority Intersection Module

Filename: Eastern Site Access ((391 dwellings).j9
Path: \\gc-did-fs01\CAD\2021\8210856\(6)_Transport\(1)_Planning\(4)_Modelling\Feb 2022 - TA
Report generation date: 20/02/2022 20:12:40

»Proposed Layout - 2027 - Do Something, AM
»Proposed Layout - 2027 - Do Something, PM

Summary of junction performance

	AM					PM				
	Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)
	Proposed Layout - 2027 - Do Something									
Stream B-C	0.0	0.00	0.00	A	1.48	0.0	0.00	0.00	A	0.42
Stream B-A	0.2	9.87	0.19	A		0.0	7.86	0.04	A	
Stream C-AB	0.0	0.00	0.00	A		0.0	0.00	0.00	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. Junction LOS and Junction Delay are demand-weighted averages.

File summary

File Description

Title	Northern Parcel Eastern Site Access (391 Dwellings)
Location	Chiswell Green
Site number	
Date	20/02/2022
Version	
Status	(new file)
Identifier	
Client	CALA Homes & Redington Capital
Jobnumber	8210856
Enumerator	UK\JBlenkinsop
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	mph	Veh	Veh	perTimeSegment	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 period length (min)	Time segment length (min)	Run automatically
D5	2027 - Do Something	AM	DIRECT	08:00	09:00	60	15	✓
D6	2027 - Do Something	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

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

Proposed Layout - 2027 - Do Something, 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.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Eastern Site Access	T-Junction	Two-way	1.48	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Chiswell Green Lane (East)		Major
B	Main Site Access		Minor
C	Chiswell Green Lane (West)		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)
Chiswell Green Lane (West)	6.10			83.0	✓	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)
Main Site Access	One lane plus flare	10.00	4.80	3.50	3.40	3.30	✓	1.00	50	22

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	138.769	0.101	0.254	0.160	0.363
1	B-C	151.465	0.092	0.234	-	-
1	C-B	155.507	0.240	0.240	-	-

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 period length (min)	Time segment length (min)	Run automatically
D5	2027 - Do Something	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Chiswell Green Lane (East)		DIRECT	✓	100.000
Main Site Access		DIRECT	✓	100.000
Chiswell Green Lane (West)		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (Veh/TS)

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0.00	18.00	45.00
	Main Site Access	22.00	0.00	0.00
	Chiswell Green Lane (West)	61.00	0.00	0.00

08:15 - 08:30

Demand (Veh/TS)

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0.00	18.00	42.00
	Main Site Access	22.00	0.00	0.00
	Chiswell Green Lane (West)	58.00	0.00	0.00

08:30 - 08:45

Demand (Veh/TS)

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0.00	18.00	49.00
	Main Site Access	22.00	0.00	0.00
	Chiswell Green Lane (West)	59.00	0.00	0.00

08:45 - 09:00

Demand (Veh/TS)

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0.00	18.00	60.00
	Main Site Access	22.00	0.00	0.00
	Chiswell Green Lane (West)	53.00	0.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0	0	0
	Main Site Access	0	0	0
	Chiswell Green Lane (West)	0	0	0

Heavy Vehicle Percentages

08:15 - 08:30

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0	0	0
	Main Site Access	0	0	0
	Chiswell Green Lane (West)	0	0	0

Heavy Vehicle Percentages

08:30 - 08:45

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0	0	0
	Main Site Access	0	0	0
	Chiswell Green Lane (West)	0	0	0

Heavy Vehicle Percentages

08:45 - 09:00

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0	0	0
	Main Site Access	0	0	0
	Chiswell Green Lane (West)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.00	0.00	0.0	A	0.00	0.00
B-A	0.19	9.87	0.2	A	22.00	88.00
C-AB	0.00	0.00	0.0	A	0.00	0.00
C-A					57.75	231.00
A-B					18.00	72.00
A-C					49.00	196.00

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	0.00	0.00	132.66	0.000	0.00	0.0	0.0	0.000	A
B-A	22.00	22.00	115.74	0.190	21.77	0.0	0.2	9.555	A
C-AB	0.00	0.00	140.39	0.000	0.00	0.0	0.0	0.000	A
C-A	61.00	61.00			61.00				
A-B	18.00	18.00			18.00				
A-C	45.00	45.00			45.00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	0.00	0.00	133.33	0.000	0.00	0.0	0.0	0.000	A
B-A	22.00	22.00	116.99	0.188	22.00	0.2	0.2	9.476	A
C-AB	0.00	0.00	141.11	0.000	0.00	0.0	0.0	0.000	A
C-A	58.00	58.00			58.00				
A-B	18.00	18.00			18.00				
A-C	42.00	42.00			42.00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	0.00	0.00	131.66	0.000	0.00	0.0	0.0	0.000	A
B-A	22.00	22.00	115.05	0.191	22.00	0.2	0.2	9.672	A
C-AB	0.00	0.00	139.43	0.000	0.00	0.0	0.0	0.000	A
C-A	59.00	59.00			59.00				
A-B	18.00	18.00			18.00				
A-C	49.00	49.00			49.00				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	0.00	0.00	129.11	0.000	0.00	0.0	0.0	0.000	A
B-A	22.00	22.00	113.21	0.194	22.00	0.2	0.2	9.867	A
C-AB	0.00	0.00	136.79	0.000	0.00	0.0	0.0	0.000	A
C-A	53.00	53.00			53.00				
A-B	18.00	18.00			18.00				
A-C	60.00	60.00			60.00				

Proposed Layout - 2027 - Do Something, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Eastern Site Access	T-Junction	Two-way	0.42	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 period length (min)	Time segment length (min)	Run automatically
D6	2027 - Do Something	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Chiswell Green Lane (East)		DIRECT	✓	100.000
Main Site Access		DIRECT	✓	100.000
Chiswell Green Lane (West)		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (Veh/TS)

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0.00	9.00	50.00
	Main Site Access	5.00	0.00	0.00
	Chiswell Green Lane (West)	36.00	0.00	0.00

17:15 - 17:30

Demand (Veh/TS)

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0.00	9.00	49.00
	Main Site Access	5.00	0.00	0.00
	Chiswell Green Lane (West)	35.00	0.00	0.00

Demand (Veh/TS)

17:30 - 17:45

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0.00	9.00	40.00
	Main Site Access	5.00	0.00	0.00
	Chiswell Green Lane (West)	29.00	0.00	0.00

Demand (Veh/TS)

17:45 - 18:00

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0.00	9.00	42.00
	Main Site Access	5.00	0.00	0.00
	Chiswell Green Lane (West)	41.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

17:00 - 17:15

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0	0	0
	Main Site Access	0	0	0
	Chiswell Green Lane (West)	0	0	0

Heavy Vehicle Percentages

17:15 - 17:30

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0	0	0
	Main Site Access	0	0	0
	Chiswell Green Lane (West)	0	0	0

Heavy Vehicle Percentages

17:30 - 17:45

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0	0	0
	Main Site Access	0	0	0
	Chiswell Green Lane (West)	0	0	0

Heavy Vehicle Percentages

17:45 - 18:00

		To		
		Chiswell Green Lane (East)	Main Site Access	Chiswell Green Lane (West)
From	Chiswell Green Lane (East)	0	0	0
	Main Site Access	0	0	0
	Chiswell Green Lane (West)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.00	0.00	0.0	A	0.00	0.00
B-A	0.04	7.86	0.0	A	5.00	20.00
C-AB	0.00	0.00	0.0	A	0.00	0.00
C-A					35.25	141.00
A-B					9.00	36.00
A-C					45.25	181.00

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	0.00	0.00	137.49	0.000	0.00	0.0	0.0	0.000	A
B-A	5.00	5.00	119.38	0.042	4.96	0.0	0.0	7.863	A
C-AB	0.00	0.00	141.35	0.000	0.00	0.0	0.0	0.000	A
C-A	36.00	36.00			36.00				
A-B	9.00	9.00			9.00				
A-C	50.00	50.00			50.00				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	0.00	0.00	137.72	0.000	0.00	0.0	0.0	0.000	A
B-A	5.00	5.00	119.79	0.042	5.00	0.0	0.0	7.839	A
C-AB	0.00	0.00	141.59	0.000	0.00	0.0	0.0	0.000	A
C-A	35.00	35.00			35.00				
A-B	9.00	9.00			9.00				
A-C	49.00	49.00			49.00				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	0.00	0.00	139.84	0.000	0.00	0.0	0.0	0.000	A
B-A	5.00	5.00	123.04	0.041	5.00	0.0	0.0	7.626	A
C-AB	0.00	0.00	143.75	0.000	0.00	0.0	0.0	0.000	A
C-A	29.00	29.00			29.00				
A-B	9.00	9.00			9.00				
A-C	40.00	40.00			40.00				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	0.00	0.00	139.34	0.000	0.00	0.0	0.0	0.000	A
B-A	5.00	5.00	120.61	0.041	5.00	0.0	0.0	7.784	A
C-AB	0.00	0.00	143.27	0.000	0.00	0.0	0.0	0.000	A
C-A	41.00	41.00			41.00				
A-B	9.00	9.00			9.00				
A-C	42.00	42.00			42.00				

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.2.5947

For sales and distribution information, program advice and maintenance, contact TRL:
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Filename: J1 - Watford Rd_Long Fallow (391 dwellings).j9
Path: \\gc-did-fs01\CAD\2021\8210856\(6)_Transport\(1)_Planning\(4)_Modelling\Feb 2022 - TA
Report generation date: 28/02/2022 19:20:27

Summary of junction performance

	AM					PM				
	Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)
	Existing Layout - 2016 - Surveyed									
Stream B-C	0.0	6.81	0.02	A	0.06	0.0	7.05	0.01	A	0.08
Stream B-A	0.0	13.24	0.01	B		0.0	0.00	0.00	A	
Stream C-AB	0.0	6.79	0.01	A		0.0	7.44	0.03	A	
	Existing Layout - 2027 - Without Development									
Stream B-C	0.0	7.04	0.02	A	0.06	0.0	7.33	0.01	A	0.08
Stream B-A	0.0	14.73	0.02	B		0.0	0.00	0.00	A	
Stream C-AB	0.0	7.00	0.02	A		0.0	7.74	0.03	A	
	Existing Layout - 2027 - With Development									
Stream B-C	0.0	7.13	0.02	A	0.06	0.0	7.52	0.01	A	0.08
Stream B-A	0.0	15.71	0.02	C		0.0	0.00	0.00	A	
Stream C-AB	0.0	7.08	0.02	A		0.0	7.95	0.03	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

File summary

File Description

Title	Watford Rd_Long Fallow (391 dwellings)
Location	Chiswell Green
Site number	J1
Date	20/02/2022
Version	v1
Status	(new file)
Identifier	
Client	CALA Homes & Redington Capital
Jobnumber	8210856
Enumerator	UK/DKemp
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	mph	Veh	Veh	perTimeSegment	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 period length (min)	Time segment length (min)	Run automatically
D1	2016 - Surveyed	AM	DIRECT	08:00	09:00	60	15	✓
D2	2016 - Surveyed	PM	DIRECT	17:00	18:00	60	15	✓
D3	2027 - Without Development	AM	DIRECT	08:00	09:00	60	15	✓
D4	2027 - Without Development	PM	DIRECT	17:00	18:00	60	15	✓
D5	2027 - With Development	AM	DIRECT	08:00	09:00	60	15	✓
D6	2027 - With Development	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

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

Existing Layout - 2016 - Surveyed, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Watford Road / Long Fallow	T-Junction	Two-way	0.06	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Watford Road (South)		Major
B	Long Fallow		Minor
C	Watford Road (North)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
Watford Road (North)	6.90		✓	2.90	127.0	✓	7.00

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)
Long Fallow	One lane plus flare	10.00	5.50	3.60	3.10	3.10	✓	1.00	35	43

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	124.331	0.087	0.220	0.138	0.314
1	B-C	178.394	0.105	0.266	-	-
1	C-B	174.210	0.259	0.259	-	-

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 period length (min)	Time segment length (min)	Run automatically
D1	2016 - Surveyed	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Long Fallow		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	0.00	169.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	160.00	0.00	0.00

08:15 - 08:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	1.00	152.00
	Long Fallow	0.00	0.00	2.00
	Watford Road (North)	177.00	2.00	0.00

08:30 - 08:45

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	0.00	152.00
	Long Fallow	1.00	0.00	0.00
	Watford Road (North)	209.00	1.00	0.00

08:45 - 09:00

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	1.00	140.00
	Long Fallow	0.00	0.00	3.00
	Watford Road (North)	155.00	1.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:15 - 08:30

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:30 - 08:45

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	0	0	0

Heavy Vehicle Percentages

08:45 - 09:00

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.02	6.81	0.0	A	1.50	6.00
B-A	0.01	13.24	0.0	B	0.25	1.00
C-AB	0.01	6.79	0.0	A	1.00	4.00
C-A					175.25	701.00
A-B					0.50	2.00
A-C					153.25	613.00

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	133.05	0.008	0.99	0.0	0.0	6.814	A
B-A	0.00	0.00	64.42	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	259.86	0.000	0.00	0.0	0.0	0.000	A
C-A	160.00	160.00			160.00				
A-B	0.00	0.00			0.00				
A-C	169.00	169.00			169.00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	2.00	2.00	137.91	0.015	1.99	0.0	0.0	6.621	A
B-A	0.00	0.00	65.44	0.000	0.00	0.0	0.0	0.000	A
C-AB	2.00	2.00	134.52	0.015	1.99	0.0	0.0	6.790	A
C-A	177.00	177.00			177.00				
A-B	1.00	1.00			1.00				
A-C	152.00	152.00			152.00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	0.00	0.00	121.96	0.000	0.01	0.0	0.0	0.000	A
B-A	1.00	1.00	68.93	0.015	0.99	0.0	0.0	13.242	B
C-AB	1.00	1.00	134.38	0.007	1.01	0.0	0.0	6.747	A
C-A	209.00	209.00			209.00				
A-B	0.00	0.00			0.00				
A-C	152.00	152.00			152.00				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	3.00	3.00	140.72	0.021	2.98	0.0	0.0	6.534	A
B-A	0.00	0.00	71.15	0.000	0.01	0.0	0.0	0.000	A
C-AB	1.00	1.00	137.27	0.007	1.00	0.0	0.0	6.606	A
C-A	155.00	155.00			155.00				
A-B	1.00	1.00			1.00				
A-C	140.00	140.00			140.00				

Existing Layout - 2016 - Surveyed, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Watford Road / Long Fallow	T-Junction	Two-way	0.08	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 period length (min)	Time segment length (min)	Run automatically
D2	2016 - Surveyed	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Long Fallow		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	4.00	186.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	151.00	4.00	0.00

17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	3.00	166.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	159.00	3.00	0.00

17:30 - 17:45

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	4.00	184.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	152.00	3.00	0.00

17:45 - 18:00

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	2.00	172.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	144.00	1.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

17:30 - 17:45

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

17:45 - 18:00

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.01	7.05	0.0	A	1.00	4.00
B-A	0.00	0.00	0.0	A	0.00	0.00
C-AB	0.03	7.44	0.0	A	2.75	11.00
C-A					151.50	606.00
A-B					3.25	13.00
A-C					177.00	708.00

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	128.56	0.008	0.99	0.0	0.0	7.054	A
B-A	0.00	0.00	60.70	0.000	0.00	0.0	0.0	0.000	A
C-AB	4.00	4.00	124.92	0.032	3.97	0.0	0.0	7.439	A
C-A	151.00	151.00			151.00				
A-B	4.00	4.00			4.00				
A-C	186.00	186.00			186.00				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	133.98	0.007	1.00	0.0	0.0	6.769	A
B-A	0.00	0.00	64.37	0.000	0.00	0.0	0.0	0.000	A
C-AB	3.00	3.00	130.37	0.023	3.01	0.0	0.0	7.066	A
C-A	159.00	159.00			159.00				
A-B	3.00	3.00			3.00				
A-C	166.00	166.00			166.00				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	129.09	0.008	1.00	0.0	0.0	7.025	A
B-A	0.00	0.00	61.31	0.000	0.00	0.0	0.0	0.000	A
C-AB	3.00	3.00	125.44	0.024	3.00	0.0	0.0	7.349	A
C-A	152.00	152.00			152.00				
A-B	4.00	4.00			4.00				
A-C	184.00	184.00			184.00				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	132.03	0.008	1.00	0.0	0.0	6.867	A
B-A	0.00	0.00	65.49	0.000	0.00	0.0	0.0	0.000	A
C-AB	1.00	1.00	128.62	0.008	1.02	0.0	0.0	7.055	A
C-A	144.00	144.00			144.00				
A-B	2.00	2.00			2.00				
A-C	172.00	172.00			172.00				

Existing Layout - 2027 - Without Development, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Watford Road / Long Fallow	T-Junction	Two-way	0.06	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2027 - Without Development	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Long Fallow		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

08:00 - 08:15

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	0.00	185.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	175.00	0.00	0.00

Demand (Veh/TS)

08:15 - 08:30

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	1.00	167.00
	Long Fallow	0.00	0.00	2.00
	Watford Road (North)	194.00	2.00	0.00

Demand (Veh/TS)

08:30 - 08:45

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	0.00	167.00
	Long Fallow	1.00	0.00	0.00
	Watford Road (North)	229.00	1.00	0.00

Demand (Veh/TS)

08:45 - 09:00

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	1.00	153.00
	Long Fallow	0.00	0.00	3.00
	Watford Road (North)	170.00	1.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

08:00 - 08:15

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:15 - 08:30

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:30 - 08:45

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	0	0	0

Heavy Vehicle Percentages

08:45 - 09:00

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.02	7.04	0.0	A	1.50	6.00
B-A	0.02	14.73	0.0	B	0.25	1.00
C-AB	0.02	7.00	0.0	A	1.00	4.00
C-A					192.00	768.00
A-B					0.50	2.00
A-C					168.00	672.00

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	128.76	0.008	0.99	0.0	0.0	7.043	A
B-A	0.00	0.00	58.76	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	251.47	0.000	0.00	0.0	0.0	0.000	A
C-A	175.00	175.00			175.00				
A-B	0.00	0.00			0.00				
A-C	185.00	185.00			185.00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	2.00	2.00	133.93	0.015	1.99	0.0	0.0	6.821	A
B-A	0.00	0.00	59.76	0.000	0.00	0.0	0.0	0.000	A
C-AB	2.00	2.00	130.63	0.015	1.98	0.0	0.0	6.996	A
C-A	194.00	194.00			194.00				
A-B	1.00	1.00			1.00				
A-C	167.00	167.00			167.00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	0.00	0.00	118.34	0.000	0.02	0.0	0.0	0.000	A
B-A	1.00	1.00	62.07	0.016	0.98	0.0	0.0	14.729	B
C-AB	1.00	1.00	130.45	0.008	1.01	0.0	0.0	6.954	A
C-A	229.00	229.00			229.00				
A-B	0.00	0.00			0.00				
A-C	167.00	167.00			167.00				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	3.00	3.00	137.23	0.022	2.98	0.0	0.0	6.704	A
B-A	0.00	0.00	66.17	0.000	0.02	0.0	0.0	0.000	A
C-AB	1.00	1.00	133.86	0.007	1.00	0.0	0.0	6.775	A
C-A	170.00	170.00			170.00				
A-B	1.00	1.00			1.00				
A-C	153.00	153.00			153.00				

Existing Layout - 2027 - Without Development, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Watford Road / Long Fallow	T-Junction	Two-way	0.08	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 period length (min)	Time segment length (min)	Run automatically
D4	2027 - Without Development	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Long Fallow		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	4.00	204.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	166.00	4.00	0.00

17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	3.00	182.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	175.00	3.00	0.00

Demand (Veh/TS)

17:30 - 17:45

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	4.00	202.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	167.00	3.00	0.00

Demand (Veh/TS)

17:45 - 18:00

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	2.00	189.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	158.00	1.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

17:00 - 17:15

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:15 - 17:30

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:30 - 17:45

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:45 - 18:00

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.01	7.33	0.0	A	1.00	4.00
B-A	0.00	0.00	0.0	A	0.00	0.00
C-AB	0.03	7.74	0.0	A	2.75	11.00
C-A					166.50	666.00
A-B					3.25	13.00
A-C					194.25	777.00

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	123.78	0.008	0.99	0.0	0.0	7.329	A
B-A	0.00	0.00	54.64	0.000	0.00	0.0	0.0	0.000	A
C-AB	4.00	4.00	120.25	0.033	3.97	0.0	0.0	7.738	A
C-A	166.00	166.00			166.00				
A-B	4.00	4.00			4.00				
A-C	204.00	204.00			204.00				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	129.73	0.008	1.00	0.0	0.0	6.993	A
B-A	0.00	0.00	58.62	0.000	0.00	0.0	0.0	0.000	A
C-AB	3.00	3.00	126.22	0.024	3.01	0.0	0.0	7.307	A
C-A	175.00	175.00			175.00				
A-B	3.00	3.00			3.00				
A-C	182.00	182.00			182.00				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	124.31	0.008	1.00	0.0	0.0	7.297	A
B-A	0.00	0.00	55.25	0.000	0.00	0.0	0.0	0.000	A
C-AB	3.00	3.00	120.77	0.025	3.00	0.0	0.0	7.641	A
C-A	167.00	167.00			167.00				
A-B	4.00	4.00			4.00				
A-C	202.00	202.00			202.00				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	127.47	0.008	1.00	0.0	0.0	7.115	A
B-A	0.00	0.00	59.76	0.000	0.00	0.0	0.0	0.000	A
C-AB	1.00	1.00	124.17	0.008	1.02	0.0	0.0	7.310	A
C-A	158.00	158.00			158.00				
A-B	2.00	2.00			2.00				
A-C	189.00	189.00			189.00				

Existing Layout - 2027 - With Development, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Watford Road / Long Fallow	T-Junction	Two-way	0.06	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2027 - With Development	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Long Fallow		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

08:00 - 08:15

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	0.00	191.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	190.00	0.00	0.00

Demand (Veh/TS)

08:15 - 08:30

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	1.00	173.00
	Long Fallow	0.00	0.00	2.00
	Watford Road (North)	209.00	2.00	0.00

Demand (Veh/TS)

08:30 - 08:45

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	0.00	173.00
	Long Fallow	1.00	0.00	0.00
	Watford Road (North)	244.00	1.00	0.00

Demand (Veh/TS)

08:45 - 09:00

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	1.00	159.00
	Long Fallow	0.00	0.00	3.00
	Watford Road (North)	185.00	1.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

08:00 - 08:15

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:15 - 08:30

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:30 - 08:45

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	0	0	0

Heavy Vehicle Percentages

08:45 - 09:00

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.02	7.13	0.0	A	1.50	6.00
B-A	0.02	15.71	0.0	C	0.25	1.00
C-AB	0.02	7.08	0.0	A	1.00	4.00
C-A					207.00	828.00
A-B					0.50	2.00
A-C					174.00	696.00

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	127.15	0.008	0.99	0.0	0.0	7.133	A
B-A	0.00	0.00	55.33	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	248.33	0.000	0.00	0.0	0.0	0.000	A
C-A	190.00	190.00			190.00				
A-B	0.00	0.00			0.00				
A-C	191.00	191.00			191.00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	2.00	2.00	132.33	0.015	1.99	0.0	0.0	6.904	A
B-A	0.00	0.00	56.34	0.000	0.00	0.0	0.0	0.000	A
C-AB	2.00	2.00	129.07	0.016	1.98	0.0	0.0	7.081	A
C-A	209.00	209.00			209.00				
A-B	1.00	1.00			1.00				
A-C	173.00	173.00			173.00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	0.00	0.00	116.89	0.000	0.02	0.0	0.0	0.000	A
B-A	1.00	1.00	58.24	0.017	0.98	0.0	0.0	15.712	C
C-AB	1.00	1.00	128.88	0.008	1.01	0.0	0.0	7.040	A
C-A	244.00	244.00			244.00				
A-B	0.00	0.00			0.00				
A-C	173.00	173.00			173.00				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	3.00	3.00	135.62	0.022	2.98	0.0	0.0	6.785	A
B-A	0.00	0.00	62.74	0.000	0.02	0.0	0.0	0.000	A
C-AB	1.00	1.00	132.29	0.008	1.00	0.0	0.0	6.854	A
C-A	185.00	185.00			185.00				
A-B	1.00	1.00			1.00				
A-C	159.00	159.00			159.00				

Existing Layout - 2027 - With Development, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Watford Road / Long Fallow	T-Junction	Two-way	0.08	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 period length (min)	Time segment length (min)	Run automatically
D6	2027 - With Development	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Long Fallow		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	4.00	216.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	172.00	4.00	0.00

17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	3.00	194.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	181.00	3.00	0.00

Demand (Veh/TS)

17:30 - 17:45

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	4.00	214.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	173.00	3.00	0.00

Demand (Veh/TS)

17:45 - 18:00

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	2.00	201.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	164.00	1.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

17:00 - 17:15

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:15 - 17:30

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:30 - 17:45

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:45 - 18:00

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.01	7.52	0.0	A	1.00	4.00
B-A	0.00	0.00	0.0	A	0.00	0.00
C-AB	0.03	7.95	0.0	A	2.75	11.00
C-A					172.50	690.00
A-B					3.25	13.00
A-C					206.25	825.00

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	120.59	0.008	0.99	0.0	0.0	7.524	A
B-A	0.00	0.00	51.17	0.000	0.00	0.0	0.0	0.000	A
C-AB	4.00	4.00	117.14	0.034	3.96	0.0	0.0	7.949	A
C-A	172.00	172.00			172.00				
A-B	4.00	4.00			4.00				
A-C	216.00	216.00			216.00				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	126.54	0.008	1.00	0.0	0.0	7.170	A
B-A	0.00	0.00	55.14	0.000	0.00	0.0	0.0	0.000	A
C-AB	3.00	3.00	123.10	0.024	3.01	0.0	0.0	7.496	A
C-A	181.00	181.00			181.00				
A-B	3.00	3.00			3.00				
A-C	194.00	194.00			194.00				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	121.12	0.008	1.00	0.0	0.0	7.491	A
B-A	0.00	0.00	51.77	0.000	0.00	0.0	0.0	0.000	A
C-AB	3.00	3.00	117.66	0.026	3.00	0.0	0.0	7.849	A
C-A	173.00	173.00			173.00				
A-B	4.00	4.00			4.00				
A-C	214.00	214.00			214.00				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	124.25	0.008	1.00	0.0	0.0	7.301	A
B-A	0.00	0.00	56.25	0.000	0.00	0.0	0.0	0.000	A
C-AB	1.00	1.00	121.03	0.008	1.02	0.0	0.0	7.499	A
C-A	164.00	164.00			164.00				
A-B	2.00	2.00			2.00				
A-C	201.00	201.00			201.00				

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.2.5947

For sales and distribution information, program advice and maintenance, contact TRL:
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Filename: J2 - Watford Rd_Forge End (391 dwellings).j9
Path: \\gc-did-fs01\CAD\2021\8210856\(6)_Transport\(1)_Planning\(4)_Modelling\Feb 2022 - TA
Report generation date: 28/02/2022 19:24:53

Summary of junction performance

	AM					PM				
	Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)
Existing Layout - 2016 - Surveyed										
Stream B-C	0.1	7.01	0.07	A	0.48	0.1	7.37	0.05	A	0.33
Stream B-A	0.0	14.32	0.03	B		0.0	14.22	0.03	B	
Stream C-AB	0.3	4.41	0.14	A		0.1	4.28	0.08	A	
Existing Layout - 2027 - Without Development										
Stream B-C	0.1	7.27	0.07	A	0.53	0.1	7.72	0.06	A	0.35
Stream B-A	0.0	15.94	0.03	C		0.0	15.85	0.03	C	
Stream C-AB	0.5	4.38	0.16	A		0.2	4.16	0.10	A	
Existing Layout - 2027 - With Development										
Stream B-C	0.2	8.73	0.16	A	1.21	0.1	8.34	0.09	A	0.84
Stream B-A	0.2	20.31	0.15	C		0.1	17.69	0.08	C	
Stream C-AB	0.9	4.55	0.23	A		0.7	4.64	0.21	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

File summary

File Description

Title	Watford Road / Forge End (391 Dwellings)
Location	Chiswell Green
Site number	J2
Date	20/02/2022
Version	
Status	(new file)
Identifier	
Client	CALA Homes & Redlington Capital
Jobnumber	8210856
Enumerator	UK\DKemp
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	mph	Veh	Veh	perTimeSegment	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 period length (min)	Time segment length (min)	Run automatically
D1	2016 - Surveyed	AM	DIRECT	08:00	09:00	60	15	✓
D2	2016 - Surveyed	PM	DIRECT	17:00	18:00	60	15	✓
D3	2027 - Without Development	AM	DIRECT	08:00	09:00	60	15	✓
D4	2027 - Without Development	PM	DIRECT	17:00	18:00	60	15	✓
D5	2027 - With Development	AM	DIRECT	08:00	09:00	60	15	✓
D6	2027 - With Development	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

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

Existing Layout - 2016 - Surveyed, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Junction 2	T-Junction	Two-way	0.48	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Watford Road (South)		Major
B	Forge End		Minor
C	Watford Road (North)		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)
Watford Road (North)	7.75			109.0	✓	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)
Forge End	One lane plus flare	10.00	4.60	2.80	2.80	2.80		1.00	38	85

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	136.508	0.092	0.232	0.146	0.332
1	B-C	174.335	0.099	0.250	-	-
1	C-B	159.272	0.228	0.228	-	-

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 period length (min)	Time segment length (min)	Run automatically
D1	2016 - Surveyed	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Forge End		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	1.00	152.00
	Forge End	1.00	0.00	2.00
	Watford Road (North)	158.00	4.00	0.00

08:15 - 08:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	1.00	162.00
	Forge End	0.00	0.00	6.00
	Watford Road (North)	182.00	8.00	0.00

08:30 - 08:45

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	0.00	157.00
	Forge End	1.00	0.00	9.00
	Watford Road (North)	203.00	8.00	0.00

08:45 - 09:00

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	2.00	151.00
	Forge End	2.00	0.00	3.00
	Watford Road (North)	156.00	11.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:15 - 08:30

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	1
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:30 - 08:45

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:45 - 09:00

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	1
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.07	7.01	0.1	A	5.00	20.00
B-A	0.03	14.32	0.0	B	1.00	4.00
C-AB	0.14	4.41	0.3	A	26.25	104.99
C-A					156.25	625.01
A-B					1.00	4.00
A-C					155.50	622.00

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	2.00	2.00	135.85	0.015	1.99	0.0	0.0	6.723	A
B-A	1.00	1.00	76.47	0.013	0.99	0.0	0.0	11.921	B
C-AB	11.87	11.87	238.27	0.050	11.80	0.0	0.1	3.973	A
C-A	150.13	150.13			150.13				
A-B	1.00	1.00			1.00				
A-C	152.00	152.00			152.00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	6.00	6.00	137.34	0.044	5.97	0.0	0.0	6.848	A
B-A	0.00	0.00	63.77	0.000	0.01	0.0	0.0	0.000	A
C-AB	28.29	28.29	254.04	0.111	28.12	0.1	0.2	3.984	A
C-A	161.71	161.71			161.71				
A-B	1.00	1.00			1.00				
A-C	162.00	162.00			162.00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	9.00	9.00	137.43	0.065	8.98	0.0	0.1	7.006	A
B-A	1.00	1.00	63.84	0.016	0.98	0.0	0.0	14.316	B
C-AB	32.39	32.39	270.34	0.120	32.36	0.2	0.3	3.784	A
C-A	178.61	178.61			178.61				
A-B	0.00	0.00			0.00				
A-C	157.00	157.00			157.00				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	3.00	3.00	142.98	0.021	3.05	0.1	0.0	6.433	A
B-A	2.00	2.00	75.23	0.027	1.99	0.0	0.0	12.286	B
C-AB	32.44	32.44	236.75	0.137	32.37	0.3	0.3	4.413	A
C-A	134.56	134.56			134.56				
A-B	2.00	2.00			2.00				
A-C	151.00	151.00			151.00				

Existing Layout - 2016 - Surveyed, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Junction 2	T-Junction	Two-way	0.33	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 period length (min)	Time segment length (min)	Run automatically
D2	2016 - Surveyed	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Forge End		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	4.00	186.00
	Forge End	2.00	0.00	5.00
	Watford Road (North)	151.00	2.00	0.00

17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	4.00	166.00
	Forge End	2.00	0.00	6.00
	Watford Road (North)	159.00	6.00	0.00

Demand (Veh/TS)

17:30 - 17:45

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	2.00	186.00
	Forge End	1.00	0.00	7.00
	Watford Road (North)	162.00	4.00	0.00

Demand (Veh/TS)

17:45 - 18:00

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	3.00	167.00
	Forge End	1.00	0.00	3.00
	Watford Road (North)	142.00	5.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

17:00 - 17:15

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:15 - 17:30

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:30 - 17:45

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	1
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:45 - 18:00

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.05	7.37	0.1	A	5.25	21.00
B-A	0.03	14.22	0.0	B	1.50	6.00
C-AB	0.08	4.28	0.1	A	12.71	50.85
C-A					145.04	580.15
A-B					3.25	13.00
A-C					176.25	705.00

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	5.00	5.00	127.13	0.039	4.96	0.0	0.0	7.365	A
B-A	2.00	2.00	69.25	0.029	1.97	0.0	0.0	13.372	B
C-AB	5.94	5.94	227.65	0.026	5.91	0.0	0.0	4.059	A
C-A	147.06	147.06			147.06				
A-B	4.00	4.00			4.00				
A-C	186.00	186.00			186.00				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	6.00	6.00	132.51	0.045	5.99	0.0	0.0	7.112	A
B-A	2.00	2.00	70.80	0.028	2.00	0.0	0.0	13.083	B
C-AB	18.33	18.33	236.51	0.078	18.22	0.0	0.1	4.122	A
C-A	146.67	146.67			146.67				
A-B	4.00	4.00			4.00				
A-C	166.00	166.00			166.00				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	7.00	7.00	129.07	0.054	6.99	0.0	0.1	7.371	A
B-A	1.00	1.00	64.31	0.016	1.01	0.0	0.0	14.220	B
C-AB	12.88	12.88	235.87	0.055	12.94	0.1	0.1	4.039	A
C-A	153.12	153.12			153.12				
A-B	2.00	2.00			2.00				
A-C	186.00	186.00			186.00				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	3.00	3.00	132.88	0.023	3.03	0.1	0.0	6.934	A
B-A	1.00	1.00	73.41	0.014	1.00	0.0	0.0	12.429	B
C-AB	13.70	13.70	224.14	0.061	13.68	0.1	0.1	4.278	A
C-A	133.30	133.30			133.30				
A-B	3.00	3.00			3.00				
A-C	167.00	167.00			167.00				

Existing Layout - 2027 - Without Development, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Junction 2	T-Junction	Two-way	0.53	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 period length (min)	Time segment length (min)	Run automatically
D3	2027 - Without Development	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Forge End		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	1.00	167.00
	Forge End	1.00	0.00	2.00
	Watford Road (North)	173.00	4.00	0.00

08:15 - 08:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	1.00	178.00
	Forge End	0.00	0.00	7.00
	Watford Road (North)	199.00	9.00	0.00

Demand (Veh/TS)

08:30 - 08:45

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	0.00	172.00
	Forge End	1.00	0.00	10.00
	Watford Road (North)	222.00	9.00	0.00

Demand (Veh/TS)

08:45 - 09:00

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	2.00	165.00
	Forge End	2.00	0.00	3.00
	Watford Road (North)	171.00	12.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

08:00 - 08:15

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:15 - 08:30

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	1
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:30 - 08:45

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:45 - 09:00

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	1
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.07	7.27	0.1	A	5.50	22.00
B-A	0.03	15.94	0.0	C	1.00	4.00
C-AB	0.16	4.38	0.5	A	33.05	132.18
C-A					166.70	666.82
A-B					1.00	4.00
A-C					170.50	682.00

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	2.00	2.00	132.08	0.015	1.98	0.0	0.0	6.917	A
B-A	1.00	1.00	70.78	0.014	0.99	0.0	0.0	12.891	B
C-AB	13.35	13.35	246.99	0.054	13.27	0.0	0.1	3.850	A
C-A	163.65	163.65			163.65				
A-B	1.00	1.00			1.00				
A-C	167.00	167.00			167.00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	7.00	7.00	133.19	0.053	6.96	0.0	0.1	7.128	A
B-A	0.00	0.00	57.66	0.000	0.01	0.0	0.0	0.000	A
C-AB	36.50	36.50	264.36	0.138	36.23	0.1	0.4	3.947	A
C-A	171.50	171.50			171.50				
A-B	1.00	1.00			1.00				
A-C	178.00	178.00			178.00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	10.00	10.00	133.67	0.075	9.97	0.1	0.1	7.273	A
B-A	1.00	1.00	57.42	0.017	0.98	0.0	0.0	15.941	C
C-AB	42.53	42.53	282.42	0.151	42.47	0.4	0.4	3.758	A
C-A	188.47	188.47			188.47				
A-B	0.00	0.00			0.00				
A-C	172.00	172.00			172.00				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	3.00	3.00	139.20	0.022	3.06	0.1	0.0	6.612	A
B-A	2.00	2.00	69.29	0.029	1.99	0.0	0.0	13.372	B
C-AB	39.80	39.80	245.68	0.162	39.74	0.4	0.5	4.382	A
C-A	143.20	143.20			143.20				
A-B	2.00	2.00			2.00				
A-C	165.00	165.00			165.00				

Existing Layout - 2027 - Without Development, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Junction 2	T-Junction	Two-way	0.35	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 period length (min)	Time segment length (min)	Run automatically
D4	2027 - Without Development	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Forge End		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	4.00	204.00
	Forge End	2.00	0.00	5.00
	Watford Road (North)	166.00	2.00	0.00

17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	4.00	182.00
	Forge End	2.00	0.00	7.00
	Watford Road (North)	175.00	7.00	0.00

Demand (Veh/TS)

17:30 - 17:45

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	2.00	204.00
	Forge End	1.00	0.00	8.00
	Watford Road (North)	178.00	4.00	0.00

Demand (Veh/TS)

17:45 - 18:00

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	3.00	183.00
	Forge End	1.00	0.00	3.00
	Watford Road (North)	156.00	5.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

17:00 - 17:15

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:15 - 17:30

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:30 - 17:45

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	1
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:45 - 18:00

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.06	7.72	0.1	A	5.75	23.00
B-A	0.03	15.85	0.0	C	1.50	6.00
C-AB	0.10	4.16	0.2	A	15.28	61.12
C-A					157.97	631.88
A-B					3.25	13.00
A-C					193.25	773.00

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	5.00	5.00	122.56	0.041	4.96	0.0	0.0	7.651	A
B-A	2.00	2.00	62.92	0.032	1.97	0.0	0.0	14.757	B
C-AB	6.73	6.73	236.17	0.029	6.69	0.0	0.0	3.922	A
C-A	161.27	161.27			161.27				
A-B	4.00	4.00			4.00				
A-C	204.00	204.00			204.00				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	7.00	7.00	128.73	0.054	6.99	0.0	0.1	7.392	A
B-A	2.00	2.00	64.10	0.031	2.00	0.0	0.0	14.495	B
C-AB	24.29	24.29	245.97	0.099	24.12	0.0	0.2	4.057	A
C-A	157.71	157.71			157.71				
A-B	4.00	4.00			4.00				
A-C	182.00	182.00			182.00				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	8.00	8.00	124.56	0.064	7.99	0.1	0.1	7.719	A
B-A	1.00	1.00	57.83	0.017	1.01	0.0	0.0	15.846	C
C-AB	14.76	14.76	245.25	0.060	14.87	0.2	0.1	3.908	A
C-A	167.24	167.24			167.24				
A-B	2.00	2.00			2.00				
A-C	204.00	204.00			204.00				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	3.00	3.00	128.84	0.023	3.04	0.1	0.0	7.158	A
B-A	1.00	1.00	67.73	0.015	1.00	0.0	0.0	13.487	B
C-AB	15.33	15.33	231.99	0.066	15.32	0.1	0.1	4.157	A
C-A	145.67	145.67			145.67				
A-B	3.00	3.00			3.00				
A-C	183.00	183.00			183.00				

Existing Layout - 2027 - With Development, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Junction 2	T-Junction	Two-way	1.21	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 period length (min)	Time segment length (min)	Run automatically
D5	2027 - With Development	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Forge End		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	4.00	183.00
	Forge End	8.00	0.00	11.00
	Watford Road (North)	192.00	7.00	0.00

08:15 - 08:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	4.00	194.00
	Forge End	7.00	0.00	16.00
	Watford Road (North)	218.00	12.00	0.00

Demand (Veh/TS)

08:30 - 08:45

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	3.00	188.00
	Forge End	8.00	0.00	19.00
	Watford Road (North)	241.00	12.00	0.00

Demand (Veh/TS)

08:45 - 09:00

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	5.00	181.00
	Forge End	9.00	0.00	12.00
	Watford Road (North)	190.00	15.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

08:00 - 08:15

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:15 - 08:30

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	1
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:30 - 08:45

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:45 - 09:00

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	1
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.16	8.73	0.2	A	14.50	58.00
B-A	0.15	20.31	0.2	C	8.00	32.00
C-AB	0.23	4.55	0.9	A	52.52	210.10
C-A					169.23	676.90
A-B					4.00	16.00
A-C					186.50	746.00

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	11.00	11.00	130.53	0.084	10.91	0.0	0.1	7.519	A
B-A	8.00	8.00	64.17	0.125	7.86	0.0	0.1	15.945	C
C-AB	27.25	27.25	258.37	0.105	27.02	0.0	0.2	3.890	A
C-A	171.75	171.75			171.75				
A-B	4.00	4.00			4.00				
A-C	183.00	183.00			183.00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	16.00	16.00	120.87	0.132	15.94	0.1	0.2	8.572	A
B-A	7.00	7.00	53.98	0.130	6.99	0.1	0.1	19.153	C
C-AB	57.31	57.31	276.18	0.208	56.81	0.2	0.7	4.111	A
C-A	172.69	172.69			172.69				
A-B	4.00	4.00			4.00				
A-C	194.00	194.00			194.00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	19.00	19.00	122.04	0.156	18.97	0.2	0.2	8.728	A
B-A	8.00	8.00	52.25	0.153	7.97	0.1	0.2	20.307	C
C-AB	67.29	67.29	294.55	0.228	67.14	0.7	0.9	3.975	A
C-A	185.71	185.71			185.71				
A-B	3.00	3.00			3.00				
A-C	188.00	188.00			188.00				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	12.00	12.00	129.27	0.093	12.08	0.2	0.1	7.686	A
B-A	9.00	9.00	61.65	0.146	9.00	0.2	0.2	17.097	C
C-AB	58.25	58.25	257.32	0.226	58.33	0.9	0.8	4.551	A
C-A	146.76	146.76			146.76				
A-B	5.00	5.00			5.00				
A-C	181.00	181.00			181.00				

Existing Layout - 2027 - With Development, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Junction 2	T-Junction	Two-way	0.84	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 period length (min)	Time segment length (min)	Run automatically
D6	2027 - With Development	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Forge End		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	9.00	211.00
	Forge End	5.00	0.00	8.00
	Watford Road (North)	170.00	9.00	0.00

17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	9.00	189.00
	Forge End	5.00	0.00	10.00
	Watford Road (North)	179.00	14.00	0.00

Demand (Veh/TS)

17:30 - 17:45

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	7.00	211.00
	Forge End	4.00	0.00	11.00
	Watford Road (North)	182.00	11.00	0.00

Demand (Veh/TS)

17:45 - 18:00

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	8.00	190.00
	Forge End	4.00	0.00	6.00
	Watford Road (North)	160.00	12.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

17:00 - 17:15

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:15 - 17:30

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:30 - 17:45

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	1
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:45 - 18:00

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.09	8.34	0.1	A	8.75	35.00
B-A	0.08	17.69	0.1	C	4.50	18.00
C-AB	0.21	4.64	0.7	A	40.97	163.87
C-A					143.28	573.13
A-B					8.25	33.00
A-C					200.25	801.00

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	8.00	8.00	117.62	0.068	7.93	0.0	0.1	8.200	A
B-A	5.00	5.00	59.26	0.084	4.91	0.0	0.1	16.533	C
C-AB	31.68	31.68	237.47	0.133	31.34	0.0	0.3	4.367	A
C-A	147.32	147.32			147.32				
A-B	9.00	9.00			9.00				
A-C	211.00	211.00			211.00				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	10.00	10.00	123.51	0.081	9.98	0.1	0.1	7.926	A
B-A	5.00	5.00	60.66	0.082	5.00	0.1	0.1	16.170	C
C-AB	50.99	50.99	247.45	0.206	50.64	0.3	0.7	4.583	A
C-A	142.01	142.01			142.01				
A-B	9.00	9.00			9.00				
A-C	189.00	189.00			189.00				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	11.00	11.00	118.82	0.093	10.99	0.1	0.1	8.345	A
B-A	4.00	4.00	54.89	0.073	4.01	0.1	0.1	17.695	C
C-AB	42.61	42.61	246.88	0.173	42.75	0.7	0.5	4.425	A
C-A	150.39	150.39			150.39				
A-B	7.00	7.00			7.00				
A-C	211.00	211.00			211.00				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	6.00	6.00	131.17	0.046	6.05	0.1	0.0	7.198	A
B-A	4.00	4.00	64.91	0.062	4.01	0.1	0.1	14.782	B
C-AB	38.60	38.60	233.43	0.165	38.64	0.5	0.5	4.638	A
C-A	133.40	133.40			133.40				
A-B	8.00	8.00			8.00				
A-C	190.00	190.00			190.00				

Junctions 9

ARCADY 9 - Roundabout Module

Filename: J3 - Watford Rd_Chiswell_Tippendell + Ped - AM (391 dwellings) v1.j9
Path: \\gc-did-fs01\CAD\2021\8210856\(6)_Transport\(1)_Planning\(4)_Modelling\Feb 2022 - TA
Report generation date: 03/03/2022 14:26:32

Summary of junction performance

	AM				
	Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)
Existing Layout - 2016 - Surveyed					
Junction 3a - Southern Jct - Watford Road (North)	2.3	9.53	0.70	A	10.39
Junction 3a - Southern Jct - Watford Road (South)	2.1	11.32	0.68	B	
Junction 3a - Southern Jct - Chiswell Green Lane	0.4	10.85	0.28	B	
Junction 3b - Northern Jct - Watford Road (South)	1.0	4.79	0.51	A	18.00
Junction 3b - Northern Jct - Watford Road (North)	5.4	22.58	0.86	C	
Junction 3b - Northern Jct - Tippendell Lane	3.6	34.50	0.81	D	
Existing Layout - 2027 - Without Development					
Junction 3a - Southern Jct - Watford Road (North)	3.0	11.67	0.76	B	12.84
Junction 3a - Southern Jct - Watford Road (South)	2.9	14.24	0.75	B	
Junction 3a - Southern Jct - Chiswell Green Lane	0.5	12.87	0.34	B	
Junction 3b - Northern Jct - Watford Road (South)	1.3	5.43	0.56	A	32.70
Junction 3b - Northern Jct - Watford Road (North)	10.7	39.16	0.95	E	
Junction 3b - Northern Jct - Tippendell Lane	9.1	72.93	0.97	F	
Existing Layout - 2027 - With Development					
Junction 3a - Southern Jct - Watford Road (North)	4.2	15.75	0.82	C	23.33
Junction 3a - Southern Jct - Watford Road (South)	6.1	27.48	0.88	D	
Junction 3a - Southern Jct - Chiswell Green Lane	2.8	34.66	0.76	D	
Junction 3b - Northern Jct - Watford Road (South)	1.7	6.47	0.63	A	47.54
Junction 3b - Northern Jct - Watford Road (North)	16.2	55.61	1.00	F	
Junction 3b - Northern Jct - Tippendell Lane	16.9	115.85	1.07	F	

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. Junction LOS and Junction Delay are demand-weighted averages.

File summary

File Description

Title	Watford Rd / Tippendell Ln / Chiswell Green Ln (391 Dwellings)
Location	Chiswell Green
Site number	J3
Date	20/02/2022
Version	
Status	(new file)
Identifier	
Client	CALA Homes & Redlington Capital
Jobnumber	8210856
Enumerator	UK\DKemp
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	mph	Veh	Veh	perTimeSegment	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 period length (min)	Time segment length (min)	Run automatically
D1	2016 - Surveyed	AM	DIRECT	08:00	09:00	60	15	✓
D3	2027 - Without Development	AM	DIRECT	08:00	09:00	60	15	✓
D5	2027 - With Development	AM	DIRECT	08:00	09:00	60	15	✓

Analysis Set Details

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

Existing Layout - 2016 - Surveyed, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 3a - Southern Jct	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 B have 90% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	Junction 3b - Northern Jct	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 B have 82% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 3a - Southern Jct - Watford Road (North)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 3b - Northern Jct - Watford Road (South)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Junction 3a - Southern Jct	Mini-roundabout	A, B, C	10.39	B
2	Junction 3b - Northern Jct	Mini-roundabout	A, B, C	18.00	C

Junction Network Options

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

Arms

Arms

Junction	Arm	Name	Description
Junction 3a - Southern Jct	A	Watford Road (North)	
	B	Watford Road (South)	
	C	Chiswell Green Lane	
Junction 3b - Northern Jct	A	Watford Road (South)	
	B	Watford Road (North)	
	C	Tippendell Lane	

Mini Roundabout Geometry

Junction	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
Junction 3a - Southern Jct	Watford Road (North)	5.20	5.20	5.62	2.4	15.70	17.70	0.0	✓
	Watford Road (South)	4.40	4.40	5.00	3.0	13.89	10.25	0.0	✓
	Chiswell Green Lane	3.50	3.50	4.50	1.9	14.00	8.50	0.0	
Junction 3b - Northern Jct	Watford Road (South)	5.20	5.20	6.50	7.4	18.80	19.90	0.0	✓
	Watford Road (North)	3.80	3.80	4.60	0.4	12.80	8.20	0.0	✓
	Tippendell Lane	3.40	3.40	5.60	2.6	15.20	9.20	0.0	

Zebra Crossings

Junction	Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
Junction 3a - Southern Jct	Watford Road (North)	4.00	4.00	✓	Distance	5.00	3.57	5.00	3.57

Slope / Intercept / Capacity

Arm Intercept Adjustments

Junction	Arm	Type	Reason	Percentage intercept adjustment (%)
Junction 3a - Southern Jct	Watford Road (North)	None		
	Watford Road (South)	None		
	Chiswell Green Lane	None		
Junction 3b - Northern Jct	Watford Road (South)	None		
	Watford Road (North)	Percentage		125.00
	Tippendell Lane	Percentage		117.00

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/TS)
Junction 3a - Southern Jct	Watford Road (North)	0.669	321.940
	Watford Road (South)	0.548	259.564
	Chiswell Green Lane	0.624	220.161
Junction 3b - Northern Jct	Watford Road (South)	0.883	437.644
	Watford Road (North)	0.514	275.100
	Tippendell Lane	0.629	245.774

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 period length (min)	Time segment length (min)	Run automatically
D1	2016 - Surveyed	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/TS)	Flow multiplier (%)	Internal storage space (PCU)
Junction 3a - Southern Jct	Watford Road (North)	2	A	Simple (vertical queueing)	Normal	0.00	100.00	
Junction 3b - Northern Jct	Watford Road (South)	1	A	Simple (vertical queueing)	Normal	0.00	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Junction 3a - Southern Jct	Watford Road (North)	✓			
	Watford Road (South)		DIRECT	✓	100.000
	Chiswell Green Lane		DIRECT	✓	100.000
Junction 3b - Northern Jct	Watford Road (South)	✓			
	Watford Road (North)		DIRECT	✓	100.000
	Tippendell Lane		DIRECT	✓	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type
Junction 3a - Southern Jct	Watford Road (North)	[DIRECT]
	Watford Road (South)	
	Chiswell Green Lane	
Junction 3b - Northern Jct	Watford Road (South)	
	Watford Road (North)	
	Tippendell Lane	

Origin-Destination Data

Junction 3a - Southern Jct 08:00 - 08:15

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	156.00	16.00
	Watford Road (South)	145.00	0.00	9.00
	Chiswell Green Lane	33.00	3.00	0.00

Junction 3a - Southern Jct 08:15 - 08:30

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	185.00	18.00
	Watford Road (South)	165.00	0.00	4.00
	Chiswell Green Lane	28.00	5.00	0.00

Junction 3a - Southern Jct 08:30 - 08:45

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	207.00	18.00
	Watford Road (South)	156.00	0.00	10.00
	Chiswell Green Lane	29.00	5.00	0.00

Junction 3a - Southern Jct 08:45 - 09:00

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	158.00	19.00
	Watford Road (South)	141.00	0.00	19.00
	Chiswell Green Lane	22.00	6.00	0.00

Junction 3b - Northern Jct 08:00 - 08:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	148.00	30.00
	Watford Road (North)	148.00	0.00	17.00
	Tippendell Lane	24.00	47.00	0.00

Junction 3b - Northern Jct 08:15 - 08:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	162.00	31.00
	Watford Road (North)	174.00	0.00	24.00
	Tippendell Lane	29.00	60.00	0.00

Junction 3b - Northern Jct 08:30 - 08:45

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	155.00	30.00
	Watford Road (North)	198.00	0.00	24.00
	Tippendell Lane	27.00	69.00	0.00

Junction 3b - Northern Jct 08:45 - 09:00

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	136.00	27.00
	Watford Road (North)	144.00	0.00	31.00
	Tippendell Lane	33.00	71.00	0.00

Vehicle Mix

Junction 3a - Southern Jct 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	0	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3a - Southern Jct 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3a - Southern Jct 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3a - Southern Jct 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3b - Northern Jct 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	0	0	0
	Tippendell Lane	0	0	0

Junction 3b - Northern Jct 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	4
	Tippendell Lane	0	2	0

Junction 3b - Northern Jct 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	0
	Tippendell Lane	0	3	0

Junction 3b - Northern Jct 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	0
	Tippendell Lane	0	3	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
Junction 3a - Southern Jct	Watford Road (North)	0.70	9.53	2.3	A	193.53	774.10
	Watford Road (South)	0.68	11.32	2.1	B	162.25	649.01
	Chiswell Green Lane	0.28	10.85	0.4	B	32.75	131.00
Junction 3b - Northern Jct	Watford Road (South)	0.51	4.79	1.0	A	179.30	717.19
	Watford Road (North)	0.86	22.58	5.4	C	190.00	760.00
	Tippendell Lane	0.81	34.50	3.6	D	90.00	360.01

Main Results for each time segment

08:00 - 08:15

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	170.20	170.20	2.97	10.00	319.95	0.532	169.08	176.20	0.0	1.1	5.
	Watford Road (South)	154.00	154.00	15.73		250.94	0.614	152.45	156.32	0.0	1.5	9.
	Chiswell Green Lane	36.00	36.00	143.54		130.14	0.277	35.62	24.64	0.0	0.4	9.
Junction 3b - Northern Jct	Watford Road (South)	176.20	176.20	46.44		396.62	0.444	175.40	170.20	0.0	0.8	4.
	Watford Road (North)	165.00	165.00	29.56		259.90	0.635	163.31	192.29	0.0	1.7	9.
	Tippendell Lane	71.00	71.00	146.48		153.62	0.462	70.16	46.39	0.0	0.8	10

08:15 - 08:30

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	201.26	201.26	4.97	10.00	315.75	0.637	200.66	192.44	1.1	1.7	7.
	Watford Road (South)	169.00	169.00	17.80		247.41	0.683	168.47	187.84	1.5	2.1	11
	Chiswell Green Lane	33.00	33.00	164.43		115.93	0.285	32.98	21.84	0.4	0.4	10
Junction 3b - Northern Jct	Watford Road (South)	192.45	192.45	59.31		381.03	0.505	192.24	201.38	0.8	1.0	4.
	Watford Road (North)	198.00	198.00	30.88		255.76	0.774	196.49	220.66	1.7	3.2	14
	Tippendell Lane	89.00	89.00	172.70		134.26	0.663	87.99	54.67	0.8	1.9	19

08:30 - 08:45

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	222.50	222.50	5.00	10.00	315.69	0.705	221.91	185.09	1.7	2.3	9.
	Watford Road (South)	166.00	166.00	17.77		247.49	0.671	166.02	209.15	2.1	2.1	11
	Chiswell Green Lane	34.00	34.00	156.09		121.24	0.280	34.00	27.69	0.4	0.4	10
Junction 3b - Northern Jct	Watford Road (South)	185.10	185.10	67.68		372.95	0.496	185.12	222.59	1.0	1.0	4.
	Watford Road (North)	222.00	222.00	30.02		257.35	0.863	219.80	222.78	3.2	5.4	22
	Tippendell Lane	96.00	96.00	195.99		118.70	0.809	94.28	53.82	1.9	3.6	34

08:45 - 09:00

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	180.14	180.14	6.00	10.00	315.11	0.572	181.10	163.39	2.3	1.4	6.
	Watford Road (South)	160.00	160.00	19.38		246.76	0.648	160.17	167.72	2.1	1.9	10
	Chiswell Green Lane	28.00	28.00	141.27		130.77	0.214	28.12	38.28	0.4	0.3	8.
Junction 3b - Northern Jct	Watford Road (South)	163.44	163.44	71.90		369.14	0.443	163.63	180.28	1.0	0.8	4.
	Watford Road (North)	175.00	175.00	27.10		259.02	0.676	178.25	208.43	5.4	2.2	11
	Tippendell Lane	104.00	104.00	147.05		149.27	0.697	105.13	58.30	3.6	2.4	20

Existing Layout - 2027 - Without Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 3a - Southern Jct	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 B have 90% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	Junction 3b - Northern Jct	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 B have 83% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 3a - Southern Jct - Watford Road (North)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 3b - Northern Jct - Watford Road (South)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Junction 3a - Southern Jct	Mini-roundabout	A, B, C	12.84	B
2	Junction 3b - Northern Jct	Mini-roundabout	A, B, C	32.70	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 period length (min)	Time segment length (min)	Run automatically
D3	2027 - Without Development	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/TS)	Flow multiplier (%)	Internal storage space (PCU)
Junction 3a - Southern Jct	Watford Road (North)	2	A	Simple (vertical queueing)	Normal	0.00	100.00	
Junction 3b - Northern Jct	Watford Road (South)	1	A	Simple (vertical queueing)	Normal	0.00	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Junction 3a - Southern Jct	Watford Road (North)	✓			
	Watford Road (South)		DIRECT	✓	100.000
	Chiswell Green Lane		DIRECT	✓	100.000
Junction 3b - Northern Jct	Watford Road (South)	✓			
	Watford Road (North)		DIRECT	✓	100.000
	Tippendell Lane		DIRECT	✓	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type
Junction 3a - Southern Jct	Watford Road (North)	[DIRECT]
	Watford Road (South)	
	Chiswell Green Lane	
Junction 3b - Northern Jct	Watford Road (South)	
	Watford Road (North)	
	Tippendell Lane	

Origin-Destination Data

Junction 3a - Southern Jct 08:00 - 08:15

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	171.00	18.00
	Watford Road (South)	159.00	0.00	10.00
	Chiswell Green Lane	36.00	3.00	0.00

Junction 3a - Southern Jct 08:15 - 08:30

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	203.00	20.00
	Watford Road (South)	181.00	0.00	4.00
	Chiswell Green Lane	31.00	5.00	0.00

Junction 3a - Southern Jct 08:30 - 08:45

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	227.00	20.00
	Watford Road (South)	171.00	0.00	11.00
	Chiswell Green Lane	32.00	5.00	0.00

Junction 3a - Southern Jct 08:45 - 09:00

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	173.00	21.00
	Watford Road (South)	154.00	0.00	21.00
	Chiswell Green Lane	24.00	7.00	0.00

Junction 3b - Northern Jct 08:00 - 08:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	162.00	33.00
	Watford Road (North)	162.00	0.00	19.00
	Tippendell Lane	26.00	51.00	0.00

Junction 3b - Northern Jct 08:15 - 08:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	178.00	34.00
	Watford Road (North)	191.00	0.00	26.00
	Tippendell Lane	32.00	66.00	0.00

Junction 3b - Northern Jct 08:30 - 08:45

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	170.00	33.00
	Watford Road (North)	217.00	0.00	26.00
	Tippendell Lane	30.00	76.00	0.00

Junction 3b - Northern Jct 08:45 - 09:00

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	149.00	30.00
	Watford Road (North)	158.00	0.00	34.00
	Tippendell Lane	36.00	78.00	0.00

Vehicle Mix

Junction 3a - Southern Jct 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	0	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3a - Southern Jct 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3a - Southern Jct 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3a - Southern Jct 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3b - Northern Jct 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	0	0	0
	Tippendell Lane	0	0	0

Junction 3b - Northern Jct 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	4
	Tippendell Lane	0	2	0

Junction 3b - Northern Jct 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	0
	Tippendell Lane	0	3	0

Junction 3b - Northern Jct 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	0
	Tippendell Lane	0	3	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
Junction 3a - Southern Jct	Watford Road (North)	0.76	11.67	3.0	B	211.83	847.32
	Watford Road (South)	0.75	14.24	2.9	B	177.75	711.00
	Chiswell Green Lane	0.34	12.87	0.5	B	35.75	143.00
Junction 3b - Northern Jct	Watford Road (South)	0.56	5.43	1.3	A	196.39	785.55
	Watford Road (North)	0.95	39.16	10.7	E	208.25	833.00
	Tippendell Lane	0.97	72.93	9.1	F	98.76	395.03

Main Results for each time segment

08:00 - 08:15

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	185.62	185.62	2.96	10.00	319.96	0.580	184.26	192.68	0.0	1.4	6.
	Watford Road (South)	169.00	169.00	17.55		249.94	0.676	166.99	169.68	0.0	2.0	10
	Chiswell Green Lane	39.00	39.00	157.11		121.52	0.321	38.54	27.43	0.0	0.5	10
Junction 3b - Northern Jct	Watford Road (South)	192.68	192.68	50.27		393.23	0.490	191.73	185.62	0.0	1.0	4.
	Watford Road (North)	181.00	181.00	32.45		258.41	0.700	178.76	209.55	0.0	2.2	11
	Tippendell Lane	77.00	77.00	159.99		145.12	0.531	75.90	51.21	0.0	1.1	12

08:15 - 08:30

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	219.75	219.75	4.97	10.00	315.76	0.696	218.89	211.10	1.4	2.2	9.
	Watford Road (South)	185.00	185.00	19.64		246.41	0.751	184.16	204.22	2.0	2.8	14
	Chiswell Green Lane	36.00	36.00	180.11		105.84	0.340	35.96	23.70	0.5	0.5	12
Junction 3b - Northern Jct	Watford Road (South)	211.11	211.11	64.56		376.34	0.561	210.80	219.89	1.0	1.3	5.
	Watford Road (North)	217.00	217.00	33.82		254.29	0.853	214.20	241.54	2.2	5.0	21
	Tippendell Lane	98.00	98.00	188.57		124.31	0.788	95.87	59.45	1.1	3.2	29

08:30 - 08:45

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	240.30	240.30	5.00	10.00	315.69	0.761	239.48	203.12	2.2	3.0	11
	Watford Road (South)	182.00	182.00	19.41		246.60	0.738	182.01	225.07	2.8	2.8	13
	Chiswell Green Lane	37.00	37.00	171.12		111.58	0.332	37.01	30.30	0.5	0.5	12
Junction 3b - Northern Jct	Watford Road (South)	203.13	203.13	71.65		369.37	0.550	203.16	240.39	1.3	1.2	5.
	Watford Road (North)	243.00	243.00	33.02		255.81	0.950	237.38	241.79	5.0	10.7	39
	Tippendell Lane	106.00	106.00	211.91		108.81	0.974	100.13	58.49	3.2	9.1	72

08:45 - 09:00

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	201.65	201.65	6.99	10.00	314.46	0.641	202.86	178.57	3.0	1.8	8.
	Watford Road (South)	175.00	175.00	21.88		245.40	0.713	175.27	187.97	2.8	2.6	12
	Chiswell Green Lane	31.00	31.00	154.40		122.37	0.253	31.16	42.74	0.5	0.3	9.
Junction 3b - Northern Jct	Watford Road (South)	178.63	178.63	80.73		361.18	0.495	178.87	201.80	1.2	1.0	4.
	Watford Road (North)	192.00	192.00	29.97		257.55	0.745	199.56	229.64	10.7	3.1	17
	Tippendell Lane	114.00	114.00	164.97		138.10	0.825	117.56	64.56	9.1	5.5	48

Existing Layout - 2027 - With Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 3a - Southern Jct	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 B have 83% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	Junction 3b - Northern Jct	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 B have 82% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 3a - Southern Jct - Watford Road (North)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 3b - Northern Jct - Watford Road (South)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Junction 3a - Southern Jct	Mini-roundabout	A, B, C	23.33	C
2	Junction 3b - Northern Jct	Mini-roundabout	A, B, C	47.54	E

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 period length (min)	Time segment length (min)	Run automatically
D5	2027 - With Development	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/TS)	Flow multiplier (%)	Internal storage space (PCU)
Junction 3a - Southern Jct	Watford Road (North)	2	A	Simple (vertical queueing)	Normal	0.00	100.00	
Junction 3b - Northern Jct	Watford Road (South)	1	A	Simple (vertical queueing)	Normal	0.00	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Junction 3a - Southern Jct	Watford Road (North)	✓			
	Watford Road (South)		DIRECT	✓	100.000
	Chiswell Green Lane		DIRECT	✓	100.000
Junction 3b - Northern Jct	Watford Road (South)	✓			
	Watford Road (North)		DIRECT	✓	100.000
	Tippendell Lane		DIRECT	✓	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type
Junction 3a - Southern Jct	Watford Road (North)	[DIRECT]
	Watford Road (South)	
	Chiswell Green Lane	
Junction 3b - Northern Jct	Watford Road (South)	
	Watford Road (North)	
	Tippendell Lane	

Origin-Destination Data

Junction 3a - Southern Jct 08:00 - 08:15

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	174.00	36.00
	Watford Road (South)	167.00	0.00	26.00
	Chiswell Green Lane	58.00	22.00	0.00

Junction 3a - Southern Jct 08:15 - 08:30

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	206.00	38.00
	Watford Road (South)	189.00	0.00	20.00
	Chiswell Green Lane	53.00	24.00	0.00

Junction 3a - Southern Jct 08:30 - 08:45

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	230.00	38.00
	Watford Road (South)	179.00	0.00	27.00
	Chiswell Green Lane	54.00	24.00	0.00

Junction 3a - Southern Jct 08:45 - 09:00

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	176.00	39.00
	Watford Road (South)	162.00	0.00	37.00
	Chiswell Green Lane	46.00	26.00	0.00

Junction 3b - Northern Jct 08:00 - 08:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	170.00	49.00
	Watford Road (North)	165.00	0.00	19.00
	Tippendell Lane	37.00	51.00	0.00

Junction 3b - Northern Jct 08:15 - 08:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	186.00	50.00
	Watford Road (North)	194.00	0.00	26.00
	Tippendell Lane	43.00	66.00	0.00

Junction 3b - Northern Jct 08:30 - 08:45

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	178.00	49.00
	Watford Road (North)	220.00	0.00	26.00
	Tippendell Lane	41.00	76.00	0.00

Junction 3b - Northern Jct 08:45 - 09:00

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	157.00	46.00
	Watford Road (North)	161.00	0.00	34.00
	Tippendell Lane	47.00	78.00	0.00

Vehicle Mix

Junction 3a - Southern Jct 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	0	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3a - Southern Jct 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3a - Southern Jct 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3a - Southern Jct 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3b - Northern Jct 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	0	0	0
	Tippendell Lane	0	0	0

Junction 3b - Northern Jct 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	4
	Tippendell Lane	0	2	0

Junction 3b - Northern Jct 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	0
	Tippendell Lane	0	3	0

Junction 3b - Northern Jct 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	0
	Tippendell Lane	0	3	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
Junction 3a - Southern Jct	Watford Road (North)	0.82	15.75	4.2	C	224.59	898.35
	Watford Road (South)	0.88	27.48	6.1	D	201.75	807.01
	Chiswell Green Lane	0.76	34.66	2.8	D	76.75	307.00
Junction 3b - Northern Jct	Watford Road (South)	0.63	6.47	1.7	A	225.53	902.12
	Watford Road (North)	1.00	55.61	16.2	F	211.25	845.00
	Tippendell Lane	1.07	115.85	16.9	F	109.77	439.09

Main Results for each time segment

08:00 - 08:15

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	198.99	198.99	21.45	10.00	307.59	0.647	197.20	220.38	0.0	1.8	8.
	Watford Road (South)	193.00	193.00	33.81		241.02	0.801	189.34	184.85	0.0	3.7	16
	Chiswell Green Lane	80.00	80.00	163.83		116.91	0.684	78.00	59.31	0.0	2.0	22
Junction 3b - Northern Jct	Watford Road (South)	220.38	220.38	50.12		393.37	0.560	219.12	198.99	0.0	1.3	5.
	Watford Road (North)	184.00	184.00	49.03		249.88	0.736	181.35	220.21	0.0	2.6	12
	Tippendell Lane	88.00	88.00	162.63		143.46	0.613	86.48	67.75	0.0	1.5	15

08:15 - 08:30

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	231.94	231.94	23.67	10.00	303.56	0.764	230.66	239.25	1.8	3.1	12
	Watford Road (South)	209.00	209.00	35.95		237.74	0.879	206.65	218.38	3.7	6.0	26
	Chiswell Green Lane	77.00	77.00	186.73		101.18	0.761	76.19	55.87	2.0	2.8	34
Junction 3b - Northern Jct	Watford Road (South)	239.20	239.20	63.64		377.36	0.634	238.75	232.02	1.3	1.7	6.
	Watford Road (North)	220.00	220.00	50.60		245.79	0.895	215.98	251.79	2.6	6.7	27
	Tippendell Lane	109.00	109.00	190.49		123.28	0.884	105.17	76.08	1.5	5.4	42

08:30 - 08:45

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	248.60	248.60	24.01	10.00	303.27	0.820	247.47	233.14	3.1	4.2	1
	Watford Road (South)	206.00	206.00	35.13		238.22	0.865	205.92	236.35	6.0	6.1	2
	Chiswell Green Lane	78.00	78.00	179.14		106.02	0.736	78.00	61.91	2.8	2.8	3
Junction 3b - Northern Jct	Watford Road (South)	233.10	233.10	68.36		372.55	0.626	233.11	248.62	1.7	1.7	6
	Watford Road (North)	246.00	246.00	50.31		246.98	0.996	236.46	251.16	6.7	16.2	5
	Tippendell Lane	117.00	117.00	211.38		109.37	1.070	105.60	75.39	5.4	16.8	11

08:45 - 09:00

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	218.81	218.81	26.26	10.00	301.90	0.725	220.28	209.44	4.2	2.7	1
	Watford Road (South)	199.00	199.00	39.79		235.82	0.844	199.29	206.74	6.1	5.8	2
	Chiswell Green Lane	72.00	72.00	162.57		116.83	0.616	73.12	76.51	2.8	1.7	2
Junction 3b - Northern Jct	Watford Road (South)	209.45	209.45	78.59		363.33	0.576	209.75	218.88	1.7	1.4	5
	Watford Road (North)	195.00	195.00	47.51		248.60	0.784	207.23	240.83	16.2	4.0	2
	Tippendell Lane	125.00	125.00	172.21		133.83	0.934	125.26	82.53	16.8	16.5	11

Junctions 9

ARCADY 9 - Roundabout Module

Filename: J3 - Watford Rd_Chiswell_Tippendell + Ped - PM (391 dwellings) v1.j9
Path: \\gc-did-fs01\CAD\2021\8210856\(6)_Transport\(1)_Planning\(4)_Modelling\Feb 2022 - TA
Report generation date: 17/03/2022 19:53:13

Summary of junction performance

	PM				
	Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)
Existing Layout - 2016 - Surveyed					
Junction 3a - Watford Road (North)	1.4	7.53	0.57	A	11.58
Junction 3a - Watford Road (South)	3.2	15.54	0.77	C	
Junction 3a - Chiswell Green Lane	0.4	10.81	0.28	B	
Junction 3b - Watford Road (South)	0.9	4.25	0.48	A	20.45
Junction 3b - Watford Road (North)	6.0	27.67	0.87	D	
Junction 3b - Tippendell Lane	3.2	46.29	0.79	E	
Existing Layout - 2027 - Without Development					
Junction 3a - Watford Road (North)	1.7	8.28	0.62	A	15.48
Junction 3a - Watford Road (South)	5.1	22.73	0.86	C	
Junction 3a - Chiswell Green Lane	0.5	12.79	0.33	B	
Junction 3b - Watford Road (South)	1.1	4.73	0.53	A	42.02
Junction 3b - Watford Road (North)	13.8	56.72	0.96	F	
Junction 3b - Tippendell Lane	7.9	107.98	0.94	F	
Existing Layout - 2027 - With Development					
Junction 3a - Watford Road (North)	1.9	9.11	0.67	A	21.00
Junction 3a - Watford Road (South)	8.0	33.53	0.91	D	
Junction 3a - Chiswell Green Lane	0.7	15.21	0.43	C	
Junction 3b - Watford Road (South)	1.2	4.89	0.55	A	77.91
Junction 3b - Watford Road (North)	20.0	77.03	1.00	F	
Junction 3b - Tippendell Lane	20.7	285.66	1.09	F	

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. Junction LOS and Junction Delay are demand-weighted averages.

File summary

File Description

Title	Watford Rd / Tippendell Ln / Chiswell Green Ln (391 Dwellings)
Location	Chiswell Green
Site number	J3
Date	21/11/2021
Version	
Status	(new file)
Identifier	
Client	CALA Homes & Redington Capital
Jobnumber	8210856
Enumerator	UK\DKemp
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	mph	Veh	Veh	perTimeSegment	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 period length (min)	Time segment length (min)	Run automatically
D2	2016 - Surveyed	PM	DIRECT	17:00	18:00	60	15	✓
D4	2027 - Without Development	PM	DIRECT	17:00	18:00	60	15	✓
D6	2027 - With Development	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

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

Existing Layout - 2016 - Surveyed, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 3a	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 B have 93% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	Junction 3b	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 B have 85% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 3a - Watford Road (North)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 3b - Watford Road (South)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Junction 3a	Mini-roundabout	A, B, C	11.58	B
2	Junction 3b	Mini-roundabout	A, B, C	20.45	C

Junction Network Options

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

Arms

Arms

Junction	Arm	Name	Description
Junction 3a	A	Watford Road (North)	
	B	Watford Road (South)	
	C	Chiswell Green Lane	
Junction 3b	A	Watford Road (South)	
	B	Watford Road (North)	
	C	Tippendell Lane	

Mini Roundabout Geometry

Junction	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
Junction 3a	Watford Road (North)	5.20	5.20	5.62	2.4	15.70	17.70	0.0	✓
	Watford Road (South)	4.40	4.40	5.00	3.0	13.89	10.25	0.0	✓
	Chiswell Green Lane	3.50	3.50	4.50	1.9	14.00	8.50	0.0	
Junction 3b	Watford Road (South)	5.20	5.20	6.50	7.4	18.80	19.90	0.0	✓
	Watford Road (North)	3.80	3.80	4.60	0.4	12.80	8.20	0.0	✓
	Tippendell Lane	3.40	3.40	5.60	2.6	15.20	9.20	0.0	

Zebra Crossings

Junction	Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
Junction 3a	Watford Road (North)	4.00	4.00	✓	Distance	5.00	3.57	5.00	3.57

Slope / Intercept / Capacity

Arm Intercept Adjustments

Junction	Arm	Type	Reason	Percentage intercept adjustment (%)
Junction 3a	Watford Road (North)	None		
	Watford Road (South)	None		
	Chiswell Green Lane	None		
Junction 3b	Watford Road (South)	None		
	Watford Road (North)	Percentage		114.00
	Tippendell Lane	Percentage		86.00

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/TS)
Junction 3a	Watford Road (North)	0.669	321.940
	Watford Road (South)	0.548	259.564
	Chiswell Green Lane	0.624	220.161
Junction 3b	Watford Road (South)	0.883	437.644
	Watford Road (North)	0.514	250.892
	Tippendell Lane	0.629	180.655

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 period length (min)	Time segment length (min)	Run automatically
D2	2016 - Surveyed	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/TS)	Flow multiplier (%)	Internal storage space (PCU)
Junction 3a	Watford Road (North)	2	A	Simple (vertical queueing)	Normal	0.00	100.00	
Junction 3b	Watford Road (South)	1	A	Simple (vertical queueing)	Normal	0.00	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Junction 3a	Watford Road (North)	✓			
	Watford Road (South)		DIRECT	✓	100.000
	Chiswell Green Lane		DIRECT	✓	100.000
Junction 3b	Watford Road (South)	✓			
	Watford Road (North)		DIRECT	✓	100.000
	Tippendell Lane		DIRECT	✓	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type
Junction 3a	Watford Road (North)	[DIRECT]
	Watford Road (South)	
	Chiswell Green Lane	
Junction 3b	Watford Road (South)	
	Watford Road (North)	
	Tippendell Lane	

Origin-Destination Data

Junction 3a 17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	150.00	25.00
	Watford Road (South)	174.00	0.00	12.00
	Chiswell Green Lane	16.00	12.00	0.00

Junction 3a 17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	152.00	21.00
	Watford Road (South)	156.00	0.00	15.00
	Chiswell Green Lane	17.00	10.00	0.00

Junction 3a 17:30 - 17:45

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	158.00	19.00
	Watford Road (South)	184.00	0.00	9.00
	Chiswell Green Lane	14.00	8.00	0.00

Junction 3a 17:45 - 18:00

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	136.00	18.00
	Watford Road (South)	159.00	0.00	12.00
	Chiswell Green Lane	21.00	12.00	0.00

Junction 3b 17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	164.00	26.00
	Watford Road (North)	151.00	0.00	53.00
	Tippendell Lane	24.00	39.00	0.00

Junction 3b 17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	153.00	20.00
	Watford Road (North)	149.00	0.00	58.00
	Tippendell Lane	24.00	42.00	0.00

Junction 3b 17:30 - 17:45

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	176.00	22.00
	Watford Road (North)	153.00	0.00	40.00
	Tippendell Lane	24.00	32.00	0.00

Junction 3b 17:45 - 18:00

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	156.00	24.00
	Watford Road (North)	133.00	0.00	43.00
	Tippendell Lane	21.00	30.00	0.00

Vehicle Mix

Junction 3a 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	21	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3a 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3a 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3a 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3b 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	1	0	0
	Tippendell Lane	20	3	0

Junction 3b 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	2
	Tippendell Lane	0	2	0

Junction 3b 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	1	0	0
	Tippendell Lane	0	0	0

Junction 3b 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	1	0	2
	Tippendell Lane	0	3	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
Junction 3a	Watford Road (North)	0.57	7.53	1.4	A	163.84	655.36
	Watford Road (South)	0.77	15.54	3.2	C	180.25	721.00
	Chiswell Green Lane	0.28	10.81	0.4	B	27.50	110.00
Junction 3b	Watford Road (South)	0.48	4.25	0.9	A	184.67	738.69
	Watford Road (North)	0.87	27.67	6.0	D	195.00	780.02
	Tippendell Lane	0.79	46.29	3.2	E	58.99	235.98

Main Results for each time segment

17:00 - 17:15

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	149.10	149.10	11.86	10.00	266.11	0.560	147.85	187.17	0.0	1.3	7.534	A
	Watford Road (South)	186.00	186.00	21.12		247.98	0.750	183.17	138.59	0.0	2.8	13.365	B
	Chiswell Green Lane	28.00	28.00	171.36		112.73	0.248	27.67	32.94	0.0	0.3	10.542	B
Junction 3b	Watford Road (South)	187.17	187.17	37.12		403.87	0.463	186.31	169.90	0.0	0.9	4.122	A
	Watford Road (North)	204.00	204.00	25.50		236.03	0.864	198.68	197.93	0.0	5.3	21.725	C
	Tippendell Lane	63.00	63.00	147.06		79.66	0.791	59.96	77.11	0.0	3.0	41.046	E

17:15 - 17:30

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	172.81	172.81	10.03	10.00	312.02	0.553	172.78	173.49	1.3	1.2	6.467	A
	Watford Road (South)	171.00	171.00	21.00		245.84	0.696	171.46	161.80	2.8	2.4	12.189	B
	Chiswell Green Lane	27.00	27.00	156.48		121.13	0.223	27.03	35.98	0.3	0.3	9.570	A
Junction 3b	Watford Road (South)	173.49	173.49	41.84		396.44	0.438	173.56	172.61	0.9	0.8	4.039	A
	Watford Road (North)	207.00	207.00	20.08		237.56	0.872	206.33	195.32	5.3	6.0	27.672	D
	Tippendell Lane	66.00	66.00	148.62		84.80	0.775	65.82	77.79	3.0	3.2	46.290	E

17:30 - 17:45

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	177.73	177.73	8.01	10.00	313.78	0.566	177.69	197.09	1.2	1.3	6.609	A
	Watford Road (South)	193.00	193.00	19.09		249.06	0.775	192.14	166.61	2.4	3.2	15.537	C
	Chiswell Green Lane	22.00	22.00	183.08		105.32	0.209	22.02	28.15	0.3	0.3	10.807	B
Junction 3b	Watford Road (South)	197.12	197.12	32.75		408.66	0.482	196.98	177.79	0.8	0.9	4.249	A
	Watford Road (North)	193.00	193.00	21.89		237.72	0.812	194.30	207.84	6.0	4.7	21.407	C
	Tippendell Lane	56.00	56.00	153.59		83.01	0.674	56.95	62.60	3.2	2.3	35.743	E

17:45 - 18:00

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	155.79	155.79	11.96	10.00	311.19	0.501	156.06	180.91	1.3	1.0	5.814	A
	Watford Road (South)	171.00	171.00	18.23		249.57	0.685	171.97	149.79	3.2	2.3	11.744	B
	Chiswell Green Lane	33.00	33.00	159.98		119.87	0.275	32.89	30.22	0.3	0.4	10.335	B
Junction 3b	Watford Road (South)	180.91	180.91	30.56		409.87	0.441	181.04	155.82	0.9	0.8	3.936	A
	Watford Road (North)	176.00	176.00	24.12		235.59	0.747	177.58	187.48	4.7	3.1	15.922	C
	Tippendell Lane	51.00	51.00	134.36		93.70	0.545	52.01	67.33	2.3	1.3	22.075	C

Existing Layout - 2027 - Without Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 3a	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 B have 93% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	Junction 3b	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 B have 85% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 3a - Watford Road (North)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 3b - Watford Road (South)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Junction 3a	Mini-roundabout	A, B, C	15.48	C
2	Junction 3b	Mini-roundabout	A, B, C	42.02	E

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 period length (min)	Time segment length (min)	Run automatically
D4	2027 - Without Development	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/TS)	Flow multiplier (%)	Internal storage space (PCU)
Junction 3a	Watford Road (North)	2	A	Simple (vertical queueing)	Normal	0.00	100.00	
Junction 3b	Watford Road (South)	1	A	Simple (vertical queueing)	Normal	0.00	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Junction 3a	Watford Road (North)	✓			
	Watford Road (South)		DIRECT	✓	100.000
	Chiswell Green Lane		DIRECT	✓	100.000
Junction 3b	Watford Road (South)	✓			
	Watford Road (North)		DIRECT	✓	100.000
	Tippendell Lane		DIRECT	✓	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type
Junction 3a	Watford Road (North)	[DIRECT]
	Watford Road (South)	
	Chiswell Green Lane	
Junction 3b	Watford Road (South)	
	Watford Road (North)	
	Tippendell Lane	

Origin-Destination Data

Junction 3a 17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	165.00	27.00
	Watford Road (South)	191.00	0.00	13.00
	Chiswell Green Lane	18.00	13.00	0.00

Junction 3a 17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	167.00	23.00
	Watford Road (South)	171.00	0.00	16.00
	Chiswell Green Lane	19.00	11.00	0.00

Junction 3a 17:30 - 17:45

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	173.00	21.00
	Watford Road (South)	202.00	0.00	10.00
	Chiswell Green Lane	15.00	9.00	0.00

Junction 3a 17:45 - 18:00

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	149.00	20.00
	Watford Road (South)	175.00	0.00	13.00
	Chiswell Green Lane	23.00	13.00	0.00

Junction 3b 17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	180.00	29.00
	Watford Road (North)	166.00	0.00	58.00
	Tippendell Lane	26.00	43.00	0.00

Junction 3b 17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	168.00	22.00
	Watford Road (North)	164.00	0.00	64.00
	Tippendell Lane	26.00	46.00	0.00

Junction 3b 17:30 - 17:45

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	193.00	24.00
	Watford Road (North)	168.00	0.00	44.00
	Tippendell Lane	26.00	35.00	0.00

Junction 3b 17:45 - 18:00

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	171.00	26.00
	Watford Road (North)	146.00	0.00	47.00
	Tippendell Lane	23.00	33.00	0.00

Vehicle Mix

Junction 3a 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	21	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3a 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3a 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3a 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3b 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	1	0	0
	Tippendell Lane	20	3	0

Junction 3b 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	2
	Tippendell Lane	0	2	0

Junction 3b 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	1	0	0
	Tippendell Lane	0	0	0

Junction 3b 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	1	0	2
	Tippendell Lane	0	3	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
Junction 3a	Watford Road (North)	0.62	8.28	1.7	A	179.48	717.92
	Watford Road (South)	0.86	22.73	5.1	C	197.75	790.99
	Chiswell Green Lane	0.33	12.79	0.5	B	30.25	121.00
Junction 3b	Watford Road (South)	0.53	4.73	1.1	A	202.66	810.63
	Watford Road (North)	0.96	56.72	13.8	F	214.26	857.04
	Tippendell Lane	0.94	107.98	7.9	F	64.49	257.96

Main Results for each time segment

17:00 - 17:15

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	159.61	159.61	12.82	10.00	265.45	0.601	158.14	204.82	0.0	1.5	8.278	A
	Watford Road (South)	204.00	204.00	22.24		247.37	0.825	199.80	148.72	0.0	4.2	17.627	C
	Chiswell Green Lane	31.00	31.00	187.07		102.77	0.302	30.58	34.97	0.0	0.4	12.397	B
Junction 3b	Watford Road (South)	204.82	204.82	39.18		402.00	0.510	203.79	182.09	0.0	1.0	4.517	A
	Watford Road (North)	224.00	224.00	28.28		234.61	0.955	213.75	214.70	0.0	10.2	34.105	D
	Tippendell Lane	69.00	69.00	158.41		73.12	0.944	62.87	83.62	0.0	6.1	68.172	F

17:15 - 17:30

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	187.57	187.57	11.04	10.00	311.32	0.602	187.49	190.82	1.5	1.5	7.269	A
	Watford Road (South)	187.00	187.00	22.73		244.91	0.764	187.78	175.80	4.2	3.4	16.010	C
	Chiswell Green Lane	30.00	30.00	171.81		111.33	0.269	30.05	38.71	0.4	0.4	11.081	B
Junction 3b	Watford Road (South)	190.81	190.81	44.68		393.89	0.484	190.89	187.12	1.0	0.9	4.435	A
	Watford Road (North)	228.00	228.00	22.13		236.54	0.964	224.54	213.44	10.2	13.7	56.724	F
	Tippendell Lane	72.00	72.00	161.73		76.35	0.936	70.07	84.93	6.1	8.0	107.980	F

17:30 - 17:45

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	195.68	195.68	9.01	10.00	313.12	0.625	195.54	215.24	1.5	1.6	7.641	A
	Watford Road (South)	212.00	212.00	21.19		247.90	0.855	210.26	183.37	3.4	5.1	22.732	C
	Chiswell Green Lane	24.00	24.00	200.22		94.45	0.254	24.03	31.24	0.4	0.3	12.785	B
Junction 3b	Watford Road (South)	215.27	215.27	36.43		405.36	0.531	215.10	195.73	0.9	1.1	4.726	A
	Watford Road (North)	212.00	212.00	23.79		236.72	0.895	215.29	227.73	13.7	10.4	46.075	E
	Tippendell Lane	61.00	61.00	169.59		72.79	0.837	62.57	69.50	8.0	6.5	96.563	F

17:45 - 18:00

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	175.16	175.16	12.96	10.00	310.53	0.564	175.48	199.73	1.6	1.3	6.682	A
	Watford Road (South)	188.00	188.00	20.75		248.18	0.758	189.84	167.68	5.1	3.3	15.889	C
	Chiswell Green Lane	36.00	36.00	176.82		109.19	0.330	35.86	33.76	0.3	0.5	12.250	B
Junction 3b	Watford Road (South)	199.73	199.73	35.41		405.53	0.493	199.87	175.20	1.1	1.0	4.380	A
	Watford Road (North)	193.00	193.00	26.36		234.48	0.823	198.26	208.92	10.4	5.2	27.381	D
	Tippendell Lane	56.00	56.00	150.35		83.80	0.670	60.25	74.27	6.5	2.2	43.126	E

Existing Layout - 2027 - With Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 3a	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 B have 91% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	Junction 3b	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 B have 84% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 3a - Watford Road (North)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 3b - Watford Road (South)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Junction 3a	Mini-roundabout	A, B, C	21.00	C
2	Junction 3b	Mini-roundabout	A, B, C	77.91	F

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 period length (min)	Time segment length (min)	Run automatically
D6	2027 - With Development	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/TS)	Flow multiplier (%)	Internal storage space (PCU)
Junction 3a	Watford Road (North)	2	A	Simple (vertical queueing)	Normal	0.00	100.00	
Junction 3b	Watford Road (South)	1	A	Simple (vertical queueing)	Normal	0.00	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Junction 3a	Watford Road (North)	✓			
	Watford Road (South)		DIRECT	✓	100.000
	Chiswell Green Lane		DIRECT	✓	100.000
Junction 3b	Watford Road (South)	✓			
	Watford Road (North)		DIRECT	✓	100.000
	Tippendell Lane		DIRECT	✓	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type
Junction 3a	Watford Road (North)	[DIRECT]
	Watford Road (South)	
	Chiswell Green Lane	
Junction 3b	Watford Road (South)	
	Watford Road (North)	
	Tippendell Lane	

Origin-Destination Data

Junction 3a 17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	171.00	35.00
	Watford Road (South)	194.00	0.00	21.00
	Chiswell Green Lane	23.00	18.00	0.00

Junction 3a 17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	173.00	31.00
	Watford Road (South)	174.00	0.00	24.00
	Chiswell Green Lane	24.00	16.00	0.00

Junction 3a 17:30 - 17:45

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	179.00	29.00
	Watford Road (South)	205.00	0.00	18.00
	Chiswell Green Lane	20.00	14.00	0.00

Junction 3a 17:45 - 18:00

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	155.00	28.00
	Watford Road (South)	178.00	0.00	21.00
	Chiswell Green Lane	28.00	18.00	0.00

Junction 3b 17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	183.00	33.00
	Watford Road (North)	172.00	0.00	58.00
	Tippendell Lane	34.00	43.00	0.00

Junction 3b 17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	171.00	26.00
	Watford Road (North)	170.00	0.00	64.00
	Tippendell Lane	34.00	46.00	0.00

Junction 3b 17:30 - 17:45

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	196.00	28.00
	Watford Road (North)	174.00	0.00	44.00
	Tippendell Lane	34.00	35.00	0.00

Junction 3b 17:45 - 18:00

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	174.00	30.00
	Watford Road (North)	152.00	0.00	47.00
	Tippendell Lane	31.00	33.00	0.00

Vehicle Mix

Junction 3a 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	21	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3a 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3a 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3a 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3b 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	1	0	0
	Tippendell Lane	20	3	0

Junction 3b 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	2
	Tippendell Lane	0	2	0

Junction 3b 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	1	0	0
	Tippendell Lane	0	0	0

Junction 3b 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	1	0	2
	Tippendell Lane	0	3	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
Junction 3a	Watford Road (North)	0.67	9.11	1.9	A	192.28	769.11
	Watford Road (South)	0.91	33.53	8.0	D	208.75	834.99
	Chiswell Green Lane	0.43	15.21	0.7	C	40.25	161.00
Junction 3b	Watford Road (South)	0.55	4.89	1.2	A	210.28	841.11
	Watford Road (North)	1.00	77.03	20.0	F	220.26	881.05
	Tippendell Lane	1.09	285.66	20.7	F	72.44	289.76

Main Results for each time segment

17:00 - 17:15

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	168.59	168.59	17.71	10.00	264.06	0.638	166.87	211.24	0.0	1.7	9.108	A
	Watford Road (South)	215.00	215.00	28.35		244.01	0.881	209.03	156.23	0.0	6.0	22.842	C
	Chiswell Green Lane	41.00	41.00	188.61		101.72	0.403	40.34	48.77	0.0	0.7	14.516	B
Junction 3b	Watford Road (South)	211.24	211.24	36.28		404.63	0.522	210.16	190.62	0.0	1.1	4.599	A
	Watford Road (North)	230.00	230.00	32.11		232.64	0.989	216.54	214.33	0.0	13.5	41.111	E
	Tippendell Lane	77.00	77.00	161.94		70.37	1.094	64.97	86.71	0.0	12.0	107.807	F

17:15 - 17:30

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	197.44	197.44	16.05	10.00	308.06	0.640	197.34	199.00	1.7	1.8	8.127	A
	Watford Road (South)	198.00	198.00	30.03		241.04	0.822	198.96	183.37	6.0	5.0	22.013	C
	Chiswell Green Lane	40.00	40.00	174.99		109.24	0.366	40.07	54.00	0.7	0.6	13.027	B
Junction 3b	Watford Road (South)	198.97	198.97	41.20		397.03	0.501	199.04	196.35	1.1	1.0	4.548	A
	Watford Road (North)	234.00	234.00	26.29		234.46	0.998	227.54	213.94	13.5	19.9	77.027	F
	Tippendell Lane	80.00	80.00	165.59		73.39	1.073	71.96	88.24	12.0	20.0	227.039	F

17:30 - 17:45

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	206.80	206.80	14.00	10.00	309.91	0.667	206.60	222.06	1.8	2.0	8.689	A
	Watford Road (South)	223.00	223.00	28.83		243.70	0.915	220.01	191.77	5.0	8.0	33.530	D
	Chiswell Green Lane	34.00	34.00	202.05		93.21	0.365	34.01	46.79	0.6	0.6	15.210	C
Junction 3b	Watford Road (South)	222.11	222.11	35.67		405.93	0.547	221.93	206.83	1.0	1.2	4.885	A
	Watford Road (North)	218.00	218.00	27.75		234.67	0.929	220.91	229.84	19.9	17.0	72.192	F
	Tippendell Lane	69.00	69.00	174.87		69.32	0.992	67.62	73.78	20.0	21.4	285.664	F

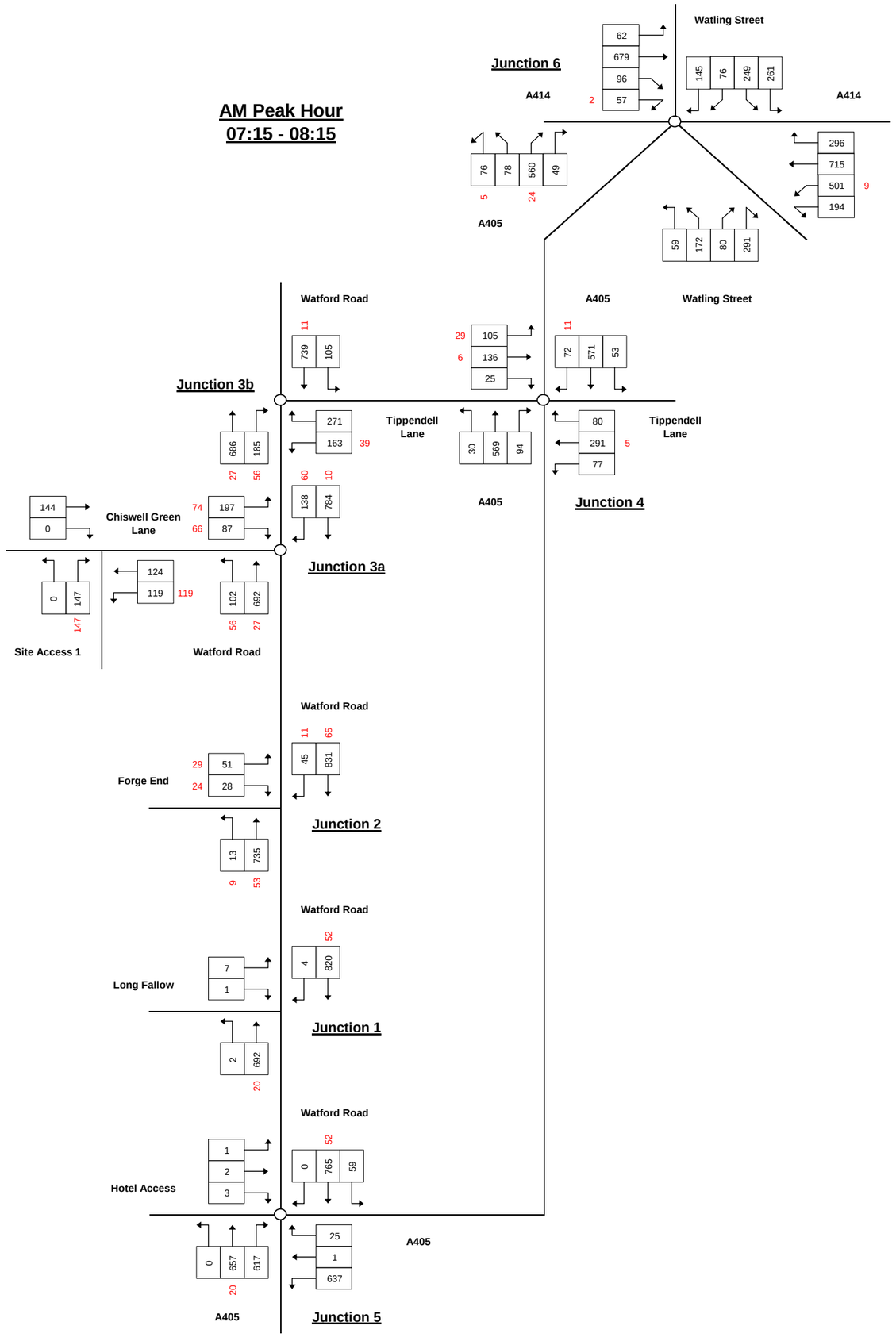
17:45 - 18:00

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	196.40	196.40	17.95	10.00	307.33	0.639	196.55	208.80	2.0	1.8	8.139	A
	Watford Road (South)	199.00	199.00	30.05		243.09	0.819	202.02	184.45	8.0	5.0	23.275	C
	Chiswell Green Lane	46.00	46.00	180.90		106.53	0.432	45.84	51.17	0.6	0.7	14.785	B
Junction 3b	Watford Road (South)	208.80	208.80	38.25		403.12	0.518	208.90	196.46	1.2	1.1	4.638	A
	Watford Road (North)	199.00	199.00	30.69		232.33	0.857	208.95	216.47	17.0	7.1	44.499	E
	Tippendell Lane	64.00	64.00	160.17		78.02	0.824	74.54	79.47	21.4	10.9	203.315	F

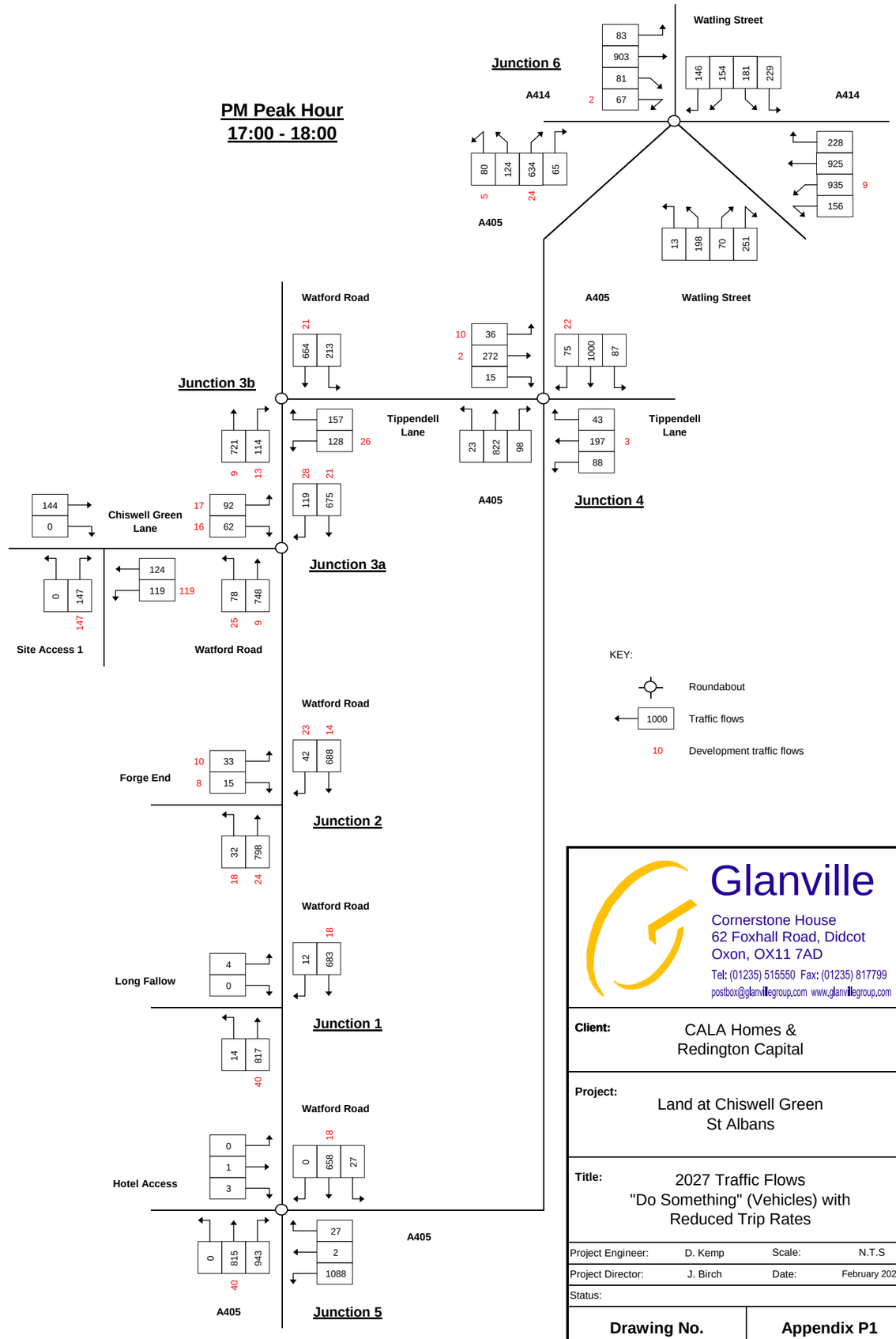
Appendix P

Traffic Flow Diagrams –
Reduced Trip Rates Sensitivity Test

AM Peak Hour
07:15 - 08:15



PM Peak Hour
17:00 - 18:00



KEY:

Roundabout

1000 Traffic flows

10 Development traffic flows

Glanville

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Client:	CALA Homes & Redington Capital
Project:	Land at Chiswell Green St Albans
Title:	2027 Traffic Flows "Do Something" (Vehicles) with Reduced Trip Rates

Project Engineer:	D. Kemp	Scale:	N.T.S
Project Director:	J. Birch	Date:	February 2022
Status:			

Drawing No. **Appendix P1**

Appendix Q

PICADY Outputs –
Reduced Trip Rates Sensitivity Test

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.2.5947

Filename: J1 - Watford Rd_Long Fallow (reduced trips) v1.j9
Path: \\gc-did-fs01\CAD\2021\8210856\(6)_Transport\(1)_Planning\(4)_Modelling\Feb 2022 - TA\Red Trip Gen
Report generation date: 03/03/2022 16:58:14

Summary of junction performance

	AM					PM				
	Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)
Existing Layout - 2016 - Surveyed										
Stream B-C	0.0	6.81	0.02	A	0.06	0.0	7.05	0.01	A	0.08
Stream B-A	0.0	13.24	0.01	B		0.0	0.00	0.00	A	
Stream C-AB	0.0	6.79	0.01	A		0.0	7.44	0.03	A	
Existing Layout - 2027 - Without Development										
Stream B-C	0.0	7.04	0.02	A	0.06	0.0	7.33	0.01	A	0.08
Stream B-A	0.0	14.73	0.02	B		0.0	0.00	0.00	A	
Stream C-AB	0.0	7.00	0.02	A		0.0	7.74	0.03	A	
Existing Layout - 2027 - With Development										
Stream B-C	0.0	7.12	0.02	A	0.06	0.0	7.49	0.01	A	0.08
Stream B-A	0.0	15.56	0.02	C		0.0	0.00	0.00	A	
Stream C-AB	0.0	7.07	0.02	A		0.0	7.91	0.03	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

File summary

File Description

Title	Watford Rd_Long Fallow - Reduced Trip Rates
Location	Chiswell Green
Site number	J1
Date	20/02/2022
Version	v1
Status	(new file)
Identifier	
Client	CALA Homes & Redington Capital
Jobnumber	8210856
Enumerator	UK/DKemp
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	mph	Veh	Veh	perTimeSegment	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 period length (min)	Time segment length (min)	Run automatically
D1	2016 - Surveyed	AM	DIRECT	08:00	09:00	60	15	✓
D2	2016 - Surveyed	PM	DIRECT	17:00	18:00	60	15	✓
D3	2027 - Without Development	AM	DIRECT	08:00	09:00	60	15	✓
D4	2027 - Without Development	PM	DIRECT	17:00	18:00	60	15	✓
D5	2027 - With Development	AM	DIRECT	08:00	09:00	60	15	✓
D6	2027 - With Development	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

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

Existing Layout - 2016 - Surveyed, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Watford Road / Long Fallow	T-Junction	Two-way	0.06	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Watford Road (South)		Major
B	Long Fallow		Minor
C	Watford Road (North)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
Watford Road (North)	6.90		✓	2.90	127.0	✓	7.00

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)
Long Fallow	One lane plus flare	10.00	5.50	3.60	3.10	3.10	✓	1.00	35	43

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	124.331	0.087	0.220	0.138	0.314
1	B-C	178.394	0.105	0.266	-	-
1	C-B	174.210	0.259	0.259	-	-

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 period length (min)	Time segment length (min)	Run automatically
D1	2016 - Surveyed	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Long Fallow		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	0.00	169.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	160.00	0.00	0.00

08:15 - 08:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	1.00	152.00
	Long Fallow	0.00	0.00	2.00
	Watford Road (North)	177.00	2.00	0.00

08:30 - 08:45

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	0.00	152.00
	Long Fallow	1.00	0.00	0.00
	Watford Road (North)	209.00	1.00	0.00

08:45 - 09:00

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	1.00	140.00
	Long Fallow	0.00	0.00	3.00
	Watford Road (North)	155.00	1.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:15 - 08:30

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:30 - 08:45

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	0	0	0

Heavy Vehicle Percentages

08:45 - 09:00

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.02	6.81	0.0	A	1.50	6.00
B-A	0.01	13.24	0.0	B	0.25	1.00
C-AB	0.01	6.79	0.0	A	1.00	4.00
C-A					175.25	701.00
A-B					0.50	2.00
A-C					153.25	613.00

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	133.05	0.008	0.99	0.0	0.0	6.814	A
B-A	0.00	0.00	64.42	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	259.86	0.000	0.00	0.0	0.0	0.000	A
C-A	160.00	160.00			160.00				
A-B	0.00	0.00			0.00				
A-C	169.00	169.00			169.00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	2.00	2.00	137.91	0.015	1.99	0.0	0.0	6.621	A
B-A	0.00	0.00	65.44	0.000	0.00	0.0	0.0	0.000	A
C-AB	2.00	2.00	134.52	0.015	1.99	0.0	0.0	6.790	A
C-A	177.00	177.00			177.00				
A-B	1.00	1.00			1.00				
A-C	152.00	152.00			152.00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	0.00	0.00	121.96	0.000	0.01	0.0	0.0	0.000	A
B-A	1.00	1.00	68.93	0.015	0.99	0.0	0.0	13.242	B
C-AB	1.00	1.00	134.38	0.007	1.01	0.0	0.0	6.747	A
C-A	209.00	209.00			209.00				
A-B	0.00	0.00			0.00				
A-C	152.00	152.00			152.00				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	3.00	3.00	140.72	0.021	2.98	0.0	0.0	6.534	A
B-A	0.00	0.00	71.15	0.000	0.01	0.0	0.0	0.000	A
C-AB	1.00	1.00	137.27	0.007	1.00	0.0	0.0	6.606	A
C-A	155.00	155.00			155.00				
A-B	1.00	1.00			1.00				
A-C	140.00	140.00			140.00				

Existing Layout - 2016 - Surveyed, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Watford Road / Long Fallow	T-Junction	Two-way	0.08	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 period length (min)	Time segment length (min)	Run automatically
D2	2016 - Surveyed	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Long Fallow		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	4.00	186.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	151.00	4.00	0.00

17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	3.00	166.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	159.00	3.00	0.00

Demand (Veh/TS)

17:30 - 17:45

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	4.00	184.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	152.00	3.00	0.00

Demand (Veh/TS)

17:45 - 18:00

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	2.00	172.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	144.00	1.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

17:00 - 17:15

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:15 - 17:30

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:30 - 17:45

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:45 - 18:00

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.01	7.05	0.0	A	1.00	4.00
B-A	0.00	0.00	0.0	A	0.00	0.00
C-AB	0.03	7.44	0.0	A	2.75	11.00
C-A					151.50	606.00
A-B					3.25	13.00
A-C					177.00	708.00

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	128.56	0.008	0.99	0.0	0.0	7.054	A
B-A	0.00	0.00	60.70	0.000	0.00	0.0	0.0	0.000	A
C-AB	4.00	4.00	124.92	0.032	3.97	0.0	0.0	7.439	A
C-A	151.00	151.00			151.00				
A-B	4.00	4.00			4.00				
A-C	186.00	186.00			186.00				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	133.98	0.007	1.00	0.0	0.0	6.769	A
B-A	0.00	0.00	64.37	0.000	0.00	0.0	0.0	0.000	A
C-AB	3.00	3.00	130.37	0.023	3.01	0.0	0.0	7.066	A
C-A	159.00	159.00			159.00				
A-B	3.00	3.00			3.00				
A-C	166.00	166.00			166.00				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	129.09	0.008	1.00	0.0	0.0	7.025	A
B-A	0.00	0.00	61.31	0.000	0.00	0.0	0.0	0.000	A
C-AB	3.00	3.00	125.44	0.024	3.00	0.0	0.0	7.349	A
C-A	152.00	152.00			152.00				
A-B	4.00	4.00			4.00				
A-C	184.00	184.00			184.00				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	132.03	0.008	1.00	0.0	0.0	6.867	A
B-A	0.00	0.00	65.49	0.000	0.00	0.0	0.0	0.000	A
C-AB	1.00	1.00	128.62	0.008	1.02	0.0	0.0	7.055	A
C-A	144.00	144.00			144.00				
A-B	2.00	2.00			2.00				
A-C	172.00	172.00			172.00				

Existing Layout - 2027 - Without Development, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Watford Road / Long Fallow	T-Junction	Two-way	0.06	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2027 - Without Development	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Long Fallow		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

08:00 - 08:15

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	0.00	185.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	175.00	0.00	0.00

Demand (Veh/TS)

08:15 - 08:30

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	1.00	167.00
	Long Fallow	0.00	0.00	2.00
	Watford Road (North)	194.00	2.00	0.00

08:30 - 08:45

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	0.00	167.00
	Long Fallow	1.00	0.00	0.00
	Watford Road (North)	229.00	1.00	0.00

08:45 - 09:00

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	1.00	153.00
	Long Fallow	0.00	0.00	3.00
	Watford Road (North)	170.00	1.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	0	0	0

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.02	7.04	0.0	A	1.50	6.00
B-A	0.02	14.73	0.0	B	0.25	1.00
C-AB	0.02	7.00	0.0	A	1.00	4.00
C-A					192.00	768.00
A-B					0.50	2.00
A-C					168.00	672.00

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	128.76	0.008	0.99	0.0	0.0	7.043	A
B-A	0.00	0.00	58.76	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	251.47	0.000	0.00	0.0	0.0	0.000	A
C-A	175.00	175.00			175.00				
A-B	0.00	0.00			0.00				
A-C	185.00	185.00			185.00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	2.00	2.00	133.93	0.015	1.99	0.0	0.0	6.821	A
B-A	0.00	0.00	59.76	0.000	0.00	0.0	0.0	0.000	A
C-AB	2.00	2.00	130.63	0.015	1.98	0.0	0.0	6.996	A
C-A	194.00	194.00			194.00				
A-B	1.00	1.00			1.00				
A-C	167.00	167.00			167.00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	0.00	0.00	118.34	0.000	0.02	0.0	0.0	0.000	A
B-A	1.00	1.00	62.07	0.016	0.98	0.0	0.0	14.729	B
C-AB	1.00	1.00	130.45	0.008	1.01	0.0	0.0	6.954	A
C-A	229.00	229.00			229.00				
A-B	0.00	0.00			0.00				
A-C	167.00	167.00			167.00				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	3.00	3.00	137.23	0.022	2.98	0.0	0.0	6.704	A
B-A	0.00	0.00	66.17	0.000	0.02	0.0	0.0	0.000	A
C-AB	1.00	1.00	133.86	0.007	1.00	0.0	0.0	6.775	A
C-A	170.00	170.00			170.00				
A-B	1.00	1.00			1.00				
A-C	153.00	153.00			153.00				

Existing Layout - 2027 - Without Development, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Watford Road / Long Fallow	T-Junction	Two-way	0.08	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 period length (min)	Time segment length (min)	Run automatically
D4	2027 - Without Development	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Long Fallow		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	4.00	204.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	166.00	4.00	0.00

17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	3.00	182.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	175.00	3.00	0.00

Demand (Veh/TS)

17:30 - 17:45

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	4.00	202.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	167.00	3.00	0.00

Demand (Veh/TS)

17:45 - 18:00

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	2.00	189.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	158.00	1.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

17:00 - 17:15

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:15 - 17:30

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:30 - 17:45

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:45 - 18:00

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.01	7.33	0.0	A	1.00	4.00
B-A	0.00	0.00	0.0	A	0.00	0.00
C-AB	0.03	7.74	0.0	A	2.75	11.00
C-A					166.50	666.00
A-B					3.25	13.00
A-C					194.25	777.00

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	123.78	0.008	0.99	0.0	0.0	7.329	A
B-A	0.00	0.00	54.64	0.000	0.00	0.0	0.0	0.000	A
C-AB	4.00	4.00	120.25	0.033	3.97	0.0	0.0	7.738	A
C-A	166.00	166.00			166.00				
A-B	4.00	4.00			4.00				
A-C	204.00	204.00			204.00				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	129.73	0.008	1.00	0.0	0.0	6.993	A
B-A	0.00	0.00	58.62	0.000	0.00	0.0	0.0	0.000	A
C-AB	3.00	3.00	126.22	0.024	3.01	0.0	0.0	7.307	A
C-A	175.00	175.00			175.00				
A-B	3.00	3.00			3.00				
A-C	182.00	182.00			182.00				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	124.31	0.008	1.00	0.0	0.0	7.297	A
B-A	0.00	0.00	55.25	0.000	0.00	0.0	0.0	0.000	A
C-AB	3.00	3.00	120.77	0.025	3.00	0.0	0.0	7.641	A
C-A	167.00	167.00			167.00				
A-B	4.00	4.00			4.00				
A-C	202.00	202.00			202.00				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	127.47	0.008	1.00	0.0	0.0	7.115	A
B-A	0.00	0.00	59.76	0.000	0.00	0.0	0.0	0.000	A
C-AB	1.00	1.00	124.17	0.008	1.02	0.0	0.0	7.310	A
C-A	158.00	158.00			158.00				
A-B	2.00	2.00			2.00				
A-C	189.00	189.00			189.00				

Existing Layout - 2027 - With Development, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Watford Road / Long Fallow	T-Junction	Two-way	0.06	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2027 - With Development	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Long Fallow		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

08:00 - 08:15

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	0.00	190.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	188.00	0.00	0.00

Demand (Veh/TS)

08:15 - 08:30

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	1.00	172.00
	Long Fallow	0.00	0.00	2.00
	Watford Road (North)	207.00	2.00	0.00

08:30 - 08:45

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	0.00	172.00
	Long Fallow	1.00	0.00	0.00
	Watford Road (North)	242.00	1.00	0.00

08:45 - 09:00

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	1.00	158.00
	Long Fallow	0.00	0.00	3.00
	Watford Road (North)	183.00	1.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

08:30 - 08:45

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	0	0	0

08:45 - 09:00

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.02	7.12	0.0	A	1.50	6.00
B-A	0.02	15.56	0.0	C	0.25	1.00
C-AB	0.02	7.07	0.0	A	1.00	4.00
C-A					205.00	820.00
A-B					0.50	2.00
A-C					173.00	692.00

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	127.42	0.008	0.99	0.0	0.0	7.118	A
B-A	0.00	0.00	55.84	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	248.85	0.000	0.00	0.0	0.0	0.000	A
C-A	188.00	188.00			188.00				
A-B	0.00	0.00			0.00				
A-C	190.00	190.00			190.00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	2.00	2.00	132.60	0.015	1.99	0.0	0.0	6.890	A
B-A	0.00	0.00	56.84	0.000	0.00	0.0	0.0	0.000	A
C-AB	2.00	2.00	129.33	0.015	1.98	0.0	0.0	7.067	A
C-A	207.00	207.00			207.00				
A-B	1.00	1.00			1.00				
A-C	172.00	172.00			172.00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	0.00	0.00	117.13	0.000	0.02	0.0	0.0	0.000	A
B-A	1.00	1.00	58.80	0.017	0.98	0.0	0.0	15.563	C
C-AB	1.00	1.00	129.14	0.008	1.01	0.0	0.0	7.026	A
C-A	242.00	242.00			242.00				
A-B	0.00	0.00			0.00				
A-C	172.00	172.00			172.00				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	3.00	3.00	135.89	0.022	2.98	0.0	0.0	6.771	A
B-A	0.00	0.00	63.24	0.000	0.02	0.0	0.0	0.000	A
C-AB	1.00	1.00	132.55	0.008	1.00	0.0	0.0	6.840	A
C-A	183.00	183.00			183.00				
A-B	1.00	1.00			1.00				
A-C	158.00	158.00			158.00				

Existing Layout - 2027 - With Development, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Watford Road / Long Fallow	T-Junction	Two-way	0.08	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 period length (min)	Time segment length (min)	Run automatically
D6	2027 - With Development	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Long Fallow		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	4.00	214.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	171.00	4.00	0.00

17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	3.00	192.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	180.00	3.00	0.00

17:30 - 17:45

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	4.00	212.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	172.00	3.00	0.00

17:45 - 18:00

Demand (Veh/TS)

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0.00	2.00	199.00
	Long Fallow	0.00	0.00	1.00
	Watford Road (North)	163.00	1.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

17:30 - 17:45

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	0
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

17:45 - 18:00

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Long Fallow	Watford Road (North)
From	Watford Road (South)	0	0	1
	Long Fallow	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.01	7.49	0.0	A	1.00	4.00
B-A	0.00	0.00	0.0	A	0.00	0.00
C-AB	0.03	7.91	0.0	A	2.75	11.00
C-A					171.50	686.00
A-B					3.25	13.00
A-C					204.25	817.00

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	121.12	0.008	0.99	0.0	0.0	7.491	A
B-A	0.00	0.00	51.75	0.000	0.00	0.0	0.0	0.000	A
C-AB	4.00	4.00	117.66	0.034	3.97	0.0	0.0	7.913	A
C-A	171.00	171.00			171.00				
A-B	4.00	4.00			4.00				
A-C	214.00	214.00			214.00				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	127.07	0.008	1.00	0.0	0.0	7.140	A
B-A	0.00	0.00	55.72	0.000	0.00	0.0	0.0	0.000	A
C-AB	3.00	3.00	123.62	0.024	3.01	0.0	0.0	7.464	A
C-A	180.00	180.00			180.00				
A-B	3.00	3.00			3.00				
A-C	192.00	192.00			192.00				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	121.66	0.008	1.00	0.0	0.0	7.458	A
B-A	0.00	0.00	52.35	0.000	0.00	0.0	0.0	0.000	A
C-AB	3.00	3.00	118.18	0.025	3.00	0.0	0.0	7.813	A
C-A	172.00	172.00			172.00				
A-B	4.00	4.00			4.00				
A-C	212.00	212.00			212.00				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	1.00	1.00	124.79	0.008	1.00	0.0	0.0	7.272	A
B-A	0.00	0.00	56.83	0.000	0.00	0.0	0.0	0.000	A
C-AB	1.00	1.00	121.55	0.008	1.02	0.0	0.0	7.469	A
C-A	163.00	163.00			163.00				
A-B	2.00	2.00			2.00				
A-C	199.00	199.00			199.00				

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.2.5947

For sales and distribution information, program advice and maintenance, contact TRL:
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Filename: J2 - Watford Rd_Forge End (reduced trips) v1.j9
Path: \\gc-did-fs01\CAD\2021\8210856\(6)_Transport\(1)_Planning\(4)_Modelling\Feb 2022 - TA\Red Trip Gen
Report generation date: 03/03/2022 17:24:37

Summary of junction performance

	AM					PM				
	Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)
Existing Layout - 2016 - Surveyed										
Stream B-C	0.1	7.01	0.07	A	0.48	0.1	7.37	0.05	A	0.33
Stream B-A	0.0	14.32	0.03	B		0.0	14.22	0.03	B	
Stream C-AB	0.3	4.41	0.14	A		0.1	4.28	0.08	A	
Existing Layout - 2027 - Without Development										
Stream B-C	0.1	7.27	0.07	A	0.53	0.1	7.72	0.06	A	0.35
Stream B-A	0.0	15.94	0.03	C		0.0	15.85	0.03	C	
Stream C-AB	0.5	4.38	0.16	A		0.2	4.16	0.10	A	
Existing Layout - 2027 - With Development										
Stream B-C	0.2	8.42	0.14	A	1.11	0.1	8.24	0.09	A	0.75
Stream B-A	0.1	19.34	0.13	C		0.1	17.38	0.07	C	
Stream C-AB	0.8	4.55	0.22	A		0.6	4.55	0.19	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

File summary

File Description

Title	Watford Road / Forge End - Reduced Trip Rates
Location	Chiswell Green
Site number	J2
Date	20/02/2022
Version	
Status	(new file)
Identifier	
Client	CALA Homes & Redlington Capital
Jobnumber	8210856
Enumerator	UK\DKemp
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	mph	Veh	Veh	perTimeSegment	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 period length (min)	Time segment length (min)	Run automatically
D1	2016 - Surveyed	AM	DIRECT	08:00	09:00	60	15	✓
D2	2016 - Surveyed	PM	DIRECT	17:00	18:00	60	15	✓
D3	2027 - Without Development	AM	DIRECT	08:00	09:00	60	15	✓
D4	2027 - Without Development	PM	DIRECT	17:00	18:00	60	15	✓
D5	2027 - With Development	AM	DIRECT	08:00	09:00	60	15	✓
D6	2027 - With Development	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

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

Existing Layout - 2016 - Surveyed, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Junction 2	T-Junction	Two-way	0.48	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Watford Road (South)		Major
B	Forge End		Minor
C	Watford Road (North)		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)
Watford Road (North)	7.75			109.0	✓	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)
Forge End	One lane plus flare	10.00	4.60	2.80	2.80	2.80		1.00	38	85

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	136.508	0.092	0.232	0.146	0.332
1	B-C	174.335	0.099	0.250	-	-
1	C-B	159.272	0.228	0.228	-	-

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 period length (min)	Time segment length (min)	Run automatically
D1	2016 - Surveyed	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Forge End		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	1.00	152.00
	Forge End	1.00	0.00	2.00
	Watford Road (North)	158.00	4.00	0.00

08:15 - 08:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	1.00	162.00
	Forge End	0.00	0.00	6.00
	Watford Road (North)	182.00	8.00	0.00

08:30 - 08:45

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	0.00	157.00
	Forge End	1.00	0.00	9.00
	Watford Road (North)	203.00	8.00	0.00

08:45 - 09:00

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	2.00	151.00
	Forge End	2.00	0.00	3.00
	Watford Road (North)	156.00	11.00	0.00

Vehicle Mix

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:15 - 08:30

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	1
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:30 - 08:45

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:45 - 09:00

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	1
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.07	7.01	0.1	A	5.00	20.00
B-A	0.03	14.32	0.0	B	1.00	4.00
C-AB	0.14	4.41	0.3	A	26.25	104.99
C-A					156.25	625.01
A-B					1.00	4.00
A-C					155.50	622.00

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	2.00	2.00	135.85	0.015	1.99	0.0	0.0	6.723	A
B-A	1.00	1.00	76.47	0.013	0.99	0.0	0.0	11.921	B
C-AB	11.87	11.87	238.27	0.050	11.80	0.0	0.1	3.973	A
C-A	150.13	150.13			150.13				
A-B	1.00	1.00			1.00				
A-C	152.00	152.00			152.00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	6.00	6.00	137.34	0.044	5.97	0.0	0.0	6.848	A
B-A	0.00	0.00	63.77	0.000	0.01	0.0	0.0	0.000	A
C-AB	28.29	28.29	254.04	0.111	28.12	0.1	0.2	3.984	A
C-A	161.71	161.71			161.71				
A-B	1.00	1.00			1.00				
A-C	162.00	162.00			162.00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	9.00	9.00	137.43	0.065	8.98	0.0	0.1	7.006	A
B-A	1.00	1.00	63.84	0.016	0.98	0.0	0.0	14.316	B
C-AB	32.39	32.39	270.34	0.120	32.36	0.2	0.3	3.784	A
C-A	178.61	178.61			178.61				
A-B	0.00	0.00			0.00				
A-C	157.00	157.00			157.00				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	3.00	3.00	142.98	0.021	3.05	0.1	0.0	6.433	A
B-A	2.00	2.00	75.23	0.027	1.99	0.0	0.0	12.286	B
C-AB	32.44	32.44	236.75	0.137	32.37	0.3	0.3	4.413	A
C-A	134.56	134.56			134.56				
A-B	2.00	2.00			2.00				
A-C	151.00	151.00			151.00				

Existing Layout - 2016 - Surveyed, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Junction 2	T-Junction	Two-way	0.33	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 period length (min)	Time segment length (min)	Run automatically
D2	2016 - Surveyed	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Forge End		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	4.00	186.00
	Forge End	2.00	0.00	5.00
	Watford Road (North)	151.00	2.00	0.00

17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	4.00	166.00
	Forge End	2.00	0.00	6.00
	Watford Road (North)	159.00	6.00	0.00

17:30 - 17:45

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	2.00	186.00
	Forge End	1.00	0.00	7.00
	Watford Road (North)	162.00	4.00	0.00

17:45 - 18:00

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	3.00	167.00
	Forge End	1.00	0.00	3.00
	Watford Road (North)	142.00	5.00	0.00

Vehicle Mix

17:00 - 17:15

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

17:15 - 17:30

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

17:30 - 17:45

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	1
	Forge End	0	0	0
	Watford Road (North)	1	0	0

17:45 - 18:00

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.05	7.37	0.1	A	5.25	21.00
B-A	0.03	14.22	0.0	B	1.50	6.00
C-AB	0.08	4.28	0.1	A	12.71	50.85
C-A					145.04	580.15
A-B					3.25	13.00
A-C					176.25	705.00

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	5.00	5.00	127.13	0.039	4.96	0.0	0.0	7.365	A
B-A	2.00	2.00	69.25	0.029	1.97	0.0	0.0	13.372	B
C-AB	5.94	5.94	227.65	0.026	5.91	0.0	0.0	4.059	A
C-A	147.06	147.06			147.06				
A-B	4.00	4.00			4.00				
A-C	186.00	186.00			186.00				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	6.00	6.00	132.51	0.045	5.99	0.0	0.0	7.112	A
B-A	2.00	2.00	70.80	0.028	2.00	0.0	0.0	13.083	B
C-AB	18.33	18.33	236.51	0.078	18.22	0.0	0.1	4.122	A
C-A	146.67	146.67			146.67				
A-B	4.00	4.00			4.00				
A-C	166.00	166.00			166.00				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	7.00	7.00	129.07	0.054	6.99	0.0	0.1	7.371	A
B-A	1.00	1.00	64.31	0.016	1.01	0.0	0.0	14.220	B
C-AB	12.88	12.88	235.87	0.055	12.94	0.1	0.1	4.039	A
C-A	153.12	153.12			153.12				
A-B	2.00	2.00			2.00				
A-C	186.00	186.00			186.00				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	3.00	3.00	132.88	0.023	3.03	0.1	0.0	6.934	A
B-A	1.00	1.00	73.41	0.014	1.00	0.0	0.0	12.429	B
C-AB	13.70	13.70	224.14	0.061	13.68	0.1	0.1	4.278	A
C-A	133.30	133.30			133.30				
A-B	3.00	3.00			3.00				
A-C	167.00	167.00			167.00				

Existing Layout - 2027 - Without Development, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Junction 2	T-Junction	Two-way	0.53	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 period length (min)	Time segment length (min)	Run automatically
D3	2027 - Without Development	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Forge End		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

08:00 - 08:15

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	1.00	167.00
	Forge End	1.00	0.00	2.00
	Watford Road (North)	173.00	4.00	0.00

Demand (Veh/TS)

08:15 - 08:30

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	1.00	178.00
	Forge End	0.00	0.00	7.00
	Watford Road (North)	199.00	9.00	0.00

Demand (Veh/TS)

08:30 - 08:45

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	0.00	172.00
	Forge End	1.00	0.00	10.00
	Watford Road (North)	222.00	9.00	0.00

Demand (Veh/TS)

08:45 - 09:00

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	2.00	165.00
	Forge End	2.00	0.00	3.00
	Watford Road (North)	171.00	12.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

08:00 - 08:15

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:15 - 08:30

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	1
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:30 - 08:45

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:45 - 09:00

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	1
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.07	7.27	0.1	A	5.50	22.00
B-A	0.03	15.94	0.0	C	1.00	4.00
C-AB	0.16	4.38	0.5	A	33.05	132.18
C-A					166.70	666.82
A-B					1.00	4.00
A-C					170.50	682.00

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	2.00	2.00	132.08	0.015	1.98	0.0	0.0	6.917	A
B-A	1.00	1.00	70.78	0.014	0.99	0.0	0.0	12.891	B
C-AB	13.35	13.35	246.99	0.054	13.27	0.0	0.1	3.850	A
C-A	163.65	163.65			163.65				
A-B	1.00	1.00			1.00				
A-C	167.00	167.00			167.00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	7.00	7.00	133.19	0.053	6.96	0.0	0.1	7.128	A
B-A	0.00	0.00	57.66	0.000	0.01	0.0	0.0	0.000	A
C-AB	36.50	36.50	264.36	0.138	36.23	0.1	0.4	3.947	A
C-A	171.50	171.50			171.50				
A-B	1.00	1.00			1.00				
A-C	178.00	178.00			178.00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	10.00	10.00	133.67	0.075	9.97	0.1	0.1	7.273	A
B-A	1.00	1.00	57.42	0.017	0.98	0.0	0.0	15.941	C
C-AB	42.53	42.53	282.42	0.151	42.47	0.4	0.4	3.758	A
C-A	188.47	188.47			188.47				
A-B	0.00	0.00			0.00				
A-C	172.00	172.00			172.00				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	3.00	3.00	139.20	0.022	3.06	0.1	0.0	6.612	A
B-A	2.00	2.00	69.29	0.029	1.99	0.0	0.0	13.372	B
C-AB	39.80	39.80	245.68	0.162	39.74	0.4	0.5	4.382	A
C-A	143.20	143.20			143.20				
A-B	2.00	2.00			2.00				
A-C	165.00	165.00			165.00				

Existing Layout - 2027 - Without Development, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Junction 2	T-Junction	Two-way	0.35	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 period length (min)	Time segment length (min)	Run automatically
D4	2027 - Without Development	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Forge End		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	4.00	204.00
	Forge End	2.00	0.00	5.00
	Watford Road (North)	166.00	2.00	0.00

17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	4.00	182.00
	Forge End	2.00	0.00	7.00
	Watford Road (North)	175.00	7.00	0.00

Demand (Veh/TS)

17:30 - 17:45

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	2.00	204.00
	Forge End	1.00	0.00	8.00
	Watford Road (North)	178.00	4.00	0.00

Demand (Veh/TS)

17:45 - 18:00

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	3.00	183.00
	Forge End	1.00	0.00	3.00
	Watford Road (North)	156.00	5.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

17:00 - 17:15

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:15 - 17:30

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:30 - 17:45

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	1
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:45 - 18:00

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.06	7.72	0.1	A	5.75	23.00
B-A	0.03	15.85	0.0	C	1.50	6.00
C-AB	0.10	4.16	0.2	A	15.28	61.12
C-A					157.97	631.88
A-B					3.25	13.00
A-C					193.25	773.00

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	5.00	5.00	122.56	0.041	4.96	0.0	0.0	7.651	A
B-A	2.00	2.00	62.92	0.032	1.97	0.0	0.0	14.757	B
C-AB	6.73	6.73	236.17	0.029	6.69	0.0	0.0	3.922	A
C-A	161.27	161.27			161.27				
A-B	4.00	4.00			4.00				
A-C	204.00	204.00			204.00				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	7.00	7.00	128.73	0.054	6.99	0.0	0.1	7.392	A
B-A	2.00	2.00	64.10	0.031	2.00	0.0	0.0	14.495	B
C-AB	24.29	24.29	245.97	0.099	24.12	0.0	0.2	4.057	A
C-A	157.71	157.71			157.71				
A-B	4.00	4.00			4.00				
A-C	182.00	182.00			182.00				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	8.00	8.00	124.56	0.064	7.99	0.1	0.1	7.719	A
B-A	1.00	1.00	57.83	0.017	1.01	0.0	0.0	15.846	C
C-AB	14.76	14.76	245.25	0.060	14.87	0.2	0.1	3.908	A
C-A	167.24	167.24			167.24				
A-B	2.00	2.00			2.00				
A-C	204.00	204.00			204.00				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	3.00	3.00	128.84	0.023	3.04	0.1	0.0	7.158	A
B-A	1.00	1.00	67.73	0.015	1.00	0.0	0.0	13.487	B
C-AB	15.33	15.33	231.99	0.066	15.32	0.1	0.1	4.157	A
C-A	145.67	145.67			145.67				
A-B	3.00	3.00			3.00				
A-C	183.00	183.00			183.00				

Existing Layout - 2027 - With Development, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Junction 2	T-Junction	Two-way	1.11	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 period length (min)	Time segment length (min)	Run automatically
D5	2027 - With Development	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Forge End		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

08:00 - 08:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	3.00	180.00
	Forge End	7.00	0.00	9.00
	Watford Road (North)	189.00	7.00	0.00

08:15 - 08:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	3.00	191.00
	Forge End	6.00	0.00	14.00
	Watford Road (North)	215.00	12.00	0.00

Demand (Veh/TS)

08:30 - 08:45

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	2.00	185.00
	Forge End	7.00	0.00	17.00
	Watford Road (North)	238.00	12.00	0.00

Demand (Veh/TS)

08:45 - 09:00

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	4.00	178.00
	Forge End	8.00	0.00	10.00
	Watford Road (North)	187.00	15.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

08:00 - 08:15

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:15 - 08:30

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	1
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:30 - 08:45

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

08:45 - 09:00

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	1
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.14	8.42	0.2	A	12.50	50.00
B-A	0.13	19.34	0.1	C	7.00	28.00
C-AB	0.22	4.55	0.8	A	51.10	204.40
C-A					167.65	670.60
A-B					3.00	12.00
A-C					183.50	734.00

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	9.00	9.00	131.64	0.068	8.93	0.0	0.1	7.329	A
B-A	7.00	7.00	65.69	0.107	6.88	0.0	0.1	15.282	C
C-AB	26.55	26.55	256.68	0.103	26.33	0.0	0.2	3.907	A
C-A	169.45	169.45			169.45				
A-B	3.00	3.00			3.00				
A-C	180.00	180.00			180.00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	14.00	14.00	122.55	0.114	13.95	0.1	0.1	8.282	A
B-A	6.00	6.00	55.21	0.109	6.00	0.1	0.1	18.288	C
C-AB	55.75	55.75	274.41	0.203	55.27	0.2	0.7	4.114	A
C-A	171.25	171.25			171.25				
A-B	3.00	3.00			3.00				
A-C	191.00	191.00			191.00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	17.00	17.00	123.82	0.137	16.97	0.1	0.2	8.421	A
B-A	7.00	7.00	53.49	0.131	6.97	0.1	0.1	19.336	C
C-AB	65.38	65.38	292.73	0.223	65.23	0.7	0.8	3.973	A
C-A	184.62	184.62			184.62				
A-B	2.00	2.00			2.00				
A-C	185.00	185.00			185.00				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	10.00	10.00	130.51	0.077	10.07	0.2	0.1	7.479	A
B-A	8.00	8.00	63.16	0.127	8.00	0.1	0.1	16.317	C
C-AB	56.72	56.72	255.60	0.222	56.80	0.8	0.8	4.552	A
C-A	145.27	145.27			145.27				
A-B	4.00	4.00			4.00				
A-C	178.00	178.00			178.00				

Existing Layout - 2027 - With Development, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Junction 2	T-Junction	Two-way	0.75	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 period length (min)	Time segment length (min)	Run automatically
D6	2027 - With Development	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Watford Road (South)		DIRECT	✓	100.000
Forge End		DIRECT	✓	100.000
Watford Road (North)		DIRECT	✓	100.000

Origin-Destination Data

17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	9.00	210.00
	Forge End	4.00	0.00	8.00
	Watford Road (North)	170.00	8.00	0.00

17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	9.00	188.00
	Forge End	4.00	0.00	10.00
	Watford Road (North)	179.00	13.00	0.00

Demand (Veh/TS)

17:30 - 17:45

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	7.00	210.00
	Forge End	3.00	0.00	11.00
	Watford Road (North)	182.00	10.00	0.00

Demand (Veh/TS)

17:45 - 18:00

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0.00	8.00	189.00
	Forge End	3.00	0.00	6.00
	Watford Road (North)	160.00	11.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

17:00 - 17:15

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:15 - 17:30

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:30 - 17:45

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	1
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Heavy Vehicle Percentages

17:45 - 18:00

		To		
		Watford Road (South)	Forge End	Watford Road (North)
From	Watford Road (South)	0	0	0
	Forge End	0	0	0
	Watford Road (North)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.09	8.24	0.1	A	8.75	35.00
B-A	0.07	17.38	0.1	C	3.50	14.00
C-AB	0.19	4.55	0.6	A	37.34	149.34
C-A					145.91	583.66
A-B					8.25	33.00
A-C					199.25	797.00

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	8.00	8.00	118.94	0.067	7.93	0.0	0.1	8.102	A
B-A	4.00	4.00	59.15	0.068	3.93	0.0	0.1	16.279	C
C-AB	28.11	28.11	237.62	0.118	27.84	0.0	0.3	4.290	A
C-A	149.89	149.89			149.89				
A-B	9.00	9.00			9.00				
A-C	210.00	210.00			210.00				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	10.00	10.00	124.85	0.080	9.99	0.1	0.1	7.834	A
B-A	4.00	4.00	60.58	0.066	4.00	0.1	0.1	15.907	C
C-AB	47.24	47.24	247.55	0.191	46.89	0.3	0.6	4.494	A
C-A	144.76	144.75			144.76				
A-B	9.00	9.00			9.00				
A-C	188.00	188.00			188.00				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	11.00	11.00	120.22	0.092	10.99	0.1	0.1	8.238	A
B-A	3.00	3.00	54.80	0.055	3.01	0.1	0.1	17.385	C
C-AB	38.68	38.68	246.99	0.157	38.85	0.6	0.5	4.339	A
C-A	153.32	153.32			153.32				
A-B	7.00	7.00			7.00				
A-C	210.00	210.00			210.00				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	6.00	6.00	124.85	0.048	6.05	0.1	0.1	7.580	A
B-A	3.00	3.00	64.53	0.046	3.01	0.1	0.0	14.630	B
C-AB	35.30	35.30	233.53	0.151	35.33	0.5	0.4	4.553	A
C-A	135.70	135.70			135.70				
A-B	8.00	8.00			8.00				
A-C	189.00	189.00			189.00				

Junctions 9

ARCADY 9 - Roundabout Module

Filename: J3 - Watford Rd_Chiswell_Tippendell + Ped - AM (reduced trips) v1.j9
Path: \\gc-did-fs01\CAD\2021\8210856\(6)_Transport\(1)_Planning\(4)_Modelling\Feb 2022 - TA\Red Trip Gen
Report generation date: 03/03/2022 14:09:19

Summary of junction performance

	AM				
	Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)
Existing Layout - 2016 - Surveyed					
Junction 3a - Southern Jct - Watford Road (North)	2.3	9.53	0.70	A	10.39
Junction 3a - Southern Jct - Watford Road (South)	2.1	11.32	0.68	B	
Junction 3a - Southern Jct - Chiswell Green Lane	0.4	10.85	0.28	B	
Junction 3b - Northern Jct - Watford Road (South)	1.0	4.79	0.51	A	18.00
Junction 3b - Northern Jct - Watford Road (North)	5.4	22.58	0.86	C	
Junction 3b - Northern Jct - Tippendell Lane	3.6	34.50	0.81	D	
Existing Layout - 2027 - Without Development					
Junction 3a - Southern Jct - Watford Road (North)	3.0	11.67	0.76	B	12.84
Junction 3a - Southern Jct - Watford Road (South)	2.9	14.24	0.75	B	
Junction 3a - Southern Jct - Chiswell Green Lane	0.5	12.87	0.34	B	
Junction 3b - Northern Jct - Watford Road (South)	1.3	5.43	0.56	A	32.70
Junction 3b - Northern Jct - Watford Road (North)	10.7	39.16	0.95	E	
Junction 3b - Northern Jct - Tippendell Lane	9.1	72.93	0.97	F	
Existing Layout - 2027 - With Development					
Junction 3a - Southern Jct - Watford Road (North)	4.1	15.32	0.82	C	20.97
Junction 3a - Southern Jct - Watford Road (South)	5.4	24.42	0.86	C	
Junction 3a - Southern Jct - Chiswell Green Lane	2.2	29.10	0.71	D	
Junction 3b - Northern Jct - Watford Road (South)	1.6	6.32	0.62	A	45.71
Junction 3b - Northern Jct - Watford Road (North)	15.6	53.68	0.99	F	
Junction 3b - Northern Jct - Tippendell Lane	16.2	110.03	1.06	F	

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. Junction LOS and Junction Delay are demand-weighted averages.

File summary

File Description

Title	Watford Rd / Tippendell Ln / Chiswell Green Ln - Reduced Trip Rates
Location	Chiswell Green
Site number	J3
Date	20/02/2022
Version	
Status	(new file)
Identifier	
Client	CALA Homes & Redlington Capital
Jobnumber	8210856
Enumerator	UK\DKemp
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	mph	Veh	Veh	perTimeSegment	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 period length (min)	Time segment length (min)	Run automatically
D1	2016 - Surveyed	AM	DIRECT	08:00	09:00	60	15	✓
D3	2027 - Without Development	AM	DIRECT	08:00	09:00	60	15	✓
D5	2027 - With Development	AM	DIRECT	08:00	09:00	60	15	✓

Analysis Set Details

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

Existing Layout - 2016 - Surveyed, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 3a - Southern Jct	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 B have 90% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	Junction 3b - Northern Jct	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 B have 82% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 3a - Southern Jct - Watford Road (North)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 3b - Northern Jct - Watford Road (South)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Junction 3a - Southern Jct	Mini-roundabout	A, B, C	10.39	B
2	Junction 3b - Northern Jct	Mini-roundabout	A, B, C	18.00	C

Junction Network Options

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

Arms

Arms

Junction	Arm	Name	Description
Junction 3a - Southern Jct	A	Watford Road (North)	
	B	Watford Road (South)	
	C	Chiswell Green Lane	
Junction 3b - Northern Jct	A	Watford Road (South)	
	B	Watford Road (North)	
	C	Tippendell Lane	

Mini Roundabout Geometry

Junction	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
Junction 3a - Southern Jct	Watford Road (North)	5.20	5.20	5.62	2.4	15.70	17.70	0.0	✓
	Watford Road (South)	4.40	4.40	5.00	3.0	13.89	10.25	0.0	✓
	Chiswell Green Lane	3.50	3.50	4.50	1.9	14.00	8.50	0.0	
Junction 3b - Northern Jct	Watford Road (South)	5.20	5.20	6.50	7.4	18.80	19.90	0.0	✓
	Watford Road (North)	3.80	3.80	4.60	0.4	12.80	8.20	0.0	✓
	Tippendell Lane	3.40	3.40	5.60	2.6	15.20	9.20	0.0	

Zebra Crossings

Junction	Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
Junction 3a - Southern Jct	Watford Road (North)	4.00	4.00	✓	Distance	5.00	3.57	5.00	3.57

Slope / Intercept / Capacity

Arm Intercept Adjustments

Junction	Arm	Type	Reason	Percentage intercept adjustment (%)
Junction 3a - Southern Jct	Watford Road (North)	None		
	Watford Road (South)	None		
	Chiswell Green Lane	None		
Junction 3b - Northern Jct	Watford Road (South)	None		
	Watford Road (North)	Percentage		125.00
	Tippendell Lane	Percentage		117.00

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/TS)
Junction 3a - Southern Jct	Watford Road (North)	0.669	321.940
	Watford Road (South)	0.548	259.564
	Chiswell Green Lane	0.624	220.161
Junction 3b - Northern Jct	Watford Road (South)	0.883	437.644
	Watford Road (North)	0.514	275.100
	Tippendell Lane	0.629	245.774

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 period length (min)	Time segment length (min)	Run automatically
D1	2016 - Surveyed	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/TS)	Flow multiplier (%)	Internal storage space (PCU)
Junction 3a - Southern Jct	Watford Road (North)	2	A	Simple (vertical queueing)	Normal	0.00	100.00	
Junction 3b - Northern Jct	Watford Road (South)	1	A	Simple (vertical queueing)	Normal	0.00	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Junction 3a - Southern Jct	Watford Road (North)	✓			
	Watford Road (South)		DIRECT	✓	100.000
	Chiswell Green Lane		DIRECT	✓	100.000
Junction 3b - Northern Jct	Watford Road (South)	✓			
	Watford Road (North)		DIRECT	✓	100.000
	Tippendell Lane		DIRECT	✓	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type
Junction 3a - Southern Jct	Watford Road (North)	[DIRECT]
	Watford Road (South)	
	Chiswell Green Lane	
Junction 3b - Northern Jct	Watford Road (South)	
	Watford Road (North)	
	Tippendell Lane	

Origin-Destination Data

Junction 3a - Southern Jct 08:00 - 08:15

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	156.00	16.00
	Watford Road (South)	145.00	0.00	9.00
	Chiswell Green Lane	33.00	3.00	0.00

Junction 3a - Southern Jct 08:15 - 08:30

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	185.00	18.00
	Watford Road (South)	165.00	0.00	4.00
	Chiswell Green Lane	28.00	5.00	0.00

Junction 3a - Southern Jct 08:30 - 08:45

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	207.00	18.00
	Watford Road (South)	156.00	0.00	10.00
	Chiswell Green Lane	29.00	5.00	0.00

Junction 3a - Southern Jct 08:45 - 09:00

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	158.00	19.00
	Watford Road (South)	141.00	0.00	19.00
	Chiswell Green Lane	22.00	6.00	0.00

Junction 3b - Northern Jct 08:00 - 08:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	148.00	30.00
	Watford Road (North)	148.00	0.00	17.00
	Tippendell Lane	24.00	47.00	0.00

Junction 3b - Northern Jct 08:15 - 08:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	162.00	31.00
	Watford Road (North)	174.00	0.00	24.00
	Tippendell Lane	29.00	60.00	0.00

Junction 3b - Northern Jct 08:30 - 08:45

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	155.00	30.00
	Watford Road (North)	198.00	0.00	24.00
	Tippendell Lane	27.00	69.00	0.00

Junction 3b - Northern Jct 08:45 - 09:00

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	136.00	27.00
	Watford Road (North)	144.00	0.00	31.00
	Tippendell Lane	33.00	71.00	0.00

Vehicle Mix

Junction 3a - Southern Jct 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	0	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3a - Southern Jct 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3a - Southern Jct 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3a - Southern Jct 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3b - Northern Jct 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	0	0	0
	Tippendell Lane	0	0	0

Junction 3b - Northern Jct 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	4
	Tippendell Lane	0	2	0

Junction 3b - Northern Jct 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	0
	Tippendell Lane	0	3	0

Junction 3b - Northern Jct 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	0
	Tippendell Lane	0	3	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
Junction 3a - Southern Jct	Watford Road (North)	0.70	9.53	2.3	A	193.53	774.10
	Watford Road (South)	0.68	11.32	2.1	B	162.25	649.01
	Chiswell Green Lane	0.28	10.85	0.4	B	32.75	131.00
Junction 3b - Northern Jct	Watford Road (South)	0.51	4.79	1.0	A	179.30	717.19
	Watford Road (North)	0.86	22.58	5.4	C	190.00	760.00
	Tippendell Lane	0.81	34.50	3.6	D	90.00	360.01

Main Results for each time segment

08:00 - 08:15

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	170.20	170.20	2.97	10.00	319.95	0.532	169.08	176.20	0.0	1.1	5.
	Watford Road (South)	154.00	154.00	15.73		250.94	0.614	152.45	156.32	0.0	1.5	9.
	Chiswell Green Lane	36.00	36.00	143.54		130.14	0.277	35.62	24.64	0.0	0.4	9.
Junction 3b - Northern Jct	Watford Road (South)	176.20	176.20	46.44		396.62	0.444	175.40	170.20	0.0	0.8	4.
	Watford Road (North)	165.00	165.00	29.56		259.90	0.635	163.31	192.29	0.0	1.7	9.
	Tippendell Lane	71.00	71.00	146.48		153.62	0.462	70.16	46.39	0.0	0.8	10

08:15 - 08:30

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	201.26	201.26	4.97	10.00	315.75	0.637	200.66	192.44	1.1	1.7	7.
	Watford Road (South)	169.00	169.00	17.80		247.41	0.683	168.47	187.84	1.5	2.1	11
	Chiswell Green Lane	33.00	33.00	164.43		115.93	0.285	32.98	21.84	0.4	0.4	10
Junction 3b - Northern Jct	Watford Road (South)	192.45	192.45	59.31		381.03	0.505	192.24	201.38	0.8	1.0	4.
	Watford Road (North)	198.00	198.00	30.88		255.76	0.774	196.49	220.66	1.7	3.2	14
	Tippendell Lane	89.00	89.00	172.70		134.26	0.663	87.99	54.67	0.8	1.9	19

08:30 - 08:45

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	222.50	222.50	5.00	10.00	315.69	0.705	221.91	185.09	1.7	2.3	9.
	Watford Road (South)	166.00	166.00	17.77		247.49	0.671	166.02	209.15	2.1	2.1	11
	Chiswell Green Lane	34.00	34.00	156.09		121.24	0.280	34.00	27.69	0.4	0.4	10
Junction 3b - Northern Jct	Watford Road (South)	185.10	185.10	67.68		372.95	0.496	185.12	222.59	1.0	1.0	4.
	Watford Road (North)	222.00	222.00	30.02		257.35	0.863	219.80	222.78	3.2	5.4	22
	Tippendell Lane	96.00	96.00	195.99		118.70	0.809	94.28	53.82	1.9	3.6	34

08:45 - 09:00

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	180.14	180.14	6.00	10.00	315.11	0.572	181.10	163.39	2.3	1.4	6.
	Watford Road (South)	160.00	160.00	19.38		246.76	0.648	160.17	167.72	2.1	1.9	10
	Chiswell Green Lane	28.00	28.00	141.27		130.77	0.214	28.12	38.28	0.4	0.3	8.
Junction 3b - Northern Jct	Watford Road (South)	163.44	163.44	71.90		369.14	0.443	163.63	180.28	1.0	0.8	4.
	Watford Road (North)	175.00	175.00	27.10		259.02	0.676	178.25	208.43	5.4	2.2	11
	Tippendell Lane	104.00	104.00	147.05		149.27	0.697	105.13	58.30	3.6	2.4	20

Existing Layout - 2027 - Without Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 3a - Southern Jct	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 B have 90% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	Junction 3b - Northern Jct	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 B have 83% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 3a - Southern Jct - Watford Road (North)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 3b - Northern Jct - Watford Road (South)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Junction 3a - Southern Jct	Mini-roundabout	A, B, C	12.84	B
2	Junction 3b - Northern Jct	Mini-roundabout	A, B, C	32.70	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 period length (min)	Time segment length (min)	Run automatically
D3	2027 - Without Development	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/TS)	Flow multiplier (%)	Internal storage space (PCU)
Junction 3a - Southern Jct	Watford Road (North)	2	A	Simple (vertical queueing)	Normal	0.00	100.00	
Junction 3b - Northern Jct	Watford Road (South)	1	A	Simple (vertical queueing)	Normal	0.00	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Junction 3a - Southern Jct	Watford Road (North)	✓			
	Watford Road (South)		DIRECT	✓	100.000
	Chiswell Green Lane		DIRECT	✓	100.000
Junction 3b - Northern Jct	Watford Road (South)	✓			
	Watford Road (North)		DIRECT	✓	100.000
	Tippendell Lane		DIRECT	✓	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type
Junction 3a - Southern Jct	Watford Road (North)	[DIRECT]
	Watford Road (South)	
	Chiswell Green Lane	
Junction 3b - Northern Jct	Watford Road (South)	
	Watford Road (North)	
	Tippendell Lane	

Origin-Destination Data

Junction 3a - Southern Jct 08:00 - 08:15

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	171.00	18.00
	Watford Road (South)	159.00	0.00	10.00
	Chiswell Green Lane	36.00	3.00	0.00

Junction 3a - Southern Jct 08:15 - 08:30

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	203.00	20.00
	Watford Road (South)	181.00	0.00	4.00
	Chiswell Green Lane	31.00	5.00	0.00

Junction 3a - Southern Jct 08:30 - 08:45

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	227.00	20.00
	Watford Road (South)	171.00	0.00	11.00
	Chiswell Green Lane	32.00	5.00	0.00

Junction 3a - Southern Jct 08:45 - 09:00

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	173.00	21.00
	Watford Road (South)	154.00	0.00	21.00
	Chiswell Green Lane	24.00	7.00	0.00

Junction 3b - Northern Jct 08:00 - 08:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	162.00	33.00
	Watford Road (North)	162.00	0.00	19.00
	Tippendell Lane	26.00	51.00	0.00

Junction 3b - Northern Jct 08:15 - 08:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	178.00	34.00
	Watford Road (North)	191.00	0.00	26.00
	Tippendell Lane	32.00	66.00	0.00

Junction 3b - Northern Jct 08:30 - 08:45

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	170.00	33.00
	Watford Road (North)	217.00	0.00	26.00
	Tippendell Lane	30.00	76.00	0.00

Junction 3b - Northern Jct 08:45 - 09:00

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	149.00	30.00
	Watford Road (North)	158.00	0.00	34.00
	Tippendell Lane	36.00	78.00	0.00

Vehicle Mix

Junction 3a - Southern Jct 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	0	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3a - Southern Jct 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3a - Southern Jct 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3a - Southern Jct 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3b - Northern Jct 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	0	0	0
	Tippendell Lane	0	0	0

Junction 3b - Northern Jct 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	4
	Tippendell Lane	0	2	0

Junction 3b - Northern Jct 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	0
	Tippendell Lane	0	3	0

Junction 3b - Northern Jct 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	0
	Tippendell Lane	0	3	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
Junction 3a - Southern Jct	Watford Road (North)	0.76	11.67	3.0	B	211.83	847.32
	Watford Road (South)	0.75	14.24	2.9	B	177.75	711.00
	Chiswell Green Lane	0.34	12.87	0.5	B	35.75	143.00
Junction 3b - Northern Jct	Watford Road (South)	0.56	5.43	1.3	A	196.39	785.55
	Watford Road (North)	0.95	39.16	10.7	E	208.25	833.00
	Tippendell Lane	0.97	72.93	9.1	F	98.76	395.03

Main Results for each time segment

08:00 - 08:15

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	185.62	185.62	2.96	10.00	319.96	0.580	184.26	192.68	0.0	1.4	6.
	Watford Road (South)	169.00	169.00	17.55		249.94	0.676	166.99	169.68	0.0	2.0	10
	Chiswell Green Lane	39.00	39.00	157.11		121.52	0.321	38.54	27.43	0.0	0.5	10
Junction 3b - Northern Jct	Watford Road (South)	192.68	192.68	50.27		393.23	0.490	191.73	185.62	0.0	1.0	4.
	Watford Road (North)	181.00	181.00	32.45		258.41	0.700	178.76	209.55	0.0	2.2	11
	Tippendell Lane	77.00	77.00	159.99		145.12	0.531	75.90	51.21	0.0	1.1	12

08:15 - 08:30

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	219.75	219.75	4.97	10.00	315.76	0.696	218.89	211.10	1.4	2.2	9.
	Watford Road (South)	185.00	185.00	19.64		246.41	0.751	184.16	204.22	2.0	2.8	14
	Chiswell Green Lane	36.00	36.00	180.11		105.84	0.340	35.96	23.70	0.5	0.5	12
Junction 3b - Northern Jct	Watford Road (South)	211.11	211.11	64.56		376.34	0.561	210.80	219.89	1.0	1.3	5.
	Watford Road (North)	217.00	217.00	33.82		254.29	0.853	214.20	241.54	2.2	5.0	21
	Tippendell Lane	98.00	98.00	188.57		124.31	0.788	95.87	59.45	1.1	3.2	29

08:30 - 08:45

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	240.30	240.30	5.00	10.00	315.69	0.761	239.48	203.12	2.2	3.0	11
	Watford Road (South)	182.00	182.00	19.41		246.60	0.738	182.01	225.07	2.8	2.8	13
	Chiswell Green Lane	37.00	37.00	171.12		111.58	0.332	37.01	30.30	0.5	0.5	12
Junction 3b - Northern Jct	Watford Road (South)	203.13	203.13	71.65		369.37	0.550	203.16	240.39	1.3	1.2	5.
	Watford Road (North)	243.00	243.00	33.02		255.81	0.950	237.38	241.79	5.0	10.7	39
	Tippendell Lane	106.00	106.00	211.91		108.81	0.974	100.13	58.49	3.2	9.1	72

08:45 - 09:00

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	201.65	201.65	6.99	10.00	314.46	0.641	202.86	178.57	3.0	1.8	8.
	Watford Road (South)	175.00	175.00	21.88		245.40	0.713	175.27	187.97	2.8	2.6	12
	Chiswell Green Lane	31.00	31.00	154.40		122.37	0.253	31.16	42.74	0.5	0.3	9.
Junction 3b - Northern Jct	Watford Road (South)	178.63	178.63	80.73		361.18	0.495	178.87	201.80	1.2	1.0	4.
	Watford Road (North)	192.00	192.00	29.97		257.55	0.745	199.56	229.64	10.7	3.1	17
	Tippendell Lane	114.00	114.00	164.97		138.10	0.825	117.56	64.56	9.1	5.5	48

Existing Layout - 2027 - With Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 3a - Southern Jct	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 B have 84% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	Junction 3b - Northern Jct	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 B have 82% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 3a - Southern Jct - Watford Road (North)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 3b - Northern Jct - Watford Road (South)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Junction 3a - Southern Jct	Mini-roundabout	A, B, C	20.97	C
2	Junction 3b - Northern Jct	Mini-roundabout	A, B, C	45.71	E

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 period length (min)	Time segment length (min)	Run automatically
D5	2027 - With Development	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/TS)	Flow multiplier (%)	Internal storage space (PCU)
Junction 3a - Southern Jct	Watford Road (North)	2	A	Simple (vertical queueing)	Normal	0.00	100.00	
Junction 3b - Northern Jct	Watford Road (South)	1	A	Simple (vertical queueing)	Normal	0.00	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Junction 3a - Southern Jct	Watford Road (North)	✓			
	Watford Road (South)		DIRECT	✓	100.000
	Chiswell Green Lane		DIRECT	✓	100.000
Junction 3b - Northern Jct	Watford Road (South)	✓			
	Watford Road (North)		DIRECT	✓	100.000
	Tippendell Lane		DIRECT	✓	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type
Junction 3a - Southern Jct	Watford Road (North)	[DIRECT]
	Watford Road (South)	
	Chiswell Green Lane	
Junction 3b - Northern Jct	Watford Road (South)	
	Watford Road (North)	
	Tippendell Lane	

Origin-Destination Data

Junction 3a - Southern Jct 08:00 - 08:15

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	174.00	33.00
	Watford Road (South)	166.00	0.00	24.00
	Chiswell Green Lane	55.00	20.00	0.00

Junction 3a - Southern Jct 08:15 - 08:30

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	206.00	35.00
	Watford Road (South)	188.00	0.00	18.00
	Chiswell Green Lane	50.00	22.00	0.00

Junction 3a - Southern Jct 08:30 - 08:45

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	230.00	35.00
	Watford Road (South)	178.00	0.00	25.00
	Chiswell Green Lane	51.00	22.00	0.00

Junction 3a - Southern Jct 08:45 - 09:00

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	176.00	36.00
	Watford Road (South)	161.00	0.00	35.00
	Chiswell Green Lane	43.00	24.00	0.00

Junction 3b - Northern Jct 08:00 - 08:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	169.00	47.00
	Watford Road (North)	165.00	0.00	19.00
	Tippendell Lane	36.00	51.00	0.00

Junction 3b - Northern Jct 08:15 - 08:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	185.00	48.00
	Watford Road (North)	194.00	0.00	26.00
	Tippendell Lane	42.00	66.00	0.00

Junction 3b - Northern Jct 08:30 - 08:45

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	177.00	47.00
	Watford Road (North)	220.00	0.00	26.00
	Tippendell Lane	40.00	76.00	0.00

Junction 3b - Northern Jct 08:45 - 09:00

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	156.00	44.00
	Watford Road (North)	161.00	0.00	34.00
	Tippendell Lane	46.00	78.00	0.00

Vehicle Mix

Junction 3a - Southern Jct 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	0	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3a - Southern Jct 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3a - Southern Jct 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3a - Southern Jct 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3b - Northern Jct 08:00 - 08:15

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	0	0	0
	Tippendell Lane	0	0	0

Junction 3b - Northern Jct 08:15 - 08:30

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	4
	Tippendell Lane	0	2	0

Junction 3b - Northern Jct 08:30 - 08:45

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	0
	Tippendell Lane	0	3	0

Junction 3b - Northern Jct 08:45 - 09:00

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	0
	Tippendell Lane	0	3	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
Junction 3a - Southern Jct	Watford Road (North)	0.82	15.32	4.1	C	223.73	894.91
	Watford Road (South)	0.86	24.42	5.4	C	198.75	795.01
	Chiswell Green Lane	0.71	29.10	2.2	D	71.75	287.00
Junction 3b - Northern Jct	Watford Road (South)	0.62	6.32	1.6	A	221.73	886.90
	Watford Road (North)	0.99	53.68	15.6	F	211.25	845.00
	Tippendell Lane	1.06	110.03	16.2	F	108.77	435.08

Main Results for each time segment

08:00 - 08:15

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	198.05	198.05	19.56	10.00	308.85	0.641	196.31	216.86	0.0	1.7	7.
	Watford Road (South)	190.00	190.00	31.30		242.40	0.784	186.65	184.57	0.0	3.3	15
	Chiswell Green Lane	75.00	75.00	163.07		117.45	0.639	73.34	54.87	0.0	1.7	19
Junction 3b - Northern Jct	Watford Road (South)	216.86	216.86	50.13		393.36	0.551	215.64	198.05	0.0	1.2	5.
	Watford Road (North)	184.00	184.00	46.92		250.97	0.733	181.39	218.85	0.0	2.6	12
	Tippendell Lane	87.00	87.00	162.66		143.44	0.607	85.52	65.65	0.0	1.5	15

08:15 - 08:30

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	231.14	231.14	21.76	10.00	304.79	0.758	229.90	235.73	1.7	3.0	11
	Watford Road (South)	206.00	206.00	33.41		239.09	0.862	204.01	218.25	3.3	5.3	24
	Chiswell Green Lane	72.00	72.00	186.05		101.68	0.708	71.44	51.37	1.7	2.2	29
Junction 3b - Northern Jct	Watford Road (South)	235.69	235.69	63.73		377.25	0.625	235.27	231.23	1.2	1.6	6.
	Watford Road (North)	220.00	220.00	48.48		246.86	0.891	216.12	250.52	2.6	6.5	26
	Tippendell Lane	108.00	108.00	190.62		123.19	0.877	104.35	73.99	1.5	5.1	41

08:30 - 08:45

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	248.23	248.23	22.01	10.00	304.57	0.815	247.13	229.16	3.0	4.1	1
	Watford Road (South)	203.00	203.00	32.68		239.54	0.847	202.96	236.46	5.3	5.4	2
	Chiswell Green Lane	73.00	73.00	178.16		106.72	0.684	73.01	57.48	2.2	2.2	2
Junction 3b - Northern Jct	Watford Road (South)	229.13	229.13	68.61		372.31	0.615	229.15	248.27	1.6	1.6	6
	Watford Road (North)	246.00	246.00	48.07		248.13	0.991	236.94	249.68	6.5	15.6	5
	Tippendell Lane	116.00	116.00	211.81		109.08	1.064	105.06	73.20	5.1	16.1	11

08:45 - 09:00

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	D
Junction 3a - Southern Jct	Watford Road (North)	217.49	217.49	24.17	10.00	303.25	0.717	218.94	205.21	4.1	2.6	1
	Watford Road (South)	196.00	196.00	37.02		237.31	0.826	196.31	206.09	5.4	5.1	2
	Chiswell Green Lane	67.00	67.00	161.55		117.54	0.570	67.83	71.78	2.2	1.4	1
Junction 3b - Northern Jct	Watford Road (South)	205.23	205.23	78.91		363.01	0.565	205.52	217.58	1.6	1.3	5
	Watford Road (North)	195.00	195.00	45.20		249.78	0.781	206.67	239.23	15.6	3.9	2
	Tippendell Lane	124.00	124.00	171.71		134.13	0.924	124.78	80.17	16.1	15.3	10

Junctions 9

ARCADY 9 - Roundabout Module

Filename: J3 - Watford Rd_Chiswell_Tippendell + Ped - PM (reduced trips) v1.j9
Path: \\gc-did-fs01\CAD\2021\8210856\(6)_Transport\(1)_Planning\(4)_Modelling\Feb 2022 - TA\Red Trip Gen
Report generation date: 03/03/2022 14:04:32

Summary of junction performance

	PM				
	Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)
Existing Layout - 2016 - Surveyed					
Junction 3a - Watford Road (North)	1.4	7.53	0.57	A	11.58
Junction 3a - Watford Road (South)	3.2	15.54	0.77	C	
Junction 3a - Chiswell Green Lane	0.4	10.81	0.28	B	
Junction 3b - Watford Road (South)	0.9	4.25	0.48	A	20.45
Junction 3b - Watford Road (North)	6.0	27.67	0.87	D	
Junction 3b - Tippendell Lane	3.2	46.29	0.79	E	
Existing Layout - 2027 - Without Development					
Junction 3a - Watford Road (North)	1.7	8.28	0.62	A	15.48
Junction 3a - Watford Road (South)	5.1	22.73	0.86	C	
Junction 3a - Chiswell Green Lane	0.5	12.79	0.33	B	
Junction 3b - Watford Road (South)	1.1	4.73	0.53	A	42.02
Junction 3b - Watford Road (North)	13.8	56.72	0.96	F	
Junction 3b - Tippendell Lane	7.9	107.98	0.94	F	
Existing Layout - 2027 - With Development					
Junction 3a - Watford Road (North)	1.9	8.98	0.66	A	19.41
Junction 3a - Watford Road (South)	7.1	30.39	0.90	D	
Junction 3a - Chiswell Green Lane	0.7	14.61	0.41	B	
Junction 3b - Watford Road (South)	1.2	4.85	0.54	A	70.95
Junction 3b - Watford Road (North)	18.6	72.75	0.99	F	
Junction 3b - Tippendell Lane	18.0	252.19	1.07	F	

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. Junction LOS and Junction Delay are demand-weighted averages.

File summary

File Description

Title	Watford Rd / Tippendell Ln / Chiswell Green Ln - Reduced Trip Rates
Location	Chiswell Green
Site number	J3
Date	20/02/2022
Version	
Status	(new file)
Identifier	
Client	CALA Homes & Redington Capital
Jobnumber	8210856
Enumerator	UK\DKemp
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	mph	Veh	Veh	perTimeSegment	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 period length (min)	Time segment length (min)	Run automatically
D2	2016 - Surveyed	PM	DIRECT	17:00	18:00	60	15	✓
D4	2027 - Without Development	PM	DIRECT	17:00	18:00	60	15	✓
D6	2027 - With Development	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

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

Existing Layout - 2016 - Surveyed, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 3a	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 B have 93% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	Junction 3b	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 B have 85% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 3a - Watford Road (North)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 3b - Watford Road (South)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Junction 3a	Mini-roundabout	A, B, C	11.58	B
2	Junction 3b	Mini-roundabout	A, B, C	20.45	C

Junction Network Options

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

Arms

Arms

Junction	Arm	Name	Description
Junction 3a	A	Watford Road (North)	
	B	Watford Road (South)	
	C	Chiswell Green Lane	
Junction 3b	A	Watford Road (South)	
	B	Watford Road (North)	
	C	Tippendell Lane	

Mini Roundabout Geometry

Junction	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
Junction 3a	Watford Road (North)	5.20	5.20	5.62	2.4	15.70	17.70	0.0	✓
	Watford Road (South)	4.40	4.40	5.00	3.0	13.89	10.25	0.0	✓
	Chiswell Green Lane	3.50	3.50	4.50	1.9	14.00	8.50	0.0	
Junction 3b	Watford Road (South)	5.20	5.20	6.50	7.4	18.80	19.90	0.0	✓
	Watford Road (North)	3.80	3.80	4.60	0.4	12.80	8.20	0.0	✓
	Tippendell Lane	3.40	3.40	5.60	2.6	15.20	9.20	0.0	

Zebra Crossings

Junction	Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
Junction 3a	Watford Road (North)	4.00	4.00	✓	Distance	5.00	3.57	5.00	3.57

Slope / Intercept / Capacity

Arm Intercept Adjustments

Junction	Arm	Type	Reason	Percentage intercept adjustment (%)
Junction 3a	Watford Road (North)	None		
	Watford Road (South)	None		
	Chiswell Green Lane	None		
Junction 3b	Watford Road (South)	None		
	Watford Road (North)	Percentage		114.00
	Tippendell Lane	Percentage		86.00

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/TS)
Junction 3a	Watford Road (North)	0.669	321.940
	Watford Road (South)	0.548	259.564
	Chiswell Green Lane	0.624	220.161
Junction 3b	Watford Road (South)	0.883	437.644
	Watford Road (North)	0.514	250.892
	Tippendell Lane	0.629	180.655

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 period length (min)	Time segment length (min)	Run automatically
D2	2016 - Surveyed	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/TS)	Flow multiplier (%)	Internal storage space (PCU)
Junction 3a	Watford Road (North)	2	A	Simple (vertical queueing)	Normal	0.00	100.00	
Junction 3b	Watford Road (South)	1	A	Simple (vertical queueing)	Normal	0.00	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Junction 3a	Watford Road (North)	✓			
	Watford Road (South)		DIRECT	✓	100.000
	Chiswell Green Lane		DIRECT	✓	100.000
Junction 3b	Watford Road (South)	✓			
	Watford Road (North)		DIRECT	✓	100.000
	Tippendell Lane		DIRECT	✓	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type
Junction 3a	Watford Road (North)	[DIRECT]
	Watford Road (South)	
	Chiswell Green Lane	
Junction 3b	Watford Road (South)	
	Watford Road (North)	
	Tippendell Lane	

Origin-Destination Data

Junction 3a 17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	150.00	25.00
	Watford Road (South)	174.00	0.00	12.00
	Chiswell Green Lane	16.00	12.00	0.00

Junction 3a 17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	152.00	21.00
	Watford Road (South)	156.00	0.00	15.00
	Chiswell Green Lane	17.00	10.00	0.00

Junction 3a 17:30 - 17:45

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	158.00	19.00
	Watford Road (South)	184.00	0.00	9.00
	Chiswell Green Lane	14.00	8.00	0.00

Junction 3a 17:45 - 18:00

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	136.00	18.00
	Watford Road (South)	159.00	0.00	12.00
	Chiswell Green Lane	21.00	12.00	0.00

Junction 3b 17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	164.00	26.00
	Watford Road (North)	151.00	0.00	53.00
	Tippendell Lane	24.00	39.00	0.00

Junction 3b 17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	153.00	20.00
	Watford Road (North)	149.00	0.00	58.00
	Tippendell Lane	24.00	42.00	0.00

Junction 3b 17:30 - 17:45

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	176.00	22.00
	Watford Road (North)	153.00	0.00	40.00
	Tippendell Lane	24.00	32.00	0.00

Junction 3b 17:45 - 18:00

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	156.00	24.00
	Watford Road (North)	133.00	0.00	43.00
	Tippendell Lane	21.00	30.00	0.00

Vehicle Mix

Junction 3a 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	21	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3a 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3a 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3a 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3b 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	1	0	0
	Tippendell Lane	20	3	0

Junction 3b 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	2
	Tippendell Lane	0	2	0

Junction 3b 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	1	0	0
	Tippendell Lane	0	0	0

Junction 3b 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	1	0	2
	Tippendell Lane	0	3	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
Junction 3a	Watford Road (North)	0.57	7.53	1.4	A	163.84	655.36
	Watford Road (South)	0.77	15.54	3.2	C	180.25	721.00
	Chiswell Green Lane	0.28	10.81	0.4	B	27.50	110.00
Junction 3b	Watford Road (South)	0.48	4.25	0.9	A	184.67	738.69
	Watford Road (North)	0.87	27.67	6.0	D	195.00	780.02
	Tippendell Lane	0.79	46.29	3.2	E	58.99	235.98

Main Results for each time segment

17:00 - 17:15

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	149.10	149.10	11.86	10.00	266.11	0.560	147.85	187.17	0.0	1.3	7.534	A
	Watford Road (South)	186.00	186.00	21.12		247.98	0.750	183.17	138.59	0.0	2.8	13.365	B
	Chiswell Green Lane	28.00	28.00	171.36		112.73	0.248	27.67	32.94	0.0	0.3	10.542	B
Junction 3b	Watford Road (South)	187.17	187.17	37.12		403.87	0.463	186.31	169.90	0.0	0.9	4.122	A
	Watford Road (North)	204.00	204.00	25.50		236.03	0.864	198.68	197.93	0.0	5.3	21.725	C
	Tippendell Lane	63.00	63.00	147.06		79.66	0.791	59.96	77.11	0.0	3.0	41.046	E

17:15 - 17:30

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	172.81	172.81	10.03	10.00	312.02	0.553	172.78	173.49	1.3	1.2	6.467	A
	Watford Road (South)	171.00	171.00	21.00		245.84	0.696	171.46	161.80	2.8	2.4	12.189	B
	Chiswell Green Lane	27.00	27.00	156.48		121.13	0.223	27.03	35.98	0.3	0.3	9.570	A
Junction 3b	Watford Road (South)	173.49	173.49	41.84		396.44	0.438	173.56	172.61	0.9	0.8	4.039	A
	Watford Road (North)	207.00	207.00	20.08		237.56	0.872	206.33	195.32	5.3	6.0	27.672	D
	Tippendell Lane	66.00	66.00	148.62		84.80	0.775	65.82	77.79	3.0	3.2	46.290	E

17:30 - 17:45

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	177.73	177.73	8.01	10.00	313.78	0.566	177.69	197.09	1.2	1.3	6.609	A
	Watford Road (South)	193.00	193.00	19.09		249.06	0.775	192.14	166.61	2.4	3.2	15.537	C
	Chiswell Green Lane	22.00	22.00	183.08		105.32	0.209	22.02	28.15	0.3	0.3	10.807	B
Junction 3b	Watford Road (South)	197.12	197.12	32.75		408.66	0.482	196.98	177.79	0.8	0.9	4.249	A
	Watford Road (North)	193.00	193.00	21.89		237.72	0.812	194.30	207.84	6.0	4.7	21.407	C
	Tippendell Lane	56.00	56.00	153.59		83.01	0.674	56.95	62.60	3.2	2.3	35.743	E

17:45 - 18:00

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	155.79	155.79	11.96	10.00	311.19	0.501	156.06	180.91	1.3	1.0	5.814	A
	Watford Road (South)	171.00	171.00	18.23		249.57	0.685	171.97	149.79	3.2	2.3	11.744	B
	Chiswell Green Lane	33.00	33.00	159.98		119.87	0.275	32.89	30.22	0.3	0.4	10.335	B
Junction 3b	Watford Road (South)	180.91	180.91	30.56		409.87	0.441	181.04	155.82	0.9	0.8	3.936	A
	Watford Road (North)	176.00	176.00	24.12		235.59	0.747	177.58	187.48	4.7	3.1	15.922	C
	Tippendell Lane	51.00	51.00	134.36		93.70	0.545	52.01	67.33	2.3	1.3	22.075	C

Existing Layout - 2027 - Without Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 3a	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 B have 93% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	Junction 3b	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 B have 85% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 3a - Watford Road (North)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 3b - Watford Road (South)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Junction 3a	Mini-roundabout	A, B, C	15.48	C
2	Junction 3b	Mini-roundabout	A, B, C	42.02	E

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 period length (min)	Time segment length (min)	Run automatically
D4	2027 - Without Development	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/TS)	Flow multiplier (%)	Internal storage space (PCU)
Junction 3a	Watford Road (North)	2	A	Simple (vertical queueing)	Normal	0.00	100.00	
Junction 3b	Watford Road (South)	1	A	Simple (vertical queueing)	Normal	0.00	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Junction 3a	Watford Road (North)	✓			
	Watford Road (South)		DIRECT	✓	100.000
	Chiswell Green Lane		DIRECT	✓	100.000
Junction 3b	Watford Road (South)	✓			
	Watford Road (North)		DIRECT	✓	100.000
	Tippendell Lane		DIRECT	✓	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type
Junction 3a	Watford Road (North)	[DIRECT]
	Watford Road (South)	
	Chiswell Green Lane	
Junction 3b	Watford Road (South)	
	Watford Road (North)	
	Tippendell Lane	

Origin-Destination Data

Junction 3a 17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	165.00	27.00
	Watford Road (South)	191.00	0.00	13.00
	Chiswell Green Lane	18.00	13.00	0.00

Junction 3a 17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	167.00	23.00
	Watford Road (South)	171.00	0.00	16.00
	Chiswell Green Lane	19.00	11.00	0.00

Junction 3a 17:30 - 17:45

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	173.00	21.00
	Watford Road (South)	202.00	0.00	10.00
	Chiswell Green Lane	15.00	9.00	0.00

Junction 3a 17:45 - 18:00

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	149.00	20.00
	Watford Road (South)	175.00	0.00	13.00
	Chiswell Green Lane	23.00	13.00	0.00

Junction 3b 17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	180.00	29.00
	Watford Road (North)	166.00	0.00	58.00
	Tippendell Lane	26.00	43.00	0.00

Junction 3b 17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	168.00	22.00
	Watford Road (North)	164.00	0.00	64.00
	Tippendell Lane	26.00	46.00	0.00

Junction 3b 17:30 - 17:45

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	193.00	24.00
	Watford Road (North)	168.00	0.00	44.00
	Tippendell Lane	26.00	35.00	0.00

Junction 3b 17:45 - 18:00

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	171.00	26.00
	Watford Road (North)	146.00	0.00	47.00
	Tippendell Lane	23.00	33.00	0.00

Vehicle Mix

Junction 3a 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	21	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3a 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3a 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3a 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3b 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	1	0	0
	Tippendell Lane	20	3	0

Junction 3b 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	2
	Tippendell Lane	0	2	0

Junction 3b 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	1	0	0
	Tippendell Lane	0	0	0

Junction 3b 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	1	0	2
	Tippendell Lane	0	3	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
Junction 3a	Watford Road (North)	0.62	8.28	1.7	A	179.48	717.92
	Watford Road (South)	0.86	22.73	5.1	C	197.75	790.99
	Chiswell Green Lane	0.33	12.79	0.5	B	30.25	121.00
Junction 3b	Watford Road (South)	0.53	4.73	1.1	A	202.66	810.63
	Watford Road (North)	0.96	56.72	13.8	F	214.26	857.04
	Tippendell Lane	0.94	107.98	7.9	F	64.49	257.96

Main Results for each time segment

17:00 - 17:15

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	159.61	159.61	12.82	10.00	265.45	0.601	158.14	204.82	0.0	1.5	8.278	A
	Watford Road (South)	204.00	204.00	22.24		247.37	0.825	199.80	148.72	0.0	4.2	17.627	C
	Chiswell Green Lane	31.00	31.00	187.07		102.77	0.302	30.58	34.97	0.0	0.4	12.397	B
Junction 3b	Watford Road (South)	204.82	204.82	39.18		402.00	0.510	203.79	182.09	0.0	1.0	4.517	A
	Watford Road (North)	224.00	224.00	28.28		234.61	0.955	213.75	214.70	0.0	10.2	34.105	D
	Tippendell Lane	69.00	69.00	158.41		73.12	0.944	62.87	83.62	0.0	6.1	68.172	F

17:15 - 17:30

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	187.57	187.57	11.04	10.00	311.32	0.602	187.49	190.82	1.5	1.5	7.269	A
	Watford Road (South)	187.00	187.00	22.73		244.91	0.764	187.78	175.80	4.2	3.4	16.010	C
	Chiswell Green Lane	30.00	30.00	171.81		111.33	0.269	30.05	38.71	0.4	0.4	11.081	B
Junction 3b	Watford Road (South)	190.81	190.81	44.68		393.89	0.484	190.89	187.12	1.0	0.9	4.435	A
	Watford Road (North)	228.00	228.00	22.13		236.54	0.964	224.54	213.44	10.2	13.7	56.724	F
	Tippendell Lane	72.00	72.00	161.73		76.35	0.936	70.07	84.93	6.1	8.0	107.980	F

17:30 - 17:45

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	195.68	195.68	9.01	10.00	313.12	0.625	195.54	215.24	1.5	1.6	7.641	A
	Watford Road (South)	212.00	212.00	21.19		247.90	0.855	210.26	183.37	3.4	5.1	22.732	C
	Chiswell Green Lane	24.00	24.00	200.22		94.45	0.254	24.03	31.24	0.4	0.3	12.785	B
Junction 3b	Watford Road (South)	215.27	215.27	36.43		405.36	0.531	215.10	195.73	0.9	1.1	4.726	A
	Watford Road (North)	212.00	212.00	23.79		236.72	0.895	215.29	227.73	13.7	10.4	46.075	E
	Tippendell Lane	61.00	61.00	169.59		72.79	0.837	62.57	69.50	8.0	6.5	96.563	F

17:45 - 18:00

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	175.16	175.16	12.96	10.00	310.53	0.564	175.48	199.73	1.6	1.3	6.682	A
	Watford Road (South)	188.00	188.00	20.75		248.18	0.758	189.84	167.68	5.1	3.3	15.889	C
	Chiswell Green Lane	36.00	36.00	176.82		109.19	0.330	35.86	33.76	0.3	0.5	12.250	B
Junction 3b	Watford Road (South)	199.73	199.73	35.41		405.53	0.493	199.87	175.20	1.1	1.0	4.380	A
	Watford Road (North)	193.00	193.00	26.36		234.48	0.823	198.26	208.92	10.4	5.2	27.381	D
	Tippendell Lane	56.00	56.00	150.35		83.80	0.670	60.25	74.27	6.5	2.2	43.126	E

Existing Layout - 2027 - With Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 3a	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 B have 92% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	Junction 3b	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 B have 84% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 3a - Watford Road (North)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 3b - Watford Road (South)	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Junction 3a	Mini-roundabout	A, B, C	19.41	C
2	Junction 3b	Mini-roundabout	A, B, C	70.95	F

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 period length (min)	Time segment length (min)	Run automatically
D6	2027 - With Development	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/TS)	Flow multiplier (%)	Internal storage space (PCU)
Junction 3a	Watford Road (North)	2	A	Simple (vertical queueing)	Normal	0.00	100.00	
Junction 3b	Watford Road (South)	1	A	Simple (vertical queueing)	Normal	0.00	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
Junction 3a	Watford Road (North)	✓			
	Watford Road (South)		DIRECT	✓	100.000
	Chiswell Green Lane		DIRECT	✓	100.000
Junction 3b	Watford Road (South)	✓			
	Watford Road (North)		DIRECT	✓	100.000
	Tippendell Lane		DIRECT	✓	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type
Junction 3a	Watford Road (North)	[DIRECT]
	Watford Road (South)	
	Chiswell Green Lane	
Junction 3b	Watford Road (South)	
	Watford Road (North)	
	Tippendell Lane	

Origin-Destination Data

Junction 3a 17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	170.00	34.00
	Watford Road (South)	193.00	0.00	19.00
	Chiswell Green Lane	22.00	17.00	0.00

Junction 3a 17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	172.00	30.00
	Watford Road (South)	173.00	0.00	22.00
	Chiswell Green Lane	23.00	15.00	0.00

Junction 3a 17:30 - 17:45

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	178.00	28.00
	Watford Road (South)	204.00	0.00	16.00
	Chiswell Green Lane	19.00	13.00	0.00

Junction 3a 17:45 - 18:00

Demand (Veh/TS)

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0.00	154.00	27.00
	Watford Road (South)	177.00	0.00	19.00
	Chiswell Green Lane	27.00	17.00	0.00

Junction 3b 17:00 - 17:15

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	182.00	32.00
	Watford Road (North)	171.00	0.00	58.00
	Tippendell Lane	33.00	43.00	0.00

Junction 3b 17:15 - 17:30

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	170.00	25.00
	Watford Road (North)	169.00	0.00	64.00
	Tippendell Lane	33.00	46.00	0.00

Junction 3b 17:30 - 17:45

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	195.00	27.00
	Watford Road (North)	173.00	0.00	44.00
	Tippendell Lane	33.00	35.00	0.00

Junction 3b 17:45 - 18:00

Demand (Veh/TS)

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0.00	173.00	29.00
	Watford Road (North)	151.00	0.00	47.00
	Tippendell Lane	30.00	33.00	0.00

Vehicle Mix

Junction 3a 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	21	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3a 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	1	0	0
	Chiswell Green Lane	0	0	0

Junction 3a 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3a 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		Watford Road (North)	Watford Road (South)	Chiswell Green Lane
From	Watford Road (North)	0	1	0
	Watford Road (South)	0	0	0
	Chiswell Green Lane	0	0	0

Junction 3b 17:00 - 17:15

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	1	0	0
	Tippendell Lane	20	3	0

Junction 3b 17:15 - 17:30

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	1	0
	Watford Road (North)	1	0	2
	Tippendell Lane	0	2	0

Junction 3b 17:30 - 17:45

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	1	0	0
	Tippendell Lane	0	0	0

Junction 3b 17:45 - 18:00

Heavy Vehicle Percentages

		To		
		Watford Road (South)	Watford Road (North)	Tippendell Lane
From	Watford Road (South)	0	0	0
	Watford Road (North)	1	0	2
	Tippendell Lane	0	3	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
Junction 3a	Watford Road (North)	0.66	8.98	1.9	A	190.91	763.62
	Watford Road (South)	0.90	30.39	7.1	D	205.75	822.99
	Chiswell Green Lane	0.41	14.61	0.7	B	38.25	153.00
Junction 3b	Watford Road (South)	0.54	4.85	1.2	A	208.39	833.55
	Watford Road (North)	0.99	72.75	18.6	F	219.26	877.05
	Tippendell Lane	1.07	252.19	18.0	F	71.46	285.86

Main Results for each time segment

17:00 - 17:15

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	167.55	167.55	16.74	10.00	264.46	0.634	165.87	209.69	0.0	1.7	8.983	A
	Watford Road (South)	212.00	212.00	27.64		244.40	0.867	206.54	154.96	0.0	5.5	21.413	C
	Chiswell Green Lane	39.00	39.00	188.03		102.10	0.382	38.40	46.16	0.0	0.6	14.002	B
Junction 3b	Watford Road (South)	209.69	209.69	36.71		404.24	0.519	208.63	189.62	0.0	1.1	4.576	A
	Watford Road (North)	229.00	229.00	31.20		233.10	0.982	216.21	214.14	0.0	12.8	39.699	E
	Tippendell Lane	76.00	76.00	161.45		70.73	1.075	64.89	85.96	0.0	11.1	101.806	F

17:15 - 17:30

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	196.33	196.33	15.05	10.00	308.72	0.635	196.24	196.96	1.7	1.7	7.999	A
	Watford Road (South)	195.00	195.00	29.18		241.48	0.808	195.92	182.11	5.5	4.5	20.257	C
	Chiswell Green Lane	38.00	38.00	173.94		109.92	0.346	38.06	51.16	0.6	0.5	12.540	B
Junction 3b	Watford Road (South)	196.93	196.93	41.79		396.49	0.497	197.00	195.35	1.1	1.0	4.513	A
	Watford Road (North)	233.00	233.00	25.28		234.97	0.992	227.23	213.51	12.8	18.6	72.752	F
	Tippendell Lane	79.00	79.00	165.09		73.80	1.055	72.05	87.43	11.1	18.0	207.793	F

17:30 - 17:45

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	205.62	205.62	13.00	10.00	310.56	0.662	205.43	220.41	1.7	1.9	8.540	A
	Watford Road (South)	220.00	220.00	27.94		244.19	0.901	217.39	190.48	4.5	7.1	30.389	D
	Chiswell Green Lane	32.00	32.00	201.40		93.64	0.342	32.01	43.94	0.5	0.5	14.612	B
Junction 3b	Watford Road (South)	220.46	220.46	35.90		405.74	0.543	220.27	205.66	1.0	1.2	4.847	A
	Watford Road (North)	217.00	217.00	26.80		235.17	0.922	220.18	229.38	18.6	15.4	66.168	F
	Tippendell Lane	68.00	68.00	174.18		69.78	0.972	67.38	72.80	18.0	18.7	252.194	F

17:45 - 18:00

Junction	Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Pedestrian demand (Ped/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Junction 3a	Watford Road (North)	194.24	194.24	16.95	10.00	307.98	0.631	194.41	206.47	1.9	1.7	7.941	A
	Watford Road (South)	196.00	196.00	28.97		243.67	0.804	198.66	182.39	7.1	4.5	21.033	C
	Chiswell Green Lane	44.00	44.00	179.57		107.39	0.410	43.85	48.06	0.5	0.7	14.127	B
Junction 3b	Watford Road (South)	206.47	206.47	39.34		402.10	0.513	206.58	194.31	1.2	1.1	4.607	A
	Watford Road (North)	198.00	198.00	29.63		232.86	0.851	206.77	216.29	15.4	6.6	39.778	E
	Tippendell Lane	63.00	63.00	158.22		79.19	0.799	75.43	78.19	18.7	6.2	162.818	F

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