

APPENDIX 2

TRANSPORT ASSESSMENT SUBMITTED WITH APPLICATION EPF/1413/18

NEXT plc & Trinity Hall

**Land to the north of Dowding Way,
Waltham Abbey**

Transport Assessment

May 2018

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1 INTRODUCTION

- 1.1 Vectos is appointed by Next plc and Trinity Hall to provide transport and highways advice in relation to development proposed on land north of Dowding Way, Waltham Abbey.
- 1.2 Policy SP2 and Policy E1 of the 'emerging' Epping Forest District Local Plan (December 2017) state that the site 'WAL.E8 – Land north of A121' is allocated for B1c/B2/B8 class uses (business use/general industrial/storage and warehousing).
- 1.3 The proposed development site forms part of this employment site allocation and comprises up to 80,000 sqm Gross Floor Area (GFA) of employment purposes. The development will be delivered in two phases:
- Phase 1, in detail will provide a new junction to access the site from the A121 (Dowding Way) and a new distribution depot (B8) for Next comprising 57,267 m²; and
 - Phase 2, in outline will provide a mix of B8 / B2 / B1c uses comprising 22,733 m².
- 1.4 For the purposes of assessing the highways impacts of Phase 2, it is assumed that the outline proposals for up to 22,733 m² of floorspace will be delivered in the following broad proportions relative to the mix of uses proposed: 40% Class B8, 40% Class B2 and 20% Class B1(c).
- 1.5 Initial scoping discussions were held with Highways England (HE) and Essex County Council (ECC) on 8th November 2017 and copy of the minutes from the meeting are at **Appendix A** together with the agreed scope of works.
- 1.6 This Transport Assessment (TA) addresses the key transportation issues set out below and is structured as follows;
- **Section 2** – reviews the existing site providing an accessibility audit for all viable modes of transport, and a description of the current traffic demand and collision history;
 - **Section 3** – reviews relevant national, regional and local policies and sets the context of the proposed development within these policies;
 - **Section 4** – describes the proposed development, including details of the proposed access arrangements for vehicles, pedestrians and cyclists, car parking arrangements and proposed mitigation;

- **Section 5** – analyses the potential trip demand of the proposed development, setting out the distribution and mode split of these trips;
- **Section 6** – assesses the effect of development vehicle trips on the highway network;
- **Section 7** – provides a summary and concludes.

2 EXISTING CONDITIONS

2.1 This section of the report provides an overall summary of the site in relation to its general surroundings and general characteristics of the area.

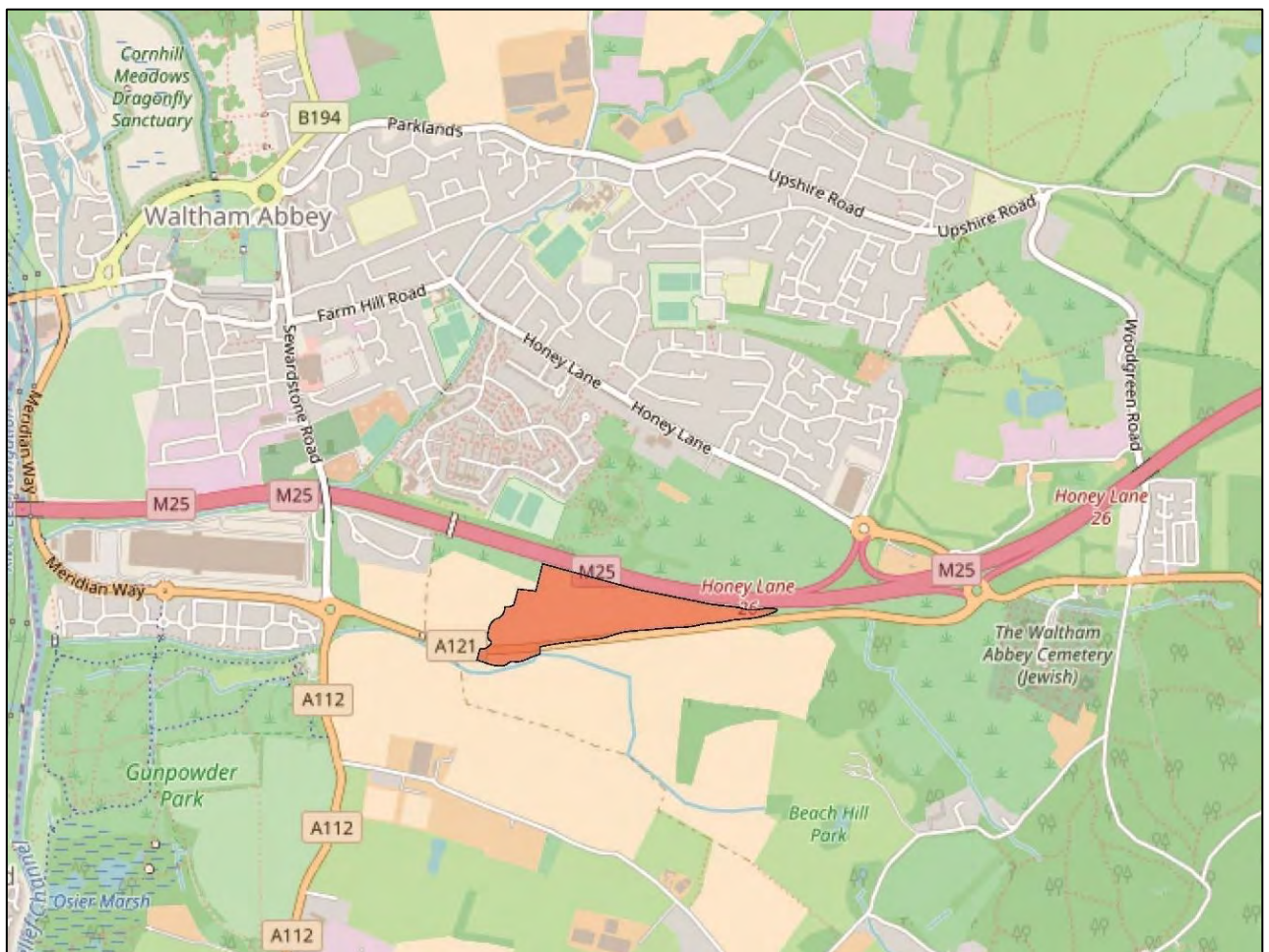
Site Location

2.2 The site is located approx. 1.7 km to the south of the centre of Waltham Abbey and some 8.6 km to the north east of Enfield. The site is located between the M25 and the A121 and to the east of the existing Sainsbury's depot at Waltham Abbey.

2.3 The proposed development is bound to the north by the M25, to the east by agricultural land and junction 26 of the M25, to the south by the A121 and to the west by agricultural land.

2.4 The site location in its local context is illustrated in **Figure 2.1**.

Figure 2.1 – Site location



Sustainable Transport Review

Travel by Foot

- 2.5 There are no existing footways on Dowding Way (A121), however the development will introduce new linkages to the site which are detailed further in Section 4.
- 2.6 Pedestrian facilities are provided on Sewardstone Road to the west of the site and along Beechfield Walk, to the north west of the site.
- 2.7 Pedestrian footways are also present within the residential settlement of Beechfield Walk. These are considered to be of a good standard, are lit and include dropped kerbs where appropriate.
- 2.8 There is a Public Right of Way (PRoW) to the north of this residential settlement which links Beechfield Walk with the remainder of Waltham Abbey to the north of the M25, via a public footpath and bridge over the motorway.
- 2.9 There is also a pedestrian bridge on the alignment of the PRoW which crosses the A121 / Dowding Way to the south of the site. The PRoW is classified by Epping District Council as PRoW 211_62 and the route is illustrated in **Figure 2.2**.

Figure 2.2 – Public Rights of Way



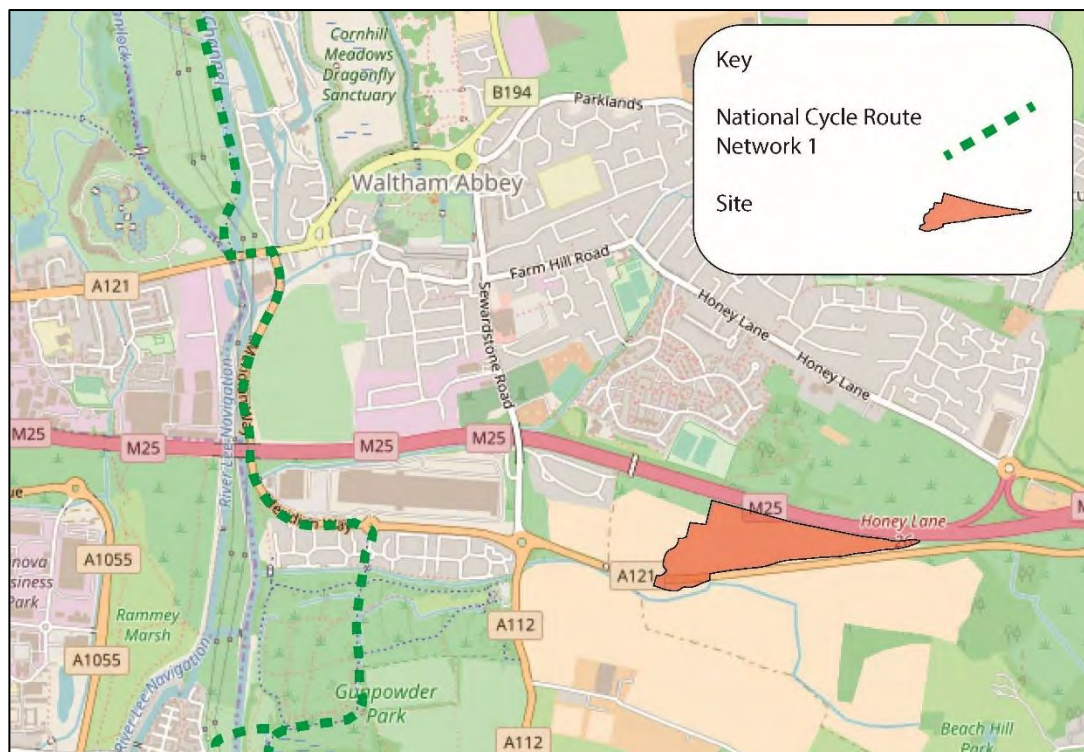
2.10 The character of the PRoW is shown in the following images and varies in quality, width and natural surveillance.



Travel by Bicycle

- 2.11 National Cycle Network Route (NCN) 1 runs to the west of the site, partially along the A121 and through the residential properties at Deer Park Way to the south west of the site. NCN route 1 is a long-distance cycle route connecting Dover and the Shetland Islands via the east coast of England and Scotland. The location of this route in relation to the site is illustrated in **Figure 2.3**.

Figure 2.3 – National Cycle Route 1



- 2.12 In practice, the distance that staff / visitors to this site are likely to choose to walk or cycle, depends on that individual and their circumstances, but it is fair to assume that over time, given current policies to encourage community, health and well-being, the propensity for individuals to walk and cycle, and to walk and cycle further will increase. The development proposes new infrastructure improvements to encourage active travel which are set out in Chapter 4.
- 2.13 **Figure 2.4** and **Figure 2.5** illustrates indicative isochrones for 15 and 30-minute walking and cycling times to and from the site based on the existing access points and routes to the site. A comfortable walking speed of 5 km/hr (3mph) and a cycling speed of 15 km/hr (9mph) has been applied to calculate the isochrones.

Figure 2.4 – Walking isochrones

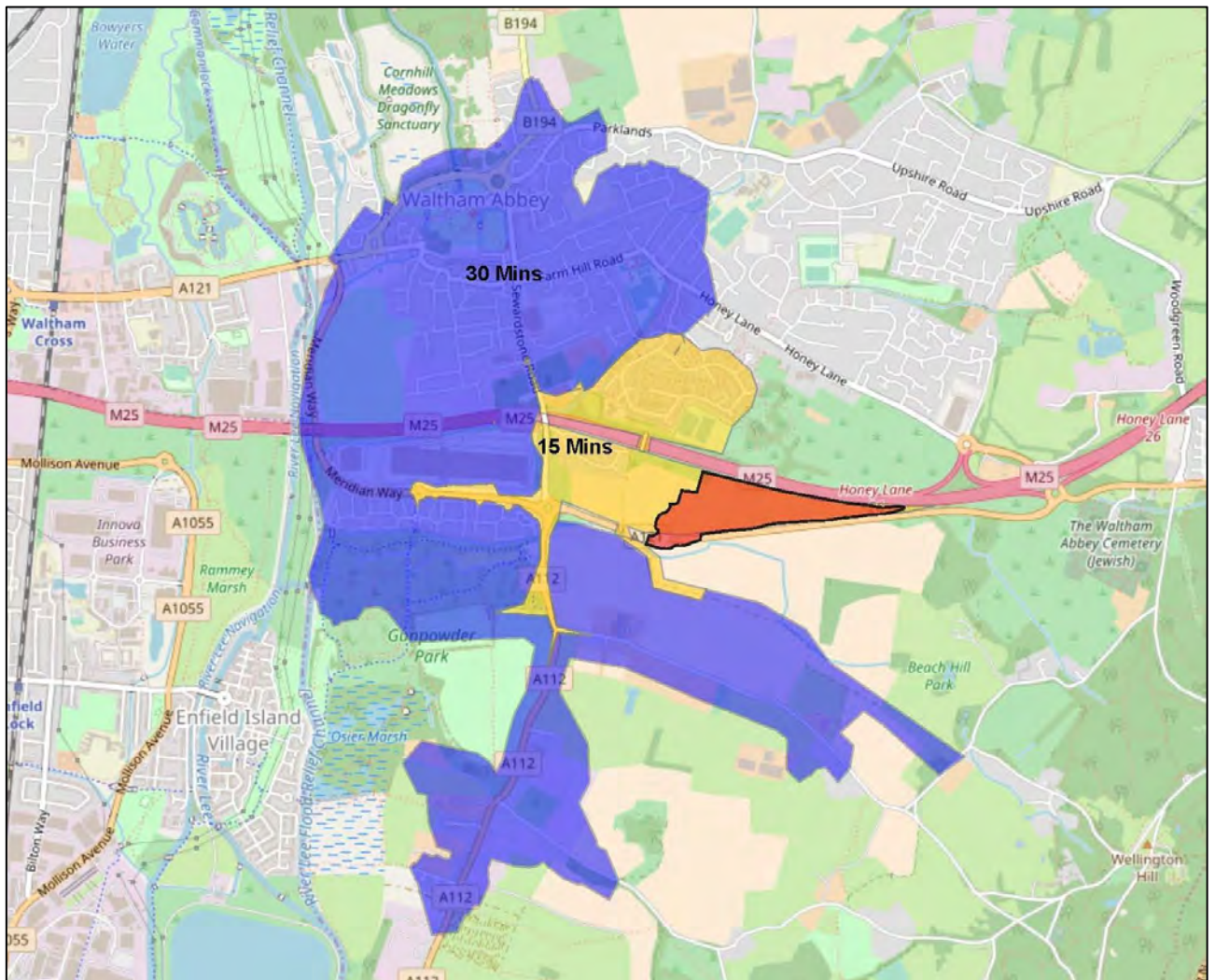
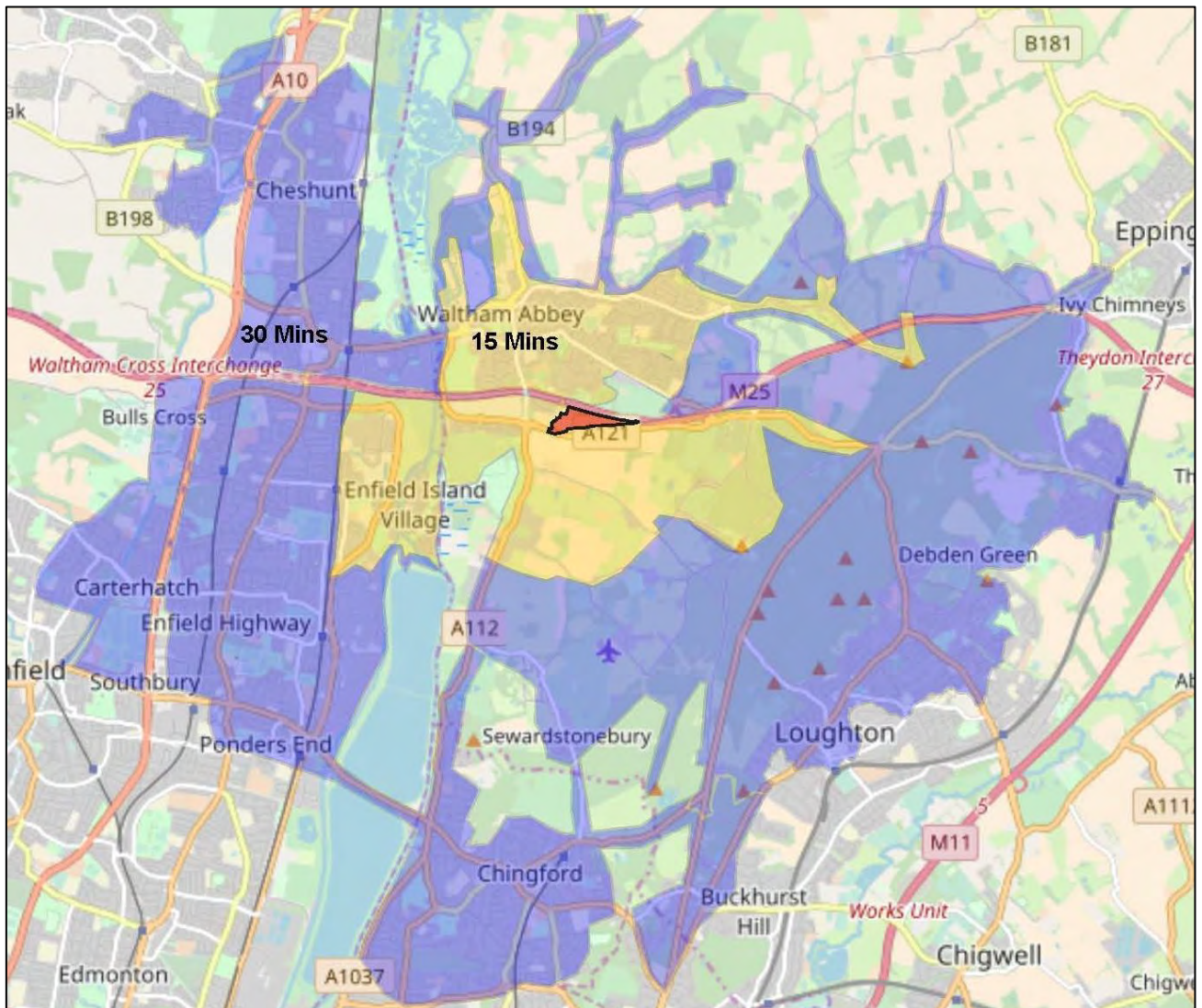


Figure 2.5 – Cycling isochrones



Travel by Bus

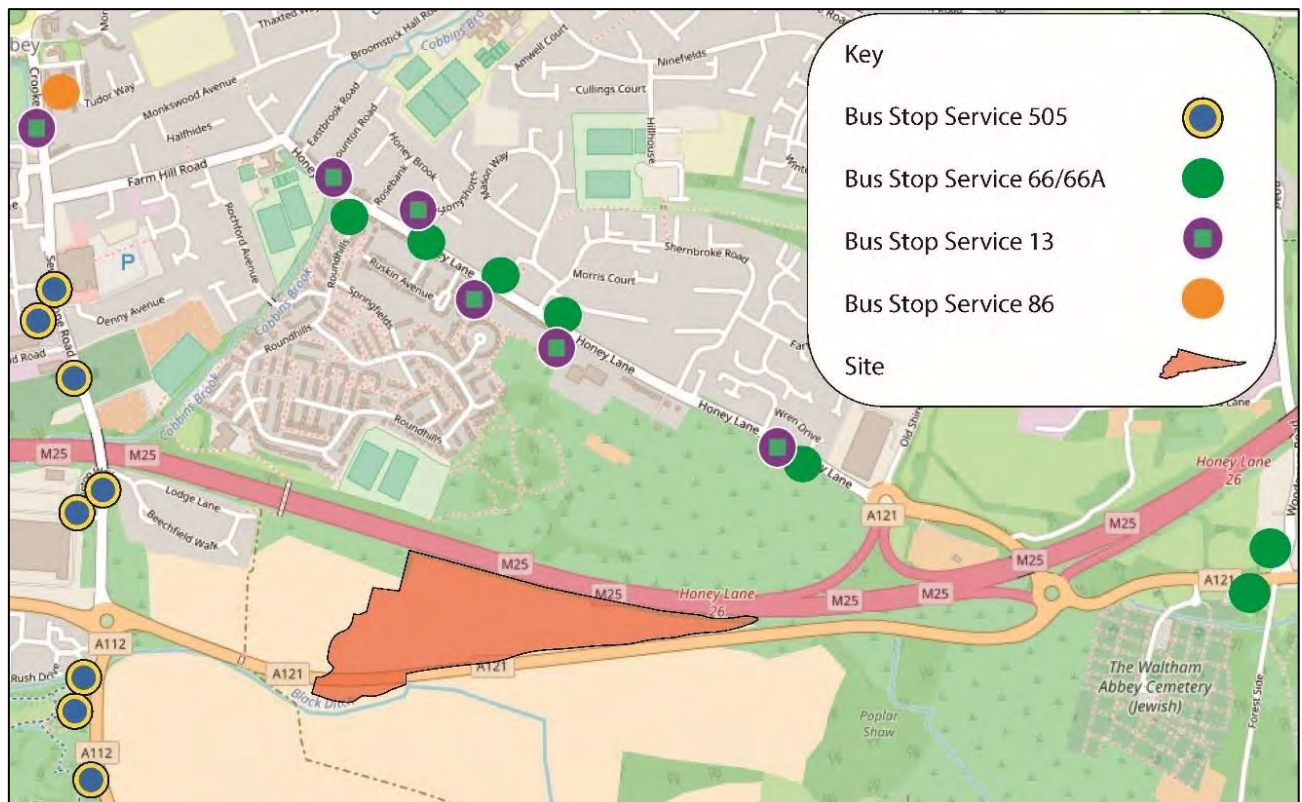
- 2.14 The nearest bus stops are to the west of the site at Sewardstone Road and to the east of the site at Honey Lane.
- 2.15 A summary of the services which serve these stops are set out in **Table 2.1** and the nearest bus stops in relation to the site are illustrated in **Figure 2.6**.

Table 2.1 – Summary of local bus services

Number	Route	First Bus	Last Bus	Frequency (mins)			Provider
				M-F	S	S	
505	Chingford – Sewardstone – Waltham Abbey – Bumbles Green – Harlow	07:49	18:54	n/a	120	n/a	TrustyBus
	Harlow – Bumbles Green – Waltham Abbey – Sewardstone – Chingford	07:21	18:30				
66	Waltham Cross – Waltham Abbey – Loughton – Debden (circular)	05:57	21:30	30	30	n/a	EOS London
66A	Waltham Cross – Waltham Abbey – Loughton – Debden (Circular)	08:23	19:23	n/a	n/a	60	EOS London
13	Epping – Ivy Chimneys – Waltham Abbey – Waltham Cross	n/a	15:25	n/a	n/a	n/a	EOS London
	Waltham Cross – Waltham Abbey – Ivy Chimneys – Epping	07:47	n/a				

2.16 Whilst there are a number of services operating within the general vicinity of the site, none of the existing bus stops / services serve the site with any real continuity or connectivity.

Figure 2.6 – Bus stops



Travel by Rail

- 2.17 Waltham Cross Railway Station is the nearest railway station, situated approximately 3.2 km to the north west of the site.
- 2.18 The railway station is included on the bus route for services 13, 66 and 66A. These services also stop on Honey Lane, which is within walking distance of the site, via the PRow. As such staff are able to travel by rail to the site via an existing connecting bus service.
- 2.19 A summary of the destinations reachable from this station is set out in **Table 2.2**.

Table 2.2 – Summary of local rail services

Destination	Frequency	Journey Time
Hertford East	30 mins	24 mins
Stratford (London)	30 mins	25 mins
London Liverpool Street	20 mins	30 mins
Bishops Stortford	20 mins	30 mins

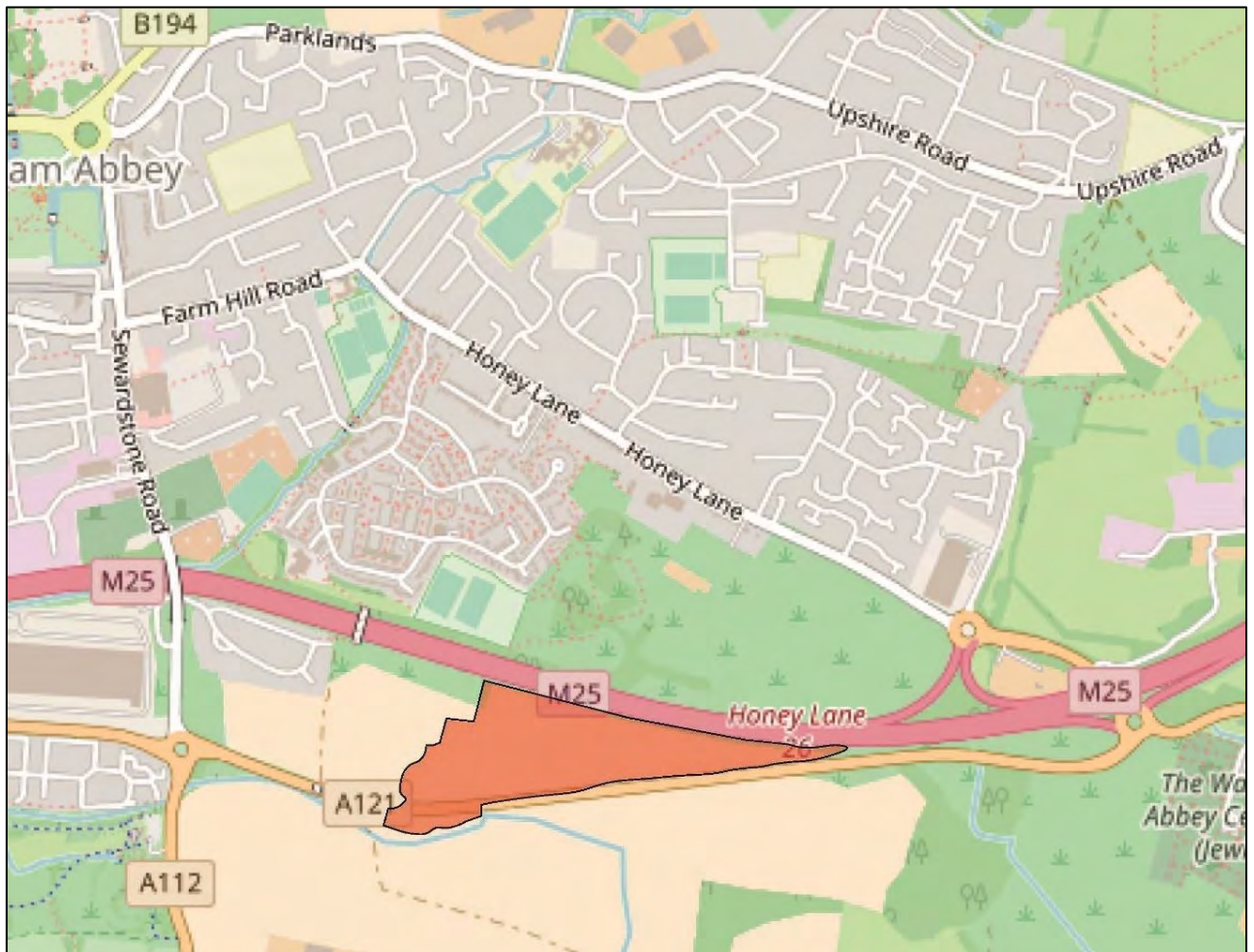
London Underground

- 2.20 There are also London Underground stations within close distance of the site. Epping Underground Station situated some 8.2km to the west of the site and Loughton Underground Station located approx. 6.6km to the south of the site. Both stations are served by the Central Line and provide frequent services to central London.
- 2.21 Epping Underground Station is linked to the site via bus service 13, which stops at Honey Lane. Loughton Underground Station is linked to the site via bus service 66, which also stops at Honey Lane.
- 2.22 Therefore, it is possible to commute to the site by Underground, connecting by bus / foot for the final part of the journey. This is however a rather tortuous journey at present.

Local Highway Network

- 2.23 The local highway network in the context of the site is illustrated in **Figure 2.7**.

Figure 2.7 – Local highway network



A121 / Dowding Way

- 2.24 The A121 / Dowding Way is located to the south of the proposed development and is subject to the national speed limit.

A112 / Sewardstone Road

- 2.25 Sewardstone Road is a single carriageway road which lies to the west of the proposed development site. It is lit, subject to a 30-mph speed limit and includes pedestrian footways with intermittent bus stops. It is the main access route to a number of local facilities as well as the centre of Waltham Abbey.

M25 Motorway

- 2.26 The M25 Motorway lies to the north of the site and provides nationwide highway connections. Junction 26 of the motorway is located to the east of the site and the

Motorway slip-roads are accessed via a grade-separated dumbbell-roundabout junction arrangement.

Collision Data

2.27 Personal Injury Accident (PIA) data was obtained for the local highway network from Essex County Council for the latest five-year period for which data is available (1st of January 2013 to 31st of December 2017). A detailed copy of all of the PIA data is contained in **Appendix B**.

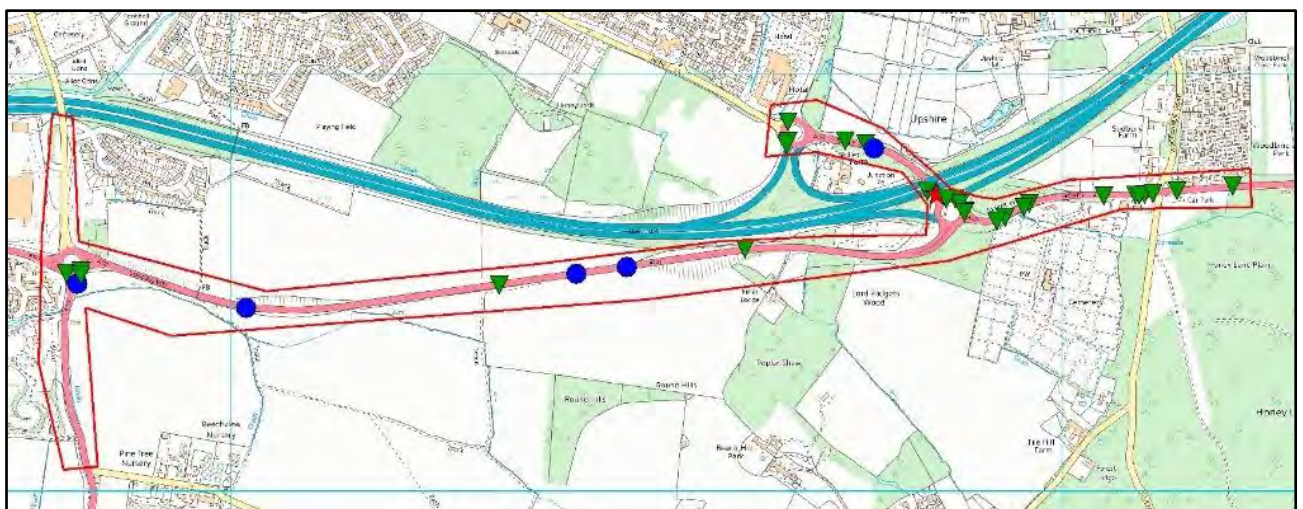
2.28 PIA data is recorded according to the severity of casualties involved in the accident. The rating is either 'slight', 'serious' or 'fatal'.

2.29 The PIA Data analysis is summarised as follows;

- There has been a total of 33 incidents with 27 of which being recorded as 'slight' incidents, five 'serious' and one 'fatal';
- The 33 accidents resulted in a total of 43 casualties;
- None of the accidents involved pedestrians and four involving cyclists;
- Ten accidents occurred in wet conditions;
- Nine accidents occurred in dark / street lit conditions;

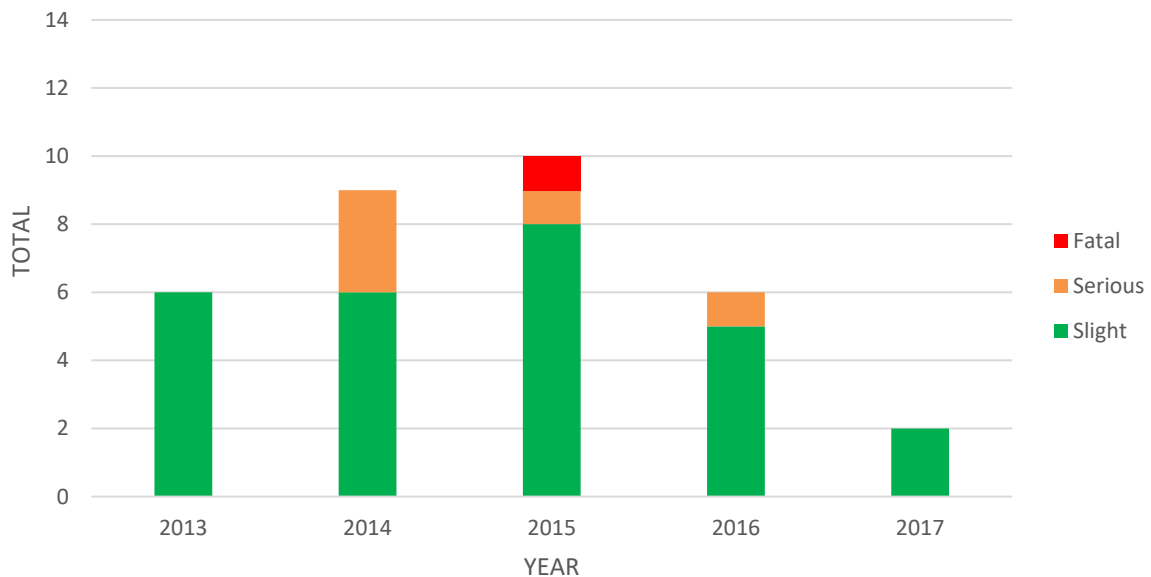
2.30 The study area, along with the location of the recorded accidents, is illustrated in **Figure 2.8**.

Figure 2.8 – Accident study area



2.31 The number and severity of the recorded accidents is graphically illustrated in **Figure 2.9**.

Figure 2.9 - Personal Injury Accident Data Summary

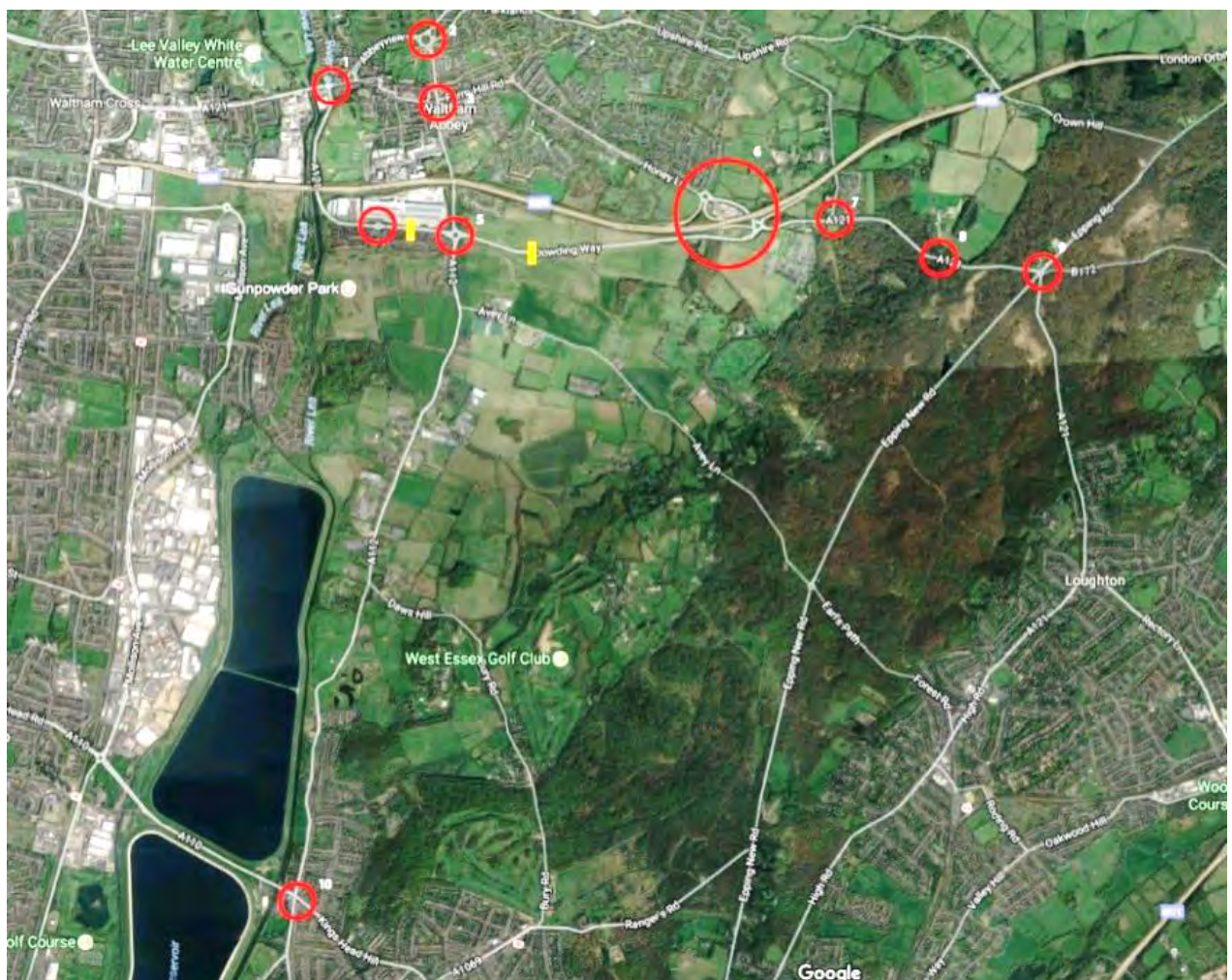


- 2.32 **Figure 2.9** demonstrates that the total number of incidents has declined significantly since 2015, reducing from ten accidents per annum, to two.
- 2.33 There was one accident during the five-year study period where an accident occurred on the A121. The accident report states that a vehicle strayed in to the path of an oncoming vehicle and they collided. The accident report does not suggest that either the highway alignment or road conditions were a contributig factor.
- 2.34 A review of the one fatal accident occuring on the A121 shows that the accident was caused by an overtaking manouvere and the details suggest that the driver was not familiar with driving on the left side of the road, which may have contributed to this accident. None of the recorded details suggest that there was any issue with the highway alignment or conditions at the time of the accident. As such it is considered that no further analysis is required in respect of this accident.
- 2.35 The Analysis of the PIA data does not lead one to a conclusion that there are any inherent safety issues on the A121It is therefore considered that the proposed redevelopment will not adversely affect or increase the number of PIAs occurring within the study area and as such, no mitigation measures specifically targeted at reducing accidents are required on the local highway network in support of this application.

Traffic Flows

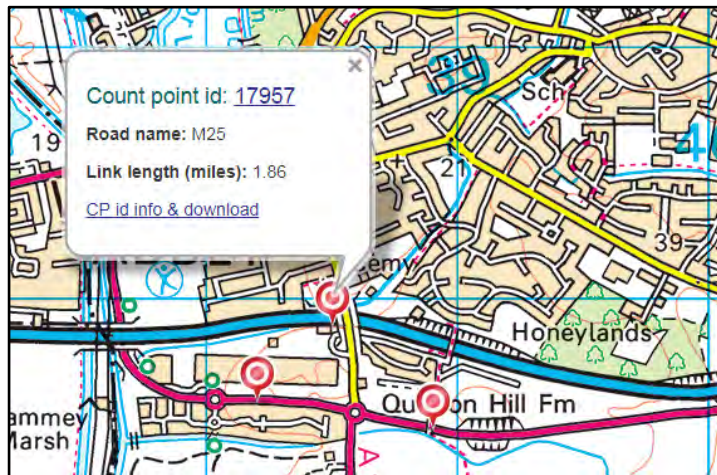
- 2.36 Following the scoping exercise with the ECC and HE, traffic surveys were commissioned to inform a new Vissim model of the local highway network, developed to understand the wider traffic effects of the proposed development.
- 2.37 Manual Classified and ATC surveys were undertaken 11th October 2017 and these are provided in detail in **Appendix C**. The junctions surveyed, and contained within the VISSIM model, are illustrated in **Figure 2.10**.

Figure 2.10 – Extent of assessed highway network



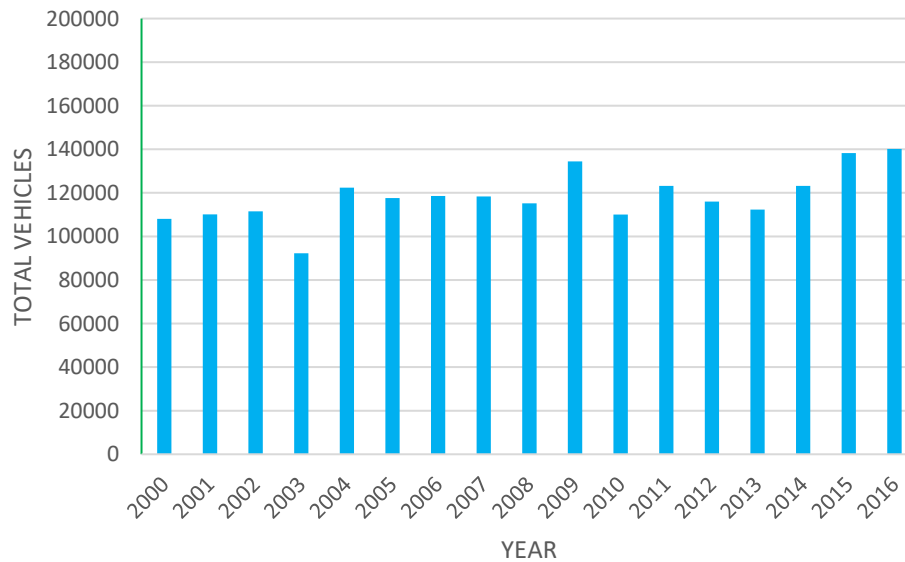
- 2.38 Existing Annual Average Daily Flows (AADF) for the local highway network within the vicinity of the site has also been obtained from the Department for Transport (DfT). The AADF data obtained covers the M25, which is situated to the immediate north of the site. The location of the AADF for the M25 obtained from DfT is illustrated in **Figure 2.11**.

Figure 2.11 – Location of AADF



2.39 **Figure 2.12** illustrates the traffic growth patterns on the M25 between 2000 and 2016 for all motor vehicles. Recorded average daily traffic volumes on the M25 is shown to be broadly consistent on the M25 between 2000 and 2014 and recorded flows in 2016 are a similar level to those observed in 2009. In other words, there has been little or no growth since 2009.

Figure 2.12 - M25 Motorway AADF



3 POLICY REVIEW

- 3.1 This section of the report reviews the relevant national and local policies in relation to the proposed development.

National

National Planning Policy Framework (NPPF)

- 3.2 NPPF sets out that development should only be prevented or refused on transport grounds where the residual cumulative impacts are severe¹. Therefore, the hurdle for transport issues to be afforded substantial weight in the planning balance is whether or not cumulatively the effect is 'severe'.
- 3.3 This is not specific to traffic impact. However, in considering the Stevenage Local Plan the Inspector considered what does not constitute (severe traffic impact) in the context of NPPF including where journey times across the network are more than one and a half minutes longer during the commuter peak periods².

Planning Practice Guidance

- 3.4 The Planning Practice Guidance (PPG) was launched on 6th March 2014 by the Ministry of Housing, Communities & Local Government and provides an internet-based source of all national planning guidance. In the section relating to Travel Plans, Transport Assessments and Statements, the PPG defines these documents as ways of assessing and mitigating the negative transport impacts of development in order to promote sustainable development. They are required for all developments which generate significant amounts of movements.
- 3.5 The PPG provides guidance as to what should be considered when setting the scope of the transport assessment, as well as the level of detail to be included, whilst acknowledging that this will vary from site to site. topics that should be included in the transport assessment or statement include: It states that an assessment should include the likely associated environmental impacts of transport related to the Development, particularly in relation to proximity to environmentally sensitive areas (such as AQMAs) as well as an appropriate assessment of the cumulative impacts arising from other committed development.

¹ NPPF para 32

² Stevenage Local Plan Inspectors Report October 2017 para 106

Local Policy

Emerging Epping Forest District Local Plan December 2017 (Regulation 19)

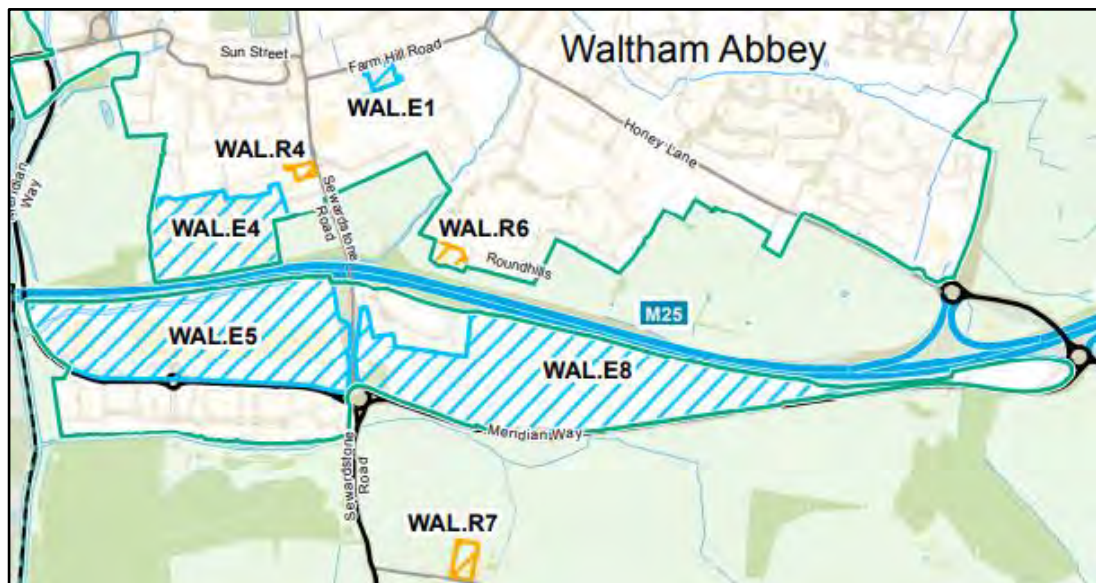
- 3.6 Epping Forest District's Local Plan highlights Waltham Abbey as a key employment site within the district. Paragraph 3.39 states;

'Drawing on the District's excellent strategic transport links, key employment locations include Loughton and Waltham Abbey.'

- 3.7 Policy SP2 and Policy E1 state that the site 'WAL.E8 – Land north of A121' is allocated for 40,000 sqm of B1c/B2/B8 class uses (business use/general industrial/storage and warehousing). The proposed development site forms part of this employment site allocation.

- 3.8 WAL.E8 – Land north of A121 is illustrated in the Local Plan extract contained in **Figure 3.1**.

Figure 3.1 – 'WAL.E8 – Land north of A121' site allocation



- 3.9 In relation to Transport, the Local Plan sets out the Council's approach to managing growth in car travel and its policies seek to widen the choice of travel opportunities using public transport, walking and cycling.
- 3.10 Policy T1 is relevant – Sustainable Travel Choices and is in numerous parts A-G. The following are considered relevant to the proposal:

- A(ii) – promote transport choice through improvements to public transport and infrastructure and providing coherent and direct cycling and walking networks to provide genuine alternatives to the car and facilitate modal shift
- B – development should minimise the need to travel and promote opportunities for sustainable transport modes.
- C – development proposals will be permitted where they:
 - i. integrate into existing transport networks;
 - ii. provide safe, suitable convenient access for all users;
 - iii. layouts with appropriate parking provision
 - iv. do not result in unacceptable increases in traffic generation or compromise highway safety.
- D – Provide a Routing Management Plan for development which generates HGV movements
- E – provide high quality sustainable infrastructure to offer maximum flexibility and choice of travel modes, including walking and cycling
- F – Development will be permitted where;
 - i) which does not result in a cumulative severe impact;
 - iii) protects and where appropriate, enhances access to Public Rights of Way
 - iv) provides appropriate parking provision and considers reduced parking provision
 - v) does not prejudice future provision of infrastructure on/through adjoining sites
- G – To accommodate low emission vehicles, electric charging points will be required.

3.11 This Transport Assessment demonstrates that the proposed development with the mitigation proposed, complies with all of these individual transport policies.

4 DEVELOPMENT PROPOSALS

Development Description

4.1 It is proposed to submit a hybrid planning application for the following development:

Phase 1 (detailed)

- 57,267 m² GIA of B8 floorspace; and
- A new access from A121 (Dowding Way) and associated parking / internal roads within the site.

Phase 2 (outline)

- Up to 22,733 m² GIA of B1c (20%) / B2 (40%) / B8 (40%) floorspace.

4.2 Access for the Phase 2 outline is yet to be determined, but it is shown on the illustrative Masterplan in **Figure 4.1** below as being taken from the roundabout and across the front of Phase 1.

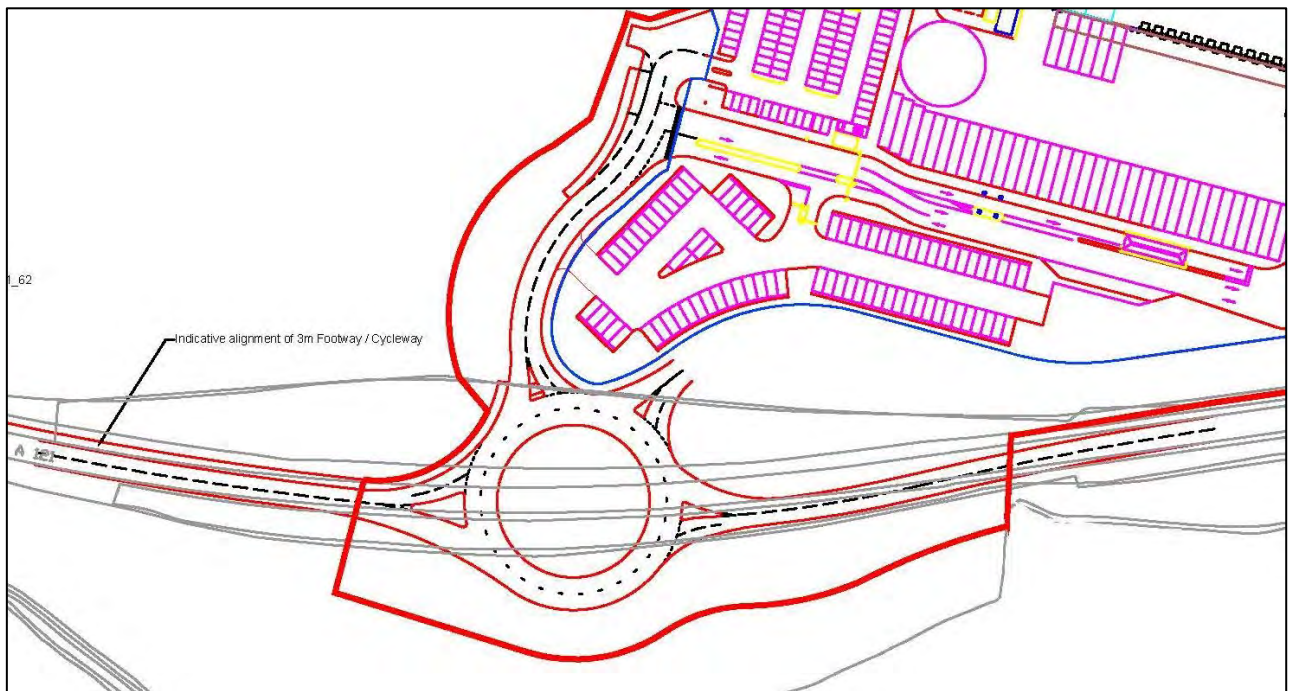
Figure 4.1 – Indicative masterplan



Site access

- 4.3 Access to the site will be via a new roundabout on Dowding Way. A preliminary design for this junction is illustrated in **Figure 4.2** and in larger scale in **Appendix D**. Swept path analysis is provided in **Appendix E**.

Figure 4.2 – Proposed site access roundabout



- 4.4 The proposed roundabout provides access to both Phase 1 and Phase 2, by separate arms of the roundabout. As mentioned, the access for Phase 2 is not yet confirmed, and the submitted Parameter plan affords some flexibility in this respect.
- 4.5 Staff and HGV access to Phase 1 are provided for with two separate access points from the northern arm of the roundabout. This preliminary design for access to the site will be subject to a Road Safety Audit and detailed design.

Sustainable Transport

- 4.6 In line with contemporary transport policy, the development will seek to enhance all modes of travel to the site including public transport, walking and cycling albeit with the acceptance of the character of the existing adjacent road network and in particular the A121 / M25.
- 4.7 Whilst any planning consent for this site will not be end user- specific, in this respect, the applicant and end user of Phase 1, Next, place significant weight on sustainable travel and

travel planning. This is covered in the following paragraphs and the proposed enhancements to accessibility are testament to the desire of the end user to develop a site which promotes travel choice and improves the overall accessibility of this site for pedestrians, cyclists and bus users.

Next Travel Planning

4.8 Next take Travel Planning for staff travelling to all of their sites seriously. They have their own in house 'Travel2Next team' (www.travel2next.co.uk) and some recent awards / accolades include:

- In 2016, Next Head Office was awarded 'most cycle friendly workplace' at the cycle planning awards hosted by Landhor Links;
- In 2017 Next Head Office was awarded "Active Travel Workplace of the year", also hosted by Landhor Links;
- In 2017 Next Head Office was the first corporate company in the UK to achieve a Gold Accredited award issued by Modeshift STARSfor, this award is valid for 3 years;
- November 2017 – Next was invited to give a presentation at the Modeshift Conference;
- The warehouses (Elmsall, Stadium and Toftshaw), have been entered for a Gold Accreditation through Modeshift, finalists and winners will be announced in November;
- Jointly, Head Office and the warehouses have entered the Healthy streets awards for 'Most Active workplace 2018';
- January 2018 – Next was invited to give a presentation at the ActTravelWise Convention; and
- November 2018 – Next have been invited to present at the Modeshift Conference.

4.9 The current mode split for the head office in Enderby, Leicestershire is:

- Drive Alone 49.7 % (includes electric and electric hybrid cars)
- Car Share 30.0 %

- Public Bus 1.3 %
- Private Coach 5.5 %
- Train 1.5 %
- Walk 3.3 %
- Drop Off / Taxi 5.1 %
- Motorbikes 0.8 %

- 4.10 The Next business is keen to ensure that travel choice is available for this depot / site. They provide financial incentives for staff to travel sustainably and reward staff with a daily £2 voucher. There will be similar financial incentives for staff to travel sustainability at this site. Next also provide bus services to some of their sites however in this case, the development will provide pump priming as explained later in this section.
- 4.11 Car sharing is high on the agenda and car sharers or even those staff being dropped off as part of a separate journey will also be rewarded with the financial subsidy. A car sharing database will be set up for this site with a support network from the Travel2Next team.
- 4.12 The Travel Plan team provide in house personalised travel planning, together with other initiatives such as Dr Bike sessions, discounted bikes, guaranteed ride home service for car sharers. Next also run monthly competitions targeted at behavioural change initiatives.
- 4.13 Next will know the postcodes of staff working on this site prior to opening and hence it will be possible to gauge the specific user requirements for travel from the outset. All staff at this site will be asked to complete an employee travel form, which will detail their current home post code and how they currently travel to work. Staff will be asked to complete this on the first day of employment. The results of this survey will identify staff that do live close to the site but currently drive alone, which will in turn identify an audience from which the Next Travel Planner can work with to engage behavioural change via competitions, voucher issue and travel clinics. This will be outlined further in the Travel Plan.

Pedestrian / Cycle connectivity

- 4.14 In terms of pedestrian / cycle connectivity (i.e. Active Transport) the development will make a financial contribution of £150,000, via Section 106 to upgrade the existing Public Rights of Way (PROW 211_62) as shown in **Figure 2.2** which links Round Hills, to the north of the M25 to Lodge Lane.

- 4.15 A new footway will also be provided on the northern side of Dowding Way from the pedestrian overbridge and PRow to the site boundary. These enhancement to pedestrian / cycle connectivity are presently being discussed with the local highway officer.
- 4.16 Enhancements to infrastructure such as this will make a significant improvement to the existing connectivity to this site from the existing residential catchments to the north of the site. It will also provide further connectivity to any subsequent phases of development on the adjoining land.
- 4.17 The development will provide showers and secure storage and locker facilities for those choosing to travel to the sites by Active modes of transport.

Public Transport

- 4.18 In devising a public transport strategy for this site, it is important to recognise the nature of the employment which will be primarily shift base staff, although there will be a proportion of employees who work traditional working patterns between core hours 0800-1800hrs.
- 4.19 We have contacted the local bus operator Galleon Travel who currently operate the 505 bus service in the area with a view to enhancing and diverting the service into this proposed employment site. It is likely that this model would involve running scheduled hourly services and given the nature of the employment it is considered that a more responsive bus service would be better suited to the site.
- 4.20 As such the development proposes via Section 106 to fund a Demand Responsive Transport (DRT) bus service operating between 05:00-01:00 seven days a week. This is likely to cost in the order of £650,000, and secured via Section 106, over two years whereby the service is forecast to become commercially viable.
- 4.21 The proposal from Arriva Click is shown in detail in **Appendix F** and is summarised below in a number of options based on various catchment areas (**Figures 4.3 – 4.5**). However, the overriding principle will be for the development to fund from day one a DRT bus service which will involve midi sized executive type buses serving the site and connecting to adjacent areas of population and public transport hubs with a 20 / 30-minute maximum wait app-based service based.

- 4.22 This type of service operated by Arriva Click is already in play in Sittingbourne Kent and has the added benefit with this proposal of having a critical mass of employees from day one.
- 4.23 Furthermore, a DRT service such as this will provide the local population with a significantly enhanced alternative form of bus service between residential areas and train / tube stations.
- 4.24 Moreover, introducing DRT in this location has the potential to benefit from an existing workforce at the Sainsbury's Waltham Point distribution centre on the A121 to the west of the proposed development. Whilst it is not possible to quantify this beneficial effect in terms of mode split from existing employers and journeys in the area and subsequent reduction in travel demand, this can only have a positive effect in terms of minimising car trips / congestion on the local and strategic highway network.
- 4.25 This level of investment is seen as a step-change in public transport provision in this area and the operator believes that given the commercial opportunities outlined above, that it will be self-sustaining by year 3.
- 4.26 In addition to this, and very much in keeping with the Next corporate approach to sustainable travel, employees will be incentivised to travel sustainably either on foot, bike, car-pooling or public transport. As per the existing Travel Plans across the Next business, which also include other depots, employees are likely to be rewarded with a £2 voucher per day for not travelling to the site by singularly occupied car. During the busier times of the year e.g. Christmas, Next may increase the travel subsidy for employees. This is considered to be a significant incentive to reducing single occupied car use.

Figure 4.3 – Arriva Click option 1

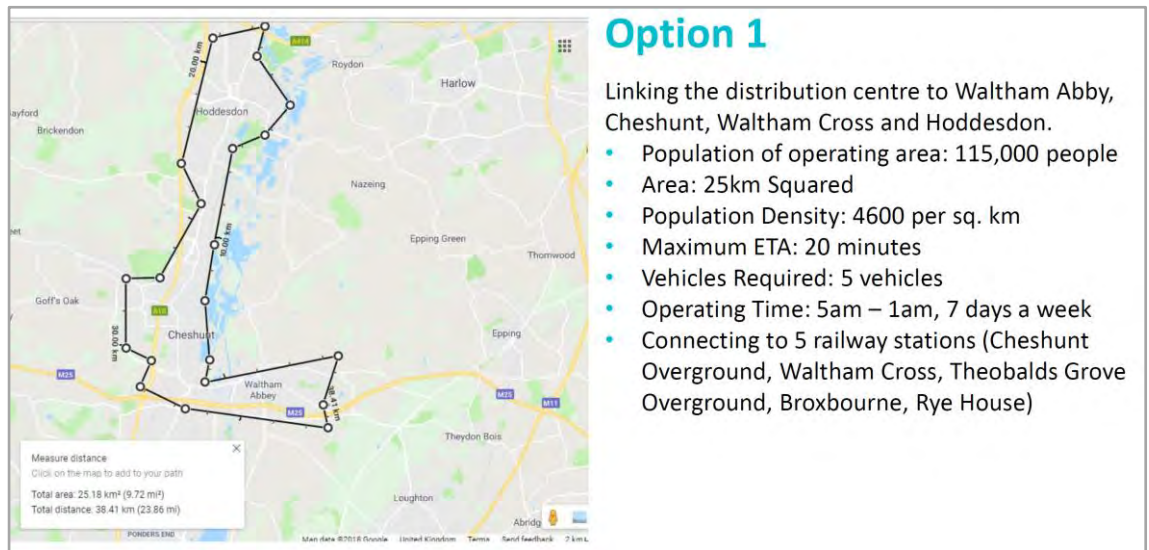


Figure 4.4 – Arriva Click option 2

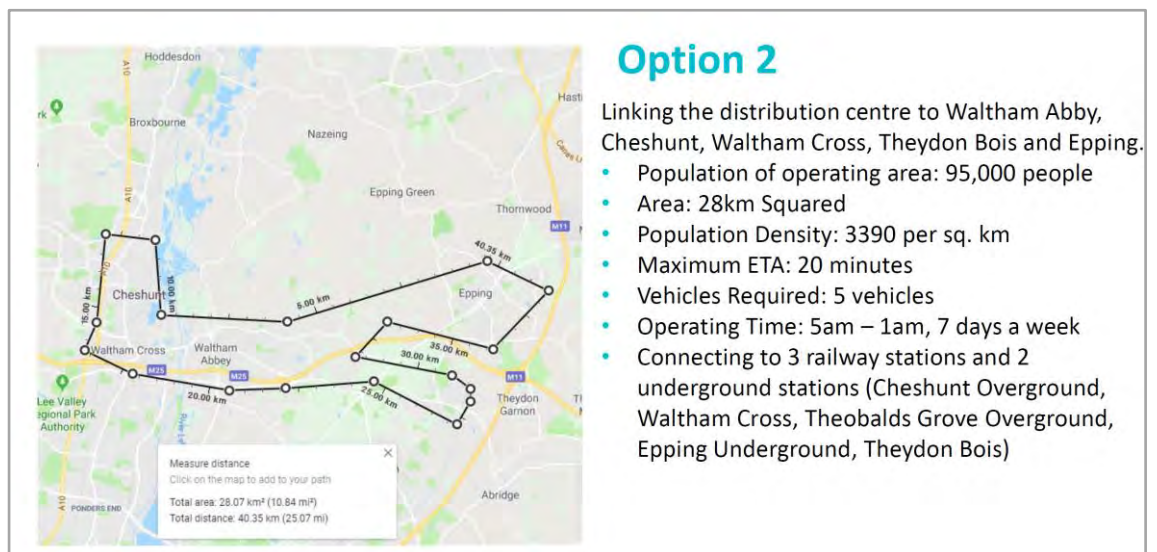
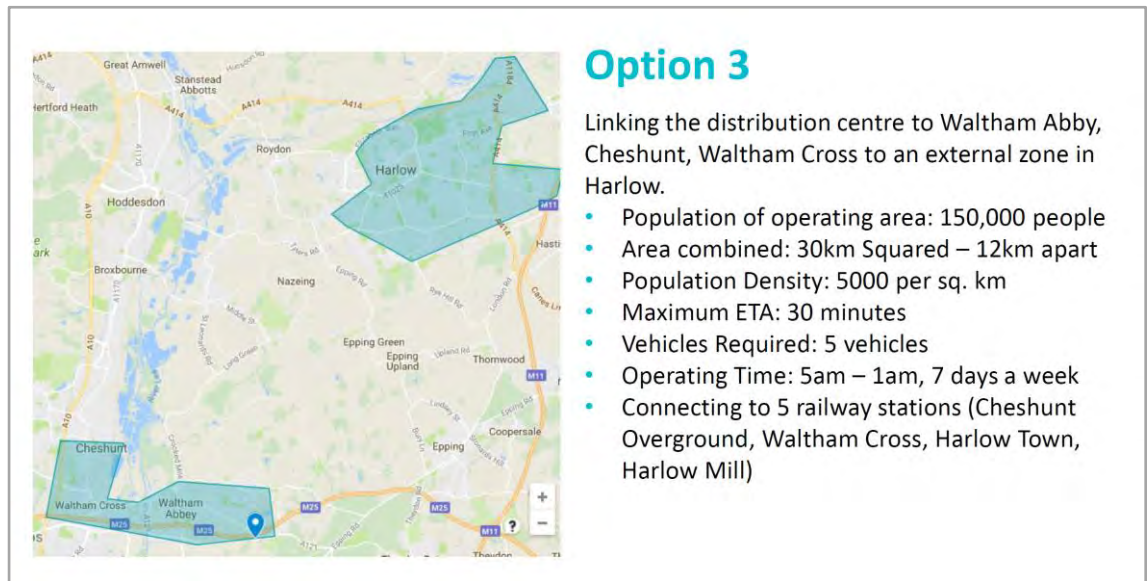


Figure 4.5 – Arriva Click option 3



Car Sharing

- 4.27 Next already operate a successful Car Sharing scheme, based on Liftshare, throughout their sites. This site will be no different and staff will be rewarded through travel vouchers for car sharing and also with car parking spaces which are nearest to the building entrances.

Staff Parking

- 4.28 Car parking on the site will be provided based on Essex County Council's parking standards (2009).
- 4.29 Based on the proposed B8, B2 and B1c use classes, the following maximum standards for car parking are relevant:
- B8 – 1 space / 150 sqm GFA;
 - B2 – 1 space / 50 sqm GFA; and
 - B1c – 1 Space / 30 sqm GFA.
- 4.30 The Phase 1 development will provide 150 car parking spaces for staff use. This quantum of parking provision for a B8 development of 57,267 m2 is well below the maximum parking level of circa 380 spaces, albeit the car park is capable of accommodating a decked area which would provide a further 150 spaces, should these be required as the facility increases

its capacity through the installation of the proposed mezzanine levels. A comprehensive Travel Plan has nevertheless been prepared to allow for the lower than maximum parking provision.

HGV Parking

- 4.31 The Phase 1 development will provide 45 HGV parking spaces and 80 van parking spaces for operational requirements.

Internal Site layout

- 4.32 There will be separate vehicular entrances for cars (staff / visitors) and HGV / vans in Phase 1 and swept path analysis for the site (Phase 1) is provided in **Appendix E**.
- 4.33 The internal layout of the site also provides a bus turning area and drop off for public transport users.
- 4.34 A link road to Phase 2 will be provided to the south of the car park for Phase 1.

Electric charging points / vehicles

- 4.35 The development will be future proofed by providing the ducting required to install charging points for electric vans and tractor (HGV) units.

HGV Routing Management Plan

- 4.36 It is intended that a HGV Routing Management Plan will be agreed with the local planning authority as part of the planning application and secured by Planning Condition.
- 4.37 Next, who will be the primary end user of this site, recognise that there is sensitivity in the local area with respect to HGV routing through Epping Forest. Equally, the proposed development is a B8 logistics depot for the Next business which will inevitably involve HGV traffic on the adjacent highway network. This is also an allocated site (WAL.E8) in the Epping Forest District Local Plan.
- 4.38 It is likely that the majority of HGV traffic will arrive to the site via M25 junction 26 and the A121 and these HGV movements will provide the stock for the depot. Thereafter, a network of smaller vehicles and vans will distribute stock to stores and the click and collect / mail order deliveries. In addition, the majority of HGV / OGV movements will occur outside of the

peak hours to avoid congestion and to provide a more streamlined logistics supply chain across the business.

4.39 The proposed depot will however, deliver stock to the following stores which, on occasion, may entail infrequent delivery by HGV movements;

- Enfield retail park - EN1 1TH
- Cheshunt retail park - EN8 0QL
- Enfield palace exchange – EN2 6BS
- Loughton – IG10 3FT
- Edmonton – N18 3HA
- Epping high street - CM16 4DA

4.40 As such, it is proposed that a HGV routing strategy is controlled via Planning Condition to restrict, where practically possible, HGV routing to stores associated with this depot through Epping Forest and Honey Lane (east).

4.41 The key exclusions to this Planning Condition would be;

i) For the occasional HGV delivery to the following local stores;

- Enfield retail park - EN1 1TH
- Cheshunt retail park - EN8 0QL
- Enfield palace exchange – EN2 6BS
- Loughton – IG10 3FT
- Edmonton – N18 3HA
- Epping high street - CM16 4DA

ii) Permitting routing of HGVs via the alternative adjacent local / strategic road network if there is serious congestion on the M25.

5 QUANTITATIVE ANALYSIS

Introduction

- 5.1 This section details the assessment scenarios and calculates the likely traffic attraction for both Phase 1 and Phase 2 of the development proposals.
- 5.2 The highway network assessed includes:
- Dowding Way;
 - West to the A121 Station Road junction;
 - Northwest to the Crooked Mile junction;
 - East to the A104 Epping New Road junction, including the M25 Motorway on and off-slip roads.
- 5.3 Network traffic flow diagrams are contained in **Appendix G**.

Scenarios

- 5.4 The development traffic effect has been assessed in the anticipated year of opening, 2021, as well as 2033, which accords with the end of the Epping Forest Local Plan period.
- 5.5 The weekday AM (08:00-09:00) and PM (17:00 – 18:00) peak periods have been considered in all scenarios.

Background Traffic Growth

- 5.6 The local and strategic highway network in this area suffers from existing commuter congestion during the weekday AM and PM peak hours primarily associated with the M25. The data presented in Section 2 of this TA demonstrates that the volumes of observed traffic on the M25 in this location have not increased materially since 2009. The local highway authority has also confirmed the area has suppressed traffic demand.
- 5.7 The observed traffic conditions and information provided by the highway authority confirm that the highway networks surrounding the site broadly operate at capacity. Therefore, the application of background growth, without substantial highway infrastructure improvements, is likely to be an over-estimation of future traffic conditions. To slavishly apply future traffic growth to a network which already has suppressed demand is not logical.

5.8 However, and in order to satisfy Highways England requirements, we have tested the year of opening as well as the end of plan period using growth factors derived from the TEMPro database, for the Epping Forest 008 Middle Super Output Area (MSOA).

5.9 **Table 5.1** summarises the TEMPro growth factors by year and by period.

Table 5.1 – TEMPro growth factors

From	To	AM	PM
2017	2021	1.0431	1.0482
2017	2033	1.1274	1.1357

Committed Developments

5.10 No additional, specific developments have been included with our assessment scenarios.

Traffic Attraction Methodology

5.11 Trip rates for each of the B8, B2 and B1c use classes were extracted from the TRICS database and these trip rates are summarised in **Table 5.2**.

Table 5.2 – Summary of development trip rates

Period	Type	B1c		B2		B8	
		Arr	Dep	Arr	Dep	Arr	Dep
AM Peak 08:00-09:00	Total	0.634	0.394	0.347	0.176	0.072	0.048
	HGVs	0.007	0.042	0.018	0.018	0.019	0.020
PM Peak 17:00-18:00	Total	0.122	0.340	0.085	0.326	0.029	0.053
	HGVs	0.002	0.005	0.007	0.009	0.018	0.020

5.12 As a sensitivity test, a survey of the adjacent Sainsbury's depot was undertaken and trip rates calculated for total traffic and HGVs only. The observed Sainsbury's trip rates are summarised in **Table 5.3**. When compared with the B8 trip rates extracted from TRICS, and included in **Table 5.2**, the observed Sainsbury's trip rates are lower. The observed Sainsbury's trip rates also include traffic associated with the small industrial estate on the western part of the site as it was not possible to separate these trips out. Therefore, this provides confidence in the chosen TRICS trip rates as being more than representative of the proposed development. Hence the B8 trip rate is considered to be robust for the purposes of this analysis.

Table 5.3 – Observed Sainsbury’s depot trip rates

Period	Type	Arr	Dep
AM Peak 08:00-09:00	Total	0.634	0.394
	HGVs	0.007	0.042
PM Peak 17:00-18:00	Total	0.122	0.340
	HGVs	0.002	0.005

5.13 In addition, the trip rates are unfettered and take no account of the proposed measures to reduce travel by car as set out in Section 4. Furthermore, it is highly likely that the volumes of traffic applied to the network during the weekday peak hours will not materialise when Phase 1 is operational. The reason for this is that the biggest part of Next’s logistical operation means that a significant proportion of vehicles will leave very early in the morning, before the peak hours.

5.14 The proposed development will be brought forward in two phases. The first phase will comprise a new depot for Next and will wholly comprise B8 use class, save for some ancillary uses which for the purposes of assessment, are not separated out. It is intended that phase 2 will offer some flexibility in terms of use class and for the purposes of traffic assessment only, a realistic approach has been taken to the likely future mix on the Phase 2 site, which is summarised in **Table 5.4**.

Table 5.4 – Development use class proportions

Phase	Phase 1	Phase 2		
Use Class	B8	B1c	B2	B8
Proportion %	100 %	20 %	40 %	40 %
Proportion GIA	5,7267 sqm	4546.6 sqm	9093.2 sqm	9093.2 sqm

5.15 Based on the use class proportions in Table 5.4 and the relevant trip rates in Table 5.2, the forecast development traffic forecast for the AM and PM peak periods is summarised in **Table 5.5**.

Table 5.5 – Summary of traffic generation by phase

Period	Type	Phase 1		Phase 2						Total	
		B8		B1c		B2		B8			
		Arr	Dep	Arr	Dep	Arr	Dep	Arr	Dep	Arr	Dep
AM Peak 08:00-09:00	Total	41	27	29	18	32	16	7	4	108	66
	HGVs	11	11	0	2	2	2	2	2	15	17
PM Peak 17:00-18:00	Total	17	30	6	15	8	30	3	5	33	80
	HGVs	10	11	0	0	1	1	2	2	13	14

5.16 The TRICS HGV trip rates do not distinguish between the various types of HGV. It was considered that there is likely to be a 50/50 split between OGV 1 and OGV2. The development traffic generation is summarised by vehicle type and peak period in **Table 5.6**.

Table 5.6 – Summary of traffic generation by vehicle type

Period	OGV 1		OGV 2		Lights		Total	
	Arr	Dep	Arr	Dep	Arr	Dep	Arr	Dep
AM Peak 08:00-09:00	7	8	7	8	94	49	108	66
PM Peak 17:00-18:00	6	7	6	7	20	66	33	80

Traffic Distribution

5.17 The development will primarily generate / attract two types of traffic movement. Firstly, there are traffic movements associated with staff working at the development and then HGV traffic.

Staff Distribution

5.18 The distribution of staff traffic has been calculated based on the geographic location of the existing staff currently working in the MSOA 'Epping Forest 008'. The most logical route between the site and the place of residence has been applied. Where more than one reasonable route is available an appropriate split has also been applied between the routes.

5.19 A summary of the staff traffic route distribution proportions is contained in **Table 5.7**.

Table 5.7 – Summary of staff distribution

Crooked Mile	A112 south	M25 east	M25 west	A121 Goldings Hill	Avery Lane	A121 Station Road	A110 kings Head Hill	Epping New Road	Epping Road (North)	B172 (east)
6.4%	5.8%	23.1%	6.2%	4.3%	1.0%	46.5%	2.6%	1.2%	1.3%	1.5%

5.20 Further details pertaining to the distribution of staff traffic is contained in **Appendix H**.

HGV Distribution

5.21 The movement of HGVs from this primarily B8-led development is key to a successful logistical operation. The site is particularly well located on the outskirts of London and adjacent to the North Circular and M25 / M11 Motorways. However, it is accepted that in general, HGV movement through local roads should be minimised. It is also likely that HGV

routing requirements for the B1c/B2 use classes will be slightly different from the B8 use class, with more local / regional trips rather than the typically nationwide movements associated with the B8 use. **Table 5.8** summarises the distribution of HGV traffic.

Table 5.8 – Summary of HGV traffic distribution

Use	M25 (east)	M25 (west)	A112 (south)
B8	45 %	45 %	10 %
B1c / B2	30 %	30 %	40 %

- 5.22 The sensitivity of routing HGV traffic south along the A112 is acknowledged and this is reflected in the quantum of HGVs allocated to this route. There will inevitably be a requirement for some HGV movement along this corridor to allow for potential future access to this part of London. The reality is however, that in real terms, the volumes of development HGVs travelling along this route will be low.

6 HIGHWAY NETWORK CAPACITY ANALYSIS

Site Access Junction

- 6.1 An ARCADY junction assessment has been undertaken for the proposed site access roundabout. The development traffic effect was tested in the year of opening 2021, as well as the end of plan period 2033, for both the AM and PM peak periods.
- 6.2 The results of the analysis are summarised in **Table 6.1** and contained in full in **Appendix I**.

Table 6.1 – Summary of ARCADY results for site access junction

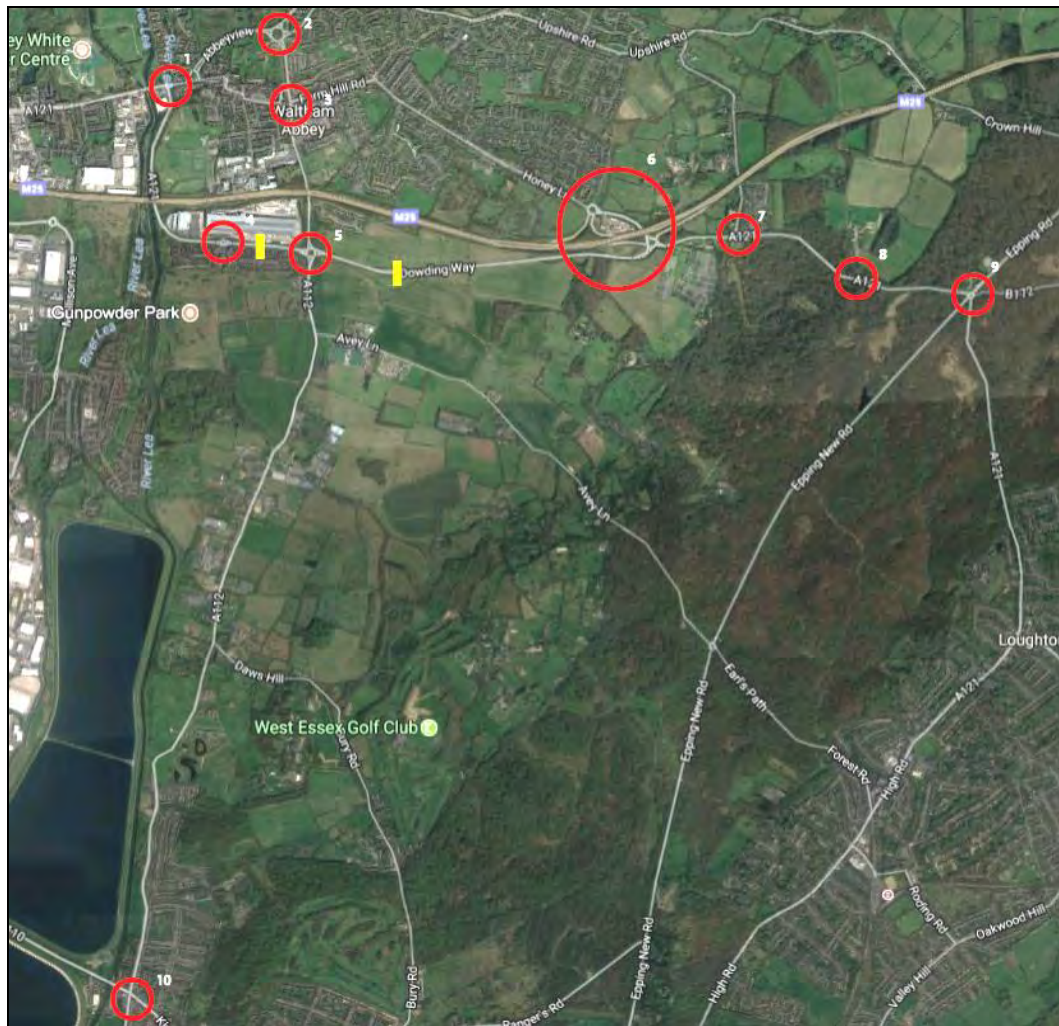
Period	Arm	AM Peak 08:00-09:00				PM Peak 17:00-18:00			
		Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
2021 Base & Development	1 - North Access	0.0	4.00	0.04	A	0.0	4.05	0.04	A
	2 - North-East Access	0.0	3.81	0.04	A	1	3.77	0.05	A
	3 - Dowding Way (E)	4	13.55	0.80	B	2	7.39	0.63	A
	4 - Dowding Way (W)	1.0	4.81	0.51	A	2	4.92	0.56	A
2033 Base & Development	1 - North Access	0.0	4.11	0.04	A	0.0	4.21	0.04	A
	2 - North-East Access	0.0	3.93	0.04	A	1	3.92	0.05	A
	3 - Dowding Way (E)	6	18.98	0.86	C	3	8.63	0.68	A
	4 - Dowding Way (W)	2	5.21	0.54	A	2	5.49	0.60	A

- 6.3 Table 6.1 demonstrates that the junction will operate well within its theoretical capacity in all scenarios including the application of background traffic growth.

Wider Highway Network

- 6.4 In order to understand the effect on development traffic on the local and strategic highway network, a VISSIM model has been developed. The extent of the model is shown in **Figure 6.1**.

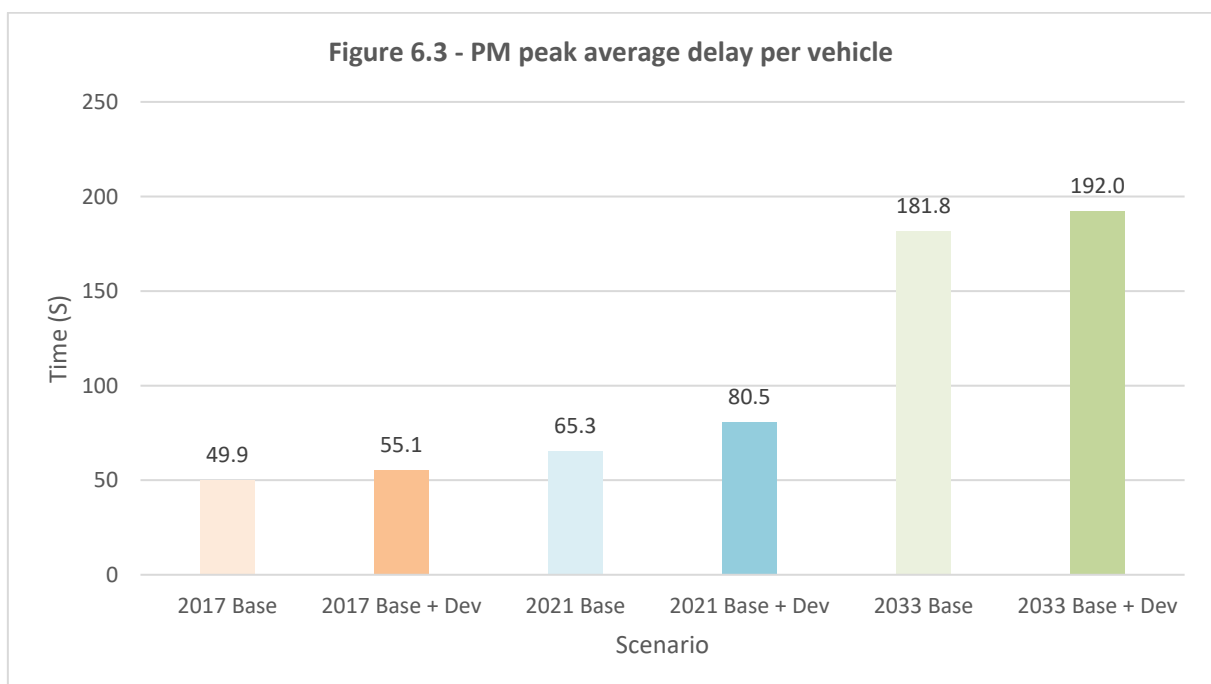
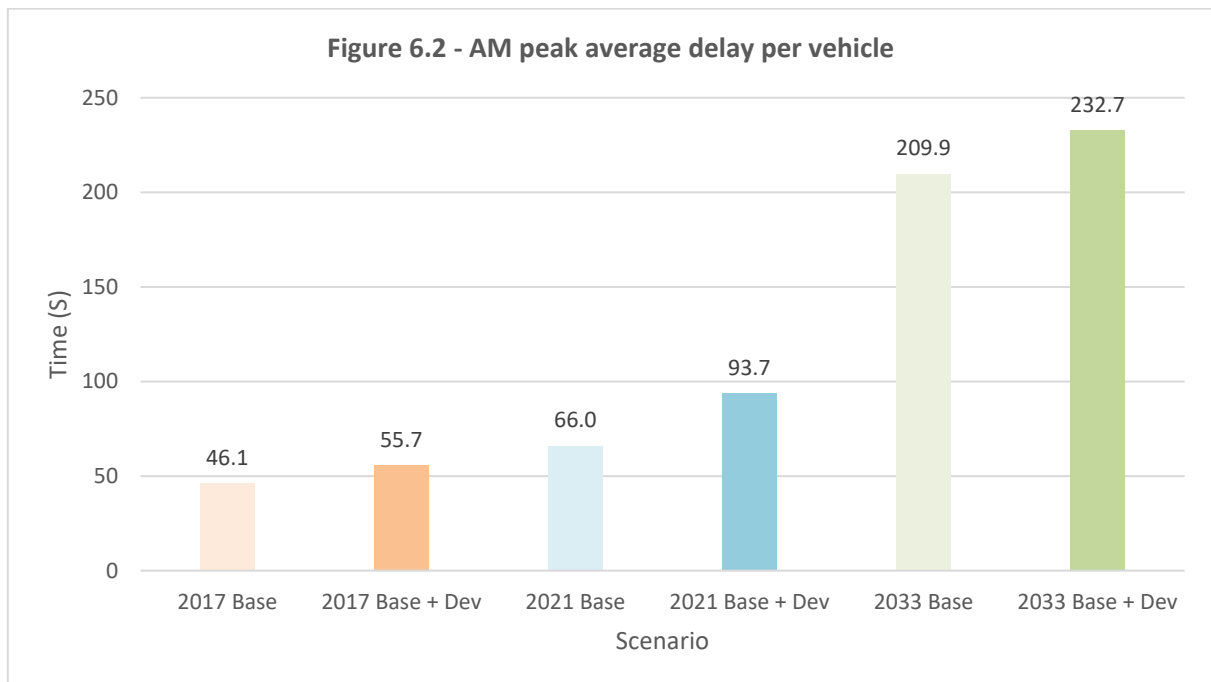
Figure 6.1 – Extent of the VISSIM model



- 6.5 The VISSIM model considers the development traffic effect in the year of opening 2021, as well as the end of plan period 2033, for both the AM and PM peak periods.
- 6.6 As detailed in Section 5, the local and strategic highway network experiences existing traffic congestion and delay during the weekday commuter peak periods. Traffic volumes on the M25 today are commensurate with those observed in 2009. As such, the development has been appraised against 2017 observed traffic volumes, as it is highly likely that these represent more realistic future traffic flows than the 2021 and 2033 scenarios, which include unattainable and unrealistic traffic growth projections.
- 6.7 Furthermore, the quantum of forecast development trips is likely to be a worst-case scenario, particularly for the Phase 1 B8 depot, for which the operator is known (Next). Whilst an end user specific planning permission is not sought, it should be noted that the likely volumes of forecast HGV movements during the commuter peak periods arising from

the scheduled Next operation is significantly less than tested. These specific details pertaining to Next can be supplied if required.

- 6.8 The average delay per vehicle, for all vehicles travelling through the highway network model, is summarised in **Figures 6.2 and 6.3**, for the AM and PM peaks respectively.



- 6.9 **Figures 6.2 and 6.3** demonstrate that based on existing traffic conditions (2017), the development effect means traffic on the network will experience an increase in average circa

9 and 5 seconds, for the AM and PM peaks respectively. This is a small and indiscernible change for which traffic will not perceive any effect.

6.10 The addition of background traffic growth in the 2021 scenarios increases the average delay to circa 28 and 15 seconds, for the AM and PM peaks respectively. This is not, in the context of NPPF guidance, considered to be a significant increase in delay to traffic.

6.11 As detailed in the previous section, the tested development scenarios include an over-estimated quantum of development trips as Next are unlikely to generate the quantum of trips forecast by TRICS, so these results should be considered worst-case. However, even as a worst case, the likely increase in delay is considered minor. The difference in average delay between the base and base + development 2033 scenarios is broadly similar to the 2021 scenarios and as such the same conclusion applies. It is likely that this level of delay is also within the daily variation of traffic within the network which is typically around 5%.

6.12 The journey times along a number of routes through the local network were also assessed. The routes include:

- Route 1 (EB and WB) – Honey Lane, J26 M25, Woodricken Hill;
- Route 2 (EB and WB) – Dowding Way; and
- J26 M25 (EB and WB) – on and off-slips.

6.13 The journey time routes are illustrated in **Figures 6.4 and 6.5**.

Figure 6.4 – Journey time routes (part 1)

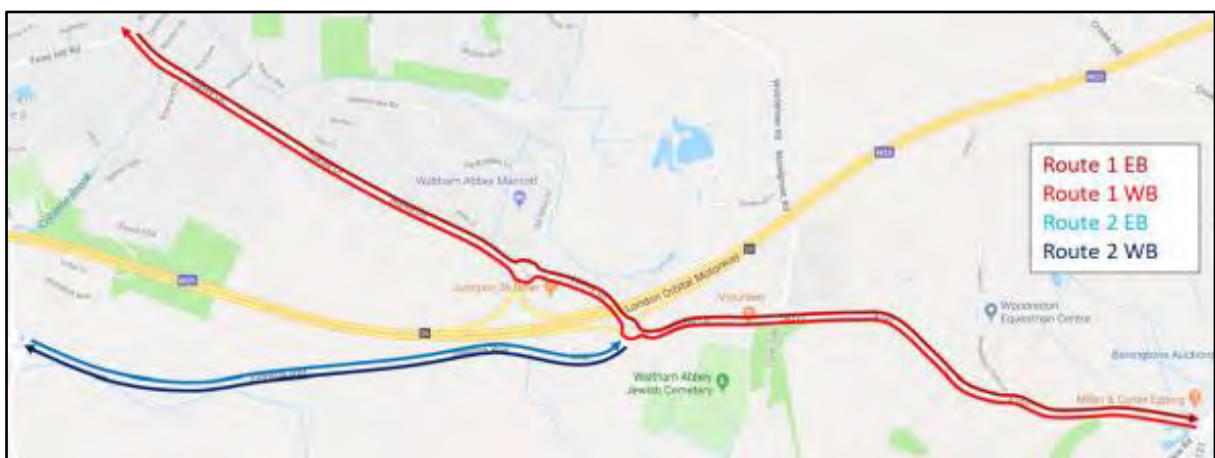
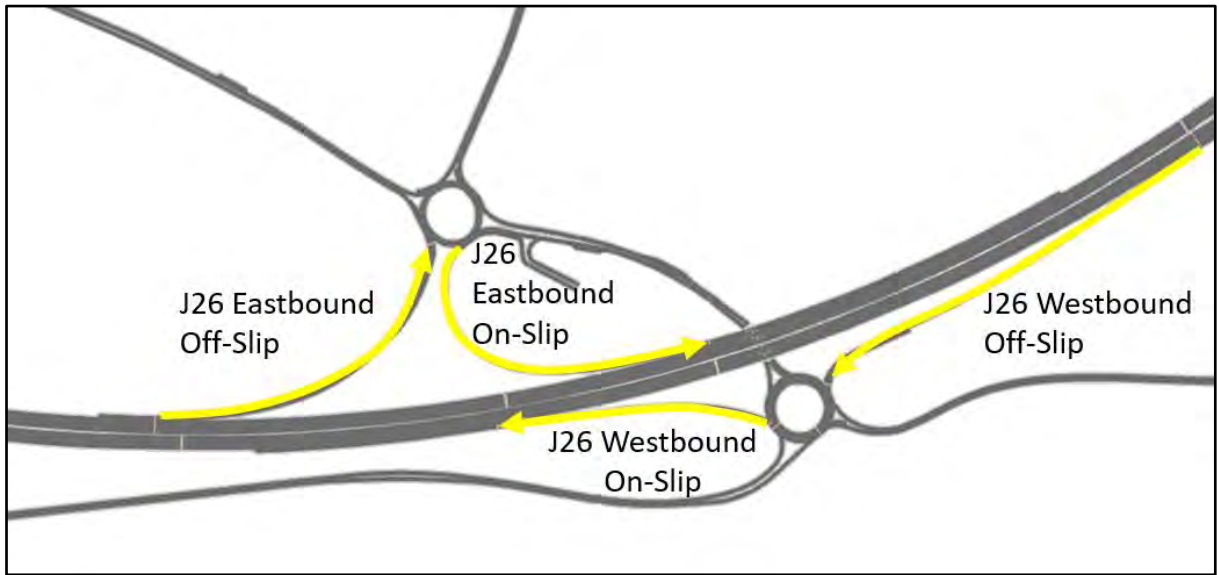
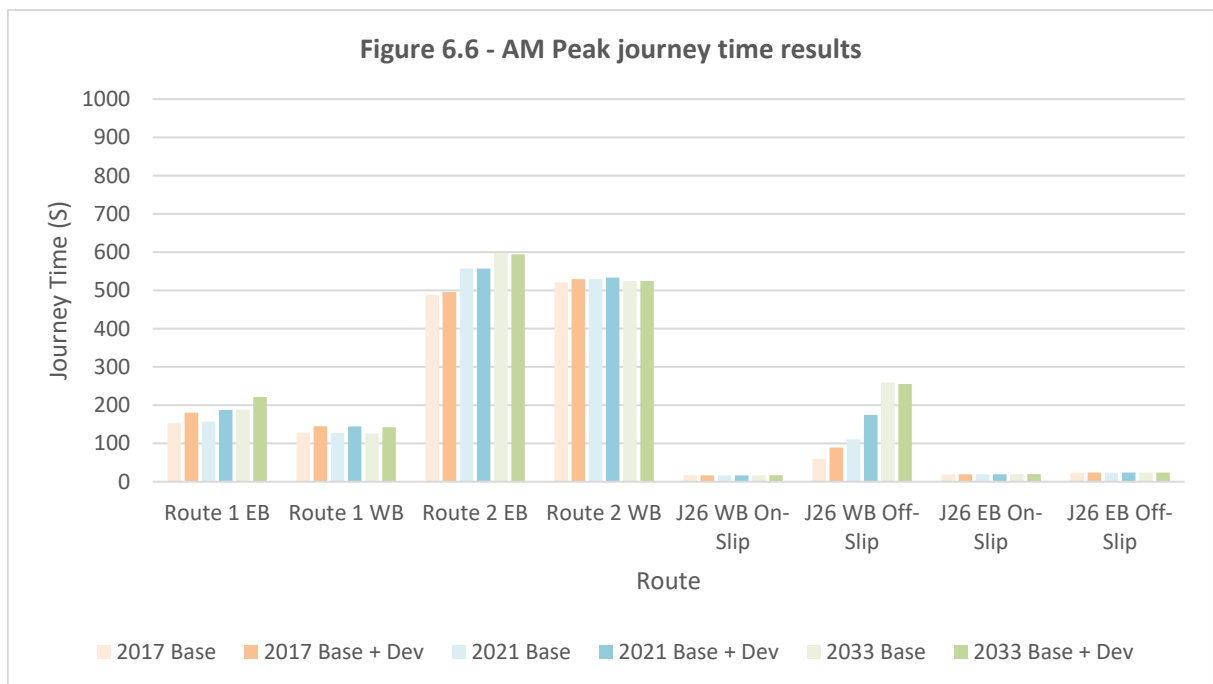
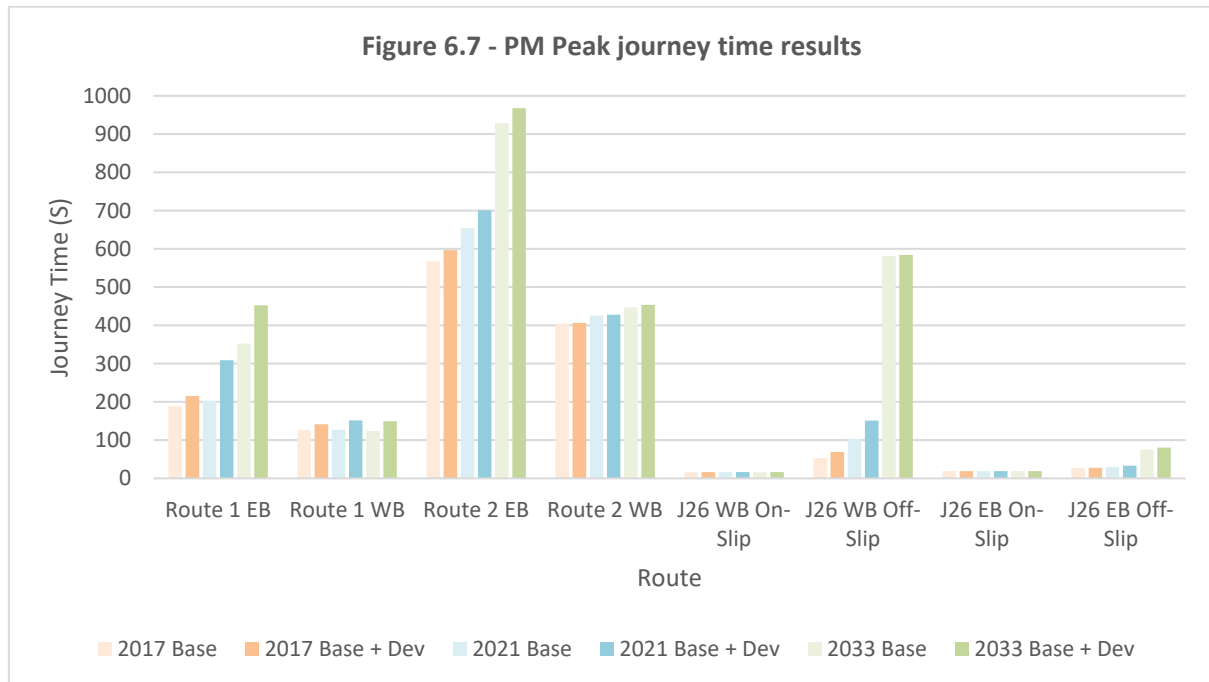


Figure 6.5 – Journey time routes (part 2)



6.14 The journey time results are summarised in **Figures 6.6** and **6.7** for the AM and PM peak periods respectively.





- 6.15 **Figures 6.6 and 6.7** demonstrate that in the 2017 scenarios, that any increase in journey times from the development along the specified routes is within + 30 seconds and on many of the routes it is much less than this. The largest forecast increases in journey time are forecast on Route 1 EB and the J26 WB Off-Slip in the AM peak (27 and 30 seconds respectively), with Route 1 EB and Route 2 EB in the PM peak (27 and 29 seconds respectively). This is not considered to be a significant traffic effect.
- 6.16 The 2021 scenarios have slightly larger increases in journey times on some routes. The largest increases in journey time are forecast on Route 1 EB and the J26 WB Off-Slip in the AM peak (31 and 64 seconds respectively), with Route 1 EB, Route 2 EB and J26 WB Off-Slip in the PM peak (106, 47 and 48 seconds respectively).
- 6.17 The 2033 assessment demonstrates that there is less variation between the base and the with development scenarios, however the overall journey times have increased in similar proportions for both scenarios. This is due to the volumes of traffic added in to the model associated with background traffic growth, which in reality are not feasible without a step-change in infrastructure provision.
- 6.18 As previously stated, we do not agree that applying TEMPRO traffic growth factors to what is an already congested network exhibiting suppressed demand is a fair and true reflection of future traffic conditions, however it is included in this assessment to demonstrate what would happen in a very worst-case scenario. Based on previous traffic trends on the

adjacent road network, it is our view that the likely future peak period traffic conditions will remain at a similar level to those observed in 2017, unless there is a significant change in highway infrastructure provision. However even in this scenario it is likely that any additional traffic capacity introduced by infrastructure improvements would be quickly eroded by suppressed traffic demand on this part of the highway network.

- 6.19 Therefore, instead of proposing any highway improvements to mitigate the minor changes in delay and journey time on the assessed network, a comprehensive Travel Plan and package of sustainable transport improvements is proposed to minimise the effect of depot staff.
- 6.20 Operational HGV vehicle movements will likely be less than forecast by TRICS, but in any case, additional control will be provided through the conditioning of an HGV routing agreement.
- 6.21 The Local Model Validation Report (LMVR) is contained in **Appendix J**.

7 SUMMARY AND CONCLUSIONS

Summary

- 7.1 Vectos is appointed by Next plc and Trinity Hall to provide transport and highways advice in relation to the proposed development at land north of Dowding Way, Waltham Abbey.
- 7.2 The proposed development comprises circa 80,000 sqm Gross Floor Area (GFA) of employment floorspace. Phase 1 will provide a new junction to access the site from Dowding Way and a new distribution depot (B8) for Next comprising 57,267 m². Phase 2 will provide a mix of B8 (40%) / B2 (40%) / B1c (20%) use comprising 22,733 m².
- 7.3 The site is currently within the Green Belt but is proposed for removal from the Green Belt and allocation for employment development (Class B1(c), B2 and B8) in the emerging Local Plan (Policy WAL.E8).
- 7.4 Whilst the site is well-located in terms of access to the strategic highway network and hence ideally suited to logistics, distribution, light industry etc, it is presently unsustainable and not particularly well connected to the residential population of Waltham Abbey.
- 7.5 The transport strategy underpinning the development proposals offers a step change improving the infrastructure for walking / cycling and public transport through Section 106 contributions of c. £800,000.
- 7.6 In addition, the site has been designed to minimise the need to travel by car by providing only 150 parking spaces which is significantly lower than the maximum standards permitted for this intended land use in this location. Moreover, the end user of Phase 1 (c. 57,000m² of B8 use), Next has an extremely well developed and organised approach to accessibility and sustainability embodied in its culture and manifest in its Travel Plan.
- 7.7 The Travel Plan coupled with the step change in infrastructure will provide travel choice to employees and visitors to this site, balance the need to travel by singularly occupied car, and hence contribute towards reducing the effect of development traffic on the local / strategic highway network.

Conclusions

- 7.8 This Transport Assessment has set out the transport strategy to deliver development on this site in accordance with the local plan and in accordance with contemporary transport policy.
- 7.9 In this instance, this does not mean building bigger junctions for more capacity to cater for existing suppressed demand on the strategic highway network based on negligible average increases in delays (post development) during commuter peak periods of less than 30s.
- 7.10 What the development offers is travel choice and greater longevity from financial investment in dealing with movement compared to junction capacity improvement works. It proposes to do this via section 106 funding for the way in which people travel to this new employment area by improving the pedestrian and cycle infrastructure together with providing a step-change in public transport provision by subsidising Demand Responsive Transport and exemplar Travel Planning. The measures proposed will also benefit existing residents and employers in this area by providing more travel choice.
- 7.11 For this reason, the site should be encouraged for employment use and supported from a transport policy perspective.

Appendix A

Note of Meeting



Name Of Meeting: Waltham Abbey (Project Buzz 173131) – Initial Highways Meeting

Meeting Held At: Highways England (HE) Guildford

Date And Time: 8th November 2017, 12:00

Minutes Taken By: Matt Thomas

Attendees: Cherrie Mendoza – Highways England (HE)
David Bowie - HE
Matthew Lane – Essex County Council Highways
Matt Thomas - Vectos

Distribution: As above plus:
Janice Burgess - HE

.....

	Description	Action By:
1	Following introductions, MT introduced the general principle of the project i.e. large scale distribution facility for a retail end user but was not able to discuss specifics due to confidentiality etc	note
2	MT stated that traffic surveys had been done at various junctions to avoid school holiday periods which may interfere with programme and that it was Vectos intention to submit a scoping report to both HE and Essex CC. The survey scope was discussed as broadly agreeable subject to the detail. This would include M25 junction 26 and not M25 junction 25.	MT
3	HE future year must be 10 years after opening or the lifetime of the local plan.	MT
4	HE stated that it was responsible for mainline, slips and merge / diverge tapers and would need to see an assessment. Junction 26 is not within the HE Road Investment Strategy (DB to check). HE do not have a microsimulation model at this junction only a strategic model – DB to confirm	DB DB
5	HE stated that HGV traffic would be a concern practically on the motorway junction. HE will be looking for 'nil detriment' although MT referred to latest HE guidance – Road to Growth March 2017 which, amongst other things, seeks to ensure logistics are prioritised. HE also mentioned that there has been no consultation with Epping re the local plan	note
6	HE stated that drainage and impact on the bund will also be pertinent issues which they will want to see mitigation for	Project team

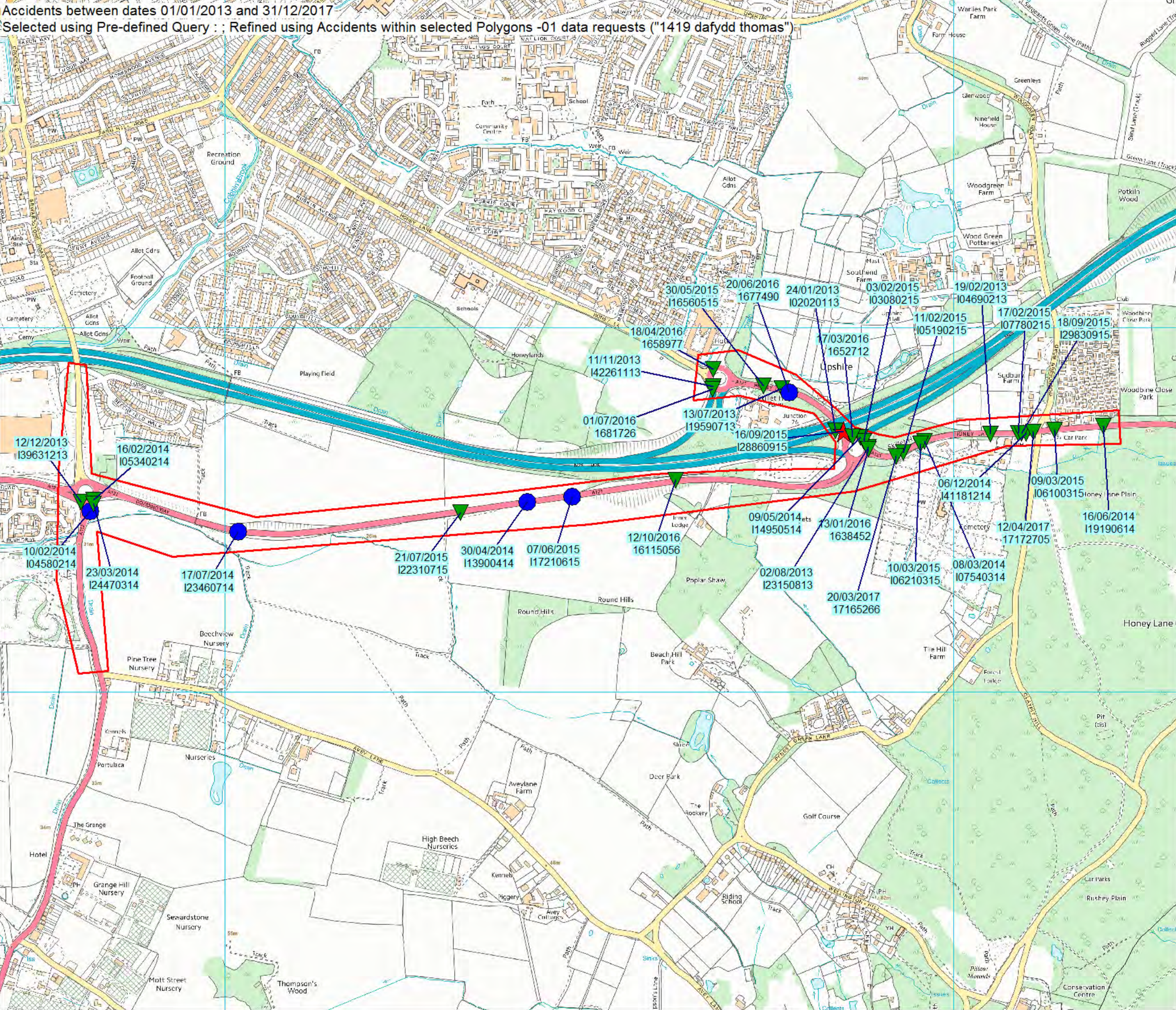
Note of Meeting



	Description	Action By:
7	Essex Council are unlikely to object in terms of HGV routing through Epping Forest	note
8	All parties confirmed that there was no committed development to consider	note

APPENDIX B

Accidents between dates 01/01/2013 and 31/12/2017
Selected using Pre-defined Query : : Refined using Accidents within selected Polygons -01 data requests ("1419 dafydd thomas")



Colour-coding by SEVERITY
Total Accidents (33)

- ★ Fatal (1)
- Serious (5)
- ▼ Slight (27)

Total Casualties (43)

- Fatal (1)
- Serious (8)
- Slight (34)

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**Essex
Highways**

Reviewed by: [Name] Date: [Date]

DRAWING TITLE

SCALE 1 : 10000

DATE 27/04/2018

DRAWING No.

DRAWN BY

accidentid	Date	police_ref	easting	northing	severity	Road_cond	Visibility	casualties	pedestrian	cycles	p2w	oaps
42720	24/01/2013	I02020113	540675	199719	3	1. Dry	4. Darkness: street lights present and lit	2	0	0	0	1
43123	19/02/2013	I04690213	541100	199709	3	1. Dry	6. Darkness: no street lighting	1	0	0	1	0
44462	13/07/2013	I19590713	540527	199834	3	1. Dry	1. Daylight	1	0	1	0	0
45298	02/08/2013	I23150813	540766	199673	3	1. Dry	1. Daylight	1	0	0	0	0
46372	11/11/2013	I42261113	540339	199840	3	2. Wet/Damp	4. Darkness: street lights present and lit	1	0	0	1	0
46414	12/12/2013	I39631213	538603	199522	3	1. Dry	4. Darkness: street lights present and lit	1	0	0	0	0
46560	10/02/2014	I04580214	538628	199498	2	2. Wet/Damp	1. Daylight	1	0	0	1	0
46784	16/02/2014	I05340214	538637	199529	3	1. Dry	1. Daylight	1	0	0	0	1
47383	08/03/2014	I07540314	540920	199690	3	1. Dry	1. Daylight	1	0	1	0	0
48797	23/03/2014	I24470314	538637	199518	3	2. Wet/Damp	1. Daylight	1	0	1	0	0
47671	30/04/2014	I13900414	539829	199522	2	2. Wet/Damp	6. Darkness: no street lighting	2	0	0	0	2
47937	09/05/2014	I14950514	540743	199701	3	1. Dry	1. Daylight	1	0	0	0	0
48302	16/06/2014	I19190614	541411	199732	3	1. Dry	1. Daylight	1	0	1	0	0
48502	17/07/2014	I23460714	539035	199441	2	1. Dry	1. Daylight	4	0	0	0	2
50631	06/12/2014	I41181214	541198	199712	3	1. Dry	1. Daylight	1	0	0	0	0
50986	03/02/2015	I03080215	540753	199690	3	2. Wet/Damp	4. Darkness: street lights present and lit	1	0	0	0	0
51156	11/02/2015	I05190215	540862	199658	3	1. Dry	1. Daylight	2	0	0	0	0
51361	17/02/2015	I07780215	541176	199711	3	1. Dry	1. Daylight	1	0	0	0	0
51216	09/03/2015	I06100315	541277	199721	3	1. Dry	4. Darkness: street lights present and lit	1	0	0	0	0
51223	10/03/2015	I06210315	540908	199682	3	1. Dry	1. Daylight	1	0	0	0	0
52153	30/05/2015	I16560515	540477	199841	3	1. Dry	1. Daylight	1	0	0	0	0
52214	07/06/2015	I17210615	539952	199538	2	1. Dry	6. Darkness: no street lighting	2	0	0	0	0
52637	21/07/2015	I22310715	539645	199494	3	1. Dry	1. Daylight	1	0	0	0	0
52796	16/09/2015	I28860915	540697	199716	1	2. Wet/Damp	4. Darkness: street lights present and lit	1	0	0	1	0
53425	18/09/2015	I29830915	541186	199711	3	2. Wet/Damp	1. Daylight	1	0	0	1	0
217085	13/01/2016	1638452	540765	199668	3	1. Dry	1. Daylight	1	0	0	1	0
217227	17/03/2016	1652712	540721	199702	3	1. Dry	1. Daylight	1	0	0	0	0
217856	18/04/2016	1658977	540340	199887	3	2. Wet/Damp	1. Daylight	1	0	0	0	1
218306	20/06/2016	1677490	540547	199824	2	2. Wet/Damp	1. Daylight	1	0	0	0	1
218762	01/07/2016	1681726	540337	199832	3	1. Dry	1. Daylight	2	0	0	0	0
221063	12/10/2016	16115056	540236	199582	3	1. Dry	1. Daylight	1	0	0	1	1
227786	20/03/2017	17165266	540842	199648	3	2. Wet/Damp	1. Daylight	2	0	0	0	1
230859	12/04/2017	17172705	541218	199715	3	1. Dry	1. Daylight	2	0	0	1	0

children	Manoeuvre	Time	vehicles	Roadclass1	roadnum1	Road_type	speed_lim	Junct_Det	Junct_Ctrl
0	0. No turn	18:19:00	3	1. Motorway	25	3. Dual carriageway	70	9. Other junction	4. Give way or Uncontrolled
0	0. No turn	05:45:00	1	3. A	121	6. Single carriageway	40	0. Not within 20M	. Not applicable
0	2. Right turn	12:35:00	2	3. A	121	6. Single carriageway	60	0. Not within 20M	. Not applicable
0	1. Left turn	10:00:00	2	3. A	121	1. Roundabout	30	1. Roundabout	4. Give way or Uncontrolled
0	2. Right turn	18:15:00	2	6. Unclassified		1. Roundabout	60	1. Roundabout	4. Give way or Uncontrolled
0	0. No turn	17:55:00	2	3. A	112	1. Roundabout	40	1. Roundabout	4. Give way or Uncontrolled
0	2. Right turn	07:50:00	2	3. A	112	6. Single carriageway	60	1. Roundabout	4. Give way or Uncontrolled
0	0. No turn	11:38:00	2	3. A	121	1. Roundabout	60	1. Roundabout	4. Give way or Uncontrolled
0	0. No turn	15:44:00	2	3. A	121	6. Single carriageway	40	0. Not within 20M	. Not applicable
0	1. Left turn	08:50:00	2	3. A	112	1. Roundabout	30	1. Roundabout	4. Give way or Uncontrolled
0	0. No turn	00:59:00	2	3. A	121	6. Single carriageway	60	0. Not within 20M	. Not applicable
0	0. No turn	18:15:00	1	3. A	121	1. Roundabout	60	1. Roundabout	4. Give way or Uncontrolled
0	0. No turn	08:29:00	1	3. A	121	6. Single carriageway	60	0. Not within 20M	. Not applicable
0	0. No turn	16:29:00	2	3. A	121	6. Single carriageway	60	0. Not within 20M	. Not applicable
0	0. No turn	14:00:00	3	3. A	121	6. Single carriageway	40	0. Not within 20M	. Not applicable
0	0. No turn	20:38:00	1	3. A	121	1. Roundabout	50	1. Roundabout	4. Give way or Uncontrolled
0	0. No turn	11:30:00	2	3. A	121	6. Single carriageway	60	0. Not within 20M	. Not applicable
0	0. No turn	17:00:00	2	3. A	121	6. Single carriageway	40	9. Other junction	4. Give way or Uncontrolled
0	2. Right turn	21:30:00	3	3. A	121	6. Single carriageway	30	6. Crossroads	4. Give way or Uncontrolled
0	0. No turn	07:20:00	2	6. Unclassified		6. Single carriageway	60	0. Not within 20M	0. Not at junction
0	0. No turn	16:50:00	2	3. A	121	6. Single carriageway	60	0. Not within 20M	0. Not at junction
0	0. No turn	22:35:00	2	3. A	121	6. Single carriageway	60	0. Not within 20M	0. Not at junction
0	0. No turn	10:26:00	3	3. A	121	6. Single carriageway	60	0. Not within 20M	0. Not at junction
0	0. No turn	22:04:00	3	6. Unclassified		6. Single carriageway	40	0. Not within 20M	0. Not at junction
0	0. No turn	12:45:00	2	6. Unclassified		6. Single carriageway	30	3. T & Stag Jct	4. Give way or Uncontrolled
0	0. No turn	09:20:00	2	3. A	121	1. Roundabout	60	1. Roundabout	4. Give way or Uncontrolled
0	0. No turn	08:50:00	2	6. Unclassified		1. Roundabout	30	1. Roundabout	4. Give way or Uncontrolled
0	0. No turn	10:48:00	2	3. A	121	1. Roundabout	30	1. Roundabout	4. Give way or Uncontrolled
0	0. No turn	08:27:00	3	3. A	123	3. Dual carriageway	50	3. T & Stag Jct	4. Give way or Uncontrolled
0	2. Right turn	18:20:00	3	3. A	121	1. Roundabout	60	1. Roundabout	4. Give way or Uncontrolled
0	0. No turn	07:40:00	4	3. A	121	6. Single carriageway	60	0. Not within 20M	. Not applicable
0	0. No turn	10:34:00	2	3. A	121	6. Single carriageway	60	0. Not within 20M	. Not applicable
0	0. No turn	14:12:00	2	3. A	121	6. Single carriageway	40	3. T & Stag Jct	4. Give way or Uncontrolled

[illegible]

SpCond	Carr_Haz	REPORTEDAT	dftsp
0. None	0. None	1. Yes	
5. Road surface defective	0. None	2. No - accident was reported 'over the counter'	
0. None	0. None	1. Yes	
0. None	0. None	2. No - accident was reported 'over the counter'	
0. None	0. None	1. Yes	
0. None	0. None	1. Yes	
0. None	0. None	1. Yes	
0. None	0. None	1. Yes	
0. None	0. None	1. Yes	
0. None	0. None	1. Yes	
0. None	0. None	1. Yes	
0. None	0. None	1. Yes	
0. None	0. None	1. Yes	
0. None	0. None	2. No - accident was reported 'over the counter'	
0. None	0. None	1. Yes	
0. None	0. None	1. Yes	
0. None	0. None	1. Yes	
0. None	0. None	1. Yes	
0. None	0. None	1. Yes	
0. None	0. None	1. Yes	
0. None	0. None	1. Yes	
0. None	0. None	1. Yes	
0. None	0. None	1. Yes	
0. None	0. None	1. Yes	
0. None	0. None	2. No - accident was reported 'over the counter'	
0. None	0. None	1. Yes	
3. Permanent road signing or marking defective or obscured	0. None	2. No - accident was reported 'over the counter'	
0. None	0. None	2. No - accident was reported 'over the counter'	
0. None	0. None	1. Yes	
0. None	0. None	2. No - accident was reported 'over the counter'	
0. None	0. None	1. Yes	

location	Local_Auth	Parish	localsp
M25 MOTORWAY B TRACK AT J26	E07000072. EPPING FOREST		
HONEY LANE, WALTHAM ABBEY 300M EAST J/W A121	E07000072. EPPING FOREST		
A121 HONEY LANE APPROX 100M SE OF ROUNDABOUT J/W OLD SHIRE LANE WALTHAM ABBEY	E07000072. EPPING FOREST		
HONEY LANE JUNCTION WITH SKILLET HILL ON ROUNDABOUT.	E07000072. EPPING FOREST		
J26 ROUNDABOUT BY WOODRIDDEN HILL, LOUGHTON	E07000072. EPPING FOREST		
SEWARDSTONE ROAD, AT JUNCTION WITH A121.	E07000072. EPPING FOREST		
SEWARDSTONE ROAD, APPROX 20 METRE FROM JUNCTION WITH DOWDING WAY (A121)	E07000072. EPPING FOREST		
ROUNDABOUT - DOWDING WAY, J/W SEWARDSTONE ROAD	E07000072. EPPING FOREST		
HONEY LANE (A121) WALTHAM ABBEY APPROX 400 METRES WEST OF THE JUNCTION WITH CLAY PIT HILL.	E07000072. EPPING FOREST		
SEWARDSTONE ROAD J/W MERIDIAN WAY	E07000072. EPPING FOREST		
A121 1.2 KM FROM J/W SEWARDSTONE ROAD	E07000072. EPPING FOREST		
HONEY LANE WALTHAM ABBEY JUNCTION WITH M25 B TRACK J26.	E07000072. EPPING FOREST		
WOODRIDDEN HILL 100M (SE) HONEY LANE.	E07000072. EPPING FOREST		
A121 (DOWDING WAY) 400 YARDS EAST OF JNCT SEWARDSTONE ROAD.	E07000072. EPPING FOREST		
HONEY LANE OUTSIDE VOLUNTEER PUB 500 YRDS FROM WOODGREEN ROAD	E07000072. EPPING FOREST		
ROUNDABOUT JUNCTION OF HONEY LANE AND SEWARDSTONE ROAD	E07000072. EPPING FOREST		
HONEY LANE ABOUT 75 METRES EAST OF ROUNDABOUT J/W DOWDING WAY	E07000072. EPPING FOREST		
A121 HONEY LANE, 50 METRES FROM THE JUNCTION WITH WOODGREEN ROAD.	E07000072. EPPING FOREST		
WOODRIDDEN HILL AT ENTRANCE TO WOODBINE P/H CAR PARK, WALTHAM ABBEY	E07000072. EPPING FOREST		
HONEY LANE, 150M EAST J/W M25	E07000072. EPPING FOREST		
A121 HONEY LANE 150YARDS SOUTH OF J/W WOODRIDDEN HILL.	E07000072. EPPING FOREST		
A121 DOWDING ROAD, 0.5 MILES EAST (WEST) OF JUNCTION WITH HONEY LANE.	E07000072. EPPING FOREST		
A121 APPROX. 1.16KM WEST OF J/W HONEY LANE.	E07000072. EPPING FOREST		
HONEY LANE, WALTHAM ABBEY, DIRECTLY UNDERNEATH M25, J26 BRIDGE.	E07000072. EPPING FOREST		
WOODREDON HILL O/S (OUTSIDE) VOLUNTEER PUBLIC HOUSE	E07000072. EPPING FOREST		
HONEY LANE A121 DOWDING ROAD A121	E07000072. EPPING FOREST		
HONEY LANE UNSPECIFIED ROAD OR LOCATION A121	E07000072. EPPING FOREST		
HONEY LANE A121 OLD SHIRE LANE	E07000072. EPPING FOREST		
HONEY LANE A123 50 METRES SOUTH OF JUNCTION WITH OLD SHIRE LANE	E07000072. EPPING FOREST		
HONEY LANE A121 HONEY LANE	E07000072. EPPING FOREST		
HONEY LANE A121 500 METRES WEST OF JUNCTION WITH JUNCTION 26 M25	E07000072. EPPING FOREST		
HONEY LANE A121	E07000072. EPPING FOREST		
HONEY LANE A121 5 METRES NORTH OF JUNCTION WITH WOODGREEN ROAD	E07000072. EPPING FOREST		

Day	pol_force	status	statusdate	errortypes	beat
5. Thursday	42	33	20130704		T213B
3. Tuesday	42	33	20130704		D122C
7. Saturday	42	33	20131024		D122D
6. Friday	42	33	20131112		D122C
2. Monday	42	33	20140326		D122C
5. Thursday	42	33	20140326		D122A
2. Monday	42	33	20140424		D122A
1. Sunday	42	33	20140424		D122A
7. Saturday	42	33	20140527		D122C
1. Sunday	42	33	20140829		D122A
4. Wednesday	42	33	20140627		D122A
6. Friday	42	33	20140725		D122C
2. Monday	42	33	20140829		D122D
5. Thursday	42	33	20150306		D122A
7. Saturday	42	33	20150306		D122D
3. Tuesday	42	33	20150415		D122C
4. Wednesday	42	33	20150415		D122C
3. Tuesday	42	33	20150415		D122D
2. Monday	42	33	20150415		D122D
3. Tuesday	42	33	20150415		D122C
7. Saturday	42	33	20150721		T213A
1. Sunday	42	33	20150721		D122A
3. Tuesday	42	33	20151006		D122A
4. Wednesday	42	32	20160706		D122C
6. Friday	42	33	20160308		D122D
4. Wednesday	42	63	20160819		
5. Thursday	42	52	20170302		
2. Monday	42	63	20160912		
2. Monday	42	52	20160920		
6. Friday	42	52	20161007		
4. Wednesday	42	52	20161205		
2. Monday	42	52	20170418		
4. Wednesday	42	52	20170619		

acc_desc

ALL VEHS TRAVELLING ANTICLOCKWISE TO WEST BOUND. VEH 1 TRAVELLING IN LANE 2. VEH 2 TRAVELLING IN LANE 1. THESE VEHS POSITIONED ADJACENT TO EACH OTHER. VEH 1 INDICATES LEFT AND MOVES FROM LANE 2 INTO LANE 1. VEH 1'S F/N/ V1 TRAVELLING WEST IN GENERAL DIRECTION OF WALTHAM ABBEY. DUE TO DEFECTIVE ROAD SURFACE, FRONT WHEEL OF V1 HAS HIT POT HOLE, CAUSING RIDER TO LOOSE CONTOL AND DROP BIKE ONTO NEARSIDE.

V1 AND V2 BOTH TRAVELLING A121 HONEY LANE, WALTHAM ABBEY HEADING IN GENERAL DIRECTION OF LOUGHTON. V1 STATIONARY IN HEAVY TRAFFIC WHILST V2 WAS OVERTAKING TO THEIR OFFSIDE. V1 THEN TURNED RIGHT TO PERFORM A U-TURN. V2 WAS ON THE OUTSIDE LANE PREPARING TO TAKE THE FIRST EXIT WHEN V1 CUT ACROSS FROM THE INSIDE LANE HITTING V2 CAUSING IT TO LEAVE THE CARRIAGEWAY. V1 FAILED TO STOP.

V1 AND V2 WERE TRAVELLING SIDE BY SIDE AND WERE PULLING ONTO THE ROUNDABOUT AND BOTH VEHICLES COLLIDED TOGETHER.

BOTH VEHICLES WERE TRAVELLING NORTH ON THE A112 ON THE APPROACH TO A ROUNDABOUT AT JUNCTION WITH A121. VEHICLE 2 HAS COME TO A STOP AND VEHICLE 1 HAS NOT STOPPED, COLLIDING WITH THE REAR OF VEHICLE 2.

V1 WAS IN STATIONARY TRAFFIC TRAVELLING TOWARDS SEWARDSTONE. DRIVER OF V1 MADE A U-TURN OUT OF THE LINE OF STATIONARY TRAFFIC TO GO IN OPPOSITE DIRECTION. V2 WAS OVERTAKING THE TRAFFIC AS V1 PERFORMED THIS MANOEUVRE. VEHICLE 1 AND 2 TRAVELLED ALONG A121 FROM M25 TOWARDS ROUNDABOUT J/W SEWARDSTONE ROAD. VEHICLE 2 HAS SLOWED AT THE GIVEWAY TO THE ROUNDABOUT LOOKING FOR A GAP. VEHICLE 1 HAS APPROACHED FROM BEHIND, SEEN VEHICLE 2 AND COLLIDED WITH THE REAR OF VEHICLE 2. V1 TRAVELLING EAST ALONG HONEY LANE FROM JUNCTION 26 OF M25. V1 WHILST ON A SLIGHT NEARSIDE BEND HAS COLLIDED WITH A CYCLIST (V2) WHO WAS ALSO TRAVELLING EAST ALONG HONEY LANE.

VEH 1 WAS TRAVELLING ON A121 TOWARDS MERIDIAN WAY AT THE RAB, VEH 1 HAS OVER TAKEN A CCLIST AND TURNED LEFT ONTO SEWARDSTONE ROAD COLLIDING WITH THE CYCLIST.

VEH 2 TRAVELLING ALONG A121 TOWARDS WALTHAM ABBEY AWAY FROM JCT 26, M25. VEH 2 IS LOST AND PERFORMS 3 POINT TURN ON HARD STANDING. WHILST FRONT WHEELS ARE STILL ON HARD STANDING REAR OF VEH 2 IS STRUCK BY VEH 1. V1 WAS NAVIGATING THE ROUNDABOUT HAVING COME FROM JUNCTION OF HONEY LANE. AS V1 WAS TURNING ON THE ROUNDABOUT IT FELL OVER ONTO ITS SIDE. NO OTHER PERSONS INVOLVED.

V1 CYCLING DOWNHILL FROM WAKES ARMS TOWARDS WALTHAM ABBEY WHEN WOBBLED SLIGHTLY AND HIT NEARSIDE KERBSTONE, CAME OFF CYCLE AND HIT ROAD - NO OTHER VEHICLES INVOLVED.

V1 HEADING FROM M25 TOWARDS SEWARDSTONE ROAD, V2 HEADING FROM SEWARDSTONE TOWARDS M25. V1 APPEARS TO HAVE CROSSED INTO V2'S PATH CAUSING COLLISION.

3 VEHS IN SLOW MOVING TRAFFIC VEH 3 WAS MOVING OFF, VEH 2 WAS ABOUT TO MOVE OFF AND VEH 1 WHO WAS BEHIND VEH 2 HIT INTO THE REAR OF VEH 2 WHO WAS THEN FORCED INTO THE REAR OF VEH 3. VEH 2 AND 3 EXCHANGED DETAILS. V1 TRAVELLING M25 JUNCTION 27 TOWARDS 26 ON B TRACK. V1 COMES OFF LAST MINUTE AT JUNCTION 26. V1 CONTINUES DOWN OFFSLIP AT SPEED TOWARDS ROUNDABOUT. V1 COLLIDES WITH ROUNDABOUT AND LEAVES THE GROUND, TRAVELLING ONTO THE ROAD. V1 EXITED THE ROUNDABOUT JUNCTION OF THE A121 WITH DOWDING WAY, TRAVELLING EAST ALONG HONEY LANE AND CROSSED OVER TO THE WRONG SIDE OF THE ROAD COLLIDING HEAD ON WITH V2 COMING TOWARDS IT.

V1 WAS WAITING TO EXIT A CAR PARK OF THE VOLUNTEER PH. AFTER RECEIVING AN INDICATION FROM VEHICLES IN EITHER DIRECTION, V1 HAS STARTED TO PULL OUT. IN DOING SO, HE HAS COLLIDED WITH V2 COMING ON THE OPPOSITE DIRECTION. V1 WAS TRAVELLING WEST ON WOODRIDDEN HILL. V2 WAS TRAVELLING EAST ON HONEY LANE ENTERING WOODRIDDEN HILL. V1 HAS THEN EITHER OVERTAKEN VEHICLE AHEAD OR JUST MISJUDGED V2'S DISTANCE. V1 HAS CROSSED V2'S PATH ATTENDING TO V2. V1 HEADING WEST ON HONEY LANE. V2 PARKED STATIONARY FACING WEST BY SOUTH KERB. V1 DROVE INTO REAR OF V2.

V1 AND V2 WERE INVOLVED IN A DRIVING DISPUTE ALONG THE M25 A TRACK FROM J24 > J26. V1 AND V2 EXITED AT J26 WHEN V1 STOPPED CAUSED BY V2. V1 DROVE OFF AND DRIVER OF V2 ALLEGED THAT V1 CAUGHT HIS SHIN ON V1.

V1 WAS TRAVELLING EAST ALONG A121. V2 WAS TRAVELLING ON SAME ROAD IN OPPOSITE DIRECTION. FOR REASONS UNKNOWN V1 HAS CROSSED ONTO OTHER SIDE OF ROAD AND COLLIDED WITH V2.

ALL 3 VEHICLES TRAVELLING WEST ON A121 TOWARDS WALTHAM ABBEY. V3 HAS COME TO A STOP. V2 HAS ALSO STOPPED AND V1 HAS COLLIDED WITH THE REAR OF V2 WHICH HAS THEN COLLIDED WITH REAR OF V3.

V1 TRAVELLING EASTBOUND ON HONEY LANE DIRECTION OF A121. V1 THEN CARRIED OUT OVERTAKE OF V3 TRAVELLING IN THE SAME DIRECTION, HOWEVER, STRUCK ONCOMING V2.

V1 WAS TRAVELLING UP WOODREDON HILL TOWARDS WAKE ARM ROUNDABOUT. AS V1 OVERTOOK ANOTHER VEHICLE, HIS WING MIRROR CLIPPED V2'S WING MIRROR. V1 FELL FROM HIS MOTORBIKE, MINOR INJURY AND AMBULANCE DECLINED. VEHICLE TWO HAD TRAVELLED AROUND THE ROUNDABOUT AT THIS LOCATION FROM DOWDING ROAD INTENDING TO TAKE THE THIRD EXIT ONTO WOODRIDDEN HILL. THERE WAS HEAVY TRAFFIC ON ROUNDABOUT. VEHICLE ONE WAS MOVING THROUGH THE ROUNDABOUT. THE INFORMANT IS REPORTING THAT SHE WAS A PASSENGER ON THE BUS WHILE V001 COLLIDED WITH V002. THE COLLISION CAUSED THE DRIVER OF V002 TO BRAKE HARD AND SUDDENLY WHICH HAS THROWN THE INFORMANT FORWARD, HITTING HER ON THE ROUNDABOUT BETWEEN HONEY LANE AND OLD SHIRE LANE, WALTHAM ABBEY. VEHICLE 1 HAS DRIVEN AROUND THE ROUNDABOUT AT ROUGHLY 10MPH AND ABRUPTLY STOPPED AS DECIDING ON EXIT TO TAKE. VEHICLE TWO HAS BEEN BEHIND VEHICLE 1 TRAVELLING IN A NORTH WEST DIRECTION ALONG HONEY LANE WALTHAM ABBEY IN ESSEX. VEHICLE 2 TRAVELLING IN A RECIPROCAL SOUTH EAST DIRECTION ALONG HONEY LANE, WALTHAM ABBEY IN ESSEX. VEHICLE 3 STATIONARY IN THE JUNCTION. VEHICLE 1***** HAS EXITED THE M25 AT JUNCTION 26. AT THE END OF THE OFF SLIP IT HAS CONTINUED ONTO THE ROUNDABOUT AND COLLIDED WITH THE REAR OF VEHICLE 2 CAUSING DAMAGE TO THE REAR OF THE VEHICLE. VEHICLE 1 HAS THEN TURNED RIGHT. VEHICLE 1 WAS PARKED ON A SLIGHT LEFT HAND BEND FOR REASONS UNKNOWN. VEHICLE 2 PULLED OUT FROM BEHIND VEHICLE 1 IN ORDER TO PASS IT AND BECAUSE OF THE SIZE OF VEHICLE 2, IT STRADDLED OVER THE CENTRE HATCHED AREA. VEHICLE 1 HAS COME OFF THE ROUNDABOUT TOO FAST FOR THE ROAD CONDITIONS AND ROAD LAYOUT AND HAS CROSSED THE CENTRE WHITE LINE COLLIDING WITH V2 WHO WAS TRAVELLING ON OPPOSITE DIRECTION.

VEHICLES 1 AND 2 TRAVELLING IN SAME DIRECTION TOWARDS LOUGHTON FROM WALTHAM ABBEY IN SLOW MOVING TRAFFIC. BOTH VEHICLES HAD STOPPED TO GIVE WAY TO TRAFFIC AND THE VEHICLES BEGAN TO MOVE OFF AGAIN WHEN A VEHICLE

acc_desc2

R/O/S CORNER CAUSING VEH 2 TO SPIN ACROSS ALL LANES INTO CENTRAL BARRIER VEH 3 IN LANE 2 UNABLE TO STOP IN TIME COLLIDES WITH VEH 2.

FALL FROM HIS CYCLE.

LL OFF HIS MOTORCYCLE AND INJURE LEFT HAND.

D GONE INTO THE BACK OF VEHICLE 2 WHO HAD STOPPED.

RDS WALTHAM ABBEY CAUSING IT TO SPIN.

STOPPED SAID HE WOULD DRIVE TO THE LOCAL PUB CAR PARK CLOSE BY BUT HE FAILED TO DO SO.

ROOF. NO OTHER VEHICLES INVOLVED IN COLLISION.

ODBINE P/H. V2 HAS THEN HIT V1 IN THE NEARSIDE NEAR REAR. V2 HAS THEN HIT V3 DUE TO COLLISION.

NTENDING TO GO PAST THE WOODRIDDEN HILL EXIT AND ONTO DOWDING ROAD. THE FRONT OF VEHICLE ONE HAS COLLIDED WITH THE NEARSIDE OF VEHICLE TWO.

OF HER. INFORMANT HAS TAKEN PHOTOS OF V001 WHICH SHOWS TO BE A BLUE RENAULT CLIO. V001 DID NOT STOP TO EXCHANGE DETAILS. INCIDENT REPORTED ON STORM - EP-20160317-0246.

RS SIDE OF VEHICLE 1 AS VEHICLE HAS STOPPED. THERE IS MINOR DAMAGE TO VEHICLE 1'S DRIVERS SIDE REAR TAIL LIGHT AND MINOR DAMAGE TO VEHICLE 2'S FRONT DRIVERS PUMPER.

ARRIAGEWAY OF HONEY LANE, WALTHAM ABBEY, ESSEX. VEHICLE 1 DRIVER SWERVES INTO THE PATH OF THE ONCOMING VEHICLE 2 WITH RESULTANT INJURIES AND DAMAGE INCURRED. VEHICLE 2 THEN IMPACTS STATIONARY VEHICLE 3.

WITH THE REAR PASSENGER SIDE OF VEHICLE 3 CAUSING VEHICLE 3 TO SPIN AND DAMAGE TO THE REAR PASSENGER SIDE BUMPER. VEHICLE 1 HAS THEN COME TO A STATIONARY POSITION ON THE ROUNDABOUT AND THE OCCUPANTS HAVE DECAN
N HAD TO BRAKE HARD TO AVOID COLLIDING WITH VEHICLE 2. VEHICLE 4 TRAVELLING BEHIND VEHICLE 3 ALSO HAD TO BRAKE HARD TO AVOID VEHICLE 3 BUT IN DOING SO, VEHICLE 4 COLLIDED SLIGHTLY WITH THE REAR OF VEHICLE 3 WHICH CAUSEI

HE DRIVER TO BRAKE HARD. VEHICLE 1 COLLIDED INTO THE REAR OF VEHICLE 2.

acc_desc3

CF1	VCU1	vcuref1	CONF1
710. Vehicle blind spot	V. Vehicle	1	A. Very likely
101. Poor or defective road surface	V. Vehicle	1	B. Possible
405. Failed to look properly	V. Vehicle	1	A. Very likely
405. Failed to look properly	V. Vehicle	1	A. Very likely
. Not coded	. Not Coded		. Not Coded
602. Careless/Reckless/In a hurry	V. Vehicle	1	A. Very likely
405. Failed to look properly	V. Vehicle	1	A. Very likely
406. Failed to judge other persons path or speed	V. Vehicle	1	B. Possible
405. Failed to look properly	V. Vehicle	1	A. Very likely
405. Failed to look properly	V. Vehicle	1	B. Possible
405. Failed to look properly	V. Vehicle	1	A. Very likely
403. Poor turn or manoeuvre	V. Vehicle	1	A. Very likely
. Not coded	. Not Coded		. Not Coded
602. Careless/Reckless/In a hurry	V. Vehicle	1	B. Possible
308. Following too close	V. Vehicle	1	B. Possible
306. Exceeding speed limit	V. Vehicle	1	A. Very likely
410. Loss of control	V. Vehicle	1	A. Very likely
405. Failed to look properly	V. Vehicle	1	A. Very likely
306. Exceeding speed limit	V. Vehicle	1	B. Possible
706. Dazzling sun	V. Vehicle	1	A. Very likely
603. Nervous/Uncertain/Panic	V. Vehicle	1	B. Possible
602. Careless/Reckless/In a hurry	V. Vehicle	1	A. Very likely
405. Failed to look properly	V. Vehicle	1	A. Very likely
403. Poor turn or manoeuvre	V. Vehicle	1	A. Very likely
405. Failed to look properly	V. Vehicle	1	B. Possible
602. Careless/Reckless/In a hurry	V. Vehicle	1	A. Very likely
406. Failed to judge other persons path or speed	V. Vehicle	1	A. Very likely
403. Poor turn or manoeuvre	V. Vehicle	1	B. Possible
410. Loss of control	V. Vehicle	1	B. Possible
405. Failed to look properly	V. Vehicle	1	B. Possible
701. Stationary or parked vehicle	V. Vehicle	1	A. Very likely
103. Slippery road (due to weather)	V. Vehicle	1	A. Very likely
308. Following too close	V. Vehicle	1	B. Possible

M ABBEY BEFORE POLICE ATTENDANCE.

THE F/O/S OF VEHICLE 2. VEHICLE 1 THEN LEFT THE SCENE FAILING TO GIVE DETAILS.

CF2	VCU2	vcuref2	CONF2	CF3	VCU3	vcuref3
. Not coded	. Not Coded		. Not Coded	. Not coded	. Not Coded	
410. Loss of control	V. Vehicle	1	A. Very likely	. Not coded	. Not Coded	
403. Poor turn or manoeuvre	V. Vehicle	1	A. Very likely	602. Careless/Reckless/In a hurry	V. Vehicle	1
406. Failed to judge other persons path or speed	V. Vehicle	1	A. Very likely	602. Careless/Reckless/In a hurry	V. Vehicle	1
. Not coded	. Not Coded		. Not Coded	. Not coded	. Not Coded	
. Not coded	. Not Coded		. Not Coded	. Not coded	. Not Coded	
406. Failed to judge other persons path or speed	V. Vehicle	1	B. Possible	403. Poor turn or manoeuvre	V. Vehicle	2
602. Careless/Reckless/In a hurry	V. Vehicle	1	B. Possible	402. Junction restart	V. Vehicle	1
. Not coded	. Not Coded		. Not Coded	. Not coded	. Not Coded	
. Not coded	. Not Coded		. Not Coded	. Not coded	. Not Coded	
403. Poor turn or manoeuvre	V. Vehicle	2	B. Possible	301. Disobeyed automatic traffic signal	V. Vehicle	1
602. Careless/Reckless/In a hurry	V. Vehicle	1	A. Very likely	. Not coded	. Not Coded	
. Not coded	. Not Coded		. Not Coded	. Not coded	. Not Coded	
603. Nervous/Uncertain/Panic	V. Vehicle	1	B. Possible	405. Failed to look properly	V. Vehicle	1
307. Travelling too fast for conditions	V. Vehicle	1	B. Possible	406. Failed to judge other persons path or speed	V. Vehicle	1
307. Travelling too fast for conditions	V. Vehicle	1	A. Very likely	401. Junction overshoot	V. Vehicle	1
501. Impaired by alcohol	V. Vehicle	1	A. Very likely	602. Careless/Reckless/In a hurry	V. Vehicle	1
405. Failed to look properly	V. Vehicle	2	A. Very likely	. Not coded	. Not Coded	
405. Failed to look properly	V. Vehicle	1	A. Very likely	406. Failed to judge other persons path or speed	V. Vehicle	1
602. Careless/Reckless/In a hurry	V. Vehicle	1	B. Possible	. Not coded	. Not Coded	
. Not coded	. Not Coded		. Not Coded	. Not coded	. Not Coded	
. Not coded	. Not Coded		. Not Coded	. Not coded	. Not Coded	
308. Following too close	V. Vehicle	1	B. Possible	406. Failed to judge other persons path or speed	V. Vehicle	1
606. Inexperience of driving on the left	V. Vehicle	1	B. Possible	. Not coded	. Not Coded	
. Not coded	. Not Coded		. Not Coded	. Not coded	. Not Coded	
. Not coded	. Not Coded		. Not Coded	. Not coded	. Not Coded	
. Not coded	. Not Coded		. Not Coded	. Not coded	. Not Coded	
. Not coded	. Not Coded		. Not Coded	. Not coded	. Not Coded	
. Not coded	. Not Coded		. Not Coded	. Not coded	. Not Coded	
602. Careless/Reckless/In a hurry	V. Vehicle	1	B. Possible	. Not coded	. Not Coded	
. Not coded	. Not Coded		. Not Coded	. Not coded	. Not Coded	
307. Travelling too fast for conditions	V. Vehicle	1	A. Very likely	. Not coded	. Not Coded	
406. Failed to judge other persons path or speed	V. Vehicle	1	B. Possible	. Not coded	. Not Coded	

[illegible]

CF6	VCU6	CONF6	mi_prinx	Time_Range
. Not coded	. Not Coded	. Not Coded	203193	1800-1859
. Not coded	. Not Coded	. Not Coded	203465	0500-0559
. Not coded	. Not Coded	. Not Coded	204828	1200-1259
. Not coded	. Not Coded	. Not Coded	205092	1000-1059
. Not coded	. Not Coded	. Not Coded	206254	1800-1859
. Not coded	. Not Coded	. Not Coded	206653	1700-1759
. Not coded	. Not Coded	. Not Coded	207311	0700-0759
. Not coded	. Not Coded	. Not Coded	207379	1100-1159
. Not coded	. Not Coded	. Not Coded	207584	1500-1559
. Not coded	. Not Coded	. Not Coded	207741	0800-0859
. Not coded	. Not Coded	. Not Coded	208153	0000-0059
. Not coded	. Not Coded	. Not Coded	208256	1800-1859
. Not coded	. Not Coded	. Not Coded	208687	0800-0859
. Not coded	. Not Coded	. Not Coded	209049	1600-1659
. Not coded	. Not Coded	. Not Coded	210688	1400-1459
. Not coded	. Not Coded	. Not Coded	211316	2000-2059
. Not coded	. Not Coded	. Not Coded	211417	1100-1159
. Not coded	. Not Coded	. Not Coded	211470	1700-1759
. Not coded	. Not Coded	. Not Coded	211667	2100-2159
. Not coded	. Not Coded	. Not Coded	211678	0700-0759
. Not coded	. Not Coded	. Not Coded	212486	1600-1659
. Not coded	. Not Coded	. Not Coded	212572	2200-2259
. Not coded	. Not Coded	. Not Coded	213053	1000-1059
. Not coded	. Not Coded	. Not Coded	213632	2200-2259
. Not coded	. Not Coded	. Not Coded	213676	1200-1259
. Not coded	. Not Coded	. Not Coded	214824	0900-0959
. Not coded	. Not Coded	. Not Coded	215437	0800-0859
. Not coded	. Not Coded	. Not Coded	215738	1000-1059
. Not coded	. Not Coded	. Not Coded	216339	0800-0859
. Not coded	. Not Coded	. Not Coded	216444	1800-1859
. Not coded	. Not Coded	. Not Coded	217594	0700-0759
. Not coded	. Not Coded	. Not Coded	219064	1000-1059
. Not coded	. Not Coded	. Not Coded	219274	1400-1459

APPENDIX C

Waltham Abbey, Wednesday 11th October 2017

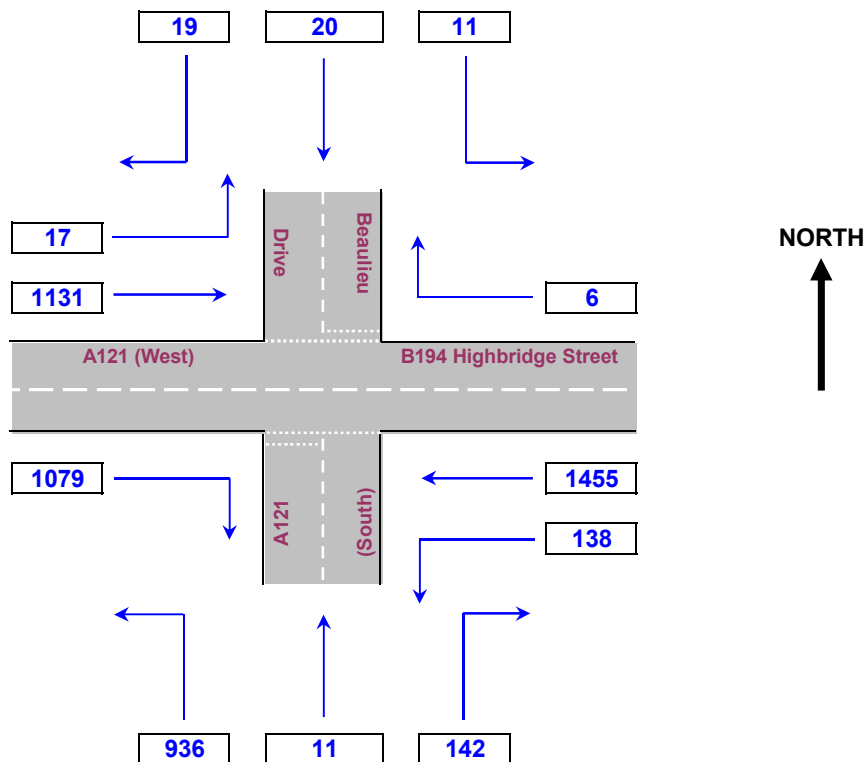
Junction: (1) Beaulieu Drive / B194 Highbridge Street / A121 Meridian Way / A121 Station Road

Vehicle Class: **ALL CLASSES**

Start Time: **1) 0700**

End Time: **1) 0930**

☐ Peak Hour



Note: The above diagram represents the Junction surveyed, although may not be the exact layout of the actual location.

Important This spreadsheet & Interactive Vehicle Flow Diagram was produced based on specific Note: parameters. Consequently, alteration to the spreadsheet format or it's properties may result in malfunction.

Waltham Abbey, Wednesday 11th October 2017

Junction: (1) Beaulieu Drive / B194 Highbridge Street / A121 Meridian Way / A121 Station Road

Approach: Beaulieu Drive

TIME	Left to B194 Highbridge Street								Ahead to A121 Meridian Way								Right to A121 Station Road							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	3	0	0	0	0	3
0715 - 0730	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1
0730 - 0745	0	0	1	0	0	0	0	1	0	0	3	1	0	0	0	4	0	0	3	1	0	0	0	4
0745 - 0800	0	0	1	1	0	0	0	2	1	0	3	0	0	0	0	4	0	0	3	0	0	0	0	3
Hourly Total	0	0	3	1	0	0	0	4	1	0	8	1	0	0	0	10	0	0	10	1	0	0	0	11
0800 - 0815	0	0	3	0	0	0	0	3	0	0	2	1	0	0	0	3	0	0	2	0	0	0	0	2
0815 - 0830	0	0	0	1	0	0	0	1	0	0	3	0	0	0	0	3	0	0	2	0	0	0	0	2
0830 - 0845	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	3	0	0	0	0	3
0845 - 0900	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	4	1	0	0	0	5	0	0	9	1	0	0	0	10	0	0	7	0	0	0	0	7
0900 - 0915	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0915 - 0930	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Hourly Total	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Session Total	0	0	9	2	0	0	0	11	1	0	17	2	0	0	0	20	0	0	18	1	0	0	0	19
1600 - 1615	0	0	0	0	1	0	0	1	0	0	2	1	0	0	0	3	0	0	1	0	0	0	0	1
1615 - 1630	0	0	2	1	0	0	0	3	0	0	2	1	0	0	0	3	0	0	2	0	0	0	0	2
1630 - 1645	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	0	1	0	0	0	1
1645 - 1700	0	0	2	0	0	0	0	2	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1
Hourly Total	0	0	4	1	1	0	0	6	0	0	6	3	0	0	0	9	0	0	4	1	0	0	0	5
1700 - 1715	0	0	2	0	0	0	0	2	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
1715 - 1730	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1
1730 - 1745	0	0	1	0	0	0	0	1	0	0	3	0	0	0	0	3	0	0	1	1	0	0	0	2
1745 - 1800	0	0	4	0	0	0	0	4	0	0	4	0	0	0	0	4	0	0	1	0	0	0	0	1
Hourly Total	0	0	7	0	0	0	0	7	0	0	9	0	0	0	0	9	0	0	3	1	0	0	0	4
1800 - 1815	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
1815 - 1830	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	1	0	0	0	0	1
Session Total	0	0	11	1	1	0	0	13	0	0	17	3	0	0	0	20	0	0	8	2	0	0	0	10

Waltham Abbey, Wednesday 11th October 2017

Junction: (1) Beaulieu Drive / B194 Highbridge Street / A121 Meridian Way / A121 Station Road

Approach: B194 Highbridge Street

TIME	Left to A121 Meridian Way								Ahead to A121 Station Road								Right to Beaulieu Drive							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	12	3	2	2	0	19	0	3	109	36	6	3	5	162	0	0	0	0	0	0	0	0
0715 - 0730	0	0	13	2	0	2	0	17	1	3	124	26	6	1	3	164	0	0	0	0	0	0	0	0
0730 - 0745	0	0	4	2	2	0	0	8	2	4	112	26	7	0	2	153	0	0	0	0	0	0	0	0
0745 - 0800	0	0	7	2	1	1	0	11	1	2	108	21	1	1	2	136	0	0	0	0	0	0	0	0
Hourly Total	0	0	36	9	5	5	0	55	4	12	453	109	20	5	12	615	0	0	0	0	0	0	0	0
0800 - 0815	0	0	8	1	1	0	0	10	2	2	120	27	9	3	3	166	0	0	0	0	0	0	0	0
0815 - 0830	0	0	8	2	1	0	0	11	0	2	104	15	2	1	0	124	0	0	0	2	0	0	0	2
0830 - 0845	0	0	16	2	1	0	0	19	1	4	136	17	9	1	1	169	0	0	1	0	0	0	0	1
0845 - 0900	0	1	10	0	0	3	0	14	1	1	95	16	5	0	2	120	0	0	1	0	0	0	0	1
Hourly Total	0	1	42	5	3	3	0	54	4	9	455	75	25	5	6	579	0	0	4	0	0	0	0	4
0900 - 0915	0	0	15	0	1	0	0	16	0	0	107	22	6	4	2	141	0	0	1	1	0	0	0	2
0915 - 0930	0	0	8	1	1	3	0	13	0	3	90	19	5	2	1	120	0	0	0	0	0	0	0	0
Hourly Total	0	0	23	1	2	3	0	29	0	3	197	41	11	6	3	261	0	0	1	1	0	0	0	2
Session Total	0	1	101	15	10	11	0	138	8	24	1105	225	56	16	21	1455	0	0	5	1	0	0	0	6
1600 - 1615	0	0	23	2	1	1	0	27	0	2	92	24	5	0	3	126	0	0	2	1	0	0	0	3
1615 - 1630	0	0	17	2	1	0	0	20	0	3	74	15	9	1	1	103	0	0	1	0	0	0	0	1
1630 - 1645	0	0	24	3	0	2	1	30	0	1	96	20	9	1	4	131	0	0	2	1	0	0	0	3
1645 - 1700	0	0	18	1	1	2	0	22	3	5	86	8	4	0	0	106	0	0	1	0	0	0	0	1
Hourly Total	0	0	82	8	3	5	1	99	3	11	348	67	27	2	8	466	0	0	6	2	0	0	0	8
1700 - 1715	0	0	33	3	0	1	0	37	0	1	101	15	8	0	3	128	0	0	0	0	0	0	0	0
1715 - 1730	0	0	23	4	0	2	0	29	1	2	93	10	0	1	1	108	0	0	2	0	0	0	0	2
1730 - 1745	0	0	32	4	0	1	0	37	0	3	78	9	5	0	1	96	0	0	2	0	0	0	0	2
1745 - 1800	0	0	27	2	0	0	0	29	0	3	93	14	5	0	2	117	0	0	0	0	0	0	0	0
Hourly Total	0	0	115	13	0	4	0	132	1	9	365	48	18	1	7	449	0	0	4	0	0	0	0	4
1800 - 1815	0	0	17	2	0	0	0	19	1	4	84	22	4	0	1	116	0	0	4	0	0	0	0	4
1815 - 1830	0	0	23	2	0	1	0	26	0	2	92	13	0	0	3	110	0	0	1	0	0	0	0	1
Hourly Total	0	0	40	4	0	1	0	45	1	6	176	35	4	0	4	226	0	0	5	0	0	0	0	5
Session Total	0	0	237	25	3	10	1	276	5	26	889	150	49	3	19	1141	0	0	15	2	0	0	0	17

Waltham Abbey, Wednesday 11th October 2017

Junction: (1) Beaulieu Drive / B194 Highbridge Street / A121 Meridian Way / A121 Station Road

Approach: A121 Meridian Way

TIME	Left to A121 Station Road								Ahead to Beaulieu Drive								Right to B194 Highbridge Street							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	70	21	10	0	0	101	0	0	0	0	0	0	0	0	0	0	6	1	1	1	0	9
0715 - 0730	0	2	81	15	7	1	0	106	0	0	0	1	0	0	0	1	0	0	7	2	1	2	0	12
0730 - 0745	0	1	84	21	1	1	0	108	0	0	0	1	0	0	0	1	0	0	8	5	0	3	0	16
0745 - 0800	0	1	67	10	5	4	0	87	0	0	0	0	0	0	0	0	0	0	15	1	0	1	0	17
Hourly Total	0	4	302	67	23	6	0	402	0	0	0	2	0	0	0	2	0	0	36	9	2	7	0	54
0800 - 0815	0	1	68	16	5	3	0	93	0	0	1	0	0	0	0	1	0	0	12	2	0	2	0	16
0815 - 0830	0	0	91	11	5	3	1	111	0	0	0	0	0	0	0	0	0	0	9	0	0	1	0	10
0830 - 0845	0	0	93	12	2	3	0	110	0	0	1	0	0	0	0	1	0	1	14	4	2	0	0	21
0845 - 0900	0	0	63	13	6	5	0	87	0	0	3	0	0	0	0	3	0	0	12	0	0	1	0	13
Hourly Total	0	1	315	52	18	14	1	401	0	0	5	0	0	0	0	5	0	1	47	6	2	4	0	60
0900 - 0915	0	1	43	9	8	1	0	62	0	0	2	0	0	0	0	2	0	0	9	1	0	4	0	14
0915 - 0930	1	0	54	11	3	2	0	71	0	0	2	0	0	0	0	2	0	0	8	1	1	4	0	14
Hourly Total	1	1	97	20	11	3	0	133	0	0	4	0	0	0	0	4	0	0	17	2	1	8	0	28
Session Total	1	6	714	139	52	23	1	936	0	0	9	2	0	0	0	11	0	1	100	17	5	19	0	142
1600 - 1615	0	3	73	20	5	2	0	103	0	0	3	0	0	0	0	3	0	0	20	4	1	0	0	25
1615 - 1630	0	0	75	23	5	1	0	104	0	0	1	1	0	0	0	2	0	0	20	0	0	2	0	22
1630 - 1645	0	2	64	19	8	0	0	93	0	0	2	0	0	0	0	2	0	0	16	2	0	0	0	18
1645 - 1700	0	1	72	20	9	1	0	103	1	0	1	0	0	0	0	2	0	0	24	4	0	1	0	29
Hourly Total	0	6	284	82	27	4	0	403	1	0	7	1	0	0	0	9	0	0	80	10	1	3	0	94
1700 - 1715	1	0	70	14	6	3	0	94	0	0	0	0	0	0	0	0	0	0	14	2	3	0	0	19
1715 - 1730	0	1	83	19	3	1	0	107	0	0	2	0	0	0	0	2	0	0	23	0	0	0	0	23
1730 - 1745	0	1	77	14	6	2	0	100	0	0	0	0	0	0	0	0	0	1	13	1	1	1	0	17
1745 - 1800	0	3	85	18	4	0	0	110	0	0	5	0	0	0	0	5	0	0	16	1	2	2	0	21
Hourly Total	1	5	315	65	19	6	0	411	0	0	7	0	0	0	0	7	0	1	66	4	6	3	0	80
1800 - 1815	0	2	65	18	2	0	0	87	0	0	1	0	0	0	0	1	0	0	26	2	0	2	0	30
1815 - 1830	0	0	82	5	0	2	0	89	0	0	1	0	0	0	0	1	0	0	21	2	0	1	0	24
Hourly Total	0	2	147	23	2	2	0	176	0	0	2	0	0	0	0	2	0	0	47	4	0	3	0	54
Session Total	1	13	746	170	48	12	0	990	1	0	16	1	0	0	0	18	0	1	193	18	7	9	0	228

Waltham Abbey, Wednesday 11th October 2017

Junction: (1) Beaulieu Drive / B194 Highbridge Street / A121 Meridian Way / A121 Station Road

Approach: A121 Station Road

TIME	Left to Beaulieu Drive								Ahead to B194 Highbridge Street								Right to A121 Meridian Way							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	1	1	60	20	2	2	2	88	0	5	61	28	9	0	0	103
0715 - 0730	0	0	3	0	0	0	0	3	0	0	67	17	5	2	2	93	0	4	94	38	6	2	0	144
0730 - 0745	0	0	0	0	0	0	0	0	0	0	91	20	11	0	2	124	0	0	80	24	8	3	0	115
0745 - 0800	0	0	1	0	0	0	0	1	0	0	90	20	9	2	4	125	0	1	78	29	9	1	0	118
Hourly Total	0	0	4	0	0	0	0	4	1	1	308	77	27	6	10	430	0	10	313	119	32	6	0	480
0800 - 0815	0	0	1	0	0	0	0	1	1	0	100	19	11	0	2	133	0	0	69	25	6	5	0	105
0815 - 0830	0	0	1	0	0	0	0	1	0	1	88	14	2	0	0	105	0	1	83	23	7	1	0	115
0830 - 0845	0	0	4	0	0	0	0	4	0	2	92	22	5	1	2	124	0	1	70	12	7	3	0	93
0845 - 0900	1	0	1	0	0	0	0	2	0	1	67	17	5	1	1	92	0	0	57	16	9	1	1	84
Hourly Total	1	0	7	0	0	0	0	8	1	4	347	72	23	2	5	454	0	2	279	76	29	10	1	397
0900 - 0915	0	0	1	0	0	0	0	1	0	1	86	25	7	0	2	121	0	0	81	21	6	2	0	110
0915 - 0930	0	0	4	0	0	0	0	4	0	0	83	28	10	3	2	126	0	2	62	19	6	3	0	92
Hourly Total	0	0	5	0	0	0	0	5	0	1	169	53	17	3	4	247	0	2	143	40	12	5	0	202
Session Total	1	0	16	0	0	0	0	17	2	6	824	202	67	11	19	1131	0	14	735	235	73	21	1	1079
1600 - 1615	0	0	0	0	0	0	0	0	0	1	141	32	8	2	1	185	0	1	94	16	2	1	1	115
1615 - 1630	0	0	1	1	0	0	0	2	0	1	117	26	3	1	4	152	0	0	83	21	6	1	0	111
1630 - 1645	0	0	0	1	0	0	0	1	1	3	118	23	6	0	1	152	0	1	98	8	4	2	0	113
1645 - 1700	0	0	2	0	0	0	0	2	1	2	141	22	2	1	4	173	0	1	91	21	2	0	0	115
Hourly Total	0	0	3	2	0	0	0	5	2	7	517	103	19	4	10	662	0	3	366	66	14	4	1	454
1700 - 1715	0	0	2	0	0	0	0	2	0	5	120	17	3	0	1	146	0	0	102	21	1	1	0	125
1715 - 1730	0	0	2	1	0	0	0	3	0	4	135	23	4	1	1	168	1	0	82	12	3	1	0	99
1730 - 1745	0	0	0	0	0	0	0	0	0	4	134	17	5	0	4	164	0	1	140	6	4	0	0	151
1745 - 1800	0	0	0	0	0	0	0	0	0	2	164	21	3	0	2	192	0	1	93	7	2	0	0	103
Hourly Total	0	0	4	1	0	0	0	5	0	15	553	78	15	1	8	670	1	2	417	46	10	2	0	478
1800 - 1815	0	0	0	0	0	0	0	0	2	2	163	15	2	0	1	185	0	0	110	5	0	0	0	115
1815 - 1830	0	1	1	0	0	0	0	2	0	2	135	23	2	0	1	163	0	1	93	7	2	3	0	106
Hourly Total	0	1	1	0	0	0	0	2	2	4	298	38	4	0	2	348	0	1	203	12	2	3	0	221
Session Total	0	1	8	3	0	0	0	12	4	26	1368	219	38	5	20	1680	1	6	986	124	26	9	1	1153

Waltham Abbey, Thursday 12th October 2017

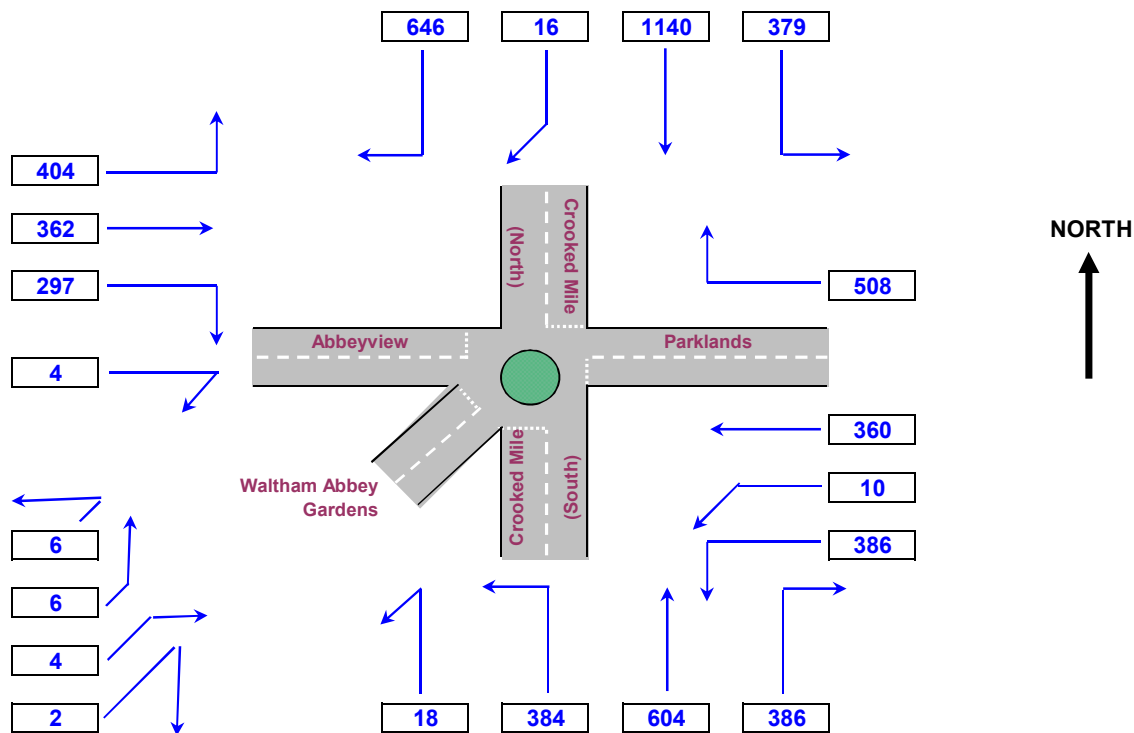
Junction: (2) Crooked Mile / Parklands / Waltham Abbey Gardens / Abbeyview

Vehicle Class: ALL CLASSES

Start Time: 1) 0700

End Time: 1) 0930

☐ Peak Hour



Note: The above diagram represents the Junction surveyed, although may not be the exact layout of the actual location.

Important This spreadsheet & Interactive Vehicle Flow Diagram was produced based on specific Note: parameters. Consequently, alteration to the spreadsheet format or it's properties may result in malfunction.

Waltham Abbey, Thursday 12th October 2017

Junction: (2) Crooked Mile / Parklands / Waltham Abbey Gardens / Abbeyview

Approach: Crooked Mile (North)

	Left to Parklands							Ahead to Crooked Mile (South)							Right to Waltham Abbey Gardens							Last Right to Abbeyview											
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	
0700 - 0715	0	1	26	9	0	0	1	37	0	0	101	32	3	2	2	140	0	0	1	0	0	0	0	1	0	0	1	56	22	1	2	2	84
0715 - 0730	0	0	42	10	2	1	1	56	0	2	102	30	8	0	0	142	0	0	0	0	0	0	0	0	0	2	67	20	4	0	1	84	
0730 - 0745	0	1	26	11	1	0	0	39	0	0	80	26	5	0	0	111	0	0	0	0	0	0	0	0	0	1	55	14	6	3	1	80	
0745 - 0800	0	0	26	12	0	0	1	39	0	5	102	32	1	0	0	140	0	0	0	1	1	0	0	2	0	1	45	11	5	1	0	63	
Hourly Total	0	2	120	42	3	1	3	171	0	7	385	120	17	2	2	533	0	0	1	1	1	0	0	3	0	5	223	57	16	6	4	311	
0800 - 0815	0	0	39	6	2	0	0	47	0	1	102	24	3	0	0	130	0	0	3	2	0	0	0	5	0	0	37	15	4	1	0	57	
0815 - 0830	0	0	33	5	5	0	0	43	0	0	78	20	6	0	0	104	0	0	0	0	0	0	0	0	0	0	51	3	3	2	0	59	
0830 - 0845	0	0	25	1	1	0	0	27	0	2	92	18	2	0	0	114	0	0	1	1	0	0	0	2	0	2	39	9	5	1	0	56	
0845 - 0900	0	0	40	4	1	1	0	46	0	0	91	11	4	0	0	106	0	0	2	0	0	0	0	2	0	0	48	8	1	2	0	59	
Hourly Total	0	0	137	16	9	1	0	163	0	3	363	73	15	0	0	454	0	0	6	3	0	0	0	9	0	2	175	35	13	6	0	231	
0900 - 0915	0	0	17	4	2	0	0	23	0	0	52	14	2	0	0	68	0	0	2	0	0	0	0	2	0	0	34	8	4	3	0	49	
0915 - 0930	0	1	17	3	1	0	0	22	0	0	68	14	3	0	0	85	0	0	2	0	0	0	0	2	0	1	38	8	6	2	0	55	
Hourly Total	0	1	34	7	3	0	0	45	0	0	120	28	5	0	0	153	0	0	4	0	0	0	0	4	0	1	72	16	10	5	0	104	
Session Total	0	3	291	65	15	2	3	379	0	10	868	221	37	2	2	1140	0	0	11	4	1	0	0	16	0	8	470	108	39	17	4	646	
1600 - 1615	0	0	28	3	0	0	0	31	1	1	70	10	3	0	0	85	0	0	1	0	0	0	0	1	0	3	43	12	4	0	0	62	
1615 - 1630	0	0	12	8	0	0	0	20	0	0	46	11	3	0	0	60	0	0	1	0	0	0	0	1	0	0	27	7	6	0	0	40	
1630 - 1645	0	0	23	4	3	1	0	31	0	4	71	17	5	0	0	97	0	0	0	0	0	0	0	0	1	0	38	10	5	2	0	56	
1645 - 1700	0	0	30	2	0	0	0	32	0	0	60	16	2	0	0	78	0	0	0	0	0	0	0	0	0	1	27	2	0	0	0	30	
Hourly Total	0	0	93	17	3	1	0	114	1	5	247	54	13	0	0	320	0	0	2	0	0	0	0	2	1	4	135	31	15	2	0	188	
1700 - 1715	0	1	31	4	2	0	0	38	0	2	75	6	0	0	0	83	0	0	1	0	0	0	0	1	0	1	34	2	2	1	0	40	
1715 - 1730	0	0	19	4	0	0	0	23	0	0	103	7	2	0	0	112	0	0	0	0	0	0	0	0	0	0	28	2	0	1	0	31	
1730 - 1745	0	0	28	4	0	0	0	32	0	0	98	6	0	0	0	104	0	0	0	0	0	0	0	0	0	0	24	4	2	1	0	31	
1745 - 1800	0	0	31	4	1	1	0	37	0	0	79	6	0	0	0	85	0	0	2	0	0	0	0	2	0	0	41	4	0	0	0	45	
Hourly Total	0	1	109	16	3	1	0	130	0	2	355	25	2	0	0	384	0	0	3	0	0	0	0	3	0	1	127	12	4	3	0	147	
1800 - 1815	0	0	35	5	0	0	0	40	0	0	59	5	0	0	0	64	0	0	0	0	0	0	0	0	0	0	30	7	1	0	0	38	
1815 - 1830	0	0	29	3	0	0	0	32	0	1	71	6	1	0	0	79	0	0	0	0	0	0	0	0	0	0	31	2	0	0	0	33	
Hourly Total	0	0	64	8	0	0	0	72	0	1	130	11	1	0	0	143	0	0	0	0	0	0	0	0	0	0	61	9	1	0	0	71	
Session Total	0	1	266	41	6	2	0	316	1	8	732	90	16	0	0	847	0	0	5	0	0	0	0	5	1	5	323	52	20	5	0	406	

Waltham Abbey, Thursday 12th October 2017

Junction: (2) Crooked Mile / Parklands / Waltham Abbey Gardens / Abbeyview

Approach: Parklands

	First Left to Crooked Mile (South)								Second Left to Waltham Abbey Gardens								Ahead to Abbeyview								Right to Crooked Mile (North)							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	9	7	4	0	1	21	0	0	0	0	0	0	0	0	0	1	20	6	2	3	2	34	0	1	25	7	2	0	0	35
0715 - 0730	0	0	18	4	2	0	0	24	0	0	0	0	0	0	0	0	0	0	17	4	2	0	2	25	0	0	30	8	0	0	0	38
0730 - 0745	0	0	24	5	1	0	0	30	1	0	0	0	0	0	0	1	0	1	28	7	0	1	0	37	0	0	46	11	1	0	0	58
0745 - 0800	0	0	31	5	0	0	0	36	1	0	0	0	0	0	0	1	0	0	24	6	1	0	0	31	0	0	55	8	1	0	0	64
Hourly Total	0	0	82	21	7	0	1	111	2	0	0	0	0	0	0	2	0	2	89	23	5	4	4	127	0	1	156	34	4	0	0	195
0800 - 0815	0	0	37	5	1	0	0	43	0	0	1	0	0	0	0	1	0	0	23	3	1	1	0	28	0	0	47	7	1	0	1	56
0815 - 0830	0	0	45	8	0	0	0	53	0	0	0	0	0	0	0	0	0	0	35	3	3	0	1	42	0	0	61	4	1	0	1	67
0830 - 0845	0	1	46	1	2	0	0	50	0	0	1	0	0	0	0	1	0	1	33	3	2	1	1	41	0	0	51	7	1	0	0	59
0845 - 0900	0	0	42	5	1	0	0	48	0	0	2	0	0	0	0	2	0	0	30	6	2	0	0	38	0	1	38	6	5	0	1	51
Hourly Total	0	1	170	19	4	0	0	194	0	0	4	0	0	0	0	4	0	1	121	15	8	2	2	149	0	1	197	24	8	0	3	233
0900 - 0915	0	0	40	4	0	0	1	45	0	0	2	0	0	0	0	2	0	0	33	4	2	1	1	41	0	0	31	6	2	1	0	40
0915 - 0930	0	0	31	5	0	0	0	36	0	0	2	0	0	0	0	2	1	1	33	6	2	0	0	43	0	0	34	6	0	0	0	40
Hourly Total	0	0	71	9	0	0	1	81	0	0	4	0	0	0	0	4	1	1	66	10	4	1	1	84	0	0	65	12	2	1	0	80
Session Total	0	1	323	49	11	0	2	386	2	0	8	0	0	0	0	10	1	4	276	48	17	7	7	360	0	2	418	70	14	1	3	508
1600 - 1615	1	0	26	6	1	0	0	34	0	0	1	0	0	0	0	1	0	0	19	2	0	0	0	21	0	0	46	7	1	0	0	54
1615 - 1630	0	0	29	5	2	0	0	36	0	0	1	0	0	0	0	1	0	1	20	3	1	0	0	25	0	0	41	9	2	0	0	52
1630 - 1645	0	0	26	4	0	0	0	30	0	0	0	0	0	0	0	0	1	0	23	6	2	0	0	32	0	0	44	11	4	0	0	59
1645 - 1700	0	0	25	3	1	0	0	29	1	0	0	0	0	0	0	1	0	1	17	1	0	1	0	20	0	1	38	10	2	1	0	52
Hourly Total	1	0	106	18	4	0	0	129	1	0	2	0	0	0	0	3	1	2	79	12	3	1	0	98	0	1	169	37	9	1	0	217
1700 - 1715	0	1	29	5	0	0	0	35	0	0	2	0	0	0	0	2	0	0	28	3	1	1	0	33	0	0	49	9	1	0	1	60
1715 - 1730	1	0	32	1	0	0	0	34	0	0	0	0	0	0	0	0	2	0	28	3	0	0	0	33	0	0	52	8	0	0	0	60
1730 - 1745	0	1	33	2	0	0	0	36	0	0	0	0	0	0	0	0	0	0	20	1	1	0	0	22	0	2	36	6	1	0	0	45
1745 - 1800	0	0	41	6	0	0	0	47	0	0	0	0	0	0	0	0	0	0	21	2	2	0	0	25	0	1	43	9	2	0	1	56
Hourly Total	1	2	135	14	0	0	0	152	0	0	2	0	0	0	0	2	2	0	97	9	4	1	0	113	0	3	180	32	4	0	2	221
1800 - 1815	0	0	29	1	0	0	0	30	0	0	0	0	0	0	0	0	0	0	22	5	3	0	0	30	0	1	48	5	0	0	0	54
1815 - 1830	0	2	28	2	4	0	1	37	0	0	0	0	0	0	0	0	0	0	18	4	0	0	0	22	0	0	30	7	0	0	0	37
Hourly Total	0	2	57	3	4	0	1	67	0	0	0	0	0	0	0	0	0	0	40	9	3	0	0	52	0	1	78	12	0	0	0	91
Session Total	2	4	298	35	8	0	1	348	1	0	4	0	0	0	0	5	3	2	216	30	10	2	0	263	0	5	427	81	13	1	2	529

Waltham Abbey, Thursday 12th October 2017

Junction: (2) Crooked Mile / Parklands / Waltham Abbey Gardens / Abbeyview

Approach: Crooked Mile (South)

TIME	First Left to Waltham Abbey Gardens								Second Left to Abbeyview								Ahead to Crooked Mile (North)								Right to Parklands							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	1	0	0	0	0	1	0	0	17	6	1	0	0	24	0	0	26	7	2	0	0	35	0	0	8	4	0	0	0	12
0715 - 0730	0	0	0	0	0	0	0	0	0	0	21	4	0	0	1	26	0	0	38	11	0	0	0	49	0	0	22	5	0	0	1	28
0730 - 0745	1	0	1	0	0	0	0	2	0	0	27	7	1	1	0	36	0	0	50	7	2	1	0	60	0	0	33	7	1	0	0	41
0745 - 0800	0	0	1	0	0	0	0	1	0	0	28	11	1	0	1	41	0	2	62	14	2	0	0	80	0	0	35	8	1	0	1	45
Hourly Total	1	0	3	0	0	0	0	4	0	0	93	28	3	1	2	127	0	2	176	39	6	1	0	224	0	0	98	24	2	0	2	126
0800 - 0815	0	0	0	0	0	0	0	0	0	0	26	5	2	0	0	33	0	0	60	9	3	0	1	73	0	0	47	4	2	0	0	53
0815 - 0830	0	0	0	0	0	0	0	0	0	0	34	8	3	0	0	45	0	0	58	11	3	0	0	72	0	0	58	6	2	0	0	66
0830 - 0845	0	0	2	0	0	0	0	2	0	1	35	4	2	0	0	42	0	0	60	8	3	0	0	71	0	0	41	3	1	0	0	45
0845 - 0900	0	0	2	0	0	0	0	2	0	0	42	7	2	1	0	52	0	0	55	7	7	1	0	70	0	0	26	5	0	0	0	31
Hourly Total	0	0	4	0	0	0	0	4	0	1	137	24	9	1	0	172	0	0	233	35	16	1	1	286	0	0	172	18	5	0	0	195
0900 - 0915	0	0	3	0	0	0	0	3	0	0	32	7	2	0	0	41	0	0	33	10	4	0	0	47	0	0	33	4	2	0	0	39
0915 - 0930	0	0	6	1	0	0	0	7	0	0	34	10	0	0	0	44	0	0	39	8	0	0	0	47	0	0	20	5	0	0	1	26
Hourly Total	0	0	9	1	0	0	0	10	0	0	66	17	2	0	0	85	0	0	72	18	4	0	0	94	0	0	53	9	2	0	1	65
Session Total	1	0	16	1	0	0	0	18	0	1	296	69	14	2	2	384	0	2	481	92	26	2	1	604	0	0	323	51	9	0	3	386
1600 - 1615	0	0	1	0	0	0	0	1	0	0	40	9	2	0	0	51	0	0	86	29	4	2	0	121	0	0	37	7	2	0	0	46
1615 - 1630	0	0	1	0	0	0	0	1	0	2	30	4	3	0	0	39	0	0	71	20	4	0	0	95	0	0	43	8	2	0	1	54
1630 - 1645	0	0	2	1	0	0	0	3	0	0	47	7	1	0	0	55	0	0	89	17	2	0	0	108	0	0	36	14	1	0	1	52
1645 - 1700	0	0	0	0	0	0	0	0	0	2	39	7	2	0	0	50	0	1	83	31	1	0	0	116	0	1	47	9	2	0	0	59
Hourly Total	0	0	4	1	0	0	0	5	0	4	156	27	8	0	0	195	0	1	329	97	11	2	0	440	0	1	163	38	7	0	2	211
1700 - 1715	0	0	1	0	0	0	0	1	0	0	41	10	2	0	0	53	0	0	77	23	2	0	0	102	0	0	54	12	1	0	0	67
1715 - 1730	0	0	1	0	0	0	0	1	0	1	41	4	0	0	0	46	0	3	78	15	5	0	0	101	0	0	51	11	2	0	0	64
1730 - 1745	0	0	1	0	0	0	0	1	0	2	40	4	1	0	0	47	0	2	74	14	1	0	0	91	0	3	47	9	2	0	0	61
1745 - 1800	0	0	3	0	0	0	0	3	0	1	50	7	1	0	0	59	0	5	98	19	1	0	2	125	0	1	54	7	0	0	0	62
Hourly Total	0	0	6	0	0	0	0	6	0	4	172	25	4	0	0	205	0	10	327	71	9	0	2	419	0	4	206	39	5	0	0	254
1800 - 1815	0	0	0	0	0	0	0	0	0	0	38	8	2	0	0	48	0	1	86	8	0	0	0	95	0	0	39	6	0	0	0	45
1815 - 1830	0	0	2	0	0	0	0	2	0	1	43	6	2	0	0	52	0	2	71	10	0	0	0	83	0	0	40	11	0	0	0	51
Hourly Total	0	0	2	0	0	0	0	2	0	1	81	14	4	0	0	100	0	3	157	18	0	0	0	178	0	0	79	17	0	0	0	96
Session Total	0	0	12	1	0	0	0	13	0	9	409	66	16	0	0	500	0	14	813	186	20	2	2	1037	0	5	448	94	12	0	2	561

Waltham Abbey, Thursday 12th October 2017

Junction: (2) Crooked Mile / Parklands / Waltham Abbey Gardens / Abbeyview

Approach: Waltham Abbey Gardens

TIME	First Left to Abbeyview								Second Left to Crooked Mile (North)								Right to Parklands								Last Right to Crooked Mile (South)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0715 - 0730	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0730 - 0745	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0745 - 0800	0	0	2	0	0	0	0	2	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	3	0	0	0	0	3	0	0	1	1	0	0	0	2	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1
0800 - 0815	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0815 - 0830	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0830 - 0845	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0845 - 0900	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
Hourly Total	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	1	0	0	0	0	1
0900 - 0915	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0915 - 0930	0	0	0	0	1	0	0	1	0	0	1	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	1	0	0	1	0	0	2	2	0	0	0	4	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
Session Total	0	0	4	1	1	0	0	6	0	0	3	3	0	0	0	6	0	0	3	1	0	0	0	4	0	0	2	0	0	0	0	2
1600 - 1615	0	0	2	0	0	0	0	2	0	0	2	0	0	0	0	2	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1
1615 - 1630	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
1630 - 1645	0	0	2	0	1	0	0	3	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
1645 - 1700	0	0	1	0	0	0	0	1	0	0	2	0	0	0	0	2	0	0	2	0	0	0	0	2	0	0	2	0	0	0	0	2
Hourly Total	0	0	6	0	1	0	0	7	0	0	8	0	0	0	0	8	0	0	5	0	0	0	0	5	0	0	4	0	0	0	0	4
1700 - 1715	0	0	2	1	0	0	0	3	0	0	2	0	0	0	0	2	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1
1715 - 1730	0	0	1	0	0	0	0	1	0	0	2	1	0	0	0	3	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
1730 - 1745	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	1	0	0	0	0	1
1745 - 1800	0	0	3	0	0	0	0	3	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Hourly Total	0	0	6	1	0	0	0	7	0	0	5	1	0	0	0	6	0	0	4	0	0	0	0	4	0	0	3	0	0	0	0	3
1800 - 1815	0	0	3	0	0	0	0	3	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1
1815 - 1830	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	4	0	0	0	0	4	0	0	1	1	0	0	0	2	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1
Session Total	0	0	16	1	1	0	0	18	0	0	14	2	0	0	0	16	0	0	10	0	0	0	0	10	0	0	8	0	0	0	0	8

Waltham Abbey, Thursday 12th October 2017

Junction: (2) Crooked Mile / Parklands / Waltham Abbey Gardens / Abbeyview

Approach: Abbeyview

	Left to Crooked Mile (North)								Ahead to Parklands							Right to Crooked Mile (South)							Last Right to Waltham Abbey Gardens									
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	24	6	3	4	0	37	0	1	19	4	0	1	1	25	0	0	15	5	1	0	0	0	21	0	0	0	0	0	0	0
0715 - 0730	0	0	29	8	1	4	0	42	0	0	19	5	2	2	0	28	0	0	16	6	1	0	0	0	23	0	0	0	0	0	0	0
0730 - 0745	0	0	32	8	3	1	0	44	0	0	32	5	5	0	0	42	0	0	15	7	4	0	0	0	26	0	0	0	0	0	0	0
0745 - 0800	0	0	30	13	5	3	0	51	0	0	34	4	0	0	1	39	0	0	28	4	0	0	0	0	32	0	0	0	0	0	0	0
Hourly Total	0	0	115	35	12	12	0	174	0	1	104	18	7	2	2	134	0	0	74	22	6	0	0	0	102	0	0	0	0	0	0	0
0800 - 0815	0	0	31	6	5	1	0	43	0	0	34	8	4	1	0	47	0	0	21	8	4	0	0	0	33	0	0	1	0	0	0	1
0815 - 0830	0	1	28	3	2	1	0	35	0	1	38	4	0	0	0	43	0	1	21	8	0	0	0	0	30	0	0	0	0	0	0	0
0830 - 0845	0	0	31	5	3	0	0	39	0	1	33	7	0	1	0	42	0	1	26	10	2	0	0	0	39	0	0	1	0	0	0	1
0845 - 0900	0	0	28	9	3	1	0	41	0	0	20	7	0	0	0	27	0	0	22	3	4	0	0	0	29	0	0	1	0	0	0	1
Hourly Total	0	1	118	23	13	3	0	158	0	2	125	26	4	2	0	159	0	2	90	29	10	0	0	0	131	0	0	3	0	0	0	3
0900 - 0915	0	0	23	9	2	2	0	36	1	0	29	8	2	0	0	40	0	0	23	7	2	0	0	0	32	0	0	1	0	0	0	1
0915 - 0930	0	0	22	8	2	4	0	36	0	0	16	7	4	2	0	29	0	0	23	7	2	0	0	0	32	0	0	0	0	0	0	0
Hourly Total	0	0	45	17	4	6	0	72	1	0	45	15	6	2	0	69	0	0	46	14	4	0	0	0	64	0	0	1	0	0	0	1
Session Total	0	1	278	75	29	21	0	404	1	3	274	59	17	6	2	362	0	2	210	65	20	0	0	0	297	0	0	4	0	0	0	4
1600 - 1615	0	0	52	14	7	3	0	76	0	0	48	6	0	1	0	55	0	0	37	6	0	0	0	0	43	0	0	1	0	0	0	1
1615 - 1630	0	0	41	11	0	2	0	54	0	0	41	9	0	1	2	53	0	0	35	5	2	0	0	0	42	0	0	1	0	0	0	1
1630 - 1645	0	2	46	5	1	0	0	54	0	0	31	7	2	0	0	40	0	2	41	3	2	0	0	0	48	0	0	0	0	0	0	0
1645 - 1700	0	1	80	15	1	1	1	99	0	0	44	5	0	0	0	49	0	0	39	9	0	0	0	0	48	0	0	0	0	0	0	0
Hourly Total	0	3	219	45	9	6	1	283	0	0	164	27	2	2	2	197	0	2	152	23	4	0	0	0	181	0	0	2	0	0	0	2
1700 - 1715	0	1	73	14	2	0	0	90	0	0	31	7	2	1	0	41	0	5	34	2	0	0	0	0	41	0	0	1	0	0	0	1
1715 - 1730	0	1	70	11	1	0	0	83	0	0	31	5	0	0	0	36	0	0	44	6	1	0	0	0	51	0	0	0	0	0	0	0
1730 - 1745	0	4	64	9	1	1	1	80	0	0	41	6	2	1	0	50	0	0	49	6	0	0	0	0	55	0	0	0	0	0	0	0
1745 - 1800	0	0	67	7	3	1	0	78	0	0	48	6	0	1	0	55	0	0	45	3	0	0	0	0	48	0	0	0	0	0	0	0
Hourly Total	0	6	274	41	7	2	1	331	0	0	161	24	4	3	0	182	0	5	172	17	1	0	0	0	195	0	0	1	0	0	0	1
1800 - 1815	0	0	59	5	5	0	0	69	1	0	47	7	0	0	0	55	0	0	66	4	0	0	0	0	70	0	0	0	0	0	0	0
1815 - 1830	0	0	58	4	1	1	0	64	0	0	40	7	0	1	0	48	0	1	54	6	0	0	0	0	61	0	0	0	0	0	0	0
Hourly Total	0	0	117	9	6	1	0	133	1	0	87	14	0	1	0	103	0	1	120	10	0	0	0	0	131	0	0	0	0	0	0	0
Session Total	0	9	610	95	22	9	2	747	1	0	402	65	6	6	2	482	0	8	444	50	5	0	0	0	507	0	0	3	0	0	0	3

Waltham Abbey, Wednesday 11th October 2017

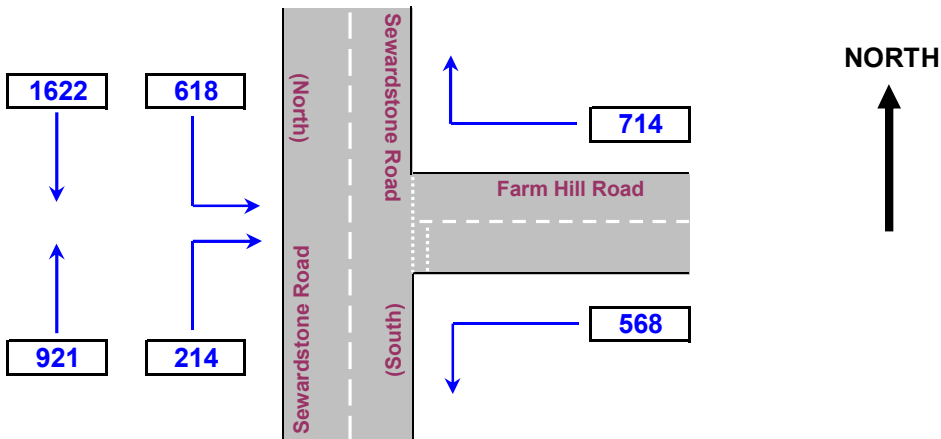
Junction: (3) Sewardstone Road / Farm Hill Road

Vehicle Class: ALL CLASSES

Start Time: 1) 0700

End Time: 1) 0930

☐ Peak Hour



Waltham Abbey, Wednesday 11th October 2017

Junction: (3) Sewardstone Road / Farm Hill Road

Approach: Sewardstone Road (North)

	Left to Farm Hill Road								Ahead to Sewardstone Road (South)							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	39	14	4	0	2	59	1	0	122	47	6	3	2	181
0715 - 0730	0	0	34	19	3	0	2	58	0	2	133	31	8	0	0	174
0730 - 0745	0	1	38	16	5	0	2	62	0	0	131	45	7	1	0	184
0745 - 0800	1	0	49	17	1	0	1	69	0	4	122	37	3	0	1	167
Hourly Total	1	1	160	66	13	0	7	248	1	6	508	160	24	4	3	706
0800 - 0815	0	0	48	15	4	0	3	70	0	2	143	22	6	0	0	173
0815 - 0830	0	0	50	17	1	1	1	70	0	0	124	23	5	2	0	154
0830 - 0845	0	0	44	14	2	0	3	63	0	2	121	26	6	0	0	155
0845 - 0900	0	0	44	5	2	0	1	52	0	0	123	19	6	0	0	148
Hourly Total	0	0	186	51	9	1	8	255	0	4	511	90	23	2	0	630
0900 - 0915	0	1	45	7	2	1	1	57	0	0	135	20	3	0	1	159
0915 - 0930	0	0	37	15	4	0	2	58	0	0	103	18	5	1	0	127
Hourly Total	0	1	82	22	6	1	3	115	0	0	238	38	8	1	1	286
Session Total	1	2	428	139	28	2	18	618	1	10	1257	288	55	7	4	1622
1600 - 1615	0	0	69	13	3	0	1	86	1	2	99	24	2	0	0	128
1615 - 1630	0	1	64	7	2	0	2	76	1	1	94	15	3	0	0	114
1630 - 1645	0	3	70	16	0	0	0	89	0	4	98	23	5	0	0	130
1645 - 1700	0	0	77	18	2	0	3	100	0	0	101	14	2	0	0	117
Hourly Total	0	4	280	54	7	0	6	351	2	7	392	76	12	0	0	489
1700 - 1715	1	5	85	7	0	0	2	100	0	2	98	6	0	0	0	106
1715 - 1730	1	2	86	10	2	0	1	102	0	0	146	14	2	0	0	162
1730 - 1745	0	0	79	8	1	0	3	91	0	1	103	8	0	0	0	112
1745 - 1800	0	0	87	3	1	0	1	92	0	0	115	14	0	0	1	130
Hourly Total	2	7	337	28	4	0	7	385	0	3	462	42	2	0	1	510
1800 - 1815	1	2	98	6	0	0	2	109	0	0	82	13	0	0	0	95
1815 - 1830	0	1	86	9	1	0	1	98	0	1	103	8	0	0	0	112
Hourly Total	1	3	184	15	1	0	3	207	0	1	185	21	0	0	0	207
Session Total	3	14	801	97	12	0	16	943	2	11	1039	139	14	0	1	1206

Waltham Abbey, Wednesday 11th October 2017

Junction: (3) Sewardstone Road / Farm Hill Road

Approach: Farm Hill Road

TIME	Left to Sewardstone Road (South)								Right to Sewardstone Road (North)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	1	39	3	0	0	0	43	0	0	40	11	0	0	1	52
0715 - 0730	0	0	43	11	0	0	0	54	0	0	45	8	0	0	2	55
0730 - 0745	0	5	50	12	1	0	0	68	0	0	63	15	5	0	1	84
0745 - 0800	0	3	51	5	1	0	1	61	0	0	57	14	1	0	1	73
Hourly Total	0	9	183	31	2	0	1	226	0	0	205	48	6	0	5	264
0800 - 0815	0	1	56	8	1	0	0	66	1	0	58	5	2	0	3	69
0815 - 0830	0	1	50	3	1	0	0	55	0	2	68	3	2	0	0	75
0830 - 0845	0	0	57	6	0	0	0	63	0	0	73	4	1	0	1	79
0845 - 0900	0	0	43	5	0	0	0	48	1	1	62	5	2	0	2	73
Hourly Total	0	2	206	22	2	0	0	232	2	3	261	17	7	0	6	296
0900 - 0915	0	0	56	10	0	0	0	66	0	0	71	10	1	0	2	84
0915 - 0930	0	0	36	8	0	0	0	44	0	1	57	9	1	0	2	70
Hourly Total	0	0	92	18	0	0	0	110	0	1	128	19	2	0	4	154
Session Total	0	11	481	71	4	0	1	568	2	4	594	84	15	0	15	714
1600 - 1615	0	0	26	3	0	0	0	29	0	1	36	13	2	0	1	53
1615 - 1630	0	0	27	7	0	0	0	34	0	1	51	13	2	0	2	69
1630 - 1645	0	0	34	6	0	0	0	40	0	2	52	10	4	0	2	70
1645 - 1700	0	1	32	3	0	0	0	36	0	1	54	14	0	0	1	70
Hourly Total	0	1	119	19	0	0	0	139	0	5	193	50	8	0	6	262
1700 - 1715	0	0	38	6	1	0	0	45	0	0	47	16	0	0	2	65
1715 - 1730	0	1	36	8	2	0	0	47	2	0	60	12	0	0	0	74
1730 - 1745	0	2	32	5	0	0	0	39	0	0	44	6	0	0	2	52
1745 - 1800	0	0	47	4	1	0	0	52	0	4	68	11	1	0	2	86
Hourly Total	0	3	153	23	4	0	0	183	2	4	219	45	1	0	6	277
1800 - 1815	1	1	31	3	0	0	0	36	0	0	55	8	0	0	0	63
1815 - 1830	0	0	46	8	0	0	0	54	0	0	69	13	1	0	3	86
Hourly Total	1	1	77	11	0	0	0	90	0	0	124	21	1	0	3	149
Session Total	1	5	349	53	4	0	0	412	2	9	536	116	10	0	15	688

Waltham Abbey, Wednesday 11th October 2017

Junction: (3) Sewardstone Road / Farm Hill Road

Approach: Sewardstone Road (South)

TIME	Ahead to Sewardstone Road (North)								Right to Farm Hill Road							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	35	10	4	0	0	49	0	0	8	1	0	0	0	9
0715 - 0730	0	1	62	15	0	0	2	80	0	0	9	3	0	0	0	12
0730 - 0745	1	0	60	11	1	2	0	75	0	0	11	6	0	0	0	17
0745 - 0800	1	3	77	21	3	0	0	105	0	0	9	4	3	0	0	16
Hourly Total	2	4	234	57	8	2	2	309	0	0	37	14	3	0	0	54
0800 - 0815	0	0	72	17	6	0	0	95	0	0	12	3	3	0	0	18
0815 - 0830	0	1	92	21	6	0	0	120	0	0	27	5	4	0	0	36
0830 - 0845	0	0	101	10	4	1	0	116	0	0	19	4	1	0	0	24
0845 - 0900	0	1	91	12	8	1	0	113	0	1	20	4	0	0	0	25
Hourly Total	0	2	356	60	24	2	0	444	0	1	78	16	8	0	0	103
0900 - 0915	0	0	60	15	6	0	0	81	0	0	17	5	0	0	0	22
0915 - 0930	0	0	61	24	1	1	0	87	0	0	19	5	11	0	0	35
Hourly Total	0	0	121	39	7	1	0	168	0	0	36	10	11	0	0	57

Session Total	2	6	711	156	39	5	2	921	0	1	151	40	22	0	0	214
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1600 - 1615	0	0	138	30	5	2	0	175	0	2	28	14	1	0	0	45
1615 - 1630	0	1	103	26	5	0	1	136	0	1	47	8	0	0	0	56
1630 - 1645	0	2	156	31	3	0	0	192	0	2	42	9	0	0	0	53
1645 - 1700	0	2	127	36	5	0	0	170	0	1	44	8	0	0	0	53
Hourly Total	0	5	524	123	18	2	1	673	0	6	161	39	1	0	0	207
1700 - 1715	0	1	136	36	2	0	0	175	0	3	53	9	0	0	0	65
1715 - 1730	0	5	138	20	8	0	0	171	0	0	51	8	0	0	0	59
1730 - 1745	0	5	136	26	4	0	0	171	0	0	68	7	1	0	0	76
1745 - 1800	0	3	165	26	1	0	2	197	0	2	62	12	0	0	0	76
Hourly Total	0	14	575	108	15	0	2	714	0	5	234	36	1	0	0	276
1800 - 1815	0	2	125	25	1	0	0	153	0	1	58	10	0	0	0	69
1815 - 1830	0	3	116	16	1	0	0	136	0	1	50	5	0	0	0	56
Hourly Total	0	5	241	41	2	0	0	289	0	2	108	15	0	0	0	125

Session Total	0	24	1340	272	35	2	3	1676	0	13	503	90	2	0	0	608
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Waltham Abbey, Wednesday 11th October 2017

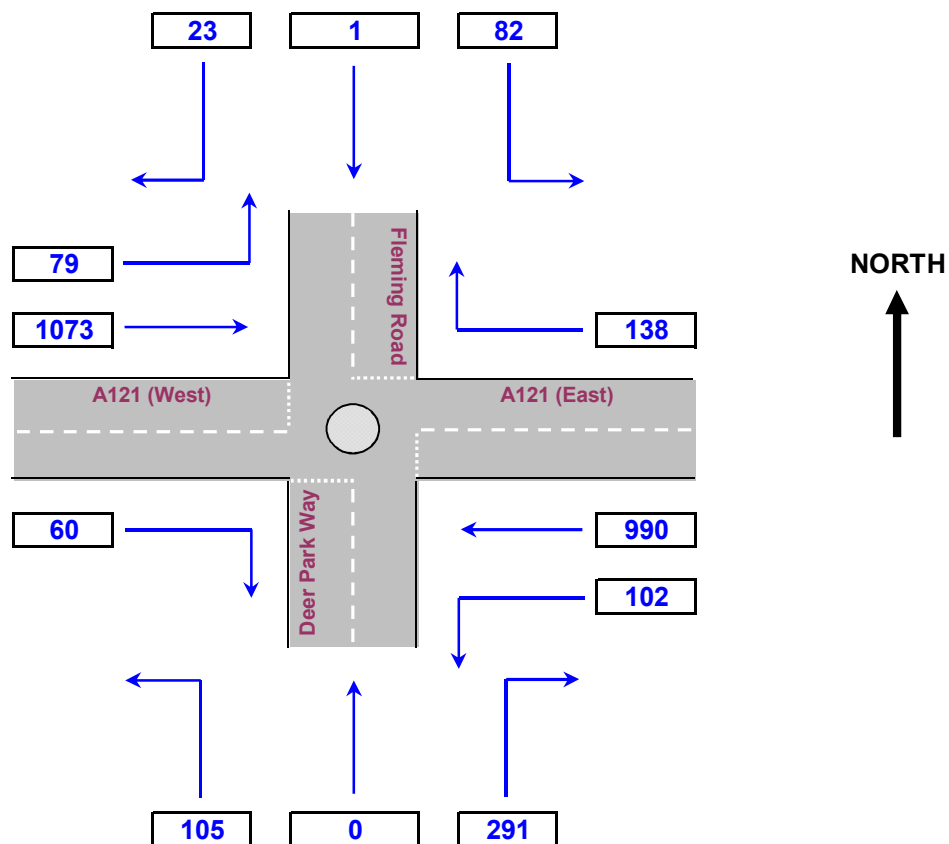
Junction: (4) Fleming Road / A121 / Deer Park Way

Vehicle Class:

Start Time:

End Time:

☐ Peak Hour



Note: The above diagram represents the Junction surveyed, although may not be the exact layout of the actual location.

Important This spreadsheet & Interactive Vehicle Flow Diagram was produced based on specific Note: parameters. Consequently, alteration to the spreadsheet format or it's properties may result in malfunction.

Waltham Abbey, Wednesday 11th October 2017

Junction: (4) Fleming Road / A121 / Deer Park Way

Approach: Fleming Road

TIME	Left to A121 (East)								Ahead to Deer Park Way								Right to A121 (West)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	13	2	0	5	0	20	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4
0715 - 0730	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
0730 - 0745	0	0	1	1	1	2	0	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0745 - 0800	0	0	3	0	0	2	0	5	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
Hourly Total	0	0	17	3	1	11	0	32	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	9
0800 - 0815	0	0	0	0	2	4	0	6	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
0815 - 0830	0	0	0	1	0	5	0	6	0	0	0	0	0	0	0	0	0	0	2	1	0	1	0	4
0830 - 0845	0	0	2	1	0	7	0	10	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0845 - 0900	0	0	1	0	0	5	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Hourly Total	0	0	3	2	2	21	0	28	0	0	0	0	0	0	0	0	0	0	5	1	0	2	0	8
0900 - 0915	0	0	5	1	0	5	0	11	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5
0915 - 0930	0	0	4	0	1	6	0	11	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1
Hourly Total	0	0	9	1	1	11	0	22	0	0	0	1	0	0	0	1	0	0	4	2	0	0	0	6
Session Total	0	0	29	6	4	43	0	82	0	0	0	1	0	0	0	1	0	0	18	3	0	2	0	23
1600 - 1615	0	1	4	1	1	7	0	14	0	0	0	0	0	0	0	0	0	0	6	1	2	2	0	11
1615 - 1630	0	0	11	2	0	4	0	17	0	0	0	0	0	0	0	0	0	0	9	0	2	1	0	12
1630 - 1645	0	0	8	0	0	3	0	11	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	5
1645 - 1700	0	0	9	3	0	4	0	16	0	0	0	0	0	0	0	0	0	0	1	0	2	1	0	4
Hourly Total	0	1	32	6	1	18	0	58	0	0	0	0	0	0	0	0	0	0	20	1	7	4	0	32
1700 - 1715	0	0	8	1	0	5	0	14	0	0	3	0	0	0	0	3	0	0	6	0	0	2	0	8
1715 - 1730	0	0	8	1	0	1	0	10	0	0	0	0	0	0	0	0	0	0	17	0	0	1	0	18
1730 - 1745	0	0	7	1	0	6	0	14	0	0	1	0	0	0	0	1	0	1	10	1	0	0	0	12
1745 - 1800	0	0	10	1	0	1	0	12	0	0	0	0	0	0	0	0	0	0	14	0	1	1	0	16
Hourly Total	0	0	33	4	0	13	0	50	0	0	4	0	0	0	0	4	0	1	47	1	1	4	0	54
1800 - 1815	0	1	13	0	0	5	0	19	0	0	1	0	0	0	0	1	0	0	8	0	0	0	0	8
1815 - 1830	0	0	5	0	0	6	0	11	0	0	0	0	0	0	0	0	0	0	14	0	0	0	0	14
Hourly Total	0	1	18	0	0	11	0	30	0	0	1	0	0	0	0	1	0	0	22	0	0	0	0	22
Session Total	0	2	83	10	1	42	0	138	0	0	5	0	0	0	0	5	0	1	89	2	8	8	0	108

Waltham Abbey, Wednesday 11th October 2017

Junction: (4) Fleming Road / A121 / Deer Park Way

Approach: A121 (East)

TIME	Left to Deer Park Way								Ahead to A121 (West)								Right to Fleming Road							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	3	2	0	0	0	5	0	0	40	15	9	2	0	66	0	0	7	2	1	4	0	14
0715 - 0730	0	0	3	1	0	0	0	4	0	2	60	13	6	2	0	83	0	0	2	0	0	4	0	6
0730 - 0745	0	0	6	1	0	0	0	7	0	1	61	20	2	4	0	88	0	0	11	1	0	5	0	17
0745 - 0800	0	0	6	1	1	0	0	8	0	1	82	11	5	5	0	104	0	0	7	0	0	6	0	13
Hourly Total	0	0	18	5	1	0	0	24	0	4	243	59	22	13	0	341	0	0	27	3	1	19	0	50
0800 - 0815	0	0	7	2	0	0	0	9	1	0	97	15	8	3	1	125	0	0	3	2	0	7	0	12
0815 - 0830	0	0	7	2	0	0	0	9	0	0	98	10	3	3	0	114	0	0	8	2	1	2	0	13
0830 - 0845	0	0	13	3	0	0	0	16	0	0	99	15	1	3	0	118	0	0	6	0	3	5	0	14
0845 - 0900	0	0	13	5	0	0	0	18	0	1	95	16	6	6	0	124	0	0	11	1	3	5	0	20
Hourly Total	0	0	40	12	0	0	0	52	1	1	389	56	18	15	1	481	0	0	28	5	7	19	0	59
0900 - 0915	0	0	12	5	0	0	0	17	0	0	77	8	5	7	0	97	0	0	4	2	0	4	0	10
0915 - 0930	0	0	8	1	0	0	0	9	0	0	49	11	6	4	1	71	0	0	8	0	2	9	0	19
Hourly Total	0	0	20	6	0	0	0	26	0	0	126	19	11	11	1	168	0	0	12	2	2	13	0	29
Session Total	0	0	78	23	1	0	0	102	1	5	758	134	51	39	2	990	0	0	67	10	10	51	0	138
1600 - 1615	0	0	10	4	0	0	0	14	0	1	81	25	2	1	0	110	0	0	1	0	0	3	0	4
1615 - 1630	0	0	17	10	0	0	0	27	0	0	81	25	3	0	0	109	0	0	1	1	0	2	0	4
1630 - 1645	0	1	22	5	0	0	0	28	0	2	77	21	4	0	0	104	0	0	2	0	0	8	0	10
1645 - 1700	0	0	8	5	0	0	0	13	1	1	85	21	5	2	0	115	0	0	1	0	0	6	0	7
Hourly Total	0	1	57	24	0	0	0	82	1	4	324	92	14	3	0	438	0	0	5	1	0	19	0	25
1700 - 1715	0	0	13	1	0	0	0	14	0	2	76	21	9	1	0	109	0	0	6	0	0	9	0	15
1715 - 1730	0	0	13	1	0	0	0	14	0	0	74	14	3	0	0	91	0	0	1	0	0	8	0	9
1730 - 1745	0	0	25	4	0	0	0	29	0	0	77	13	6	3	0	99	0	1	6	0	0	10	0	17
1745 - 1800	0	0	25	3	1	0	0	29	0	2	87	14	4	1	0	108	0	0	5	1	0	3	0	9
Hourly Total	0	0	76	9	1	0	0	86	0	4	314	62	22	5	0	407	0	1	18	1	0	30	0	50
1800 - 1815	0	0	32	3	0	0	0	35	0	3	79	17	2	2	0	103	0	0	4	1	0	6	0	11
1815 - 1830	0	0	10	3	0	0	0	13	0	0	66	1	0	3	0	70	0	0	8	1	0	4	0	13
Hourly Total	0	0	42	6	0	0	0	48	0	3	145	18	2	5	0	173	0	0	12	2	0	10	0	24
Session Total	0	1	175	39	1	0	0	216	1	11	783	172	38	13	0	1018	0	1	35	4	0	59	0	99

Waltham Abbey, Wednesday 11th October 2017

Junction: (4) Fleming Road / A121 / Deer Park Way

Approach: Deer Park Way

TIME	Left to A121 (West)								Ahead to Fleming Road								Right to A121 (East)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	18	2	0	0	0	20	0	0	0	0	0	0	0	0	0	0	20	3	1	0	0	24
0715 - 0730	0	0	14	4	0	0	0	18	0	0	0	0	0	0	0	0	0	1	18	2	1	0	0	22
0730 - 0745	0	0	17	3	0	0	0	20	0	0	0	0	0	0	0	0	0	0	26	7	0	0	0	33
0745 - 0800	0	0	11	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	26	3	0	0	0	29
Hourly Total	0	0	60	9	0	0	0	69	0	0	0	0	0	0	0	0	0	1	90	15	2	0	0	108
0800 - 0815	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	1	0	42	8	0	0	0	51
0815 - 0830	0	0	8	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	42	3	1	0	0	46
0830 - 0845	0	0	8	1	0	0	0	9	0	0	0	0	0	0	0	0	0	0	31	2	0	0	0	33
0845 - 0900	0	0	6	1	0	0	0	7	0	0	0	0	0	0	0	0	0	0	23	1	0	0	0	24
Hourly Total	0	0	26	2	0	0	0	28	0	0	0	0	0	0	0	0	1	0	138	14	1	0	0	154
0900 - 0915	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	11	4	0	0	0	15
0915 - 0930	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	1	9	4	0	0	0	14
Hourly Total	0	0	8	0	0	0	0	8	0	0	0	0	0	0	0	0	0	1	20	8	0	0	0	29
Session Total	0	0	94	11	0	0	0	105	0	0	0	0	0	0	0	0	1	2	248	37	3	0	0	291
1600 - 1615	0	0	4	1	0	0	0	5	0	0	0	0	0	0	0	0	0	0	13	4	0	0	0	17
1615 - 1630	0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	6	2	0	0	0	8
1630 - 1645	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	9	1	0	0	0	10
1645 - 1700	0	0	11	0	0	0	0	11	0	0	0	0	0	0	0	0	0	1	13	2	1	0	0	17
Hourly Total	0	0	25	1	0	0	0	26	0	0	0	0	0	0	0	0	0	1	41	9	1	0	0	52
1700 - 1715	0	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	13
1715 - 1730	0	0	16	1	0	0	0	17	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	13
1730 - 1745	0	1	3	1	0	0	0	5	0	0	0	1	0	0	0	1	0	0	15	1	0	0	0	16
1745 - 1800	0	0	5	2	0	0	0	7	0	0	0	0	0	0	0	0	0	0	12	3	0	0	0	15
Hourly Total	0	1	31	4	0	0	0	36	0	0	0	1	0	0	0	1	0	0	53	4	0	0	0	57
1800 - 1815	0	0	5	2	0	0	0	7	0	0	0	0	0	0	0	0	0	0	13	1	1	0	0	15
1815 - 1830	0	0	16	3	0	0	0	19	0	0	0	0	0	0	0	0	0	0	17	4	0	0	0	21
Hourly Total	0	0	21	5	0	0	0	26	0	0	0	0	0	0	0	0	0	0	30	5	1	0	0	36
Session Total	0	1	77	10	0	0	0	88	0	0	0	1	0	0	0	1	0	1	124	18	2	0	0	145

Waltham Abbey, Wednesday 11th October 2017

Junction: (4) Fleming Road / A121 / Deer Park Way

Approach: A121 (West)

TIME	Left to Fleming Road								Ahead to A121 (East)								Right to Deer Park Way							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	8	2	0	0	0	10	0	5	54	25	7	3	0	94	0	0	6	0	1	0	0	7
0715 - 0730	0	0	7	0	0	0	0	7	0	4	95	38	6	4	0	147	0	0	2	0	0	0	0	2
0730 - 0745	0	0	6	0	0	0	0	6	0	0	80	26	10	2	0	118	0	0	4	3	0	0	0	7
0745 - 0800	0	0	6	0	0	1	0	7	1	0	79	26	12	2	0	120	0	0	3	2	0	0	0	5
Hourly Total	0	0	27	2	0	1	0	30	1	9	308	115	35	11	0	479	0	0	15	5	1	0	0	21
0800 - 0815	0	0	1	1	1	0	0	3	1	0	81	28	7	4	0	121	0	0	1	3	0	0	0	4
0815 - 0830	0	0	2	1	0	0	0	3	0	0	88	21	7	1	0	117	0	0	2	1	0	0	0	3
0830 - 0845	0	0	13	0	0	0	0	13	0	1	69	10	6	2	0	88	0	0	7	0	0	0	0	7
0845 - 0900	0	1	3	1	1	0	0	6	0	1	64	13	10	7	1	96	0	0	3	1	0	0	0	4
Hourly Total	0	1	19	3	2	0	0	25	1	2	302	72	30	14	1	422	0	0	13	5	0	0	0	18
0900 - 0915	0	0	11	2	0	0	0	13	0	0	63	18	7	2	0	90	0	0	13	0	0	0	0	13
0915 - 0930	0	0	9	1	1	0	0	11	0	1	51	19	6	5	0	82	0	0	8	0	0	0	0	8
Hourly Total	0	0	20	3	1	0	0	24	0	1	114	37	13	7	0	172	0	0	21	0	0	0	0	21
Session Total	0	1	66	8	3	1	0	79	2	12	724	224	78	32	1	1073	0	0	49	10	1	0	0	60
1600 - 1615	0	0	1	0	0	0	0	1	0	1	93	17	2	2	1	116	0	0	21	0	0	0	0	21
1615 - 1630	0	0	1	0	0	0	0	1	0	0	110	23	6	1	0	140	0	0	6	2	0	0	0	8
1630 - 1645	0	0	0	0	0	0	0	0	0	0	107	13	2	3	1	126	0	0	15	3	0	0	0	18
1645 - 1700	0	0	1	3	0	0	0	4	0	1	83	12	2	1	0	99	0	0	24	4	1	0	0	29
Hourly Total	0	0	3	3	0	0	0	6	0	2	393	65	12	7	2	481	0	0	66	9	1	0	0	76
1700 - 1715	0	0	4	0	1	1	0	6	0	0	97	23	1	2	0	123	0	0	23	3	0	0	0	26
1715 - 1730	0	0	2	0	0	0	0	2	0	0	104	16	3	3	0	126	0	0	20	0	0	0	0	20
1730 - 1745	0	0	1	0	0	0	0	1	0	1	121	6	2	1	0	131	0	0	33	1	0	0	0	34
1745 - 1800	0	0	1	0	0	0	0	1	0	1	124	8	3	0	0	136	0	0	21	0	0	0	0	21
Hourly Total	0	0	8	0	1	1	0	10	0	2	446	53	9	6	0	516	0	0	97	4	0	0	0	101
1800 - 1815	0	0	2	0	0	0	0	2	0	0	80	5	0	0	0	85	0	0	27	1	0	0	0	28
1815 - 1830	0	0	2	0	0	1	0	3	0	1	83	8	2	3	1	98	0	0	25	1	0	0	0	26
Hourly Total	0	0	4	0	0	1	0	5	0	1	163	13	2	3	1	183	0	0	52	2	0	0	0	54
Session Total	0	0	15	3	1	2	0	21	0	5	1002	131	23	16	3	1180	0	0	215	15	1	0	0	231

Waltham Abbey, Wednesday 11th October 2017

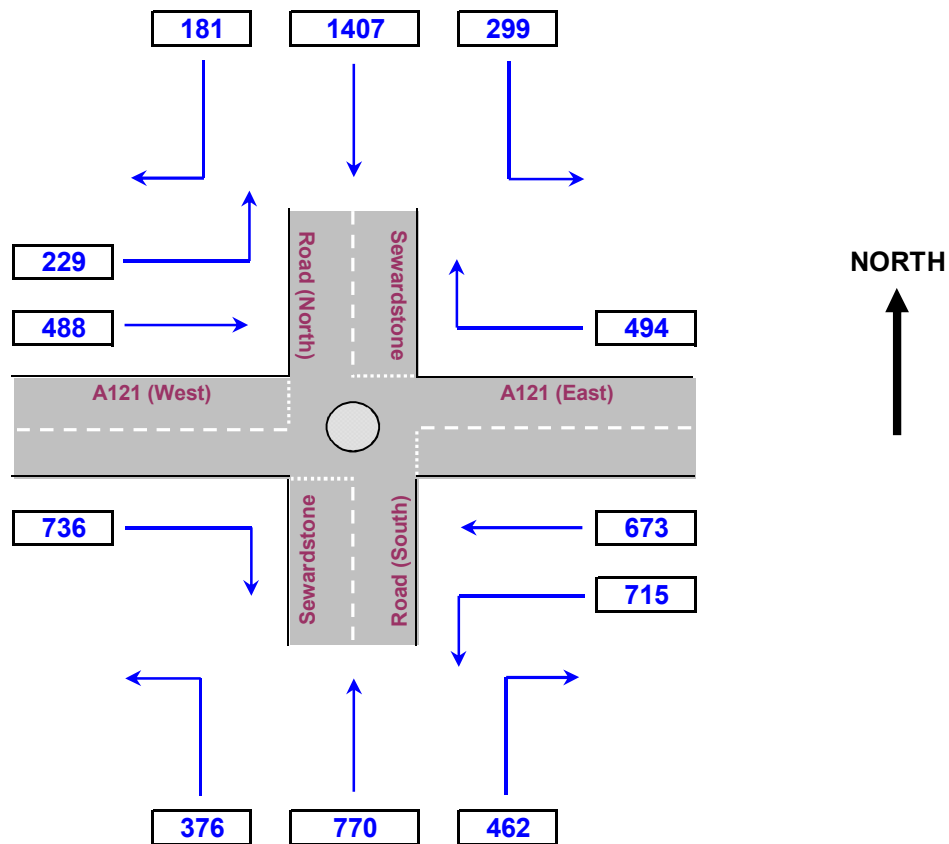
Junction: (5) Sewardstone Road / A121

Vehicle Class:

Start Time:

End Time:

☐ Peak Hour



Note: The above diagram represents the Junction surveyed, although may not be the exact layout of the actual location.

Important This spreadsheet & Interactive Vehicle Flow Diagram was produced based on specific
Note: parameters. Consequently, alteration to the spreadsheet format or it's properties
may result in malfunction.

Waltham Abbey, Wednesday 11th October 2017

Junction: (5) Sewardstone Road / A121

Approach: Sewardstone Road (North)

TIME	Left to A121 (East)								Ahead to Sewardstone Road (South)								Right to A121 (West)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	13	3	1	0	1	18	1	2	123	52	3	3	1	185	0	0	3	1	1	0	0	5
0715 - 0730	0	0	17	5	3	0	0	25	0	3	131	40	5	0	0	179	0	0	5	1	1	0	0	7
0730 - 0745	0	0	21	6	4	1	0	32	2	3	120	36	11	0	0	172	0	0	9	2	0	0	0	11
0745 - 0800	0	0	19	6	5	1	0	31	0	7	121	26	2	1	0	157	0	0	11	2	2	1	0	16
Hourly Total	0	0	70	20	13	2	1	106	3	15	495	154	21	4	1	693	0	0	28	6	4	1	0	39
0800 - 0815	0	0	27	5	5	0	0	37	0	3	135	22	2	0	1	163	0	0	15	2	2	0	0	19
0815 - 0830	0	0	23	9	2	0	0	34	0	0	93	16	5	0	0	114	0	0	21	0	0	0	0	21
0830 - 0845	0	0	29	9	4	0	0	42	0	3	101	17	3	0	0	124	0	0	26	2	1	0	0	29
0845 - 0900	0	0	21	8	0	1	0	30	0	0	94	10	4	0	0	108	0	0	31	0	1	1	0	33
Hourly Total	0	0	100	31	11	1	0	143	0	6	423	65	14	0	1	509	0	0	93	4	4	1	0	102
0900 - 0915	0	0	16	7	2	1	0	26	0	0	86	17	1	1	0	105	0	0	22	3	2	1	0	28
0915 - 0930	0	0	16	7	1	0	0	24	0	0	77	19	3	0	1	100	0	0	11	1	0	0	0	12
Hourly Total	0	0	32	14	3	1	0	50	0	0	163	36	4	1	1	205	0	0	33	4	2	1	0	40
Session Total	0	0	202	65	27	4	1	299	3	21	1081	255	39	5	3	1407	0	0	154	14	10	3	0	181
1600 - 1615	0	1	26	5	0	0	0	32	1	2	79	19	1	0	0	102	0	0	18	7	0	0	0	25
1615 - 1630	0	0	23	11	0	0	0	34	0	1	68	13	3	0	0	85	0	0	26	5	0	0	0	31
1630 - 1645	0	0	25	7	1	0	0	33	0	1	77	13	1	0	0	92	1	0	22	7	0	0	0	30
1645 - 1700	0	0	34	3	2	0	0	39	0	1	83	14	3	0	0	101	0	1	19	4	0	0	0	24
Hourly Total	0	1	108	26	3	0	0	138	1	5	307	59	8	0	0	380	1	1	85	23	0	0	0	110
1700 - 1715	0	0	52	3	0	0	0	55	0	4	72	14	1	0	0	91	0	2	20	1	0	1	0	24
1715 - 1730	0	0	65	5	0	0	0	70	0	0	90	10	1	0	0	101	0	0	16	2	0	0	0	18
1730 - 1745	0	1	53	6	1	0	0	61	2	7	93	6	0	0	0	108	0	1	29	1	0	0	0	31
1745 - 1800	0	0	49	5	1	0	0	55	0	1	95	8	1	0	0	105	0	0	23	2	1	0	0	26
Hourly Total	0	1	219	19	2	0	0	241	2	12	350	38	3	0	0	405	0	3	88	6	1	1	0	99
1800 - 1815	0	1	32	5	0	1	0	39	1	1	71	10	0	0	0	83	0	0	26	0	1	0	0	27
1815 - 1830	0	0	28	5	0	0	0	33	1	2	79	9	1	1	0	93	0	0	16	1	0	0	0	17
Hourly Total	0	1	60	10	0	1	0	72	2	3	150	19	1	1	0	176	0	0	42	1	1	0	0	44
Session Total	0	3	387	55	5	1	0	451	5	20	807	116	12	1	0	961	1	4	215	30	2	1	0	253

Waltham Abbey, Wednesday 11th October 2017

Junction: (5) Sewardstone Road / A121

Approach: A121 (East)

TIME	Left to Sewardstone Road (South)								Ahead to A121 (West)								Right to Sewardstone Road (North)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	1	36	23	1	4	0	65	0	0	35	15	6	4	0	60	0	0	28	5	2	1	0	36
0715 - 0730	0	0	41	23	2	1	0	67	0	0	34	12	4	7	0	57	0	0	20	4	1	1	0	26
0730 - 0745	0	2	44	15	3	3	0	67	0	1	54	14	1	10	0	80	0	0	22	7	3	2	0	34
0745 - 0800	0	0	49	15	5	4	0	73	0	0	63	7	4	8	0	82	0	0	31	10	1	0	0	42
Hourly Total	0	3	170	76	11	12	0	272	0	1	186	48	15	29	0	279	0	0	101	26	7	4	0	138
0800 - 0815	0	2	63	19	4	2	0	90	0	0	60	9	3	10	1	83	0	0	32	17	2	0	0	51
0815 - 0830	0	0	62	18	7	1	0	88	0	0	51	8	4	5	0	68	0	0	33	10	2	1	0	46
0830 - 0845	0	0	36	16	4	7	1	64	0	0	45	6	3	8	0	62	0	0	67	10	1	1	0	79
0845 - 0900	0	0	48	22	3	5	0	78	0	0	45	15	7	10	0	77	0	0	58	10	5	0	0	73
Hourly Total	0	2	209	75	18	15	1	320	0	0	201	38	17	33	1	290	0	0	190	47	10	2	0	249
0900 - 0915	0	0	43	10	8	2	0	63	0	0	29	8	5	10	0	52	0	1	34	6	3	1	0	45
0915 - 0930	0	0	39	18	2	1	0	60	0	0	29	7	5	11	0	52	0	0	41	16	4	1	0	62
Hourly Total	0	0	82	28	10	3	0	123	0	0	58	15	10	21	0	104	0	1	75	22	7	2	0	107
Session Total	0	5	461	179	39	30	1	715	0	1	445	101	42	83	1	673	0	1	366	95	24	8	0	494
1600 - 1615	0	2	38	11	0	1	1	53	0	0	23	8	3	4	0	38	0	0	37	8	2	0	0	47
1615 - 1630	0	0	49	19	4	0	0	72	0	0	27	15	0	0	0	42	0	0	26	10	2	0	0	38
1630 - 1645	0	0	38	21	7	1	1	68	0	2	31	10	1	8	0	52	0	1	35	9	1	0	0	46
1645 - 1700	0	0	59	17	3	0	0	79	0	0	25	11	5	9	0	50	0	0	30	6	1	1	0	38
Hourly Total	0	2	184	68	14	2	2	272	0	2	106	44	9	21	0	182	0	1	128	33	6	1	0	169
1700 - 1715	0	0	66	14	1	1	0	82	0	0	30	11	6	7	0	54	0	0	25	11	1	2	0	39
1715 - 1730	0	1	59	13	4	2	0	79	0	0	30	3	2	7	0	42	0	0	26	5	2	0	0	33
1730 - 1745	0	0	64	8	1	0	0	73	0	0	39	6	6	13	0	64	0	0	33	10	2	1	0	46
1745 - 1800	0	0	59	15	2	1	1	78	0	1	45	8	1	4	0	59	0	0	28	15	2	0	0	45
Hourly Total	0	1	248	50	8	4	1	312	0	1	144	28	15	31	0	219	0	0	112	41	7	3	0	163
1800 - 1815	0	1	70	16	1	0	0	88	0	2	32	6	0	8	0	48	0	0	32	3	2	0	0	37
1815 - 1830	0	1	59	11	2	0	0	73	0	0	20	4	0	7	0	31	0	0	37	5	0	1	0	43
Hourly Total	0	2	129	27	3	0	0	161	0	2	52	10	0	15	0	79	0	0	69	8	2	1	0	80
Session Total	0	5	561	145	25	6	3	745	0	5	302	82	24	67	0	480	0	1	309	82	15	5	0	412

Waltham Abbey, Wednesday 11th October 2017

Junction: (5) Sewardstone Road / A121

Approach: Sewardstone Road (South)

TIME	Left to A121 (West)								Ahead to Sewardstone Road (North)								Right to A121 (East)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	12	4	2	1	0	19	0	0	10	4	0	0	1	15	0	1	11	3	1	0	0	16
0715 - 0730	0	2	22	3	1	0	0	28	0	0	43	9	1	0	1	54	0	0	16	2	1	1	0	20
0730 - 0745	0	0	19	5	0	0	0	24	0	1	53	15	1	0	0	70	0	0	22	8	3	0	0	33
0745 - 0800	0	1	21	2	2	1	0	27	0	3	82	13	4	0	0	102	0	0	25	11	1	0	0	37
Hourly Total	0	3	74	14	5	2	0	98	0	4	188	41	6	0	2	241	0	1	74	24	6	1	0	106
0800 - 0815	0	1	33	9	2	0	0	45	0	0	75	13	4	0	0	92	0	0	37	8	4	0	0	49
0815 - 0830	0	0	41	3	0	0	0	44	0	0	77	8	4	0	0	89	0	1	50	15	2	1	0	69
0830 - 0845	0	0	45	11	0	0	0	56	0	1	95	7	3	0	0	106	0	0	61	9	4	0	1	75
0845 - 0900	0	1	44	8	1	0	0	54	1	0	78	14	5	1	0	99	0	0	47	10	2	4	0	63
Hourly Total	0	2	163	31	3	0	0	199	1	1	325	42	16	1	0	386	0	1	195	42	12	5	1	256
0900 - 0915	0	0	32	4	0	0	0	36	0	3	62	16	3	0	0	84	0	0	37	12	1	1	0	51
0915 - 0930	0	0	33	5	2	2	1	43	0	0	49	8	1	0	1	59	0	0	39	4	2	4	0	49
Hourly Total	0	0	65	9	2	2	1	79	0	3	111	24	4	0	1	143	0	0	76	16	3	5	0	100
Session Total	0	5	302	54	10	4	1	376	1	8	624	107	26	1	3	770	0	2	345	82	21	11	1	462
1600 - 1615	0	1	50	12	1	2	0	66	0	3	92	29	2	1	0	127	0	0	31	5	2	1	0	39
1615 - 1630	0	0	44	16	0	0	0	60	0	2	89	27	5	0	1	124	0	0	41	6	1	0	0	48
1630 - 1645	0	1	47	13	2	0	0	63	0	3	114	29	3	0	0	149	0	0	43	8	1	0	0	52
1645 - 1700	1	0	53	11	3	0	0	68	0	1	118	28	4	0	0	151	0	0	46	13	3	0	0	62
Hourly Total	1	2	194	52	6	2	0	257	0	9	413	113	14	1	1	551	0	0	161	32	7	1	0	201
1700 - 1715	0	0	51	7	1	2	0	61	0	5	120	34	4	0	0	163	0	0	54	16	4	1	0	75
1715 - 1730	0	0	44	11	1	0	0	56	0	5	118	17	4	0	0	144	0	1	50	9	2	0	0	62
1730 - 1745	0	0	40	11	1	1	0	53	0	4	127	31	2	0	0	164	0	0	47	5	1	1	0	54
1745 - 1800	0	2	48	9	2	0	0	61	0	5	152	17	0	0	3	177	0	1	50	4	0	0	0	55
Hourly Total	0	2	183	38	5	3	0	231	0	19	517	99	10	0	3	648	0	2	201	34	7	2	0	246
1800 - 1815	0	1	60	15	2	0	0	78	1	4	108	24	1	0	0	138	0	0	47	9	2	0	0	58
1815 - 1830	0	0	46	1	0	0	0	47	0	4	99	18	1	0	0	122	0	0	50	4	1	0	0	55
Hourly Total	0	1	106	16	2	0	0	125	1	8	207	42	2	0	0	260	0	0	97	13	3	0	0	113
Session Total	1	5	483	106	13	5	0	613	1	36	1137	254	26	1	4	1459	0	2	459	79	17	3	0	560

Waltham Abbey, Wednesday 11th October 2017

Junction: (5) Sewardstone Road / A121

Approach: A121 (West)

TIME	Left to Sewardstone Road (North)								Ahead to A121 (East)								Right to Sewardstone Road (South)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	6	0	1	0	0	7	0	3	33	8	5	7	0	56	0	2	48	24	4	1	0	79
0715 - 0730	0	1	19	1	1	0	0	22	0	0	19	13	3	3	0	38	0	3	69	24	3	2	0	101
0730 - 0745	0	0	16	5	1	0	0	22	0	0	38	8	7	3	0	56	0	1	61	21	2	1	0	86
0745 - 0800	0	0	20	4	3	0	0	27	0	0	36	11	6	1	0	54	1	0	47	15	4	3	0	70
Hourly Total	0	1	61	10	6	0	0	78	0	3	126	40	21	14	0	204	1	6	225	84	13	7	0	336
0800 - 0815	2	0	30	3	0	0	0	35	0	0	34	5	3	5	0	47	0	0	61	24	5	3	0	93
0815 - 0830	0	0	35	3	1	0	0	39	0	0	36	12	1	5	0	54	0	0	57	11	7	1	0	76
0830 - 0845	0	0	22	2	0	0	0	24	0	1	31	7	5	9	0	53	0	0	55	6	1	0	0	62
0845 - 0900	0	0	20	0	1	0	0	21	0	0	29	5	6	12	1	53	0	1	42	10	3	0	0	56
Hourly Total	2	0	107	8	2	0	0	119	0	1	130	29	15	31	1	207	0	1	215	51	16	4	0	287
0900 - 0915	0	0	12	2	2	0	0	16	0	0	23	8	4	4	0	39	0	0	46	13	1	3	0	63
0915 - 0930	0	0	10	6	0	0	0	16	0	1	18	6	4	9	0	38	0	1	34	10	3	2	0	50
Hourly Total	0	0	22	8	2	0	0	32	0	1	41	14	8	13	0	77	0	1	80	23	4	5	0	113
Session Total	2	1	190	26	10	0	0	229	0	5	297	83	44	58	1	488	1	8	520	158	33	16	0	736
1600 - 1615	1	0	19	6	1	1	0	28	0	1	50	6	1	9	0	67	0	1	48	7	1	0	1	58
1615 - 1630	0	0	13	4	1	0	0	18	0	0	51	13	2	5	0	71	0	0	53	7	3	0	0	63
1630 - 1645	0	1	13	1	0	0	0	15	0	0	58	8	0	5	0	71	0	0	57	6	1	0	1	65
1645 - 1700	0	1	15	1	1	0	0	18	0	0	41	10	1	5	0	57	0	1	49	9	2	1	0	62
Hourly Total	1	2	60	12	3	1	0	79	0	1	200	37	4	24	0	266	0	2	207	29	7	1	2	248
1700 - 1715	0	0	12	1	0	0	0	13	0	0	55	6	1	7	0	69	0	0	51	15	0	0	0	66
1715 - 1730	2	0	20	1	1	0	0	24	0	0	63	7	0	4	0	74	0	0	47	13	2	0	0	62
1730 - 1745	0	0	23	2	0	0	0	25	0	1	68	5	2	7	0	83	0	0	48	3	0	0	0	51
1745 - 1800	0	0	18	4	0	0	0	22	0	0	61	2	2	1	0	66	0	1	60	4	1	0	0	66
Hourly Total	2	0	73	8	1	0	0	84	0	1	247	20	5	19	0	292	0	1	206	35	3	0	0	245
1800 - 1815	0	1	25	1	1	0	0	28	0	0	45	1	0	5	0	51	0	0	52	5	0	0	0	57
1815 - 1830	1	0	14	1	0	0	0	16	0	0	37	4	1	8	0	50	0	1	54	8	1	0	0	64
Hourly Total	1	1	39	2	1	0	0	44	0	0	82	5	1	13	0	101	0	1	106	13	1	0	0	121
Session Total	4	3	172	22	5	1	0	207	0	2	529	62	10	56	0	659	0	4	519	77	11	1	2	614

Waltham Abbey, Wednesday 11th October 2017

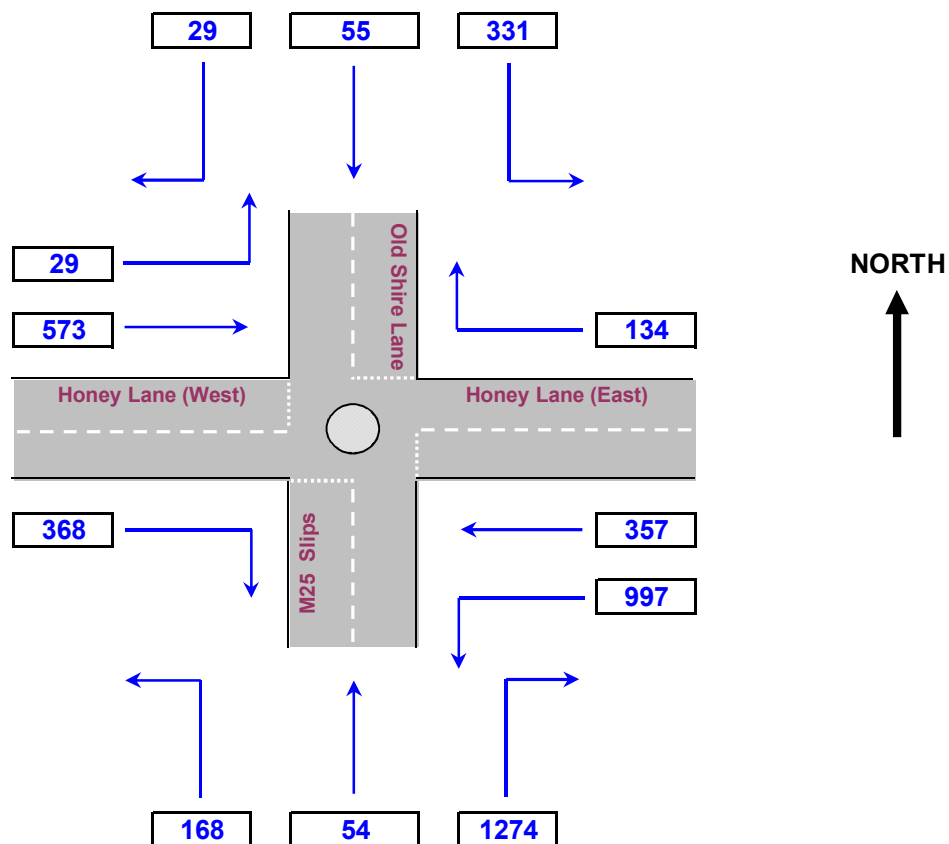
Junction: (6A) Old Shire Lane / Honey Lane / M25 Eastbound Slips

Vehicle Class:

Start Time:

End Time:

☐ Peak Hour



Note: The above diagram represents the Junction surveyed, although may not be the exact layout of the actual location.

Important This spreadsheet & Interactive Vehicle Flow Diagram was produced based on specific Note: parameters. Consequently, alteration to the spreadsheet format or it's properties may result in malfunction.

Waltham Abbey, Wednesday 11th October 2017

Junction: (6A) Old Shire Lane / Honey Lane / M25 Eastbound Slips

Approach: Old Shire Lane

TIME	Left to Honey Lane (East)								Ahead to M25 Eastbound Slips								Right to Honey Lane (West)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	2	29	8	0	0	0	39	0	0	1	0	0	0	0	1	0	0	4	1	0	0	0	5
0715 - 0730	0	1	35	11	2	0	0	49	0	0	3	0	1	0	0	4	0	0	2	0	0	0	0	2
0730 - 0745	0	2	28	4	0	0	0	34	0	0	7	2	0	0	0	9	0	0	6	0	0	0	0	6
0745 - 0800	0	0	39	5	0	0	0	44	0	0	3	2	0	0	0	5	0	0	3	0	0	0	0	3
Hourly Total	0	5	131	28	2	0	0	166	0	0	14	4	1	0	0	19	0	0	15	1	0	0	0	16
0800 - 0815	0	0	41	3	1	0	0	45	0	0	6	2	0	0	0	8	0	0	4	0	0	0	0	4
0815 - 0830	0	0	23	1	1	0	0	25	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
0830 - 0845	0	0	29	3	0	0	0	32	0	0	13	0	0	0	0	13	0	0	2	0	1	0	0	3
0845 - 0900	0	0	22	2	1	0	0	25	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0
Hourly Total	0	0	115	9	3	0	0	127	0	0	26	2	0	0	0	28	0	0	6	0	1	0	0	7
0900 - 0915	0	0	22	4	0	0	0	26	0	0	5	2	0	0	0	7	0	0	4	0	0	0	0	4
0915 - 0930	0	0	10	1	1	0	0	12	0	0	0	1	0	0	0	1	0	0	2	0	0	0	0	2
Hourly Total	0	0	32	5	1	0	0	38	0	0	5	3	0	0	0	8	0	0	6	0	0	0	0	6
Session Total	0	5	278	42	6	0	0	331	0	0	45	9	1	0	0	55	0	0	27	1	1	0	0	29
1600 - 1615	0	1	19	2	0	0	0	22	0	0	3	1	0	0	0	4	0	0	3	1	0	0	0	4
1615 - 1630	0	1	11	4	0	0	0	16	0	0	2	1	0	0	0	3	0	0	7	1	0	0	0	8
1630 - 1645	0	0	10	1	1	0	0	12	0	0	7	1	0	0	0	8	0	0	6	0	0	0	0	6
1645 - 1700	0	0	15	3	0	0	0	18	0	0	3	1	0	0	0	4	0	0	4	2	0	1	0	7
Hourly Total	0	2	55	10	1	0	0	68	0	0	15	4	0	0	0	19	0	0	20	4	0	1	0	25
1700 - 1715	0	0	15	5	1	0	0	21	0	0	1	4	0	0	0	5	0	0	1	0	0	0	0	1
1715 - 1730	0	0	7	1	1	0	0	9	0	0	0	2	0	0	0	2	0	0	3	0	0	0	0	3
1730 - 1745	0	0	9	0	1	0	0	10	0	0	0	1	0	0	0	1	0	0	4	0	0	0	0	4
1745 - 1800	0	0	18	2	1	0	0	21	0	0	1	0	0	0	0	1	0	0	5	0	0	0	0	5
Hourly Total	0	0	49	8	4	0	0	61	0	0	2	7	0	0	0	9	0	0	13	0	0	0	0	13
1800 - 1815	0	0	11	1	0	0	0	12	0	0	2	1	1	0	0	4	0	0	4	0	0	0	0	4
1815 - 1830	0	0	10	2	0	0	0	12	0	0	2	0	0	0	0	2	0	0	2	0	0	0	0	2
Hourly Total	0	0	21	3	0	0	0	24	0	0	4	1	1	0	0	6	0	0	6	0	0	0	0	6
Session Total	0	2	125	21	5	0	0	153	0	0	21	12	1	0	0	34	0	0	39	4	0	1	0	44

Waltham Abbey, Wednesday 11th October 2017

Junction: (6A) Old Shire Lane / Honey Lane / M25 Eastbound Slips

Approach: Honey Lane (East)

	Left to M25 Eastbound Slips							Ahead to Honey Lane (West)							Right to Old Shire Lane							U-Turn										
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	1	46	14	8	7	0	76	0	0	16	8	0	0	1	25	0	0	5	2	0	1	0	8	0	0	2	1	2	4	0	9
0715 - 0730	0	0	66	29	11	6	0	112	0	3	24	9	3	0	0	39	0	0	6	2	0	0	0	8	0	0	3	1	1	1	0	6
0730 - 0745	0	0	55	23	9	1	0	88	0	0	17	10	1	0	1	29	0	0	6	2	0	0	0	8	0	0	2	1	2	0	0	5
0745 - 0800	0	0	58	18	8	6	0	90	0	0	17	9	0	0	0	26	0	0	8	1	0	3	0	12	0	0	2	1	4	1	0	8
Hourly Total	0	1	225	84	36	20	0	366	0	3	74	36	4	0	2	119	0	0	25	7	0	4	0	36	0	0	9	4	9	6	0	28
0800 - 0815	0	0	75	28	10	9	0	122	0	0	29	8	3	0	0	40	0	0	9	0	0	0	0	9	0	0	1	0	1	1	0	3
0815 - 0830	0	0	84	24	5	7	0	120	0	0	29	4	4	0	1	38	0	1	11	3	0	0	0	15	0	0	1	1	0	4	0	6
0830 - 0845	0	0	75	18	5	9	0	107	0	0	25	8	0	0	0	33	0	1	16	2	0	0	0	19	0	0	5	1	1	1	0	8
0845 - 0900	0	0	58	17	3	12	0	90	0	0	28	4	2	0	1	35	0	0	19	0	0	0	0	19	0	0	3	0	0	3	0	6
Hourly Total	0	0	292	87	23	37	0	439	0	0	111	24	9	0	2	146	0	2	55	5	0	0	0	62	0	0	10	2	2	9	0	23
0900 - 0915	0	0	65	19	4	8	0	96	0	0	40	8	1	0	1	50	0	0	12	1	0	0	0	13	0	0	4	3	1	8	0	16
0915 - 0930	0	1	60	16	11	8	0	96	0	1	31	7	2	0	1	42	0	0	23	0	0	0	0	23	0	0	4	2	0	4	0	10
Hourly Total	0	1	125	35	15	16	0	192	0	1	71	15	3	0	2	92	0	0	35	1	0	0	0	36	0	0	8	5	1	12	0	26
Session Total	0	2	642	206	74	73	0	997	0	4	256	75	16	0	6	357	0	2	115	13	0	4	0	134	0	0	27	11	12	27	0	77
1600 - 1615	0	0	85	22	7	9	0	123	0	0	37	14	2	0	2	55	0	0	17	1	0	0	0	18	0	0	2	0	0	1	0	3
1615 - 1630	0	2	86	28	8	4	0	128	0	1	54	11	2	0	2	70	0	0	22	2	0	0	0	24	0	0	4	0	0	0	0	4
1630 - 1645	0	0	116	16	4	8	0	144	0	0	40	12	2	0	0	54	0	0	14	0	0	0	0	14	0	0	4	0	0	3	0	7
1645 - 1700	0	0	94	25	6	4	0	129	0	0	71	9	0	0	1	81	0	0	13	3	0	0	0	16	0	0	5	2	0	1	0	8
Hourly Total	0	2	381	91	25	25	0	524	0	1	202	46	6	0	5	260	0	0	66	6	0	0	0	72	0	0	15	2	0	5	0	22
1700 - 1715	0	0	104	25	6	6	0	141	0	1	61	15	0	0	0	77	0	0	12	6	0	1	0	19	0	0	2	0	2	1	0	5
1715 - 1730	0	1	141	19	3	6	0	170	0	2	70	10	1	0	1	84	0	1	19	3	0	0	0	23	0	0	4	0	1	1	0	6
1730 - 1745	0	0	120	19	3	2	0	144	0	2	67	9	0	0	0	78	0	0	31	2	0	0	0	33	0	0	4	0	0	5	0	9
1745 - 1800	0	0	141	10	2	4	0	157	0	1	66	10	0	0	2	79	0	0	24	5	0	0	0	29	0	0	1	0	0	0	0	1
Hourly Total	0	1	506	73	14	18	0	612	0	6	264	44	1	0	3	318	0	1	86	16	0	1	0	104	0	0	11	0	3	7	0	21
1800 - 1815	0	0	95	10	1	2	0	108	1	2	52	6	2	0	0	63	0	0	19	5	0	0	0	24	0	0	3	0	0	0	0	3
1815 - 1830	0	1	112	15	0	8	0	136	0	1	68	11	0	0	1	81	0	1	21	1	0	0	0	23	0	0	4	0	0	0	0	4
Hourly Total	0	1	207	25	1	10	0	244	1	3	120	17	2	0	1	144	0	1	40	6	0	0	0	47	0	0	7	0	0	0	0	7
Session Total	0	4	1094	189	40	53	0	1380	1	10	586	107	9	0	9	722	0	2	192	28	0	1	0	223	0	0	33	2	3	12	0	50

Waltham Abbey, Wednesday 11th October 2017

Junction: (6A) Old Shire Lane / Honey Lane / M25 Eastbound Slips

Approach: M25 Eastbound Slips

TIME	Left to Honey Lane (West)								Ahead to Old Shire Lane								Right to Honey Lane (East)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	4	2	0	0	0	6	0	0	6	0	1	0	0	7	0	0	76	38	7	6	0	127
0715 - 0730	0	0	20	5	1	0	0	26	0	0	0	4	0	0	0	4	0	1	78	36	11	10	0	136
0730 - 0745	0	1	14	10	2	0	0	27	0	0	1	0	1	0	0	2	0	0	83	35	7	10	0	135
0745 - 0800	0	0	14	3	2	0	0	19	0	1	0	0	0	0	0	1	0	0	74	21	9	8	1	113
Hourly Total	0	1	52	20	5	0	0	78	0	1	7	4	2	0	0	14	0	1	311	130	34	34	1	511
0800 - 0815	0	0	15	5	0	0	0	20	0	0	0	1	0	0	0	1	0	0	82	24	7	7	0	120
0815 - 0830	0	0	9	4	1	0	0	14	0	0	5	2	0	1	0	8	0	0	81	24	12	2	0	119
0830 - 0845	0	0	11	4	0	0	0	15	0	0	9	5	0	1	0	15	0	0	81	28	7	9	0	125
0845 - 0900	0	0	10	4	0	0	0	14	0	0	8	0	0	1	1	10	0	1	88	28	11	7	0	135
Hourly Total	0	0	45	17	1	0	0	63	0	0	22	8	0	3	1	34	0	1	332	104	37	25	0	499
0900 - 0915	0	1	13	3	0	0	0	17	0	0	3	0	3	0	0	6	0	1	96	19	15	6	1	138
0915 - 0930	0	0	7	2	1	0	0	10	0	0	0	0	0	0	0	0	0	1	77	30	11	7	0	126
Hourly Total	0	1	20	5	1	0	0	27	0	0	3	0	3	0	0	6	0	2	173	49	26	13	1	264
Session Total	0	2	117	42	7	0	0	168	0	1	32	12	5	3	1	54	0	4	816	283	97	72	2	1274
1600 - 1615	0	0	27	7	3	0	0	37	0	0	12	3	0	0	0	15	0	2	115	38	8	6	1	170
1615 - 1630	0	0	26	4	1	0	0	31	0	0	10	7	0	0	0	17	0	1	121	47	10	5	0	184
1630 - 1645	0	1	22	10	2	0	0	35	0	0	23	1	1	0	0	25	0	0	129	50	5	16	1	201
1645 - 1700	0	0	44	19	3	0	0	66	0	0	22	0	3	0	0	25	0	0	133	48	9	14	0	204
Hourly Total	0	1	119	40	9	0	0	169	0	0	67	11	4	0	0	82	0	3	498	183	32	41	2	759
1700 - 1715	0	0	42	16	2	0	0	60	0	0	16	2	0	0	1	19	0	1	144	26	4	12	3	190
1715 - 1730	0	0	34	15	2	0	0	51	0	0	9	1	1	0	0	11	0	1	123	33	3	13	1	174
1730 - 1745	0	2	42	8	3	0	0	55	0	0	13	0	0	0	0	13	0	0	161	29	4	24	1	219
1745 - 1800	0	0	36	12	2	0	0	50	0	0	17	3	0	2	0	22	0	0	155	25	8	7	1	196
Hourly Total	0	2	154	51	9	0	0	216	0	0	55	6	1	2	1	65	0	2	583	113	19	56	6	779
1800 - 1815	0	1	45	11	0	0	0	57	0	0	14	4	0	2	0	20	0	0	153	19	8	9	0	189
1815 - 1830	0	0	52	9	1	0	0	62	0	0	26	4	0	0	0	30	0	2	119	22	3	10	0	156
Hourly Total	0	1	97	20	1	0	0	119	0	0	40	8	0	2	0	50	0	2	272	41	11	19	0	345
Session Total	0	4	370	111	19	0	0	504	0	0	162	25	5	4	1	197	0	7	1353	337	62	116	8	1883

Waltham Abbey, Wednesday 11th October 2017

Junction: (6A) Old Shire Lane / Honey Lane / M25 Eastbound Slips

Approach: Honey Lane (West)

TIME	Left to Old Shire Lane								Ahead to Honey Lane (East)								Right to M25 Eastbound Slips							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	3	1	0	0	0	4	0	0	62	12	1	0	0	75	0	0	26	12	2	0	0	40
0715 - 0730	0	0	4	0	0	0	0	4	0	1	30	9	1	0	1	42	0	0	33	12	1	0	0	46
0730 - 0745	0	0	1	0	0	0	0	1	0	0	48	9	0	0	2	59	0	0	34	6	1	1	0	42
0745 - 0800	0	0	3	1	0	0	0	4	0	2	49	18	1	0	0	70	0	2	38	10	1	1	0	52
Hourly Total	0	0	11	2	0	0	0	13	0	3	189	48	3	0	3	246	0	2	131	40	5	2	0	180
0800 - 0815	0	0	2	1	0	0	0	3	0	2	56	7	0	0	1	66	0	0	27	12	0	0	0	39
0815 - 0830	0	0	3	0	0	0	0	3	0	0	45	6	4	0	1	56	0	1	25	8	0	1	0	35
0830 - 0845	0	0	2	0	0	0	0	2	0	0	48	16	0	0	1	65	0	0	21	8	1	0	0	30
0845 - 0900	0	0	3	0	0	0	0	3	0	0	54	8	0	1	1	64	0	0	27	4	5	0	0	36
Hourly Total	0	0	10	1	0	0	0	11	0	2	203	37	4	1	4	251	0	1	100	32	6	1	0	140
0900 - 0915	0	0	1	0	0	0	0	1	0	1	28	7	1	0	1	38	0	0	24	2	1	0	0	27
0915 - 0930	0	0	3	1	0	0	0	4	0	0	31	7	0	0	0	38	0	0	16	3	2	0	0	21
Hourly Total	0	0	4	1	0	0	0	5	0	1	59	14	1	0	1	76	0	0	40	5	3	0	0	48
Session Total	0	0	25	4	0	0	0	29	0	6	451	99	8	1	8	573	0	3	271	77	14	3	0	368
1600 - 1615	0	0	1	0	0	0	0	1	0	0	17	9	0	0	1	27	0	0	29	6	2	0	0	37
1615 - 1630	0	0	5	0	0	0	0	5	0	0	26	5	0	0	0	31	0	0	21	5	0	0	0	26
1630 - 1645	0	0	3	0	0	0	0	3	0	0	30	7	0	0	1	38	0	0	18	7	3	0	0	28
1645 - 1700	0	0	3	0	0	0	0	3	0	0	23	2	0	0	0	25	0	0	16	11	1	1	0	29
Hourly Total	0	0	12	0	0	0	0	12	0	0	96	23	0	0	2	121	0	0	84	29	6	1	0	120
1700 - 1715	0	0	4	1	0	0	0	5	0	1	32	4	0	0	0	37	0	0	40	6	0	0	0	46
1715 - 1730	0	0	3	0	0	0	0	3	0	1	37	10	0	0	2	50	0	0	25	4	1	0	0	30
1730 - 1745	0	0	8	1	0	0	0	9	0	0	28	5	0	0	0	33	0	1	27	4	0	0	0	32
1745 - 1800	0	0	1	0	0	0	0	1	0	0	19	8	0	0	1	28	0	0	39	1	0	0	0	40
Hourly Total	0	0	16	2	0	0	0	18	0	2	116	27	0	0	3	148	0	1	131	15	1	0	0	148
1800 - 1815	0	0	9	1	0	0	0	10	0	0	23	0	1	0	0	24	0	0	26	2	0	0	0	28
1815 - 1830	0	0	10	0	0	0	0	10	0	1	32	0	1	0	1	35	0	0	18	1	0	0	0	19
Hourly Total	0	0	19	1	0	0	0	20	0	1	55	0	2	0	1	59	0	0	44	3	0	0	0	47
Session Total	0	0	47	3	0	0	0	50	0	3	267	50	2	0	6	328	0	1	259	47	7	1	0	315

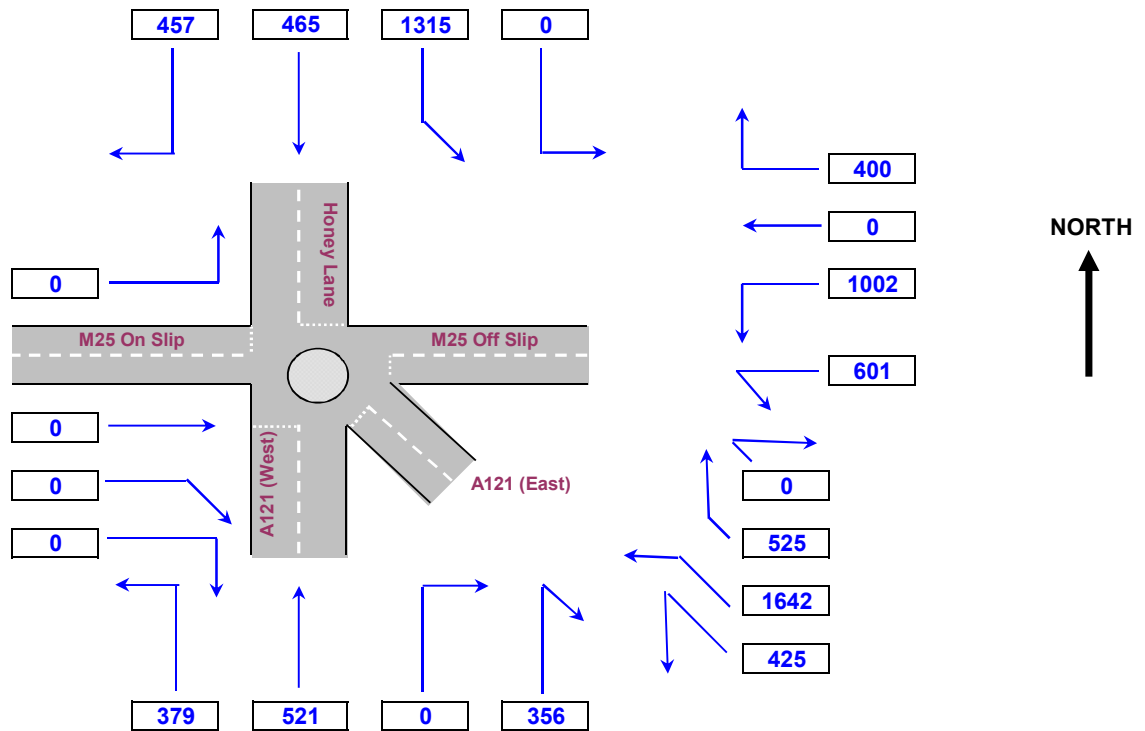
Waltham Abbey, Wednesday 11th October 2017

Junction: (6B) Honey Lane / M25 Westbound Slips / A121

Vehicle Class: **ALL CLASSES**

Start Time: 1) 0700

End Time: 1) 0930

☐ **Peak Hour**

Note: The above diagram represents the Junction surveyed, although may not be the exact layout of the actual location.

Important This spreadsheet & Interactive Vehicle Flow Diagram was produced based on specific Note: parameters. Consequently, alteration to the spreadsheet format or it's properties may result in malfunction.

Waltham Abbey, Wednesday 11th October 2017

Junction: (6B) Honey Lane / M25 Westbound Slips / A121

Approach: Honey Lane

First Left to M25 Off Slip										Second Left to A121 (East)										Ahead to A121 (West)										Right to M25 On Slip											
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	
0700 - 0715	0	0	0	0	0	0	0	0	0	0	93	32	5	1	1	123	0	0	27	18	3	6	0	54	0	0	1	49	9	2	1	0	62	0	0	0	0	0	2	0	2
0715 - 0730	0	0	0	0	0	0	0	0	0	0	91	21	8	2	1	123	0	1	26	17	5	6	0	55	0	2	29	19	1	0	0	51	0	0	0	0	0	1	3	0	4
0730 - 0745	0	0	0	0	0	0	0	0	0	2	99	34	6	2	2	145	0	0	41	11	1	6	0	59	0	0	21	4	2	1	0	28	0	0	0	0	0	1	0	1	
0745 - 0800	0	0	0	0	0	0	0	0	0	2	111	31	8	1	1	154	0	0	31	10	3	6	0	50	0	0	22	4	3	1	0	30	0	0	0	0	0	1	0	1	
Hourly Total	0	0	0	0	0	0	0	0	0	5	394	118	27	6	4	554	0	1	125	56	12	24	0	218	0	3	121	36	8	3	0	171	0	0	0	0	0	1	7	0	8
0800 - 0815	0	0	0	0	0	0	0	0	0	1	115	22	5	0	0	143	0	1	30	8	1	6	0	46	0	0	35	4	3	0	1	43	0	0	0	0	0	2	0	2	
0815 - 0830	0	0	0	0	0	0	0	0	0	0	95	19	6	0	1	121	0	0	22	6	4	3	0	35	0	0	33	7	6	1	0	47	0	0	0	0	0	1	2	0	3
0830 - 0845	0	0	0	0	0	0	0	0	0	0	101	18	6	2	1	128	0	0	27	10	1	1	0	39	0	0	35	20	1	7	0	63	0	0	0	0	0	0	0	0	
0845 - 0900	0	0	0	0	0	0	0	0	0	1	94	18	5	2	1	121	0	0	33	3	3	1	0	40	0	0	40	17	4	7	0	68	0	0	0	0	0	1	0	1	
Hourly Total	0	0	0	0	0	0	0	0	0	2	405	77	22	4	3	513	0	1	112	27	9	11	0	160	0	0	143	48	14	15	1	221	0	0	0	0	0	1	5	0	6
0900 - 0915	0	0	0	0	0	0	0	0	0	1	96	16	11	0	1	125	0	1	31	10	4	6	0	52	0	0	23	7	2	6	1	39	0	0	0	0	0	2	0	2	
0915 - 0930	0	0	0	0	0	0	0	0	0	1	92	21	9	0	0	123	0	0	16	10	2	7	0	35	0	0	14	9	1	2	0	26	0	0	0	0	0	2	0	2	
Hourly Total	0	0	0	0	0	0	0	0	0	2	188	37	20	0	1	248	0	1	47	20	6	13	0	87	0	0	37	16	3	8	1	65	0	0	0	0	0	4	0	4	
Session Total	0	0	0	0	0	0	0	0	0	9	987	232	69	10	8	1315	0	3	284	103	27	48	0	465	0	3	301	100	25	26	2	457	0	0	0	0	0	2	16	0	18
1600 - 1615	0	0	0	0	0	0	0	0	0	1	107	28	5	0	1	142	0	0	23	8	2	2	0	35	0	2	23	13	0	4	1	43	0	0	0	0	0	1	1	0	2
1615 - 1630	0	0	0	0	0	0	0	0	0	2	112	38	4	0	0	156	0	0	32	12	3	1	0	48	0	0	18	6	2	1	0	27	0	0	0	0	0	1	3	0	4
1630 - 1645	0	0	0	0	0	0	0	0	0	0	134	36	3	1	1	176	0	0	20	14	2	9	0	45	0	0	19	8	1	3	0	31	0	0	0	0	0	6	0	6	
1645 - 1700	0	0	0	0	0	0	0	0	0	0	120	39	5	0	0	164	0	0	38	13	2	9	0	62	0	0	18	3	1	0	0	22	0	0	0	0	0	1	6	0	7
Hourly Total	0	0	0	0	0	0	0	0	0	3	473	141	17	1	3	638	0	0	113	47	9	21	0	190	0	2	78	30	4	8	1	123	0	0	0	0	0	3	16	0	19
1700 - 1715	0	0	0	0	0	0	0	0	0	0	126	22	3	0	2	153	0	0	44	8	2	6	0	62	0	0	23	5	1	2	1	32	0	0	0	0	0	1	5	0	6
1715 - 1730	0	0	0	0	0	0	0	0	0	2	112	33	2	0	3	152	0	0	41	7	2	10	0	60	0	0	18	4	1	1	0	24	0	0	0	0	0	3	0	3	
1730 - 1745	0	0	0	0	0	0	0	0	0	0	137	18	1	0	0	156	0	0	37	10	1	14	0	62	0	0	28	6	3	4	1	42	0	0	0	0	0	11	0	11	
1745 - 1800	0	0	0	0	0	0	0	0	0	0	128	14	7	4	2	155	0	0	40	13	2	1	0	56	0	0	25	8	0	0	0	33	0	0	0	0	0	2	0	2	
Hourly Total	0	0	0	0	0	0	0	0	0	7	503	87	13	4	7	616	0	2	162	38	7	31	0	240	0	0	94	23	5	7	2	131	0	0	0	0	0	1	21	0	22
1800 - 1815	0	0	0	0	0	0	0	0	0	0	119	11	3	0	0	133	0	0	48	6	3	6	0	63	0	0	23	3	2	0	0	28	0	0	0	0	0	1	3	0	4
1815 - 1830	0	0	0	0	0	0	0	0	0	2	125	13	2	0	1	143	0	0	24	8	2	6	0	40	0	1	16	3	0	0	0	20	0	0	0	0	0	4	0	4	
Hourly Total	0	0	0	0	0	0	0	0	0	2	244	24	5	0	1	276	0	0	72	14	5	12	0	103	0	1	39	6	2	0	0	48	0	0	0	0	0	1	7	0	8
Session Total	0	0	0	0	0	0	0	0	0	7	1220	252	35	5	11	1530	0	2	347	99	21	64	0	533	0	3	211	59	11	15	3	302	0	0	0	0	0	5	44	0	49

Waltham Abbey, Wednesday 11th October 2017

Junction: (6B) Honey Lane / M25 Westbound Slips / A121

Approach: M25 Off Slip

TIME	First Left to A121 (East)								Second Left to A121 (West)								Ahead to M25 On Slip								Right to Honey Lane								
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	
0700 - 0715	0	0	26	22	2	0	0	50	0	0	46	14	3	3	0	66	0	0	0	0	0	0	0	0	0	0	18	4	2	2	0	26	
0715 - 0730	0	0	51	19	4	1	0	75	0	0	47	12	1	3	0	63	0	0	0	0	0	0	0	0	0	0	16	15	0	3	0	34	
0730 - 0745	0	1	27	21	4	0	0	53	0	0	60	18	1	8	0	87	0	0	0	0	0	0	0	0	0	0	25	3	0	4	0	32	
0745 - 0800	0	0	33	19	2	1	0	55	0	1	79	18	6	5	0	109	0	0	0	0	0	0	0	0	0	0	6	5	0	4	0	15	
Hourly Total	0	1	137	81	12	2	0	233	0	1	232	62	11	19	0	325	0	0	0	0	0	0	0	0	0	0	65	27	2	13	0	107	
0800 - 0815	0	0	41	21	1	1	0	64	0	0	91	29	8	3	1	132	0	0	0	0	0	0	0	0	0	0	28	17	5	13	0	63	
0815 - 0830	0	0	47	14	5	2	0	68	0	0	98	22	6	8	0	134	0	0	0	0	0	0	0	0	0	0	44	8	5	3	0	60	
0830 - 0845	0	0	47	15	3	2	0	67	0	1	82	20	5	14	0	122	0	0	0	0	0	0	0	0	0	0	29	11	1	4	0	45	
0845 - 0900	0	0	55	13	9	1	0	78	0	0	90	36	12	12	0	150	0	0	0	0	0	0	0	0	0	0	37	14	4	8	1	64	
Hourly Total	0	0	190	63	18	6	0	277	0	1	361	107	31	37	1	538	0	0	0	0	0	0	0	0	0	0	138	50	15	28	1	232	
0900 - 0915	0	0	32	8	3	0	0	43	0	0	43	11	8	7	0	69	0	0	0	0	0	0	0	0	0	0	15	4	0	9	1	29	
0915 - 0930	0	0	37	9	1	1	0	48	0	0	43	14	7	6	0	70	0	0	0	0	0	0	0	0	0	0	17	6	2	7	0	32	
Hourly Total	0	0	69	17	4	1	0	91	0	0	86	25	15	13	0	139	0	0	0	0	0	0	0	0	0	0	32	10	2	16	1	61	
Session Total	0	1	396	161	34	9	0	601	0	2	679	194	57	69	1	1002	0	0	0	0	0	0	0	0	0	0	235	87	19	57	2	400	
1600 - 1615	0	0	27	7	3	0	0	37	0	0	34	7	2	2	0	45	0	0	0	0	0	0	0	0	0	0	20	13	1	6	0	40	
1615 - 1630	0	0	33	10	2	0	0	45	0	0	41	23	2	0	0	66	0	0	0	0	0	0	0	0	0	0	19	7	3	9	0	38	
1630 - 1645	0	0	33	12	0	1	0	46	0	0	49	22	5	0	0	76	0	0	0	0	0	0	0	0	0	0	19	6	3	5	0	33	
1645 - 1700	0	0	29	11	1	0	0	41	0	0	47	14	4	0	0	65	0	0	0	0	0	0	0	0	0	0	20	6	1	9	1	37	
Hourly Total	0	0	122	40	6	1	0	169	0	0	171	66	13	2	0	252	0	0	0	0	0	0	0	0	0	0	78	32	8	29	1	148	
1700 - 1715	0	0	49	8	0	0	0	57	0	0	58	22	3	0	0	83	0	0	0	0	0	0	0	0	0	0	1	26	11	3	18	0	59
1715 - 1730	0	0	55	5	0	0	0	60	0	1	54	14	3	0	0	72	0	0	0	0	0	0	0	0	0	0	0	21	3	1	10	0	35
1730 - 1745	0	0	42	4	0	0	0	46	0	0	55	9	4	0	0	68	0	0	0	0	0	0	0	0	0	0	0	22	7	0	11	0	40
1745 - 1800	0	0	48	6	2	0	0	56	0	1	61	16	1	3	1	83	0	0	0	0	0	0	0	0	0	0	1	32	10	0	11	0	54
Hourly Total	0	0	194	23	2	0	0	219	0	2	228	61	11	3	1	306	0	0	0	0	0	0	0	0	0	0	2	101	31	4	50	0	188
1800 - 1815	0	0	55	9	1	1	0	66	0	1	46	18	2	1	0	68	0	0	0	0	0	0	0	0	0	0	0	24	6	0	13	0	43
1815 - 1830	0	0	58	4	1	0	0	63	0	0	47	8	0	3	0	58	0	0	0	0	0	0	0	0	0	0	0	23	2	0	9	0	34
Hourly Total	0	0	113	13	2	1	0	129	0	1	93	26	2	4	0	126	0	0	0	0	0	0	0	0	0	0	0	47	8	0	22	0	77
Session Total	0	0	429	76	10	2	0	517	0	3	492	153	26	9	1	684	0	0	0	0	0	0	0	0	0	0	2	226	71	12	101	1	413

Waltham Abbey, Wednesday 11th October 2017

Junction: (6B) Honey Lane / M25 Westbound Slips / A121

Approach: A121 (East)

TIME	First Left to A121 (West)								Second Left to M25 On Slip								Right to Honey Lane								Last Right to M25 Off Slip							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	27	13	2	0	0	42	0	1	155	38	2	1	1	198	0	0	26	18	2	0	0	46	0	0	0	0	0	0	0	0
0715 - 0730	0	0	21	7	4	0	0	32	0	1	149	39	1	0	0	190	0	1	37	13	3	1	0	55	0	0	0	0	0	0	0	0
0730 - 0745	0	2	20	7	3	0	0	32	0	2	166	9	8	1	1	187	0	0	35	25	3	0	1	64	0	0	0	0	0	0	0	0
0745 - 0800	0	0	30	6	1	2	0	39	0	0	148	17	5	0	1	171	0	0	26	13	1	0	0	40	0	0	0	0	0	0	0	0
Hourly Total	0	2	98	33	10	2	0	145	0	4	618	103	16	2	3	746	0	1	124	69	9	1	1	205	0	0	0	0	0	0	0	0
0800 - 0815	0	1	27	8	0	0	1	37	0	0	143	13	5	0	4	165	0	0	32	8	1	0	0	41	0	0	0	0	0	0	0	0
0815 - 0830	0	0	30	9	2	1	0	42	0	0	148	28	2	0	1	179	0	0	35	7	2	1	1	46	0	0	0	0	0	0	0	0
0830 - 0845	0	0	42	5	4	0	0	51	0	1	142	26	4	2	0	175	0	0	31	8	2	0	0	41	0	0	0	0	0	0	0	0
0845 - 0900	0	0	36	6	2	1	0	45	0	0	120	19	4	3	1	147	0	0	41	2	1	1	0	45	0	0	0	0	0	0	0	0
Hourly Total	0	1	135	28	8	2	1	175	0	1	553	86	15	5	6	666	0	0	139	25	6	2	1	173	0	0	0	0	0	0	0	0
0900 - 0915	0	0	36	7	2	0	0	45	0	0	111	19	2	3	0	135	0	0	54	14	2	2	1	73	0	0	0	0	0	0	0	0
0915 - 0930	0	0	47	12	1	0	0	60	0	0	78	11	4	1	1	95	0	1	57	6	8	1	1	74	0	0	0	0	0	0	0	0
Hourly Total	0	0	83	19	3	0	0	105	0	0	189	30	6	4	1	230	0	1	111	20	10	3	2	147	0	0	0	0	0	0	0	0
Session Total	0	3	316	80	21	4	1	425	0	5	1360	219	37	11	10	1642	0	2	374	114	25	6	4	525	0	0	0	0	0	0	0	0
1600 - 1615	0	1	44	15	3	0	1	64	0	1	102	19	4	0	0	126	0	0	64	17	6	0	2	89	0	0	0	0	0	0	0	0
1615 - 1630	0	0	24	6	1	0	1	32	0	0	97	25	3	0	0	125	0	1	83	19	5	0	2	110	0	0	0	0	0	0	0	0
1630 - 1645	0	2	36	5	2	0	0	45	0	0	114	22	5	0	1	142	0	0	60	15	1	0	0	76	0	0	0	0	0	0	0	0
1645 - 1700	0	0	29	7	0	1	0	37	0	0	80	21	0	0	1	102	0	0	72	21	3	0	0	144	0	0	0	0	0	0	0	0
Hourly Total	0	3	133	33	6	1	2	178	0	1	393	87	12	0	2	495	0	1	327	72	15	0	4	419	0	0	0	0	0	0	0	0
1700 - 1715	0	0	18	2	3	2	0	25	0	0	123	22	5	0	0	150	0	0	71	16	3	0	0	90	0	0	0	0	0	0	0	0
1715 - 1730	0	0	26	6	3	2	0	37	0	2	116	20	1	0	0	139	0	3	109	16	1	0	1	130	0	0	0	0	0	0	0	0
1730 - 1745	0	0	43	2	3	1	0	49	0	1	127	15	2	0	0	145	0	3	73	14	1	2	0	93	0	0	0	0	0	0	0	0
1745 - 1800	0	1	31	6	2	0	0	40	0	1	104	20	1	0	1	127	0	0	104	14	0	0	2	120	0	0	0	0	0	0	0	0
Hourly Total	0	1	118	16	11	5	0	151	0	4	470	77	9	0	1	561	0	6	357	60	5	2	3	433	0	0	0	0	0	0	0	0
1800 - 1815	0	1	41	4	0	0	0	46	0	1	81	9	2	0	0	93	1	0	91	13	2	0	0	107	0	0	0	0	0	0	0	0
1815 - 1830	0	0	38	3	0	0	0	41	0	3	98	9	2	0	0	112	0	2	84	17	1	0	1	105	0	0	0	0	0	0	0	0
Hourly Total	0	1	79	7	0	0	0	87	0	4	179	18	4	0	0	205	1	2	175	30	3	0	1	212	0	0	0	0	0	0	0	0
Session Total	0	5	330	56	17	6	2	416	0	9	1042	182	25	0	3	1261	1	9	859	162	23	2	8	1064	0	0	0	0	0	0	0	0

Waltham Abbey, Wednesday 11th October 2017

Junction: (6B) Honey Lane / M25 Westbound Slips / A121

Approach: A121 (West)

TIME	Left to M25 On Slip								Ahead to Honey Lane								Right to M25 Off Slip								Last Right to A121 (East)								
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	
0700 - 0715	0	0	18	6	1	3	0	28	0	1	19	4	5	4	1	34	0	0	0	0	0	0	0	0	0	0	2	22	6	2	0	1	33
0715 - 0730	0	0	15	3	1	1	0	20	0	2	31	11	10	1	0	55	0	0	0	0	0	0	0	0	0	0	0	17	10	2	0	0	29
0730 - 0745	0	0	23	5	2	2	0	32	0	0	23	8	7	2	0	40	0	0	0	0	0	0	0	0	0	0	0	34	6	2	0	0	42
0745 - 0800	0	0	19	9	3	0	0	31	0	0	34	11	4	4	0	53	0	0	0	0	0	0	0	0	0	0	0	21	3	3	0	0	27
Hourly Total	0	0	75	23	7	6	0	111	0	3	107	34	26	11	1	182	0	0	0	0	0	0	0	0	0	0	2	94	25	9	0	1	131
0800 - 0815	0	0	35	8	1	2	0	46	0	0	39	12	6	2	0	59	0	0	0	0	0	0	0	0	0	0	1	30	6	6	0	0	43
0815 - 0830	0	0	37	11	2	1	0	51	0	1	47	15	3	7	0	73	0	0	0	0	0	0	0	0	0	0	0	18	8	2	0	0	28
0830 - 0845	0	0	41	11	3	1	1	57	0	0	53	4	4	8	0	69	0	0	0	0	0	0	0	0	0	0	1	24	6	4	0	0	35
0845 - 0900	0	0	37	8	1	5	0	51	0	0	27	5	2	10	0	44	0	0	0	0	0	0	0	0	0	0	0	32	11	6	1	1	51
Hourly Total	0	0	150	38	7	9	1	205	0	1	166	36	15	27	0	245	0	0	0	0	0	0	0	0	0	0	2	104	31	18	1	1	157
0900 - 0915	0	0	21	5	2	5	0	33	0	0	35	11	1	4	0	51	0	0	0	0	0	0	0	0	0	0	0	24	10	3	0	0	37
0915 - 0930	0	0	17	6	2	5	0	30	0	1	25	8	4	5	0	43	0	0	0	0	0	0	0	0	0	0	0	27	4	0	0	0	31
Hourly Total	0	0	38	11	4	10	0	63	0	1	60	19	5	9	0	94	0	0	0	0	0	0	0	0	0	0	0	51	14	3	0	0	68
Session Total	0	0	263	72	18	25	1	379	0	5	333	89	46	47	1	521	0	0	0	0	0	0	0	0	0	0	4	249	70	30	1	2	356
1600 - 1615	0	0	14	7	1	4	0	26	0	0	63	5	2	8	0	78	0	0	0	0	0	0	0	0	0	0	0	30	7	1	0	0	38
1615 - 1630	0	0	21	9	1	1	0	32	0	2	72	10	1	2	0	87	0	0	0	0	0	0	0	0	0	0	1	31	10	2	0	0	44
1630 - 1645	0	0	14	10	0	2	0	26	0	0	80	9	0	5	0	94	0	0	0	0	0	0	0	0	0	0	0	31	6	2	0	0	39
1645 - 1700	0	0	29	8	2	1	0	40	0	0	55	14	2	4	0	75	0	0	0	0	0	0	0	0	0	0	0	35	4	2	0	0	41
Hourly Total	0	0	78	34	4	8	0	124	0	2	270	38	5	19	0	334	0	0	0	0	0	0	0	0	0	0	1	127	27	7	0	0	162
1700 - 1715	0	0	38	7	2	4	0	51	0	0	91	17	0	4	0	112	0	0	0	0	0	0	0	0	0	0	0	26	4	0	0	0	30
1715 - 1730	0	0	51	4	0	0	0	55	0	1	94	12	4	5	0	116	0	0	0	0	0	0	0	0	0	0	0	32	2	0	0	0	34
1730 - 1745	0	1	30	4	0	1	0	36	0	0	121	13	3	2	0	139	0	0	0	0	0	0	0	0	0	0	0	21	2	0	0	0	23
1745 - 1800	0	0	49	4	2	2	0	57	0	0	82	2	2	4	0	90	0	0	0	0	0	0	0	0	0	0	1	29	4	0	0	0	34
Hourly Total	0	1	168	19	4	7	0	199	0	1	388	44	9	15	0	457	0	0	0	0	0	0	0	0	0	0	1	108	12	0	0	0	121
1800 - 1815	0	0	36	6	0	2	0	44	0	2	60	7	2	2	0	73	0	0	0	0	0	0	0	0	0	0	0	26	2	0	0	0	28
1815 - 1830	0	0	12	4	1	2	0	19	0	0	81	3	0	6	0	90	0	0	0	0	0	0	0	0	0	0	0	25	2	0	0	0	27
Hourly Total	0	0	48	10	1	4	0	63	0	2	141	10	2	8	0	163	0	0	0	0	0	0	0	0	0	0	0	51	4	0	0	0	55
Session Total	0	1	294	63	9	19	0	386	0	5	799	92	16	42	0	954	0	0	0	0	0	0	0	0	0	0	2	286	43	7	0	0	338

Waltham Abbey, Wednesday 11th October 2017

Junction: (6B) Honey Lane / M25 Westbound Slips / A121

Approach: M25 On Slip

[illegible]

Waltham Abbey, Wednesday 11th October 2017

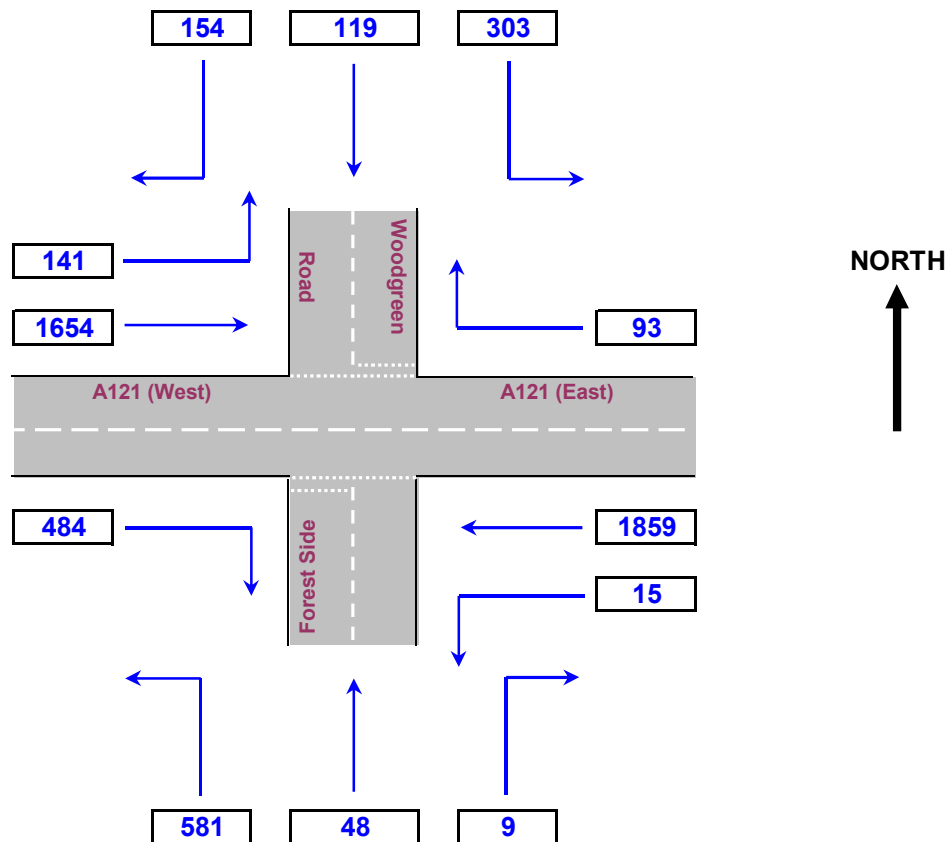
Junction: (7) Woodgreen Road / A121 / Forest Side

Vehicle Class:

Start Time:

End Time:

☐ Peak Hour



Note: The above diagram represents the Junction surveyed, although may not be the exact layout of the actual location.

Important This spreadsheet & Interactive Vehicle Flow Diagram was produced based on specific Note: parameters. Consequently, alteration to the spreadsheet format or it's properties may result in malfunction.

Waltham Abbey, Wednesday 11th October 2017

Junction: (7) Woodgreen Road / A121 / Forest Side

Approach: Woodgreen Road

TIME	Left to A121 (East)								Ahead to Forest Side								Right to A121 (West)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	27	6	0	0	0	33	0	0	12	0	0	0	0	12	0	0	10	6	0	0	0	16
0715 - 0730	0	0	37	5	1	0	0	43	0	0	10	1	0	0	0	11	0	0	11	5	1	0	0	17
0730 - 0745	0	0	29	7	0	0	0	36	0	0	15	3	0	0	0	18	0	0	10	7	0	0	0	17
0745 - 0800	0	0	32	7	0	0	0	39	0	0	22	1	0	0	0	23	0	0	11	3	0	0	0	14
Hourly Total	0	0	125	25	1	0	0	151	0	0	59	5	0	0	0	64	0	0	42	21	1	0	0	64
0800 - 0815	0	1	34	5	1	0	0	41	0	0	17	0	0	0	0	17	0	0	16	2	0	0	0	18
0815 - 0830	0	0	24	4	0	0	0	28	0	0	9	1	1	0	0	11	0	0	12	4	1	0	0	17
0830 - 0845	0	0	18	4	1	0	0	23	0	0	5	0	0	0	0	5	0	0	10	4	0	0	0	14
0845 - 0900	0	0	16	4	0	0	0	20	0	0	7	0	0	0	0	7	0	0	9	5	1	0	0	15
Hourly Total	0	1	92	17	2	0	0	112	0	0	38	1	1	0	0	40	0	0	47	15	2	0	0	64
0900 - 0915	0	0	21	3	2	0	0	26	0	0	11	0	0	0	0	11	0	0	9	4	0	0	0	13
0915 - 0930	0	0	11	3	0	0	0	14	0	0	4	0	0	0	0	4	0	0	6	3	4	0	0	13
Hourly Total	0	0	32	6	2	0	0	40	0	0	15	0	0	0	0	15	0	0	15	7	4	0	0	26
Session Total	0	1	249	48	5	0	0	303	0	0	112	6	1	0	0	119	0	0	104	43	7	0	0	154
1600 - 1615	0	0	10	5	0	0	0	15	0	2	2	0	0	0	0	4	0	1	10	5	3	0	0	19
1615 - 1630	1	0	15	0	0	0	0	16	0	0	4	0	0	0	0	4	0	0	8	8	1	0	1	18
1630 - 1645	0	0	10	4	1	0	0	15	0	0	5	0	0	0	0	5	0	0	12	3	0	0	0	15
1645 - 1700	0	0	15	1	0	0	0	16	0	0	5	0	0	0	0	5	0	0	6	4	0	0	0	10
Hourly Total	1	0	50	10	1	0	0	62	0	2	16	0	0	0	0	18	0	1	36	20	4	0	1	62
1700 - 1715	0	1	12	2	0	0	0	15	0	0	1	0	0	0	0	1	0	0	12	2	1	0	0	15
1715 - 1730	0	0	8	1	0	0	0	9	0	0	2	0	0	0	0	2	0	0	15	3	0	0	0	18
1730 - 1745	0	0	11	1	0	0	0	12	0	0	2	1	0	0	0	3	0	0	7	5	1	0	0	13
1745 - 1800	0	0	12	0	0	0	0	12	0	0	5	0	0	0	0	5	0	0	8	4	0	0	0	12
Hourly Total	0	1	43	4	0	0	0	48	0	0	10	1	0	0	0	11	0	0	42	14	2	0	0	58
1800 - 1815	0	0	10	2	0	0	0	12	0	0	4	2	0	0	0	6	0	0	11	0	0	0	0	11
1815 - 1830	0	0	17	0	0	0	0	17	0	0	1	0	1	0	0	2	0	0	13	4	0	0	0	17
Hourly Total	0	0	27	2	0	0	0	29	0	0	5	2	1	0	0	8	0	0	24	4	0	0	0	28
Session Total	1	1	120	16	1	0	0	139	0	2	31	3	1	0	0	37	0	1	102	38	6	0	1	148

Waltham Abbey, Wednesday 11th October 2017

Junction: (7) Woodgreen Road / A121 / Forest Side

Approach: A121 (East)

TIME	Left to Forest Side								Ahead to A121 (West)								Right to Woodgreen Road							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	0	1	2	0	0	3	0	1	179	58	5	1	1	245	0	1	9	2	0	0	0	12
0715 - 0730	0	0	2	0	0	0	0	2	0	2	170	54	5	1	0	232	0	0	4	3	1	0	0	8
0730 - 0745	0	0	0	0	0	0	0	0	0	4	164	27	13	1	3	212	0	1	7	5	0	0	0	13
0745 - 0800	0	0	3	0	0	0	0	3	0	0	153	26	7	2	2	190	0	0	5	3	1	0	0	9
Hourly Total	0	0	5	1	2	0	0	8	0	7	666	165	30	5	6	879	0	2	25	13	2	0	0	42
0800 - 0815	0	0	0	1	0	0	0	1	0	1	104	23	3	0	3	134	0	0	8	0	2	0	0	10
0815 - 0830	0	0	1	0	0	0	0	1	0	0	132	28	7	2	2	171	0	0	3	1	0	0	0	4
0830 - 0845	0	0	0	1	0	0	0	1	0	1	123	29	8	2	0	163	0	0	5	1	0	0	0	6
0845 - 0900	0	0	0	1	0	0	0	1	0	0	127	15	7	6	1	156	0	0	5	0	0	0	0	5
Hourly Total	0	0	1	3	0	0	0	4	0	2	486	95	25	10	6	624	0	0	21	2	2	0	0	25
0900 - 0915	0	0	0	1	0	0	0	1	0	0	137	30	5	5	1	178	0	0	8	2	0	0	0	10
0915 - 0930	0	0	2	0	0	0	0	2	0	1	144	21	9	1	2	178	0	0	12	2	2	0	0	16
Hourly Total	0	0	2	1	0	0	0	3	0	1	281	51	14	6	3	356	0	0	20	4	2	0	0	26
Session Total	0	0	8	5	2	0	0	15	0	10	1433	311	69	21	15	1859	0	2	66	19	6	0	0	93
1600 - 1615	0	0	1	0	0	0	0	1	0	0	163	39	9	0	3	214	0	0	14	7	1	0	0	22
1615 - 1630	0	0	0	0	0	0	0	0	0	2	166	38	8	0	1	215	0	0	11	4	0	0	0	15
1630 - 1645	0	0	0	0	0	0	0	0	0	2	172	27	5	0	2	208	0	0	9	1	1	0	0	11
1645 - 1700	0	0	0	0	0	0	0	0	0	0	157	35	4	1	0	197	0	0	17	4	0	0	0	21
Hourly Total	0	0	1	0	0	0	0	1	0	4	658	139	26	1	6	834	0	0	51	16	2	0	0	69
1700 - 1715	0	0	4	0	0	0	0	4	0	0	171	32	10	2	0	215	0	2	7	3	1	0	0	13
1715 - 1730	0	0	2	1	0	0	0	3	0	4	181	34	4	3	1	227	0	0	17	3	0	0	0	20
1730 - 1745	0	0	1	0	0	0	0	1	0	1	167	17	5	1	0	191	0	0	13	6	1	0	0	20
1745 - 1800	0	0	1	1	0	0	0	2	1	1	184	28	2	0	3	219	0	2	22	2	0	0	0	26
Hourly Total	0	0	8	2	0	0	0	10	1	6	703	111	21	6	4	852	0	4	59	14	2	0	0	79
1800 - 1815	0	0	1	0	0	0	0	1	0	2	152	17	4	0	0	175	0	2	16	2	0	0	0	20
1815 - 1830	0	0	0	1	0	0	0	1	0	4	172	21	2	0	1	200	0	0	14	2	0	0	0	16
Hourly Total	0	0	1	1	0	0	0	2	0	6	324	38	6	0	1	375	0	2	30	4	0	0	0	36
Session Total	0	0	10	3	0	0	0	13	1	16	1685	288	53	7	11	2061	0	6	140	34	4	0	0	184

Waltham Abbey, Wednesday 11th October 2017

Junction: (7) Woodgreen Road / A121 / Forest Side

Approach: Forest Side

TIME	Left to A121 (West)								Ahead to Woodgreen Road								Right to A121 (East)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	17	4	2	0	0	23	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1
0715 - 0730	0	0	35	2	0	0	0	37	0	0	4	1	0	0	0	5	0	0	1	0	0	0	0	1
0730 - 0745	0	0	53	6	2	0	0	61	0	0	1	3	0	0	0	4	0	0	0	0	1	0	0	1
0745 - 0800	0	0	52	6	0	0	0	58	0	1	7	1	0	0	0	9	0	0	1	0	0	0	0	1
Hourly Total	0	0	157	18	4	0	0	179	0	1	13	5	0	0	0	19	0	0	3	0	1	0	0	4
0800 - 0815	0	0	66	7	1	0	0	74	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0
0815 - 0830	0	0	73	7	1	0	0	81	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0
0830 - 0845	0	0	81	8	0	0	0	89	0	0	7	0	0	0	0	7	0	0	1	0	0	0	0	1
0845 - 0900	0	0	62	8	0	0	0	70	0	0	5	0	0	0	0	5	0	0	1	0	0	0	0	1
Hourly Total	0	0	282	30	2	0	0	314	0	0	20	0	0	0	0	20	0	0	2	0	0	0	0	2
0900 - 0915	0	0	48	9	0	0	0	57	0	0	2	0	0	0	1	3	0	0	0	0	0	0	0	0
0915 - 0930	0	0	29	1	1	0	0	31	0	0	6	0	0	0	0	6	0	0	3	0	0	0	0	3
Hourly Total	0	0	77	10	1	0	0	88	0	0	8	0	0	0	1	9	0	0	3	0	0	0	0	3
Session Total	0	0	516	58	7	0	0	581	0	1	41	5	0	0	1	48	0	0	8	0	1	0	0	9
1600 - 1615	0	0	29	5	0	0	1	35	0	0	3	0	0	0	0	3	0	0	3	0	0	0	0	3
1615 - 1630	0	0	31	7	2	0	0	40	1	0	5	5	0	0	0	11	0	0	1	1	0	0	0	2
1630 - 1645	0	0	31	12	1	0	0	44	0	0	10	1	0	0	0	11	0	0	0	0	0	0	0	0
1645 - 1700	0	0	55	8	1	0	0	64	0	0	5	1	0	0	0	6	0	0	1	0	0	0	0	1
Hourly Total	0	0	146	32	4	0	1	183	1	0	23	7	0	0	0	31	0	0	5	1	0	0	0	6
1700 - 1715	0	0	37	8	1	0	0	46	0	0	6	0	0	0	0	6	0	0	1	0	1	0	0	2
1715 - 1730	0	1	50	6	0	0	0	57	0	0	6	2	0	0	0	8	0	0	0	0	0	0	0	0
1730 - 1745	0	3	62	6	1	0	0	72	0	0	8	2	0	0	0	10	0	0	1	0	0	0	0	1
1745 - 1800	0	1	51	8	0	0	0	60	1	0	5	1	0	0	0	7	0	0	0	0	0	0	0	0
Hourly Total	0	5	200	28	2	0	0	235	1	0	25	5	0	0	0	31	0	0	2	0	1	0	0	3
1800 - 1815	0	0	50	7	0	0	0	57	0	0	7	0	0	0	0	7	0	0	1	0	0	0	0	1
1815 - 1830	0	0	35	4	1	0	0	40	0	0	8	0	0	0	0	8	0	0	0	0	0	0	0	0
Hourly Total	0	0	85	11	1	0	0	97	0	0	15	0	0	0	0	15	0	0	1	0	0	0	0	1
Session Total	0	5	431	71	7	0	1	515	2	0	63	12	0	0	0	77	0	0	8	1	1	0	0	10

Waltham Abbey, Wednesday 11th October 2017

Junction: (7) Woodgreen Road / A121 / Forest Side

Approach: A121 (West)

TIME	Left to Woodgreen Road								Ahead to A121 (East)								Right to Forest Side							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	7	4	2	0	0	13	0	1	102	45	7	1	2	158	0	1	36	10	1	0	0	48
0715 - 0730	0	0	9	2	1	0	0	12	0	1	111	37	10	3	1	163	0	0	39	10	2	0	0	51
0730 - 0745	0	0	3	5	0	0	0	8	0	2	118	45	12	1	1	179	0	1	39	16	0	0	0	56
0745 - 0800	0	0	8	3	0	0	0	11	0	1	120	36	14	2	1	174	0	1	38	12	0	0	0	51
Hourly Total	0	0	27	14	3	0	0	44	0	5	451	163	43	7	5	674	0	3	152	48	3	0	0	206
0800 - 0815	0	1	10	1	1	0	0	13	0	0	134	34	11	0	1	180	0	1	47	11	0	0	0	59
0815 - 0830	0	0	4	6	3	1	0	14	0	0	113	31	8	1	1	154	0	0	40	9	2	0	0	51
0830 - 0845	0	0	11	4	2	0	0	17	0	1	107	21	12	5	0	146	0	0	53	8	0	0	0	61
0845 - 0900	0	0	13	8	3	0	0	24	0	1	132	26	16	4	1	180	0	0	39	8	1	0	0	48
Hourly Total	0	1	38	19	9	1	0	68	0	2	486	112	47	10	3	660	0	1	179	36	3	0	0	219
0900 - 0915	0	0	16	3	1	0	0	20	0	0	114	25	14	0	2	155	0	1	25	5	2	0	0	33
0915 - 0930	0	0	8	1	0	0	0	9	0	1	123	31	9	1	0	165	0	0	23	3	0	0	0	26
Hourly Total	0	0	24	4	1	0	0	29	0	1	237	56	23	1	2	320	0	1	48	8	2	0	0	59
Session Total	0	1	89	37	13	1	0	141	0	8	1174	331	113	18	10	1654	0	5	379	92	8	0	0	484
1600 - 1615	0	0	11	3	1	0	0	15	0	1	115	38	8	0	1	163	0	0	35	2	0	0	0	37
1615 - 1630	0	1	11	5	1	0	0	18	0	3	136	40	7	0	0	186	0	0	31	9	1	0	0	41
1630 - 1645	0	0	13	2	0	0	0	15	0	0	143	45	5	1	2	196	0	0	35	6	0	0	0	41
1645 - 1700	0	0	14	4	0	0	0	18	0	0	142	37	8	1	0	188	0	0	38	7	0	0	0	45
Hourly Total	0	1	49	14	2	0	0	66	0	4	536	160	28	2	3	733	0	0	139	24	1	0	0	164
1700 - 1715	0	0	18	3	1	0	0	22	0	0	133	24	2	0	2	161	0	0	44	10	0	0	0	54
1715 - 1730	0	0	15	1	0	0	0	16	0	1	150	31	1	0	3	186	0	1	39	7	0	0	0	47
1730 - 1745	0	0	11	2	0	0	0	13	0	0	161	19	2	0	0	182	0	0	45	7	0	0	0	52
1745 - 1800	0	0	11	2	2	0	0	15	0	1	138	20	6	3	2	170	0	0	41	4	0	0	0	45
Hourly Total	0	0	55	8	3	0	0	66	0	2	582	94	11	3	7	699	0	1	169	28	0	0	0	198
1800 - 1815	0	0	19	1	1	0	0	21	0	0	131	17	4	1	0	153	0	0	42	7	0	0	0	49
1815 - 1830	0	0	9	3	1	0	0	13	0	0	150	17	1	1	1	170	0	2	48	1	1	0	0	52
Hourly Total	0	0	28	4	2	0	0	34	0	0	281	34	5	2	1	323	0	2	90	8	1	0	0	101
Session Total	0	1	132	26	7	0	0	166	0	6	1399	288	44	7	11	1755	0	3	398	60	2	0	0	463

Waltham Abbey, Wednesday 11th October 2017

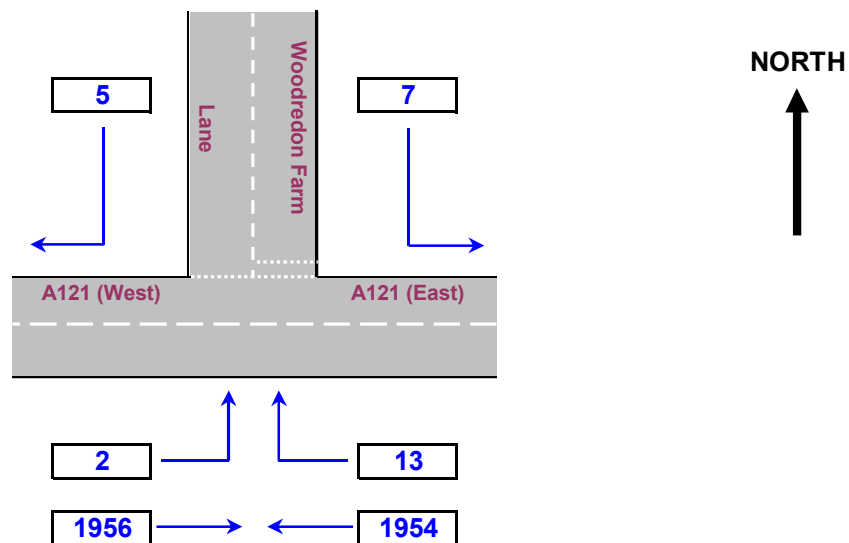
Junction: (8) Woodredon Farm Lane / A121 Woodridden Hill

Vehicle Class:

Start Time:

End Time:

☐ Peak Hour



Note: The above diagram represents the Junction surveyed, although may not be the exact layout of the actual location.

Important This spreadsheet & Interactive Vehicle Flow Diagram was produced based on specific
Note: parameters. Consequently, alteration to the spreadsheet format or it's properties
may result in malfunction.

Waltham Abbey, Wednesday 11th October 2017

Junction: (8) Woodredon Farm Lane / A121 Woodriven Hill

Approach: Woodredon Farm Lane

TIME	Left to A121 Woodriven Hill (East)								Right to A121 Woodriven Hill (West)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0715 - 0730	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0730 - 0745	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0745 - 0800	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
Hourly Total	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
0800 - 0815	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1
0815 - 0830	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0830 - 0845	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
0845 - 0900	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1
Hourly Total	0	0	2	0	1	0	0	3	0	0	2	0	0	0	0	2
0900 - 0915	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0915 - 0930	0	0	1	0	0	0	0	1	0	0	2	1	0	0	0	3
Hourly Total	0	0	1	0	0	0	0	1	0	0	2	1	0	0	0	3
Session Total	0	0	6	0	1	0	0	7	0	0	4	1	0	0	0	5
1600 - 1615	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3
1615 - 1630	0	0	4	0	0	0	0	4	0	0	0	1	0	0	0	1
1630 - 1645	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0
1645 - 1700	0	0	3	0	0	0	0	3	0	0	3	0	0	0	0	3
Hourly Total	0	0	12	0	0	0	0	12	0	0	5	2	0	0	0	7
1700 - 1715	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
1715 - 1730	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
1730 - 1745	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
1745 - 1800	0	0	2	0	0	0	0	2	0	0	1	0	0	0	0	1
Hourly Total	0	0	6	1	0	0	0	7	0	0	1	0	0	0	0	1
1800 - 1815	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
1815 - 1830	0	0	2	0	0	0	0	2	0	0	0	0	1	0	0	1
Hourly Total	0	0	3	0	0	0	0	3	0	0	0	0	1	0	0	1
Session Total	0	0	21	1	0	0	0	22	0	0	6	2	1	0	0	9

Waltham Abbey, Wednesday 11th October 2017

Junction: (8) Woodredon Farm Lane / A121 Woodridden Hill

Approach: A121 Woodridden Hill (East)

TIME	Ahead to A121 Woodridden Hill (West)								Right to Woodredon Farm Lane							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	1	193	59	7	1	1	262	0	0	0	0	0	0	0	0
0715 - 0730	0	6	190	57	5	2	0	260	0	0	0	0	0	0	0	0
0730 - 0745	0	1	171	33	14	1	3	223	0	0	1	0	0	0	0	1
0745 - 0800	0	0	166	35	8	1	5	215	0	0	3	0	1	0	0	4
Hourly Total	0	8	720	184	34	5	9	960	0	0	4	0	1	0	0	5
0800 - 0815	0	1	92	24	4	2	1	124	0	0	0	0	0	0	0	0
0815 - 0830	0	1	135	24	10	1	1	172	0	0	0	0	0	0	0	0
0830 - 0845	0	0	123	25	6	2	1	157	0	0	3	0	0	0	0	3
0845 - 0900	0	0	121	26	7	6	0	160	0	0	3	0	0	0	0	3
Hourly Total	0	2	471	99	27	11	3	613	0	0	6	0	0	0	0	6
0900 - 0915	0	0	148	28	5	3	1	185	0	0	1	0	0	0	0	1
0915 - 0930	0	1	160	21	11	1	2	196	0	0	1	0	0	0	0	1
Hourly Total	0	1	308	49	16	4	3	381	0	0	2	0	0	0	0	2
Session Total	0	11	1499	332	77	20	15	1954	0	0	12	0	1	0	0	13
1600 - 1615	0	1	181	45	10	0	3	240	0	0	3	0	0	0	0	3
1615 - 1630	0	1	173	42	9	0	1	226	0	0	5	0	0	0	0	5
1630 - 1645	0	2	171	29	5	0	1	208	0	0	4	0	0	0	0	4
1645 - 1700	0	0	177	37	5	0	0	219	0	0	1	0	0	0	0	1
Hourly Total	0	4	702	153	29	0	5	893	0	0	13	0	0	0	0	13
1700 - 1715	0	2	192	32	11	2	0	239	0	0	2	0	0	0	0	2
1715 - 1730	0	4	196	39	4	3	1	247	0	0	1	0	0	0	0	1
1730 - 1745	0	1	183	24	4	1	0	213	0	0	1	1	0	0	0	2
1745 - 1800	1	3	191	29	2	0	3	229	0	0	0	0	0	0	0	0
Hourly Total	1	10	762	124	21	6	4	928	0	0	4	1	0	0	0	5
1800 - 1815	0	6	165	19	4	0	0	194	0	0	1	0	0	0	0	1
1815 - 1830	0	3	189	24	1	0	1	218	0	0	0	0	0	0	0	0
Hourly Total	0	9	354	43	5	0	1	412	0	0	1	0	0	0	0	1
Session Total	1	23	1818	320	55	6	10	2233	0	0	18	1	0	0	0	19

Waltham Abbey, Wednesday 11th October 2017

Junction: (8) Woodredon Farm Lane / A121 Woodridden Hill

Approach: A121 Woodridden Hill (West)

TIME	Left to Woodredon Farm Lane								Ahead to A121 Woodridden Hill (East)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0	134	54	8	1	2	199
0715 - 0730	0	0	0	0	0	0	0	0	0	2	156	43	10	5	1	217
0730 - 0745	0	0	0	0	0	0	0	0	0	2	146	50	10	0	1	209
0745 - 0800	0	0	0	0	0	0	0	0	0	1	153	42	18	2	1	217
Hourly Total	0	0	0	0	0	0	0	0	0	5	589	189	46	8	5	842
0800 - 0815	0	0	0	0	0	0	0	0	0	3	154	40	9	0	1	207
0815 - 0830	0	0	1	0	0	0	0	1	0	0	151	34	10	0	1	196
0830 - 0845	0	0	1	0	0	0	0	1	0	1	108	24	13	5	1	152
0845 - 0900	0	0	0	0	0	0	0	0	0	1	146	32	16	3	0	198
Hourly Total	0	0	2	0	0	0	0	2	0	5	559	130	48	8	3	753
0900 - 0915	0	0	0	0	0	0	0	0	0	0	131	28	16	1	2	178
0915 - 0930	0	0	0	0	0	0	0	0	0	1	138	33	10	1	0	183
Hourly Total	0	0	0	0	0	0	0	0	0	1	269	61	26	2	2	361

Session Total	0	0	2	0	0	0	0	2	0	11	1417	380	120	18	10	1956
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1600 - 1615	0	0	1	0	0	0	0	1	0	1	123	39	8	1	1	173
1615 - 1630	0	0	3	0	1	0	0	4	0	5	146	36	6	0	0	193
1630 - 1645	0	0	0	0	0	0	0	0	0	0	140	52	5	1	0	198
1645 - 1700	0	0	0	0	0	0	0	0	0	0	159	39	9	1	1	209
Hourly Total	0	0	4	0	1	0	0	5	0	6	568	166	28	3	2	773
1700 - 1715	0	0	1	0	0	0	0	1	0	1	150	37	2	0	0	190
1715 - 1730	0	0	0	0	0	0	0	0	0	0	158	35	2	0	5	200
1730 - 1745	0	0	0	0	0	0	0	0	0	0	172	17	2	0	0	191
1745 - 1800	0	0	1	0	0	0	0	1	0	1	149	17	6	3	2	178
Hourly Total	0	0	2	0	0	0	0	2	0	2	629	106	12	3	7	759
1800 - 1815	0	0	0	0	0	0	0	0	0	0	151	16	4	1	0	172
1815 - 1830	0	0	1	0	0	0	0	1	0	0	174	19	1	1	1	196
Hourly Total	0	0	1	0	0	0	0	1	0	0	325	35	5	2	1	368

Session Total	0	0	7	0	1	0	0	8	0	8	1522	307	45	8	10	1900
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Waltham Abbey, Wednesday 11th October 2017

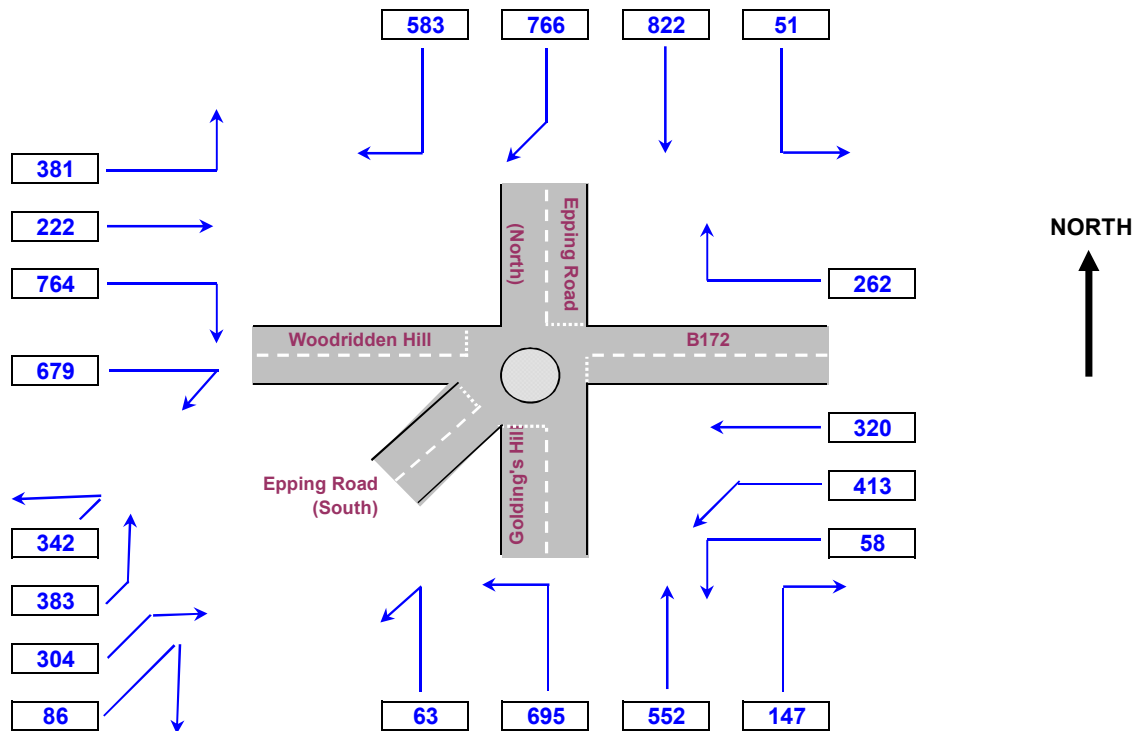
Junction: (9) Wake Arms Roundabout

Vehicle Class:

Start Time:

End Time:

☐ Peak Hour



Note: The above diagram represents the Junction surveyed, although may not be the exact layout of the actual location.

Important This spreadsheet & Interactive Vehicle Flow Diagram was produced based on specific
Note: parameters. Consequently, alteration to the spreadsheet format or it's properties
may result in malfunction.

Waltham Abbey, Wednesday 11th October 2017

Junction: (9) Wake Arms Roundabout

Approach: Epping Road (North)

TIME	Left to B172								Ahead to Golding's Hill								Right to Epping Road (South)								Last Right to Woodriven Hill							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	5	0	0	0	0	5	1	0	60	25	3	0	0	89	0	4	77	28	2	0	0	111	0	1	38	15	2	0	0	56
0715 - 0730	0	1	2	0	0	0	0	3	0	1	67	21	5	1	0	95	0	2	77	19	2	0	0	100	0	1	46	13	2	0	0	62
0730 - 0745	0	0	4	2	0	0	0	6	0	1	62	22	3	0	0	88	1	2	56	16	2	0	0	77	0	0	58	9	2	0	0	69
0745 - 0800	0	0	4	0	0	0	0	4	0	0	78	18	3	0	0	99	2	0	64	17	0	0	0	83	0	0	33	13	0	0	0	46
Hourly Total	0	1	15	2	0	0	0	18	1	2	267	86	14	1	0	371	3	8	274	80	6	0	0	371	0	2	175	50	6	0	0	233
0800 - 0815	0	0	7	4	0	0	0	11	0	1	96	5	1	0	0	103	1	2	62	7	1	0	0	73	0	1	51	12	1	1	0	66
0815 - 0830	0	0	6	0	0	0	0	6	0	0	67	13	3	0	0	83	0	0	68	13	3	0	0	84	0	0	51	8	2	0	0	61
0830 - 0845	0	0	2	1	0	0	0	3	0	1	51	9	4	0	0	65	0	2	38	8	2	1	0	51	0	0	33	11	3	1	0	48
0845 - 0900	0	0	1	1	0	0	0	2	0	2	49	11	3	0	0	65	0	2	48	10	1	0	0	61	0	0	47	12	2	0	0	61
Hourly Total	0	0	16	6	0	0	0	22	0	4	263	38	11	0	0	316	1	6	216	38	7	1	0	269	0	1	182	43	8	2	0	236
0900 - 0915	0	0	5	1	0	0	0	6	0	0	50	14	6	1	0	71	1	3	55	9	3	0	0	71	0	0	39	12	2	1	0	54
0915 - 0930	0	0	2	3	0	0	0	5	0	0	57	5	2	0	0	64	1	0	46	7	1	0	0	55	0	0	49	7	3	0	1	60
Hourly Total	0	0	7	4	0	0	0	11	0	0	107	19	8	1	0	135	2	3	101	16	4	0	0	126	0	0	88	19	5	1	1	114
Session Total	0	1	38	12	0	0	0	51	1	6	637	143	33	2	0	822	6	17	591	134	17	1	0	766	0	3	445	112	19	3	1	583
1600 - 1615	0	0	6	5	1	0	0	12	0	0	56	11	2	0	0	69	0	2	36	4	0	0	0	42	0	0	44	5	2	0	0	51
1615 - 1630	0	1	4	1	1	0	0	7	0	1	2	64	11	0	0	77	0	0	38	5	0	0	0	43	0	0	41	14	1	0	0	56
1630 - 1645	0	0	8	2	0	0	0	10	0	0	35	13	1	0	0	49	0	0	33	5	1	0	0	39	0	0	58	12	1	0	0	71
1645 - 1700	0	0	8	2	0	0	0	10	0	0	31	6	0	0	1	38	0	1	33	4	0	0	0	38	0	0	77	10	0	0	0	87
Hourly Total	0	1	26	10	2	0	0	39	0	2	186	41	3	0	1	233	0	3	140	18	1	0	0	162	0	0	220	41	4	0	0	265
1700 - 1715	0	0	5	4	0	0	0	9	0	0	60	4	0	0	0	64	0	3	47	3	0	0	0	53	0	0	62	6	3	0	0	71
1715 - 1730	0	0	5	1	0	0	0	6	0	1	49	9	1	0	0	60	0	0	41	3	1	0	0	45	0	1	56	7	2	1	0	67
1730 - 1745	0	0	7	0	0	0	0	7	0	0	54	10	1	0	0	65	0	1	38	3	1	0	0	43	0	0	66	7	1	0	0	74
1745 - 1800	0	0	5	1	0	0	0	6	0	0	60	7	0	0	0	67	0	0	40	5	0	0	0	45	0	0	61	9	1	0	0	71
Hourly Total	0	0	22	6	0	0	0	28	0	1	223	30	2	0	0	256	0	4	166	14	2	0	0	186	0	1	245	29	7	1	0	283
1800 - 1815	0	0	8	2	0	0	0	10	0	0	36	2	1	0	1	40	0	0	36	2	0	1	0	39	0	2	45	7	1	0	0	55
1815 - 1830	0	0	4	0	0	0	0	4	0	0	40	6	0	0	0	46	0	0	27	2	0	0	0	29	0	0	51	6	0	0	0	57
Hourly Total	0	0	12	2	0	0	0	14	0	0	76	8	1	0	1	86	0	0	63	4	0	1	0	68	0	2	96	13	1	0	0	112
Session Total	0	1	60	18	2	0	0	81	0	3	485	79	6	0	2	575	0	7	369	36	3	1	0	416	0	3	561	83	12	1	0	660

Waltham Abbey, Wednesday 11th October 2017

Junction: (9) Wake Arms Roundabout

Approach: B172

TIME	First Left to Golding's Hill								Second Left to Epping Road (South)								Ahead to Woodriden Hill								Right to Epping Road (North)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	2	1	0	0	0	3	0	1	37	14	2	0	0	54	0	1	17	8	5	0	0	31	0	0	13	7	0	0	0	20
0715 - 0730	0	0	1	0	1	0	0	2	0	1	30	10	0	0	0	41	0	1	19	7	2	0	0	29	0	0	13	4	0	0	0	17
0730 - 0745	0	0	4	1	0	0	0	5	0	0	30	13	4	0	0	47	0	0	32	7	2	0	1	42	0	0	27	2	0	0	0	29
0745 - 0800	0	0	5	1	0	0	0	6	0	0	50	10	0	0	0	60	0	0	28	8	0	0	0	36	0	0	17	6	0	0	0	23
Hourly Total	0	0	12	3	1	0	0	16	0	2	147	47	6	0	0	202	0	2	96	30	9	0	1	138	0	0	70	19	0	0	0	89
0800 - 0815	0	0	5	0	1	0	0	6	0	0	35	5	2	0	0	42	0	0	28	10	2	0	0	40	0	0	24	5	2	0	0	31
0815 - 0830	0	0	5	2	0	0	0	7	0	0	38	6	2	0	0	46	0	0	29	4	0	0	0	33	0	0	32	4	0	0	0	36
0830 - 0845	0	0	5	0	0	0	0	5	1	0	33	7	1	0	0	42	0	0	29	8	1	0	0	38	0	0	26	4	1	0	0	31
0845 - 0900	0	0	6	1	0	0	0	7	0	0	19	3	1	0	0	23	0	0	18	3	2	0	0	23	0	0	19	3	1	0	0	23
Hourly Total	0	0	21	3	1	0	0	25	1	0	125	21	6	0	0	153	0	0	104	25	5	0	0	134	0	0	101	16	4	0	0	121
0900 - 0915	0	0	8	0	0	0	0	8	0	0	28	5	1	0	0	34	0	0	18	5	0	0	0	23	0	0	18	4	1	0	0	23
0915 - 0930	0	0	8	1	0	0	0	9	0	0	18	5	1	0	0	24	0	0	19	4	2	0	0	25	0	0	26	3	0	0	0	29
Hourly Total	0	0	16	1	0	0	0	17	0	0	46	10	2	0	0	58	0	0	37	9	2	0	0	48	0	0	44	7	1	0	0	52
Session Total	0	0	49	7	2	0	0	58	1	2	318	78	14	0	0	413	0	2	237	64	16	0	1	320	0	0	215	42	5	0	0	262
1600 - 1615	0	0	2	0	0	0	0	2	0	0	21	4	0	0	0	25	0	0	26	8	2	0	0	36	0	0	18	3	0	0	0	21
1615 - 1630	0	0	6	0	0	0	0	6	0	0	17	5	0	0	0	22	0	0	19	10	1	0	0	30	0	0	16	3	0	0	0	19
1630 - 1645	0	0	4	1	0	0	0	5	0	0	15	3	1	0	0	19	0	2	23	7	1	0	0	33	0	2	18	2	0	0	0	22
1645 - 1700	0	0	6	4	0	0	0	10	0	0	8	2	0	0	0	10	0	0	20	4	0	0	0	24	0	0	27	3	0	0	0	30
Hourly Total	0	0	18	5	0	0	0	23	0	0	61	14	1	0	0	76	0	2	88	29	4	0	0	123	0	2	79	11	0	0	0	92
1700 - 1715	0	0	3	0	0	0	0	3	3	1	21	3	0	0	0	28	0	0	25	6	2	0	0	33	0	1	20	3	2	0	0	26
1715 - 1730	0	0	3	0	0	0	0	3	0	0	15	3	1	0	0	19	0	0	18	11	1	0	0	30	0	0	19	4	1	0	0	24
1730 - 1745	0	0	2	3	0	0	0	5	0	0	13	2	0	0	0	15	0	0	26	4	0	0	0	30	0	0	13	3	0	0	0	16
1745 - 1800	0	0	2	0	0	0	0	2	1	0	16	3	0	0	0	20	0	2	23	3	0	0	0	28	0	0	16	4	0	0	0	20
Hourly Total	0	0	10	3	0	0	0	13	4	1	65	11	1	0	0	82	0	2	92	24	3	0	0	121	0	1	68	14	3	0	0	86
1800 - 1815	0	0	2	0	0	0	0	2	0	0	16	2	0	0	0	18	0	1	20	4	2	0	0	27	0	1	16	3	0	0	0	20
1815 - 1830	0	0	4	0	0	0	0	4	0	0	11	2	0	0	0	13	0	0	19	4	0	0	0	23	0	1	12	2	0	0	0	15
Hourly Total	0	0	6	0	0	0	0	6	0	0	27	4	0	0	0	31	0	1	39	8	2	0	0	50	0	2	28	5	0	0	0	35
Session Total	0	0	34	8	0	0	0	42	4	1	153	29	2	0	0	189	0	5	219	61	9	0	0	294	0	5	175	30	3	0	0	213

Waltham Abbey, Wednesday 11th October 2017

Junction: (9) Wake Arms Roundabout

Approach: Golding's Hill

TIME	First Left to Epping Road (South)								Second Left to Woodriden Hill								Ahead to Epping Road (North)								Right to B172							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	2	0	0	0	0	2	0	0	55	17	1	0	0	73	0	0	32	10	0	0	0	42	0	0	13	5	0	0	0	18
0715 - 0730	0	0	1	1	0	0	0	2	0	2	56	18	4	1	1	82	0	0	35	12	0	0	1	48	0	0	9	1	0	0	0	10
0730 - 0745	0	0	1	2	0	0	0	3	0	0	53	17	3	1	2	76	0	1	47	4	0	0	0	52	0	0	9	1	0	0	0	10
0745 - 0800	0	0	5	0	0	0	0	5	0	0	64	10	5	0	1	80	0	0	37	7	0	0	0	44	0	0	7	3	0	0	0	10
Hourly Total	0	0	9	3	0	0	0	12	0	2	228	62	13	2	4	311	0	1	151	33	0	0	1	186	0	0	38	10	0	0	0	48
0800 - 0815	0	0	6	1	0	0	0	7	0	0	57	12	1	1	2	73	0	1	45	7	2	1	0	56	0	0	12	2	1	0	0	15
0815 - 0830	0	0	6	2	0	0	0	8	0	0	42	5	1	0	0	48	0	0	46	8	4	0	1	59	0	0	10	3	1	0	0	14
0830 - 0845	0	0	11	4	0	0	0	15	0	0	71	6	3	4	1	85	0	0	55	6	2	0	0	63	0	0	11	1	1	0	0	13
0845 - 0900	0	0	5	1	0	0	0	6	0	0	50	12	2	3	0	67	0	0	58	10	2	0	0	70	0	0	12	2	1	0	0	15
Hourly Total	0	0	28	8	0	0	0	36	0	0	220	35	7	8	3	273	0	1	204	31	10	1	1	248	0	0	45	8	4	0	0	57
0900 - 0915	0	0	13	0	0	0	0	13	0	0	42	8	2	2	1	55	0	0	48	5	1	0	0	54	0	0	17	4	1	0	2	24
0915 - 0930	0	0	2	0	0	0	0	2	0	1	38	9	5	2	1	56	0	0	58	5	1	0	0	64	0	0	16	2	0	0	0	18
Hourly Total	0	0	15	0	0	0	0	15	0	1	80	17	7	4	2	111	0	0	106	10	2	0	0	118	0	0	33	6	1	0	2	42
Session Total	0	0	52	11	0	0	0	63	0	3	528	114	27	14	9	695	0	2	461	74	12	1	2	552	0	0	116	24	5	0	2	147
1600 - 1615	0	0	5	0	0	0	0	5	0	1	73	22	3	0	2	101	0	1	52	7	2	0	0	62	0	1	12	2	0	0	0	15
1615 - 1630	0	0	4	0	0	0	0	4	0	1	73	17	5	0	1	97	0	1	64	6	1	0	0	72	0	2	19	5	3	0	0	29
1630 - 1645	0	0	2	0	0	1	0	3	0	2	58	12	3	0	1	76	0	1	49	3	0	0	0	53	0	1	17	2	0	0	0	20
1645 - 1700	0	0	5	0	0	0	0	5	0	0	51	8	3	0	0	62	0	1	75	9	1	0	1	87	0	0	30	4	1	0	0	35
Hourly Total	0	0	16	0	0	1	0	17	0	4	255	59	14	0	4	336	0	4	240	25	4	0	1	274	0	4	78	13	4	0	0	99
1700 - 1715	0	0	2	0	0	0	0	2	0	1	75	10	2	0	0	88	0	0	61	7	1	0	0	69	0	0	20	4	0	0	0	24
1715 - 1730	0	0	3	0	0	0	0	3	2	1	67	11	0	2	1	84	0	3	70	4	0	0	0	77	0	0	21	4	2	0	0	27
1730 - 1745	0	0	2	1	0	0	0	3	0	1	117	10	3	1	0	132	0	0	51	7	0	0	0	58	0	0	18	1	1	0	0	20
1745 - 1800	0	0	4	0	0	0	0	4	0	0	93	7	1	0	2	103	0	0	62	7	0	0	0	69	0	0	24	3	1	0	0	28
Hourly Total	0	0	11	1	0	0	0	12	2	3	352	38	6	3	3	407	0	3	244	25	1	0	0	273	0	0	83	12	4	0	0	99
1800 - 1815	0	0	4	0	0	0	0	4	0	2	74	7	1	0	0	84	0	1	62	8	0	0	0	71	0	0	23	2	0	0	0	25
1815 - 1830	0	0	2	1	0	0	0	3	0	2	86	9	0	0	1	98	0	1	60	4	2	0	0	67	0	0	17	2	2	0	0	21
Hourly Total	0	0	6	1	0	0	0	7	0	4	160	16	1	0	1	182	0	2	122	12	2	0	0	138	0	0	40	4	2	0	0	46
Session Total	0	0	33	2	0	1	0	36	2	11	767	113	21	3	8	925	0	9	606	62	7	0	1	685	0	4	201	29	10	0	0	244

Waltham Abbey, Wednesday 11th October 2017

Junction: (9) Wake Arms Roundabout

Approach: Epping Road (South)

TIME	First Left to Woodriven Hill								Second Left to Epping Road (North)								Right to B172								Last Right to Golding's Hill							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	1	31	12	1	0	0	45	0	0	14	3	0	0	0	17	0	0	14	3	0	0	0	17	0	0	6	1	0	0	0	7
0715 - 0730	0	0	34	5	0	1	0	40	0	0	17	10	0	0	0	27	0	0	33	2	0	0	0	35	0	0	3	1	0	0	0	4
0730 - 0745	0	0	33	9	1	1	0	44	0	1	31	7	0	0	0	39	0	1	30	3	0	0	0	34	0	0	5	2	0	0	0	7
0745 - 0800	1	0	36	2	1	0	3	43	0	0	58	4	0	0	0	62	0	0	25	4	0	0	0	29	0	0	8	2	0	0	0	10
Hourly Total	1	1	134	28	3	2	3	172	0	1	120	24	0	0	0	145	0	1	102	12	0	0	0	115	0	0	22	6	0	0	0	28
0800 - 0815	0	0	19	3	1	0	0	23	0	0	35	5	1	0	0	41	0	0	22	3	1	0	0	26	0	0	8	1	0	0	0	9
0815 - 0830	0	0	28	2	3	0	0	33	0	0	33	5	1	0	0	39	0	0	27	4	1	0	0	32	0	0	7	2	0	0	0	9
0830 - 0845	0	0	16	2	1	0	0	19	0	1	45	4	1	0	0	51	0	0	28	2	0	0	0	30	0	0	8	1	0	0	0	9
0845 - 0900	0	0	25	3	2	0	0	30	0	0	28	4	1	0	0	33	0	0	19	2	0	0	0	21	0	0	5	1	0	0	0	6
Hourly Total	0	0	88	10	7	0	0	105	0	1	141	18	4	0	0	164	0	0	96	11	2	0	0	109	0	0	28	5	0	0	0	33
0900 - 0915	0	0	28	5	0	0	0	33	0	1	29	6	1	0	0	37	0	0	37	6	1	0	0	44	0	0	11	4	0	0	0	15
0915 - 0930	0	0	31	1	0	0	0	32	0	0	32	5	0	0	0	37	0	3	29	4	0	0	0	36	0	0	8	2	0	0	0	10
Hourly Total	0	0	59	6	0	0	0	65	0	1	61	11	1	0	0	74	0	3	66	10	1	0	0	80	0	0	19	6	0	0	0	25
Session Total	1	1	281	44	10	2	3	342	0	3	322	53	5	0	0	383	0	4	264	33	3	0	0	304	0	0	69	17	0	0	0	86
1600 - 1615	0	0	30	10	1	0	1	42	0	0	43	11	0	0	0	54	0	0	34	3	0	0	0	37	0	0	10	1	0	0	0	11
1615 - 1630	1	0	25	6	1	0	0	33	0	1	49	3	0	0	0	53	0	1	27	4	0	0	0	32	0	1	11	3	0	0	0	15
1630 - 1645	1	0	31	8	0	0	0	40	0	0	34	8	0	0	0	42	0	0	38	12	2	0	0	52	0	0	11	6	0	0	0	17
1645 - 1700	1	0	26	9	1	0	0	37	0	1	32	4	0	0	0	37	0	0	34	10	0	0	0	44	0	0	9	3	0	0	0	12
Hourly Total	3	0	112	33	3	0	1	152	0	2	158	26	0	0	0	186	0	1	133	29	2	0	0	165	0	1	41	13	0	0	0	55
1700 - 1715	0	0	16	6	5	1	0	28	0	2	25	10	0	0	0	37	0	0	39	6	0	0	0	45	0	1	11	5	0	0	0	17
1715 - 1730	0	0	31	7	1	0	0	39	0	1	39	4	1	0	0	45	0	1	45	4	0	0	0	50	0	0	10	4	0	0	0	14
1730 - 1745	0	0	27	3	0	0	0	30	0	1	46	5	0	0	0	52	0	2	29	5	0	0	0	36	0	0	14	1	0	0	0	15
1745 - 1800	0	1	31	5	0	0	1	38	0	0	42	4	0	0	0	46	0	0	36	3	0	0	0	39	0	0	17	2	0	0	0	19
Hourly Total	0	1	105	21	6	1	1	135	0	4	152	23	1	0	0	180	0	3	149	18	0	0	0	170	0	1	52	12	0	0	0	65
1800 - 1815	0	1	20	4	0	0	0	25	1	3	39	4	0	0	0	47	0	0	51	2	0	0	0	53	0	0	18	2	0	0	0	20
1815 - 1830	0	0	27	5	0	0	0	32	0	5	36	3	0	0	0	44	0	1	29	3	1	0	0	34	0	1	10	1	0	0	0	12
Hourly Total	0	1	47	9	0	0	0	57	1	8	75	7	0	0	0	91	0	1	80	5	1	0	0	87	0	1	28	3	0	0	0	32
Session Total	3	2	264	63	9	1	2	344	1	14	385	56	1	0	0	457	0	5	362	52	3	0	0	422	0	3	121	28	0	0	0	152

Waltham Abbey, Wednesday 11th October 2017

Junction: (9) Wake Arms Roundabout

Approach: Woodriden Hill

TIME	Left to Epping Road (North)								Ahead to B172								Right to Golding's Hill								Last Right to Epping Road (South)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	18	11	0	1	0	30	0	0	16	6	3	0	0	25	0	0	44	13	4	0	1	62	0	0	63	16	1	0	2	82
0715 - 0730	0	0	18	10	3	0	0	31	0	0	9	1	1	0	0	11	0	0	55	14	4	4	0	77	0	2	61	19	3	0	1	86
0730 - 0745	0	1	15	10	0	1	0	27	0	0	14	11	1	0	0	26	0	1	71	23	4	0	1	100	0	1	62	15	3	0	0	81
0745 - 0800	0	0	28	9	1	0	0	38	0	0	17	5	5	0	0	27	0	0	65	15	11	2	1	94	0	0	54	14	0	0	0	68
Hourly Total	0	1	79	40	4	2	0	126	0	0	56	23	10	0	0	89	0	1	235	65	23	6	3	333	0	3	240	64	7	0	3	317
0800 - 0815	0	0	26	11	1	0	0	38	0	0	16	7	1	0	0	24	0	0	85	12	3	0	0	100	0	2	55	14	4	0	1	76
0815 - 0830	0	0	32	8	2	0	0	42	0	0	19	4	1	0	0	24	0	0	60	7	6	2	1	76	0	1	61	8	4	0	0	74
0830 - 0845	0	1	26	7	3	0	0	37	0	0	12	5	1	0	0	18	0	1	58	11	5	1	1	77	0	0	39	11	3	2	0	55
0845 - 0900	0	0	34	5	4	1	0	44	0	1	16	6	4	0	0	27	0	0	55	11	6	1	0	73	0	0	54	10	2	1	0	67
Hourly Total	0	1	118	31	10	1	0	161	0	1	63	22	7	0	0	93	0	1	258	41	20	4	2	326	0	3	209	43	13	3	1	272
0900 - 0915	0	0	30	4	4	1	1	40	0	0	12	6	2	0	0	20	0	0	35	10	7	0	0	52	0	0	44	6	3	0	0	53
0915 - 0930	0	0	40	12	2	0	0	54	0	0	13	4	3	0	0	20	0	1	40	6	5	1	0	53	0	0	27	8	2	0	0	37
Hourly Total	0	0	70	16	6	1	1	94	0	0	25	10	5	0	0	40	0	1	75	16	12	1	0	105	0	0	71	14	5	0	0	90
Session Total	0	2	267	87	20	4	1	381	0	1	144	55	22	0	0	222	0	3	568	122	55	11	5	764	0	6	520	121	25	3	4	679
1600 - 1615	0	0	39	11	2	0	0	52	0	0	16	7	4	0	0	27	0	0	57	22	7	0	1	87	0	0	39	4	0	1	0	44
1615 - 1630	0	1	31	6	1	0	0	39	0	2	20	8	1	0	0	31	0	1	51	14	0	0	1	67	0	1	35	7	1	0	0	44
1630 - 1645	0	0	33	8	2	0	0	41	0	0	17	10	0	0	0	27	0	0	46	17	2	1	0	66	0	0	41	7	2	0	0	50
1645 - 1700	0	0	33	6	1	1	0	41	0	0	9	10	2	0	0	21	0	0	52	20	3	0	0	75	0	0	54	8	0	0	0	62
Hourly Total	0	1	134	31	6	1	0	173	0	2	62	35	7	0	0	106	0	1	206	73	12	1	2	295	0	1	169	26	3	1	0	200
1700 - 1715	0	0	35	8	1	0	0	44	0	0	19	10	0	0	0	29	0	0	62	15	4	0	0	81	0	0	50	8	0	0	0	58
1715 - 1730	0	0	31	5	1	0	0	37	0	0	20	4	0	0	0	24	0	0	70	8	1	0	2	81	0	0	53	3	0	0	4	60
1730 - 1745	0	0	23	6	1	0	0	30	0	0	30	2	0	0	0	32	0	0	69	14	1	1	1	86	0	0	52	5	1	0	0	58
1745 - 1800	0	1	29	8	0	0	0	38	0	0	24	2	3	0	0	29	0	1	53	5	0	2	1	62	0	0	41	3	1	0	0	45
Hourly Total	0	1	118	27	3	0	0	149	0	0	93	18	3	0	0	114	0	1	254	42	6	3	4	310	0	0	196	19	2	0	4	221
1800 - 1815	0	0	30	1	2	0	0	33	0	0	16	3	0	0	0	19	0	0	45	8	3	0	0	56	0	0	44	5	0	0	0	49
1815 - 1830	0	1	26	4	0	1	0	32	0	0	23	1	0	0	0	24	0	0	68	8	1	1	0	78	0	0	40	2	0	0	0	42
Hourly Total	0	1	56	5	2	1	0	65	0	0	39	4	0	0	0	43	0	0	113	16	4	1	0	134	0	0	84	7	0	0	0	91
Session Total	0	3	308	63	11	2	0	387	0	2	194	57	10	0	0	263	0	2	573	131	22	5	6	739	0	1	449	52	5	1	4	512

Waltham Abbey, Wednesday 11th October 2017

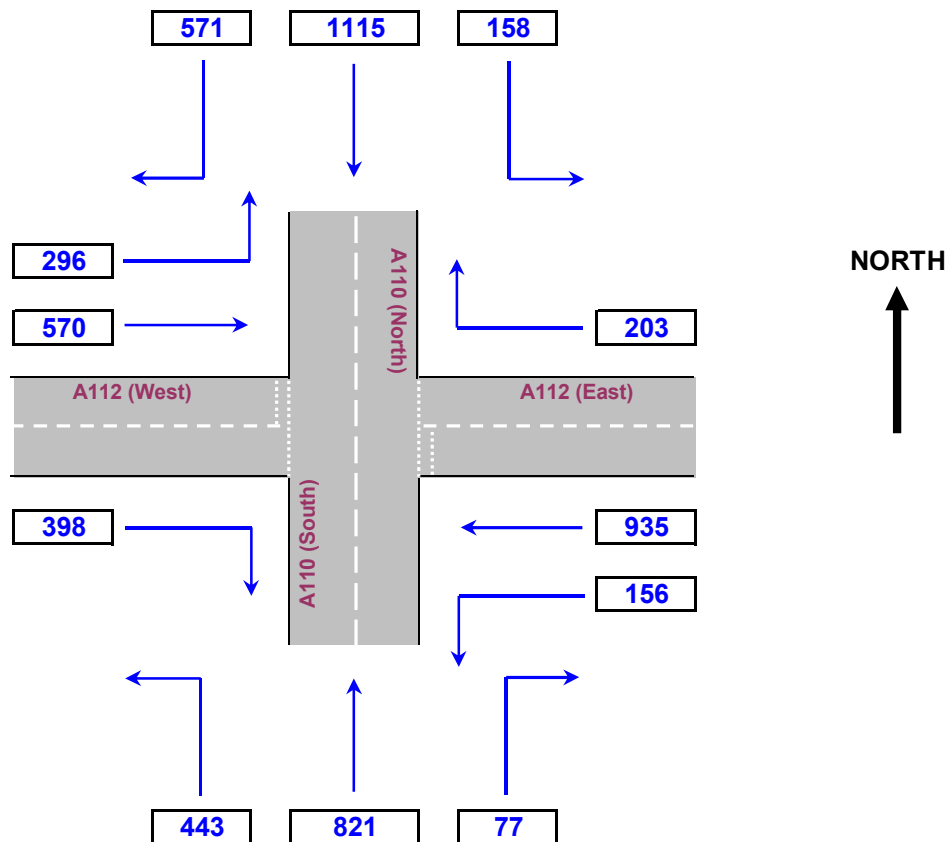
Junction: (10) A110 / A112

Vehicle Class:

Start Time:

End Time:

☐ Peak Hour



Note: The above diagram represents the Junction surveyed, although may not be the exact layout of the actual location.

Important This spreadsheet & Interactive Vehicle Flow Diagram was produced based on specific Note: parameters. Consequently, alteration to the spreadsheet format or it's properties may result in malfunction.

Waltham Abbey, Wednesday 11th October 2017

Junction: (10) A110 / A112

Approach: A110 (North)

TIME	Left to A112 (East)								Ahead to A110 (South)								Right to A112 (West)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	3	1	4	0	0	8	0	2	70	45	11	4	0	132	0	3	38	12	5	1	0	59
0715 - 0730	0	0	5	2	2	1	1	11	0	3	70	25	3	3	1	105	1	1	50	22	2	2	0	78
0730 - 0745	0	0	9	2	1	0	0	12	0	2	50	25	9	1	1	88	0	1	49	10	1	2	0	63
0745 - 0800	0	0	8	2	2	0	0	12	1	4	71	27	13	2	1	119	0	3	39	12	2	3	0	59
Hourly Total	0	0	25	7	9	1	1	43	1	11	261	122	36	10	3	444	1	8	176	56	10	8	0	259
0800 - 0815	0	0	13	4	1	0	0	18	2	7	86	21	6	5	1	128	0	1	36	12	1	1	0	51
0815 - 0830	0	0	24	5	1	0	0	30	0	2	85	19	3	1	1	111	0	1	32	15	5	1	0	54
0830 - 0845	0	0	15	0	0	0	0	15	1	2	76	16	3	1	2	101	0	0	35	8	9	1	0	53
0845 - 0900	0	0	9	1	1	0	0	11	0	2	73	19	6	1	1	102	0	1	37	15	0	6	0	59
Hourly Total	0	0	61	10	3	0	0	74	3	13	320	75	18	8	5	442	0	3	140	50	15	9	0	217
0900 - 0915	0	0	17	4	1	0	0	22	0	1	85	13	11	1	1	112	0	1	30	7	7	2	0	47
0915 - 0930	0	0	15	4	0	0	0	19	0	0	89	21	5	2	0	117	0	0	30	9	6	3	0	48
Hourly Total	0	0	32	8	1	0	0	41	0	1	174	34	16	3	1	229	0	1	60	16	13	5	0	95
Session Total	0	0	118	25	13	1	1	158	4	25	755	231	70	21	9	1115	1	12	376	122	38	22	0	571
1600 - 1615	0	1	16	3	0	0	0	20	0	0	77	26	0	0	1	104	0	4	18	6	2	0	0	30
1615 - 1630	1	0	16	0	0	0	0	17	0	0	70	16	2	0	0	88	0	1	25	8	3	1	1	39
1630 - 1645	0	0	16	5	0	0	0	21	0	2	83	22	2	0	1	110	0	0	30	14	3	1	0	48
1645 - 1700	0	0	17	1	0	0	0	18	0	2	75	10	2	0	2	91	0	0	28	3	6	1	0	38
Hourly Total	1	1	65	9	0	0	0	76	0	4	305	74	6	0	4	393	0	5	101	31	14	3	1	155
1700 - 1715	0	0	21	4	1	0	0	26	0	1	104	24	0	0	1	130	0	0	23	8	1	0	0	32
1715 - 1730	0	0	19	2	0	0	0	21	0	1	68	11	2	0	0	82	0	0	22	7	1	0	0	30
1730 - 1745	0	0	23	0	0	0	0	23	2	2	108	18	1	0	1	132	0	2	33	4	1	0	0	40
1745 - 1800	0	1	29	0	0	0	1	31	0	0	77	14	3	0	1	95	0	0	29	4	0	1	0	34
Hourly Total	0	1	92	6	1	0	1	101	2	4	357	67	6	0	3	439	0	2	107	23	3	1	0	136
1800 - 1815	0	0	23	1	2	0	0	26	0	0	86	15	0	0	1	102	0	0	24	1	0	0	0	25
1815 - 1830	0	0	23	2	0	0	0	25	0	0	88	9	1	0	1	99	0	0	22	8	1	0	0	31
Hourly Total	0	0	46	3	2	0	0	51	0	0	174	24	1	0	2	201	0	0	46	9	1	0	0	56
Session Total	1	2	203	18	3	0	1	228	2	8	836	165	13	0	9	1033	0	7	254	63	18	4	1	347

Waltham Abbey, Wednesday 11th October 2017

Junction: (10) A110 / A112

Approach: A112 (East)

TIME	Left to A110 (South)								Ahead to A112 (West)								Right to A110 (North)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	15	2	1	0	0	18	3	0	101	16	1	0	1	122	0	0	10	3	0	0	0	13
0715 - 0730	0	0	10	3	1	0	0	14	1	4	113	28	5	1	2	154	0	0	11	0	1	0	0	12
0730 - 0745	0	0	10	2	0	0	0	12	1	3	99	19	2	0	2	126	0	0	13	3	1	0	0	17
0745 - 0800	0	0	9	3	2	0	0	14	6	3	71	16	0	0	1	97	0	0	18	2	2	0	0	22
Hourly Total	0	0	44	10	4	0	0	58	11	10	384	79	8	1	6	499	0	0	52	8	4	0	0	64
0800 - 0815	0	0	17	3	0	0	0	20	3	2	72	8	1	0	1	87	0	0	12	3	0	0	0	15
0815 - 0830	0	0	10	0	1	0	0	11	0	1	53	5	3	0	1	63	0	0	26	3	1	0	1	31
0830 - 0845	0	0	11	1	1	0	1	14	1	1	44	10	0	0	1	57	0	0	26	4	1	1	0	32
0845 - 0900	0	0	11	1	1	0	0	13	2	0	52	10	3	0	0	67	0	0	18	2	0	0	0	20
Hourly Total	0	0	49	5	3	0	1	58	6	4	221	33	7	0	3	274	0	0	82	12	2	1	1	98
0900 - 0915	0	0	19	2	0	0	0	21	2	1	65	10	2	1	1	82	0	0	16	5	0	0	0	21
0915 - 0930	0	0	14	4	1	0	0	19	0	3	58	13	5	0	1	80	0	0	16	2	2	0	0	20
Hourly Total	0	0	33	6	1	0	0	40	2	4	123	23	7	1	2	162	0	0	32	7	2	0	0	41
Session Total	0	0	126	21	8	0	1	156	19	18	728	135	22	2	11	935	0	0	166	27	8	1	1	203
1600 - 1615	0	0	21	2	0	0	0	23	0	2	39	6	1	0	1	49	0	0	17	6	1	1	0	25
1615 - 1630	0	0	16	9	0	0	0	25	0	0	65	12	8	0	1	86	1	0	20	5	0	0	0	26
1630 - 1645	0	1	17	4	2	0	0	24	0	0	48	12	2	0	0	62	0	0	23	8	1	0	0	32
1645 - 1700	0	0	21	4	1	0	0	26	0	2	63	14	8	1	0	88	0	0	23	6	0	0	0	29
Hourly Total	0	1	75	19	3	0	0	98	0	4	215	44	19	1	2	285	1	0	83	25	2	1	0	112
1700 - 1715	0	0	17	3	0	0	0	20	1	1	81	12	3	0	2	100	0	0	17	3	1	0	0	21
1715 - 1730	0	0	14	3	1	0	0	18	0	3	74	13	4	0	0	94	0	0	20	4	1	0	0	25
1730 - 1745	1	0	18	1	1	0	0	21	2	1	61	4	3	0	1	72	0	0	26	5	0	0	2	33
1745 - 1800	0	0	16	1	0	1	0	18	0	2	68	12	2	0	1	85	0	0	22	2	2	0	0	26
Hourly Total	1	0	65	8	2	1	0	77	3	7	284	41	12	0	4	351	0	0	85	14	4	0	2	105
1800 - 1815	0	0	20	0	0	0	0	20	2	2	54	9	1	0	0	68	0	1	21	1	1	0	0	24
1815 - 1830	0	0	16	2	0	0	0	18	0	0	68	14	1	0	1	84	0	0	24	3	0	0	0	27
Hourly Total	0	0	36	2	0	0	0	38	2	2	122	23	2	0	1	152	0	1	45	4	1	0	0	51
Session Total	1	1	176	29	5	1	0	213	5	13	621	108	33	1	7	788	1	1	213	43	7	1	2	268

Waltham Abbey, Wednesday 11th October 2017

Junction: (10) A110 / A112

Approach: A110 (South)

TIME	Left to A112 (West)								Ahead to A110 (North)								Right to A112 (East)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	51	13	2	0	0	66	0	0	43	15	1	1	1	61	1	0	3	1	0	0	0	5
0715 - 0730	0	1	37	5	2	1	0	46	0	2	56	14	0	2	1	75	0	0	3	3	0	0	0	6
0730 - 0745	1	0	47	11	0	0	0	59	0	1	73	15	2	0	0	91	0	0	5	2	0	0	0	7
0745 - 0800	0	0	30	8	0	0	0	38	0	1	83	16	1	1	1	103	0	0	4	2	0	0	0	6
Hourly Total	1	1	165	37	4	1	0	209	0	4	255	60	4	4	3	330	1	0	15	8	0	0	0	24
0800 - 0815	0	0	32	5	3	0	0	40	1	0	70	11	3	2	1	88	0	1	7	2	1	0	0	11
0815 - 0830	0	0	29	6	0	0	0	35	0	1	81	11	3	0	2	98	2	0	6	2	1	0	0	11
0830 - 0845	0	0	26	5	1	0	0	32	0	2	64	15	3	1	1	86	0	0	9	1	2	0	0	12
0845 - 0900	0	0	38	5	3	0	0	46	0	1	73	16	4	1	1	96	0	0	2	0	0	0	0	2
Hourly Total	0	0	125	21	7	0	0	153	1	4	288	53	13	4	5	368	2	1	24	5	4	0	0	36
0900 - 0915	0	1	29	10	3	0	0	43	0	2	49	10	1	0	2	64	0	0	7	0	0	0	0	7
0915 - 0930	1	0	25	8	3	0	1	38	0	1	43	11	3	0	1	59	0	0	9	1	0	0	0	10
Hourly Total	1	1	54	18	6	0	1	81	0	3	92	21	4	0	3	123	0	0	16	1	0	0	0	17
Session Total	2	2	344	76	17	1	1	443	1	11	635	134	21	8	11	821	3	1	55	14	4	0	0	77
1600 - 1615	1	0	35	10	5	0	0	51	0	2	82	22	4	0	1	111	0	0	14	1	0	0	1	16
1615 - 1630	0	1	26	9	1	0	0	37	1	0	77	27	3	0	1	109	0	0	4	2	0	0	0	6
1630 - 1645	0	0	42	6	2	0	0	50	0	2	83	26	5	0	0	116	0	0	5	0	0	0	0	5
1645 - 1700	0	1	25	6	3	0	0	35	0	0	86	16	2	0	1	105	0	0	7	1	0	0	0	8
Hourly Total	1	2	128	31	11	0	0	173	1	4	328	91	14	0	3	441	0	0	30	4	0	0	1	35
1700 - 1715	0	0	29	5	0	0	0	34	0	3	85	20	5	1	1	115	0	0	7	0	0	0	0	7
1715 - 1730	0	0	29	6	1	0	0	36	0	6	78	17	3	0	1	105	0	0	8	0	0	0	0	8
1730 - 1745	0	0	42	3	1	0	0	46	0	2	99	22	2	0	0	125	0	0	14	2	0	0	0	16
1745 - 1800	0	0	21	6	2	0	0	29	0	1	101	22	1	0	1	126	0	0	9	2	0	0	0	11
Hourly Total	0	0	121	20	4	0	0	145	0	12	363	81	11	1	3	471	0	0	38	4	0	0	0	42
1800 - 1815	0	1	29	3	1	0	0	34	0	4	94	20	1	0	1	120	0	0	9	1	1	0	0	11
1815 - 1830	0	0	32	4	1	0	0	37	2	3	74	11	2	0	0	92	0	1	10	1	1	0	1	14
Hourly Total	0	1	61	7	2	0	0	71	2	7	168	31	3	0	1	212	0	1	19	2	2	0	1	25
Session Total	1	3	310	58	17	0	0	389	3	23	859	203	28	1	7	1124	0	1	87	10	2	0	2	102

Waltham Abbey, Wednesday 11th October 2017

Junction: (10) A110 / A112

Approach: A112 (West)

TIME	Left to A110 (North)								Ahead to A112 (East)								Right to A110 (South)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	12	3	7	0	0	22	0	1	37	11	5	0	2	56	0	0	22	7	5	1	0	35
0715 - 0730	0	3	11	3	8	1	0	26	0	1	40	10	5	0	0	56	0	0	25	14	4	0	0	43
0730 - 0745	0	1	19	4	3	0	0	27	0	0	44	12	8	0	1	65	0	0	16	11	7	0	0	34
0745 - 0800	0	1	20	10	3	0	0	34	0	1	57	11	13	1	1	84	0	1	29	12	2	0	0	44
Hourly Total	0	5	62	20	21	1	0	109	0	3	178	44	31	1	4	261	0	1	92	44	18	1	0	156
0800 - 0815	0	0	16	7	2	1	0	26	0	0	50	8	2	0	1	61	0	0	16	4	1	0	0	21
0815 - 0830	0	0	23	5	4	0	0	32	0	0	27	9	2	0	0	38	0	1	22	8	4	0	0	35
0830 - 0845	0	0	33	5	6	2	0	46	0	1	41	12	3	0	1	58	0	0	31	10	2	2	0	45
0845 - 0900	0	0	20	10	0	2	0	32	0	1	33	7	4	0	2	47	0	0	26	13	4	0	0	43
Hourly Total	0	0	92	27	12	5	0	136	0	2	151	36	11	0	4	204	0	1	95	35	11	2	0	144
0900 - 0915	0	0	14	5	5	2	0	26	0	0	40	13	8	2	0	63	0	2	28	11	7	0	0	48
0915 - 0930	0	0	15	3	2	4	1	25	1	1	21	8	7	3	1	42	0	2	35	8	4	1	0	50
Hourly Total	0	0	29	8	7	6	1	51	1	1	61	21	15	5	1	105	0	4	63	19	11	1	0	98
Session Total	0	5	183	55	40	12	1	296	1	6	390	101	57	6	9	570	0	6	250	98	40	4	0	398
1600 - 1615	0	4	40	12	2	1	0	59	0	2	61	6	1	0	1	71	0	2	25	4	0	2	0	33
1615 - 1630	0	1	41	13	0	0	0	55	0	0	55	10	0	0	0	65	1	0	30	3	0	0	0	34
1630 - 1645	0	2	41	9	1	0	0	53	0	3	48	10	0	0	1	62	0	1	31	6	3	0	0	41
1645 - 1700	0	0	61	13	0	1	0	75	0	4	54	8	1	0	1	68	0	0	40	5	0	0	0	45
Hourly Total	0	7	183	47	3	2	0	242	0	9	218	34	2	0	3	266	1	3	126	18	3	2	0	153
1700 - 1715	0	5	63	16	6	0	0	90	2	3	41	7	1	0	1	55	1	0	22	2	0	0	0	25
1715 - 1730	0	4	40	9	1	0	0	54	1	1	46	7	0	0	0	55	1	2	32	2	2	0	0	39
1730 - 1745	0	2	65	4	0	0	0	71	0	1	61	8	1	0	1	72	0	1	24	2	1	0	0	28
1745 - 1800	0	4	43	6	0	0	0	53	2	1	71	6	1	1	1	83	0	0	33	4	0	0	0	37
Hourly Total	0	15	211	35	7	0	0	268	5	6	219	28	3	1	3	265	2	3	111	10	3	0	0	129
1800 - 1815	0	1	43	10	0	0	0	54	1	1	48	6	2	0	0	58	0	0	29	1	2	0	0	32
1815 - 1830	1	0	55	8	1	0	1	66	3	0	62	11	0	0	1	77	1	1	49	6	1	0	0	58
Hourly Total	1	1	98	18	1	0	1	120	4	1	110	17	2	0	1	135	1	1	78	7	3	0	0	90
Session Total	1	23	492	100	11	2	1	630	9	16	547	79	7	1	7	666	4	7	315	35	9	2	0	372

Waltham Abbey, Wednesday 11th October 2017

Junction: (1) Beaulieu Drive / B194 Highbridge Street / A121 Meridian Way / A121 Station Road

TIME	Queue Lengths (Vehicles)						
	Beaulieu Drive	Highbridge Street		A121 (South)		A121 (West)	
	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
700	1	16	9	9	1	6	6
705	2	17	10	16	2	8	20
710	0	17	8	14	6	5	31
715	0	20	8	9	3	8	28
720	0	18	7	13	4	8	12
725	2	16	8	12	1	7	22
730	2	20	8	13	5	9	26
735	3	20	8	15	2	9	17
740	2	20	8	11	1	9	18
745	3	20	8	10	1	9	19
750	1	20	8	15	3	8	24
755	1	20	8	21	1	8	19
800	3	20	8	26	3	8	14
805	2	20	8	34	2	7	23
810	2	20	8	42	2	8	17
815	2	20	8	45	2	8	18
820	1	20	8	51	3	7	22
825	1	20	8	49	3	6	16
830	2	20	8	53	2	8	17
835	1	19	8	46	5	8	9
840	1	12	8	38	3	6	13
845	0	20	8	32	2	6	15
850	0	20	8	29	2	7	18
855	1	20	8	22	2	8	18
900	0	20	8	24	4	6	17
905	0	20	8	18	3	5	19
910	1	20	8	21	3	6	16
915	0	20	8	23	4	8	17
920	1	20	8	22	4	8	14
925	1	20	8	20	3	8	15

TIME	Queue Lengths (Vehicles)						
	Beaulieu Drive	Highbridge Street		A121 (South)		A121 (West)	
	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
1600	1	8	11	11	4	8	14
1605	1	7	13	6	7	7	13
1610	1	14	11	11	5	12	8
1615	2	11	8	8	4	12	8
1620	1	12	8	13	4	14	8
1625	2	20	8	13	5	9	8
1630	1	20	8	14	2	13	8
1635	1	20	8	10	4	8	12
1640	0	20	8	11	5	8	12
1645	0	20	8	7	4	10	8
1650	2	6	6	11	5	12	8
1655	1	7	5	6	4	13	8
1700	1	20	8	7	4	13	6
1705	0	20	8	11	3	12	10
1710	1	20	8	12	3	14	8
1715	1	15	8	13	2	11	9
1720	2	8	5	6	2	9	7
1725	0	7	4	4	5	9	7
1730	2	7	6	6	2	10	14
1735	0	20	8	9	5	9	14
1740	2	12	6	9	4	9	16
1745	1	13	8	13	5	10	16
1750	1	14	8	8	2	8	6
1755	1	7	6	7	4	14	8
1800	3	9	5	6	2	8	7
1805	1	10	8	7	2	13	12
1810	0	7	6	7	4	12	9
1815	0	8	7	7	4	8	12
1820	1	8	6	5	4	8	12
1825	0	6	5	6	3	9	10

HIGHBRIDGE STREET HAS 20 CAR LENGTHS TO NEXT SITE

Waltham Abbey, Wednesday 11th October 2017

Junction: (2) Crooked Mile / Parklands / Waltham Abbey Gardens / Abbeyview

TIME	Queue Lengths (Vehicles)							
	Crooked Mile (North)		Parklands	Crooked Mile (South)		Gardens	Abbeyview	
	Lane 1	Lane 2	Lane 1	Lane 1	Lane 2	Lane 1	Lane 1	Lane 2
700	1	3	3	2	3	0	2	1
705	6	2	2	0	4	1	5	1
710	6	3	4	0	1	1	0	1
715	5	2	5	0	5	0	2	1
720	4	2	3	0	4	0	1	0
725	6	1	3	1	2	0	4	0
730	6	2	3	1	4	0	1	1
735	7	4	7	1	4	0	3	0
740	6	5	6	2	4	0	5	1
745	6	2	4	2	5	1	4	2
750	5	4	4	1	4	0	3	2
755	3	1	2	1	4	0	4	1
800	7	2	3	1	3	0	7	2
805	6	2	6	4	5	1	3	2
810	3	4	3	1	6	0	3	3
815	6	4	7	4	5	0	2	2
820	5	2	3	2	4	0	3	1
825	4	3	5	1	4	0	3	2
830	4	1	5	0	4	0	3	2
835	8	2	4	3	4	0	2	3
840	5	3	5	1	6	1	2	1
845	2	2	6	2	4	0	5	3
850	4	3	5	1	2	1	2	3
855	5	2	2	3	3	0	2	3
900	1	0	4	1	2	1	0	4
905	4	1	2	5	3	0	2	1
910	3	1	5	1	3	1	2	0
915	4	2	2	3	2	0	2	0
920	4	2	5	1	3	0	4	1
925	2	3	3	0	2	0	1	2

TIME	Queue Lengths (Vehicles)							
	Crooked Mile (North)		Parklands	Crooked Mile (South)		Gardens	Abbeyview	
	Lane 1	Lane 2	Lane 1	Lane 1	Lane 2	Lane 1	Lane 1	Lane 2
1600	2	2	3	4	4	0	5	2
1605	5	3	3	4	5	1	6	4
1610	6	3	2	3	3	0	4	2
1615	3	3	2	2	3	0	2	2
1620	2	2	3	1	6	0	6	1
1625	3	2	3	0	6	2	4	2
1630	3	3	5	5	5	0	4	3
1635	6	1	4	3	6	0	5	1
1640	2	4	4	3	5	0	3	2
1645	6	2	2	3	3	1	5	2
1650	3	1	2	1	2	1	2	1
1655	6	1	3	2	4	1	4	2
1700	2	3	3	4	4	1	4	3
1705	3	1	6	4	5	1	3	2
1710	3	2	4	3	5	1	3	3
1715	5	4	4	2	6	1	2	4
1720	6	2	2	2	5	0	3	2
1725	5	2	3	2	1	0	3	3
1730	4	1	2	1	3	1	4	3
1735	5	4	3	2	4	1	4	2
1740	8	3	1	1	2	1	5	3
1745	6	5	2	5	7	0	4	3
1750	7	3	2	5	2	1	5	3
1755	3	3	4	2	6	0	3	3
1800	5	3	2	2	2	2	5	4
1805	6	1	2	1	3	1	4	2
1810	3	2	2	2	5	0	4	3
1815	4	1	2	2	1	1	4	3
1820	4	2	2	1	5	1	2	2
1825	5	2	1	2	4	0	2	2

Waltham Abbey, Wednesday 11th October 2017

Junction: (3) Sewardstone Road / Farm Hill Road

TIME	Queue Lengths (Vehicles)					
	Sewardstone Rd (N)		Farm Hill Road		Sewardstone Rd (S)	
	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
700	7	9	6	3	3	2
705	7	9	4	4	2	1
710	3	7	6	5	3	0
715	3	7	6	5	4	1
720	4	5	8	8	7	1
725	4	4	8	8	2	3
730	5	9	8	13	3	1
735	3	9	4	15	6	3
740	7	9	6	16	2	3
745	6	6	7	15	3	4
750	7	9	5	8	3	2
755	9	9	8	10	8	4
800	7	8	12	10	7	3
805	5	9	6	10	3	5
810	8	9	10	12	4	6
815	8	9	4	12	2	4
820	5	7	8	12	5	4
825	6	9	8	12	8	7
830	2	6	10	20	4	6
835	4	9	9	18	6	4
840	9	7	7	15	3	2
845	4	9	6	14	8	3
850	4	9	6	9	4	4
855	8	7	9	12	7	3
900	7	9	9	8	4	4
905	5	8	3	8	4	3
910	7	9	11	8	2	4
915	6	9	8	10	4	3
920	9	9	8	12	3	6
925	6	8	8	10	5	2

TIME	Queue Lengths (Vehicles)					
	Sewardstone Rd (N)		Farm Hill Road		Sewardstone Rd (S)	
	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
1600	9	9	3	7	2	6
1605	7	9	8	12	4	5
1610	9	6	3	6	5	4
1615	9	9	8	12	8	8
1620	9	9	6	8	5	8
1625	9	9	6	8	3	5
1630	9	9	4	12	6	3
1635	5	9	5	14	6	5
1640	9	9	9	6	8	7
1645	9	9	5	10	5	7
1650	9	7	6	12	5	8
1655	9	6	8	10	3	7
1700	9	5	8	14	7	8
1705	9	9	8	15	8	6
1710	9	9	6	9	8	7
1715	5	6	4	12	4	8
1720	9	9	4	6	8	7
1725	9	9	5	10	4	8
1730	7	9	7	5	4	8
1735	9	9	5	4	8	5
1740	7	7	4	6	7	8
1745	9	9	4	12	4	8
1750	9	6	10	14	7	8
1755	9	9	8	14	9	8
1800	9	5	8	10	5	8
1805	9	6	3	7	2	7
1810	5	9	5	12	2	7
1815	7	9	6	15	2	4
1820	9	6	5	15	6	8
1825	9	8	6	14	4	6

SEWARDSTONE ROAD (N) HAS 9 CAR LENGTHS TO NEXT SITE
SEWARDSTONE ROAD (S) HAS 8 CAR LENGTHS TO NEXT SITE

Waltham Abbey, Wednesday 11th October 2017

Junction: (4) Fleming Road / A121 / Deer Park Way

TIME	Queue Lengths (Vehicles)			
	Fleming Road	A121 (East)	Deer Park Way	A121 (West)
700	3	0	2	2
705	3	0	2	1
710	1	0	1	2
715	0	0	1	5
720	0	0	2	5
725	3	1	1	5
730	3	0	2	6
735	0	0	1	7
740	3	0	2	5
745	3	0	1	5
750	3	0	1	7
755	0	5	2	4
800	3	0	2	7
805	0	1	3	8
810	3	1	3	11
815	2	4	4	8
820	3	1	1	5
825	0	0	1	7
830	3	0	1	6
835	0	3	3	1
840	3	2	3	4
845	3	7	1	7
850	4	0	1	4
855	3	0	1	5
900	3	0	1	0
905	3	0	0	1
910	1	2	1	6
915	0	4	1	1
920	3	0	1	1
925	4	1	1	0

TIME	Queue Lengths (Vehicles)			
	Fleming Road	A121 (East)	Deer Park Way	A121 (West)
1600	3	0	1	0
1605	1	1	1	1
1610	1	4	1	5
1615	0	0	0	3
1620	2	0	1	3
1625	1	0	1	3
1630	3	0	1	1
1635	1	0	2	5
1640	1	2	0	5
1645	3	1	0	9
1650	0	4	2	6
1655	3	2	1	2
1700	3	0	1	3
1705	3	6	1	2
1710	1	1	1	4
1715	3	1	1	1
1720	2	3	0	8
1725	1	0	1	0
1730	0	1	1	2
1735	6	1	1	3
1740	5	10	1	7
1745	1	3	1	3
1750	3	0	1	3
1755	2	1	1	0
1800	3	3	1	0
1805	4	2	2	0
1810	1	4	1	1
1815	3	0	1	2
1820	1	4	2	4
1825	3	3	4	3

Waltham Abbey, Wednesday 11th October 2017

Junction: (5) Sewardstone Road / A121

TIME	Queue Lengths (Vehicles)							
	Sewardstone Rd (N)		A121 (East)		Sewardstone Rd (S)		A121 (West)	
	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
700	10	2	8	6	2	1	4	3
705	5	1	4	3	3	1	2	1
710	8	1	7	2	3	2	3	2
715	8	1	8	8	2	1	5	5
720	2	1	6	2	3	2	5	7
725	10	3	5	2	1	0	3	1
730	12	3	9	4	4	3	2	3
735	8	1	14	2	3	1	2	2
740	10	3	7	3	9	2	3	6
745	5	2	7	3	5	0	4	3
750	8	1	7	4	4	0	3	7
755	4	0	9	3	6	0	7	13
800	10	1	10	3	3	2	3	4
805	6	1	10	5	2	1	6	2
810	10	1	7	3	4	2	6	5
815	6	2	5	3	4	1	6	5
820	8	3	7	3	4	0	4	3
825	5	2	4	1	5	1	8	5
830	7	1	6	5	3	2	5	5
835	5	1	5	2	3	1	5	4
840	9	2	9	4	6	4	7	3
845	2	2	11	3	3	2	5	5
850	6	1	4	1	8	3	9	7
855	9	1	5	2	5	3	5	5
900	5	0	3	2	4	2	4	4
905	4	0	5	3	2	1	3	1
910	6	1	7	1	6	1	2	3
915	2	0	5	3	7	0	2	2
920	2	0	5	3	4	1	2	1
925	3	0	9	1	3	0	3	4

TIME	Queue Lengths (Vehicles)							
	Sewardstone Rd (N)		A121 (East)		Sewardstone Rd (S)		A121 (West)	
	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
1600	2	0	2	1	4	2	8	3
1605	2	0	3	4	3	3	6	5
1610	5	0	4	2	1	0	6	3
1615	2	0	1	1	4	1	4	2
1620	5	2	5	2	4	3	5	2
1625	3	1	2	0	1	2	5	2
1630	5	2	6	2	6	1	4	2
1635	2	3	3	1	5	0	6	6
1640	7	1	5	1	5	0	4	3
1645	2	2	3	3	7	0	6	2
1650	4	1	2	1	3	2	5	5
1655	4	2	7	3	3	2	2	4
1700	4	2	6	1	7	2	5	5
1705	6	2	10	2	5	1	5	2
1710	8	2	8	1	2	1	4	3
1715	5	2	6	1	4	0	5	6
1720	10	2	10	2	5	1	5	3
1725	6	1	7	2	2	0	4	3
1730	4	0	5	3	7	1	4	3
1735	4	1	5	2	8	4	9	2
1740	5	3	9	2	3	0	7	3
1745	6	2	13	1	5	4	4	4
1750	5	1	7	2	10	3	6	6
1755	5	2	5	2	6	1	3	2
1800	2	2	7	3	4	2	5	2
1805	4	1	3	2	1	0	4	1
1810	4	2	5	2	4	2	4	3
1815	4	2	4	2	4	1	7	2
1820	1	2	4	1	4	1	3	3
1825	3	1	4	5	4	2	4	4

Waltham Abbey, Wednesday 11th October 2017

Junction: (6A) Old Shire Lane / Honey Lane / M25 Eastbound Slips

TIME	Queue Lengths (Vehicles)					
	Old Shire Lane	Honey Lane (East)		M25 Off Slip		Honey Lane (West)
	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1
700	3	0	2	1	2	2
705	1	3	1	0	2	5
710	2	4	0	0	3	2
715	3	4	1	1	7	7
720	5	1	2	1	10	6
725	6	3	2	2	12	7
730	3	2	1	3	3	5
735	1	2	1	1	4	3
740	3	0	0	1	3	8
745	3	1	1	0	2	3
750	3	3	2	2	2	1
755	1	1	0	1	3	3
800	2	4	1	2	3	2
805	3	2	2	1	2	2
810	2	0	0	0	5	1
815	2	1	1	1	3	3
820	1	1	1	1	2	2
825	1	3	1	1	4	2
830	3	4	1	1	3	1
835	1	7	1	1	3	1
840	2	3	1	3	2	2
845	1	0	1	1	2	4
850	3	1	4	1	3	5
855	3	2	1	0	3	3
900	2	2	3	2	6	1
905	2	4	1	1	3	2
910	2	1	1	2	2	3
915	1	0	1	3	3	2
920	0	0	0	2	3	2
925	1	0	0	1	5	2

TIME	Queue Lengths (Vehicles)					
	Old Shire Lane	Honey Lane (East)		M25 Off Slip		Honey Lane (West)
	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1
1600	1	4	1	1	4	1
1605	2	1	2	2	4	2
1610	3	4	2	2	3	3
1615	1	3	3	2	4	4
1620	1	1	1	0	5	2
1625	1	4	1	2	5	3
1630	1	3	2	3	3	4
1635	1	3	2	0	4	3
1640	1	2	1	5	5	3
1645	1	1	3	2	4	3
1650	1	3	4	2	6	3
1655	3	4	1	3	6	2
1700	3	3	3	2	6	4
1705	1	2	2	2	4	3
1710	1	3	1	2	7	3
1715	1	1	0	2	5	2
1720	2	2	2	3	9	2
1725	1	3	2	2	6	2
1730	1	3	3	8	6	3
1735	2	5	1	6	7	2
1740	3	5	1	2	5	1
1745	2	3	2	1	5	2
1750	3	3	3	2	4	2
1755	2	3	5	3	6	3
1800	0	2	2	2	6	3
1805	1	1	2	3	4	2
1810	3	1	2	1	8	3
1815	2	1	2	8	8	4
1820	1	1	1	2	12	4
1825	1	1	0	6	11	3

Waltham Abbey, Wednesday 11th October 2017

Junction: (6B) Honey Lane / M25 Westbound Slips / A121

TIME	Queue Lengths (Vehicles)				
	Honey Lane	M25 Off Slip		A121 (East)	A121 (West)
	Lane 1	Lane 1	Lane 2	Lane 1	Lane 1
700	5	8	4	9	12
705	0	7	9	16	9
710	18	22	19	25	14
715	60	34	24	41	8
720	60	54	30	81	10
725	60	67	30	109	8
730	60	52	30	105	12
735	52	54	30	158	7
740	60	63	30	230	4
745	60	74	30	230	10
750	45	71	30	230	6
755	37	60	30	230	15
800	5	36	30	230	10
805	1	33	30	230	18
810	4	9	8	230	16
815	2	6	7	230	12
820	1	8	6	230	11
825	4	6	5	230	8
830	2	6	6	230	15
835	1	13	7	230	8
840	1	5	4	230	10
845	6	9	4	230	7
850	3	8	5	230	4
855	3	19	6	230	8
900	2	22	10	230	10
905	0	6	7	230	8
910	2	5	4	160	12
915	0	9	5	100	5
920	3	4	3	55	9
925	0	5	2	24	6

TIME	Queue Lengths (Vehicles)				
	Honey Lane	M25 Off Slip		A121 (East)	A121 (West)
	Lane 1	Lane 1	Lane 2	Lane 1	Lane 1
1600	3	3	3	9	12
1605	3	4	3	20	7
1610	3	4	3	22	20
1615	2	7	4	21	20
1620	2	5	2	19	7
1625	3	4	4	24	8
1630	5	3	3	26	7
1635	12	13	6	26	7
1640	7	7	4	29	6
1645	4	21	18	35	11
1650	12	12	11	39	10
1655	12	15	12	51	8
1700	3	14	11	69	7
1705	4	20	16	100	14
1710	18	11	8	121	16
1715	57	12	11	174	20
1720	42	5	7	232	20
1725	30	14	6	190	20
1730	30	11	9	150	12
1735	60	12	7	135	18
1740	30	21	14	159	15
1745	57	29	21	165	20
1750	25	36	27	151	25
1755	30	35	30	179	25
1800	30	43	30	200	12
1805	38	46	30	226	8
1810	60	31	17	160	15
1815	60	15	14	90	22
1820	60	17	15	40	10
1825	60	14	5	25	4

Honey Lane is 60 to next site
A121 (East) large queues are seen on this lane . Slow moving traffic and stationary traffic is seen back at Site 7 - 07:23 - 09:18.
The same traffic is also seen back at Site 8 - 07:40 - 09:10.
The same happens in the afternoon Site 7 - 17:09- 18:20
and Site 8 18:05 - 18:06

Waltham Abbey, Wednesday 11th October 2017

Junction: (7) Woodgreen Road / A121 / Forest Side

TIME	Queue Lengths (Vehicles)	
	Woodgreen Rd	Forest Side
700	3	2
705	6	4
710	5	3
715	5	5
720	6	4
725	7	5
730	7	4
735	12	6
740	6	8
745	9	5
750	9	6
755	6	7
800	12	5
805	15	5
810	16	18
815	6	9
820	4	9
825	4	16
830	1	17
835	3	13
840	4	7
845	9	10
850	6	6
855	4	9
900	7	10
905	6	3
910	4	3
915	2	4
920	3	6
925	6	7

TIME	Queue Lengths (Vehicles)	
	Woodgreen Rd	Forest Side
1600	12	13
1605	15	2
1610	16	12
1615	6	5
1620	4	9
1625	4	5
1630	1	6
1635	3	7
1640	4	7
1645	9	6
1650	6	7
1655	4	5
1700	2	7
1705	6	4
1710	1	7
1715	5	5
1720	3	4
1725	3	6
1730	5	8
1735	5	9
1740	1	5
1745	2	9
1750	3	3
1755	7	7
1800	4	4
1805	2	7
1810	2	10
1815	3	9
1820	3	5
1825	3	4

Waltham Abbey, Wednesday 11th October 2017

Junction: (8) Woodredon Farm Lane / A121 Woodriven Hil

TIME	Queue Lengths (Vehicles)	
	Woodreddon Farm Ln	A121 (East)
700	0	0
705	0	0
710	0	1
715	0	0
720	0	0
725	0	0
730	0	0
735	0	0
740	2	0
745	1	0
750	0	0
755	1	0
800	2	1
805	0	0
810	0	1
815	0	0
820	0	0
825	0	0
830	1	0
835	0	1
840	0	0
845	0	0
850	0	0
855	5	0
900	0	0
905	0	0
910	3	0
915	0	1
920	0	1
925	0	1

TIME	Queue Lengths (Vehicles)	
	Woodreddon Farm Ln	A121 (East)
1600	0	0
1605	0	1
1610	3	0
1615	1	1
1620	4	0
1625	6	1
1630	0	0
1635	0	1
1640	1	1
1645	2	4
1650	0	1
1655	0	0
1700	3	1
1705	0	1
1710	0	0
1715	0	0
1720	2	0
1725	0	0
1730	0	0
1735	3	0
1740	0	2
1745	0	2
1750	0	0
1755	0	0
1800	0	0
1805	1	1
1810	0	0
1815	0	2
1820	0	0
1825	0	1

Waltham Abbey, Wednesday 11th October 2017

Junction: (9) Wake Arms Roundabout

TIME	Queue Lengths (Vehicles)					
	Epping Rd (N)		B172	Golding's Hill	Epping Rd (S)	Woodridden Hill
	Lane 1	Lane 2	Lane 1	Lane 1	Lane 1	Lane 1
700	3	14	8	30+	6	8
705	8	17	7	30+	6	6
710	7	9	6	30+	7	15
715	8	10	9	30+	6	8
720	4	8	6	30+	5	8
725	11	15	12	30+	9	18
730	5	13	15	30+	10	32
735	11	6	16	30+	8	40
740	11	16	15	30+	24	48
745	4	7	13	30+	22	65
750	5	10	12	30+	7	73
755	8	16	8	21	9	70
800	11	18	10	15	4	85
805	10	18	5	20	7	89
810	8	12	9	30+	12	93
815	9	10	11	30+	13	107
820	7	13	10	30+	5	107
825	5	9	10	30+	6	90
830	7	7	7	30+	8	94
835	5	11	6	30+	9	78
840	5	6	7	30+	8	55
845	9	6	8	30+	7	49
850	3	6	6	19	6	38
855	8	12	6	10	7	31
900	4	6	4	7	7	22
905	7	6	5	8	7	18
910	5	13	4	12	6	10
915	4	5	6	8	8	14
920	3	4	4	6	6	12
925	5	3	3	9	8	21

TIME	Queue Lengths (Vehicles)					
	Epping Rd (N)		B172	Golding's Hill	Epping Rd (S)	Woodridden Hill
	Lane 1	Lane 2	Lane 1	Lane 1	Lane 1	Lane 1
1600	3	4	4	11	40+	27
1605	3	5	4	6	33	25
1610	4	10	7	13	20	32
1615	3	6	5	15	28	20
1620	5	9	4	23	40+	57
1625	7	7	2	16	40+	69
1630	4	8	3	7	35	87
1635	4	4	4	10	14	107
1640	5	6	5	16	13	107
1645	6	13	4	25	18	107
1650	7	9	7	30+	20	107
1655	8	10	4	16	19	107
1700	7	8	4	7	13	107
1705	8	15	4	14	28	107
1710	5	10	4	23	40+	90
1715	4	7	4	30+	40+	87
1720	5	9	4	30+	40+	84
1725	7	16	3	30+	40+	71
1730	6	11	4	30+	40+	65
1735	5	11	5	30+	40+	64
1740	8	8	2	30+	40+	53
1745	5	11	4	30+	40+	56
1750	6	6	5	30+	40+	43
1755	2	5	2	30+	40+	39
1800	4	7	3	30+	40+	25
1805	5	6	5	6	40+	13
1810	2	5	2	8	29	24
1815	3	3	4	11	37	18
1820	2	4	5	8	18	23
1825	4	4	2	7	10	20

Woodridden Hill - when figures equal 107 queues go back to site 8

30+ and 40+ were recorded when the queues went out of site but there may have been an additional queue/ slow moving traffic less than 10mph beyond this point

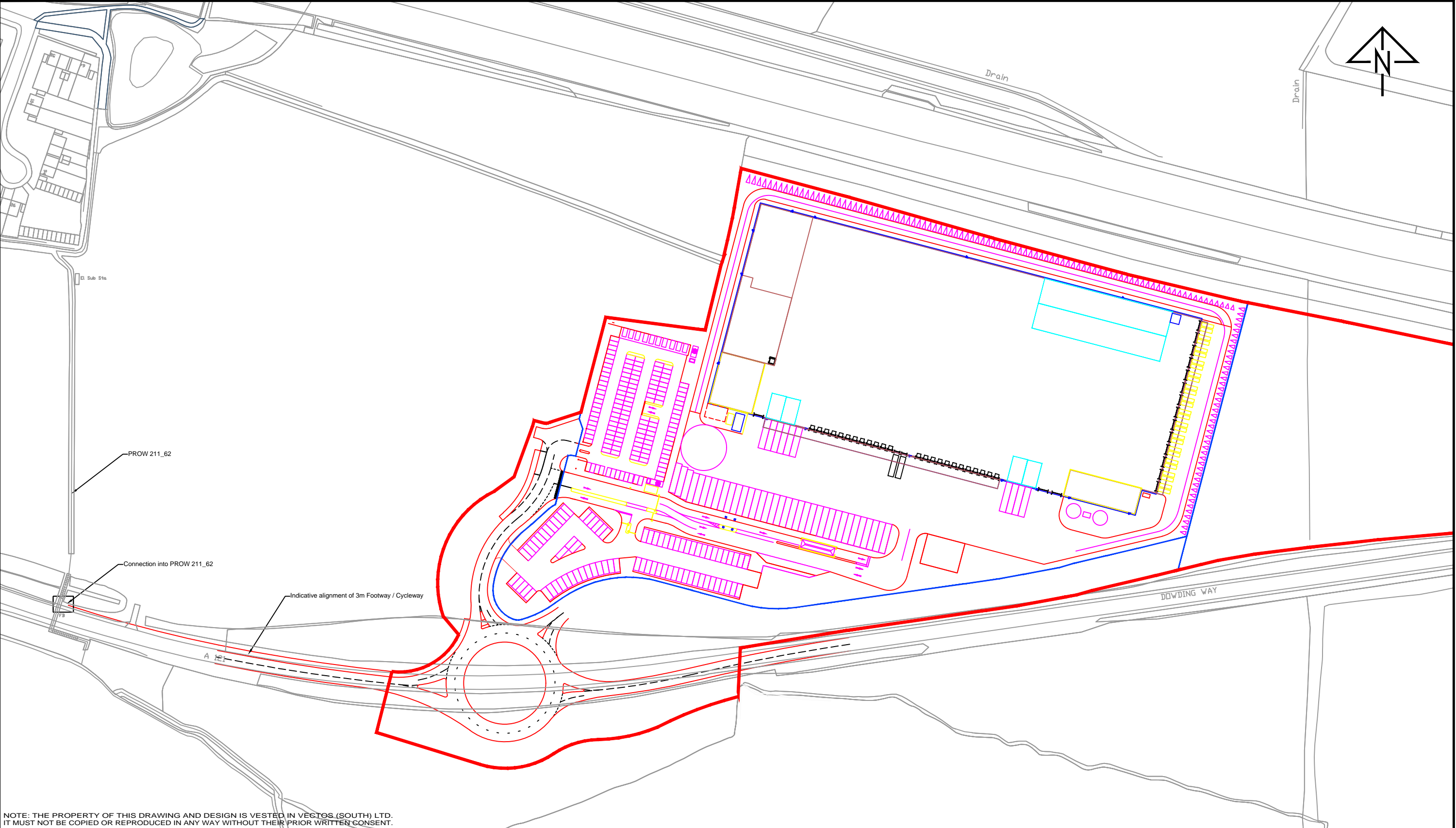
Waltham Abbey, Wednesday 11th October 2017

Junction: (10) A110 / A112

	Queue Lengths (Vehicles)											
	A110 (North)				A112 (East)			A110 (South)			A112 (West)	
TIME	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
700	1	12	5	19	23	1	13	3	22	3		
705	2	20	10	1	24	2	15	4	27	5		
710	0	17	11	1	32	3	8	3	28	6		
715	0	10	20	0	29	1	15	3	23	2		
720	0	8	20	2	28	2	9	5	26	6		
725	1	9	18	1	24	2	11	7	1	28		
730	2	14	18	0	21	1	18	5	7	22		
735	2	7	20	1	18	3	14	4	18	10		
740	2	6	18	3	13	3	18	3	22	6		
745	1	9	16	0	24	1	17	6	20	7		
750	3	7	12	1	9	5	13	5	28	5		
755	4	9	8	1	17	1	11	4	19	10		
800	2	12	7	1	22	1	19	6	13	3		
805	4	4	8	2	13	2	13	4	13	2		
810	2	8	8	3	11	2	13	6	20	2		
815	4	8	15	0	7	3	12	6	18	7		
820	1	8	14	0	14	8	9	4	9	23		
825	1	5	8	2	12	6	13	3	21	7		
830	2	6	12	1	6	3	8	6	18	3		
835	6	4	8	2	7	5	15	4	23	5		
840	3	7	20	1	13	6	16	4	12	6		
845	2	2	18	0	16	2	27	5	15	7		
850	2	8	7	2	12	2	13	7	27	6		
855	1	10	5	0	10	2	14	2	30	6		
900	1	7	9	0	11	4	6	4	35	10		
905	2	10	4	2	10	2	12	4	30	32		
910	2	7	7	0	15	1	14	3	28	4		
915	1	8	6	1	15	1	7	3	30	8		
920	6	5	2	1	12	2	8	3	24	6		
925	1	8	6	0	15	3	13	5	25	8		

	Queue Lengths (Vehicles)									
	A110 (North)			A112 (East)			A110 (South)		A112 (West)	
TIME	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 1	Lane 2
1600	2	11	2	2	5	5	13	5	36	6
1605	2	8	6	3	10	5	18	6	32	5
1610	1	5	6	1	9	1	21	6	29	8
1615	2	4	16	3	12	3	22	4	27	4
1620	4	12	6	1	11	6	23	9	31	4
1625	1	8	4	1	11	6	22	5	27	9
1630	3	8	4	1	10	5	28	7	25	8
1635	2	5	6	2	9	4	23	3	24	6
1640	1	6	14	2	8	4	29	4	27	4
1645	4	4	9	3	13	4	33	4	29	6
1650	1	8	16	0	10	3	25	5	25	5
1655	0	9	16	0	15	1	25	4	22	6
1700	3	12	7	1	9	1	18	5	29	6
1705	4	15	2	0	17	4	18	4	29	2
1710	2	15	2	1	11	3	9	3	31	2
1715	2	7	2	2	10	4	12	5	26	4
1720	3	12	7	0	10	2	14	6	27	26
1725	3	12	2	3	13	6	13	3	30	7
1730	2	16	10	1	10	4	16	6	36	3
1735	0	14	10	0	8	3	18	7	31	5
1740	0	16	6	0	12	3	22	5	27	4
1745	2	12	8	0	12	5	25	6	30	3
1750	2	12	4	0	12	4	24	6	32	6
1755	3	12	4	3	10	4	23	4	28	8
1800	3	12	2	2	7	5	16	5	22	8
1805	4	16	1	0	12	8	13	2	24	7
1810	5	15	9	0	9	4	19	5	28	3
1815	3	10	8	1	15	3	16	5	29	5
1820	2	12	9	0	6	3	26	4	26	7
1825	1	9	1	3	6	4	20	3	22	4

APPENDIX D



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REV.	DETAILS	DRAWN	CHECKED	DATE
A	Exclusion Area Amended	AP	MT	21.03.18
B	Exclusion Area / Scale Amended	AP	MT	22.03.18
C	Roundabout arms re-configured	AW	MT	23.04.18
D	Architects update, 12m bus provisions	AW	MT	27.04.18
E	Van park arrangement alteration	AW	CNE	02.05.18
F	Footway connections	CNE	CNE	04.05.18
G	Site updated	CNE	CNE	16.05.18

1. This is not a construction drawing and is intended for illustrative purposes only.
2. White lining is indicative only.

Project Buzz

Proposed Site Access Roundabout
64m ICD


DRAWN:
AP

CHECKED:
MT

DATE:
12.03.18

SCALES:
1 : 2,000 at A3

Next plc & Trinity Hall

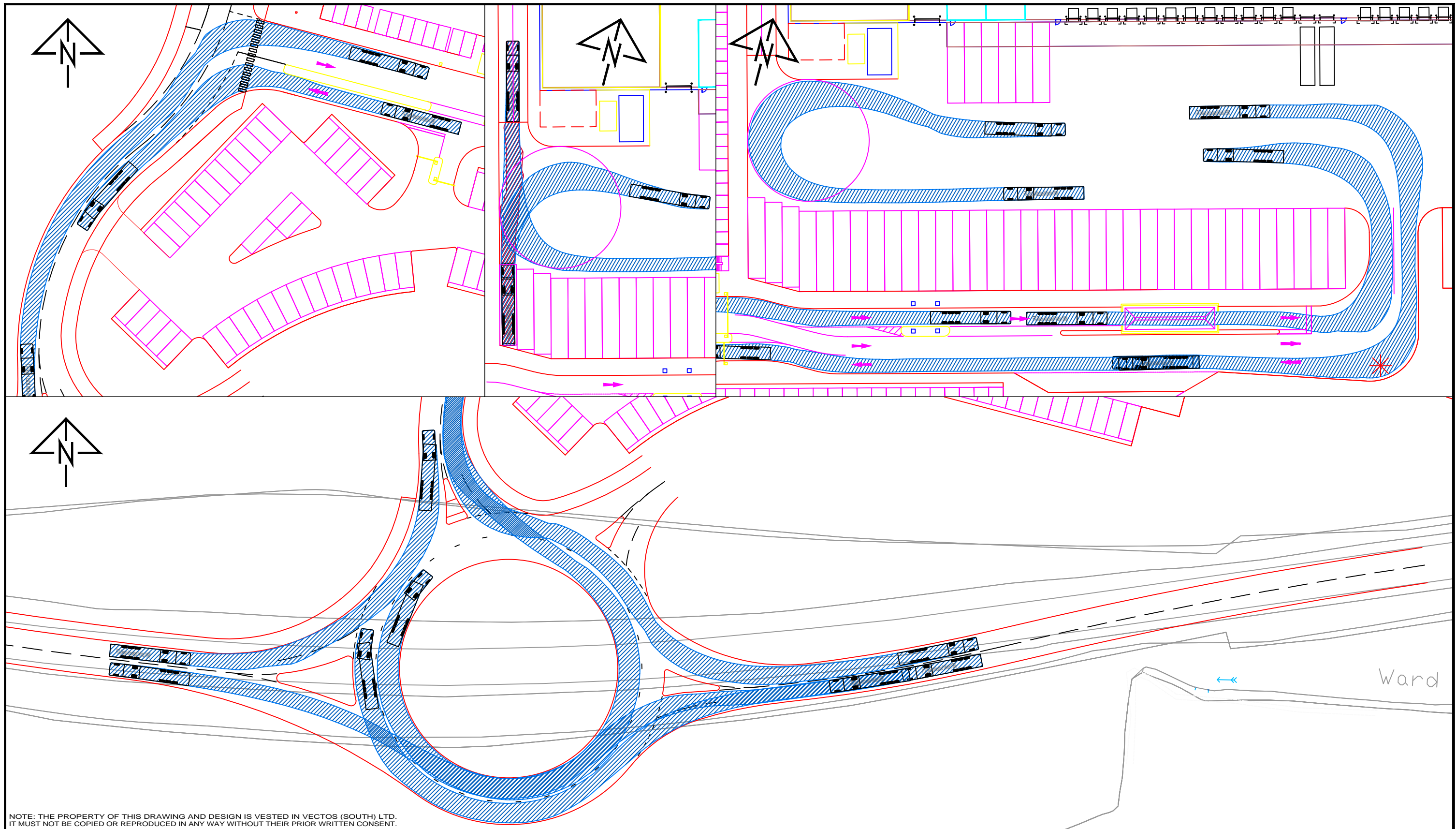


10th Floor, Belmont House, Churchill Way, Cardiff CF10 2HE
t: 02920 720 860 e: enquiries@vectos.co.uk

DRAWING NUMBER:
173131_A09

REVISION:
G

APPENDIX E



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REV.	DETAILS	DRAWN	CHECKED	DATE

1. This is not a construction drawing and is intended for illustrative purposes only.
2. White lining is indicative only.

Project Buzz

Site Access Roundabout
64m ICD
Swept Path Analysis : 16.5m Articulated

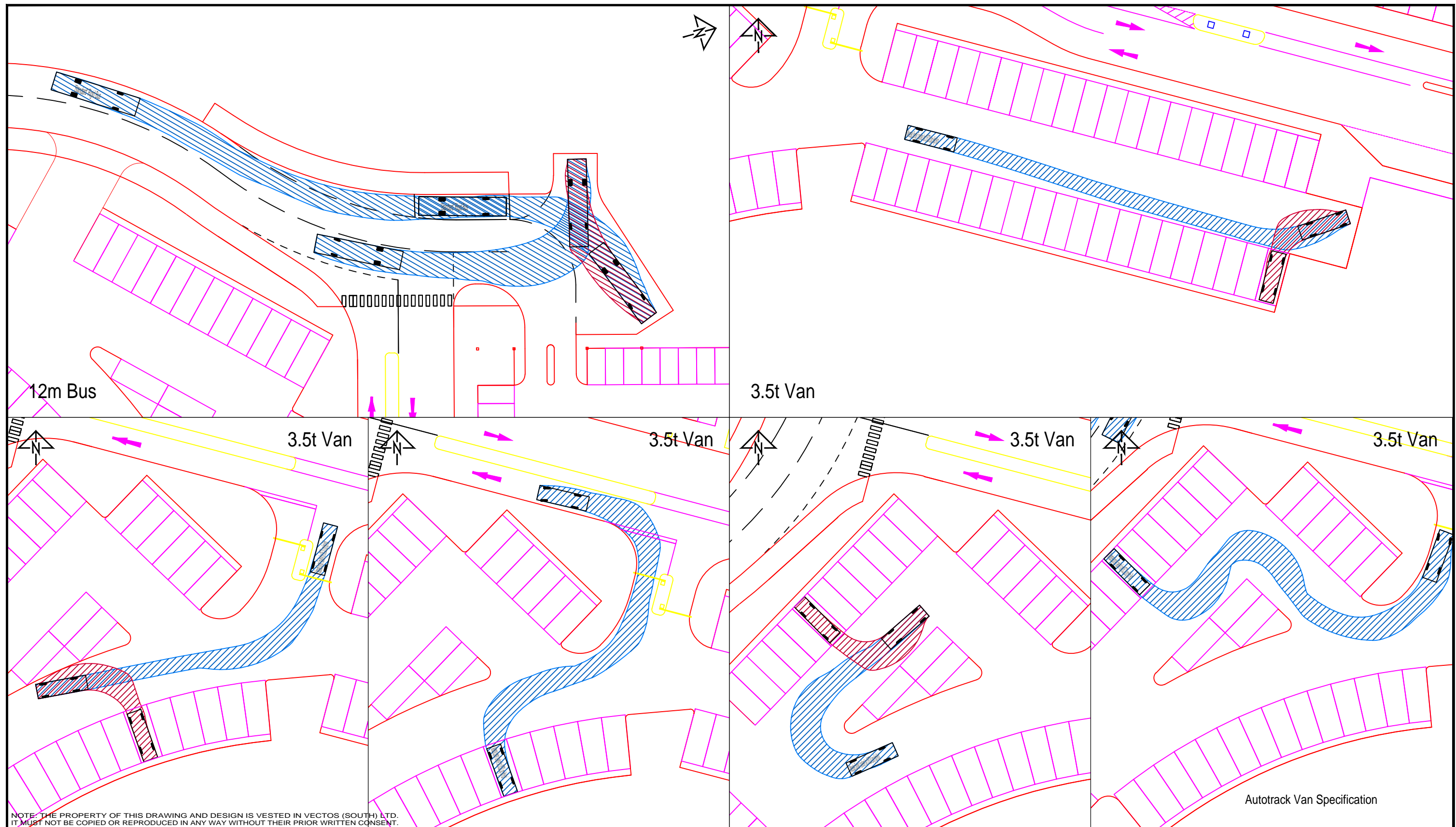
DRAWN: AP	CHECKED: MT	DATE: 12.03.18	SCALES: 1 : 1,000 at A3
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NEXT Holdings Ltd & Trinity Hall College




10th Floor, Helmont House, Churchill Way, Cardiff CF10 2HE
t: 02920 720 860 e: enquiries@vectos.co.uk

DRAWING NUMBER: 173131_AT_A09a	REVISION:
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REV.	DETAILS	DRAWN	CHECKED	DATE	
					1. This is not a construction drawing and is intended for illustrative purposes only. 2. White lining is indicative only.

Project Buzz				NEXT Holdings Ltd & Trinity Hall College	
Bus Turning Facility & Van Park Swept Path Analysis : 12m Bus and 3.5t Van					
DRAWN: AP	CHECKED: MT	DATE: 12.03.18	SCALES: 1 :500 at A3	DRAWING NUMBER: 173131_AT_A09B	REVISION:



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APPENDIX F

About ArrivaClick

- Arriva aim is to be the 'mobility partner of choice'
- One pillar of our strategy is focused on innovation to shape and grow the market in partnership with our transport partners. Over the past 5 years we have looked at new ways to complement our traditional bus and train networks.
- For example, Arriva Transport Solutions operate specialist transport on behalf of the NHS with full contact centre capabilities.
- We believe that Arriva Click with its demand responsive capabilities is another product that can operate in partnership with our core business and partners.

14

countries



62,000

employees



+2.2bn

passenger
journeys a year



- We are one of the largest providers of passenger transport in Europe.
- We are part of Deutsche Bahn (DB) and responsible for DB's regional passenger transport services outside Germany.
- We have unrivalled pan-European passenger transport experience.
- We deliver transport solutions for local and national authorities, tendering bodies and health care commissioners.
- We are experts in creating innovative transport solutions that link people, communities and economies.



Principle of on-demand transport

On demand transport **aggregates** people travelling from multiple origins to multiple destinations in an exceptionally **efficient** way, providing the **convenience** and the **flexibility** of a customised on demand journey.

A

Customer



1. Request journey via app
2. Choose pick-up and drop-off point, number of passengers etc.
3. Receive and then confirm a binding offer
4. Get confirmation, info about the ride and further instructions

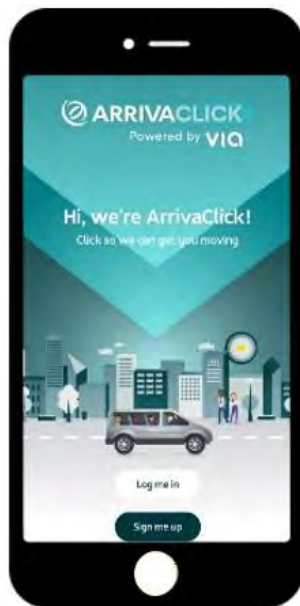
B

System

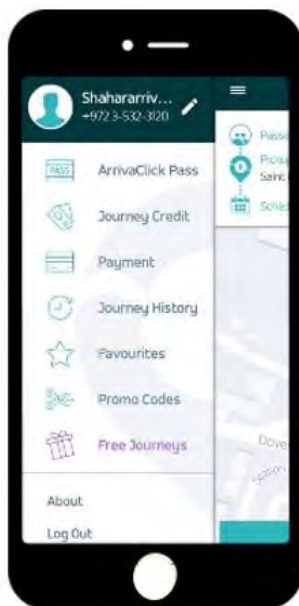


1. Process request
2. Match journeys
3. Send binding offer
4. Adjust routing and display new route to driver

Powered by an App with an intuitive design



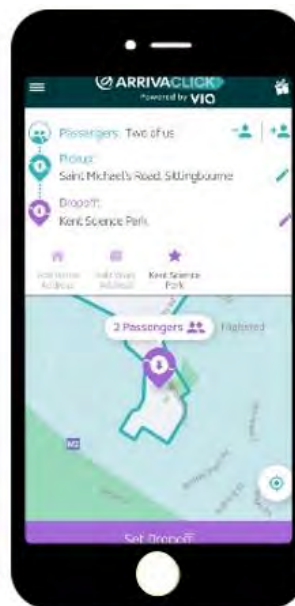
Powered by our technology partner Via Transportation



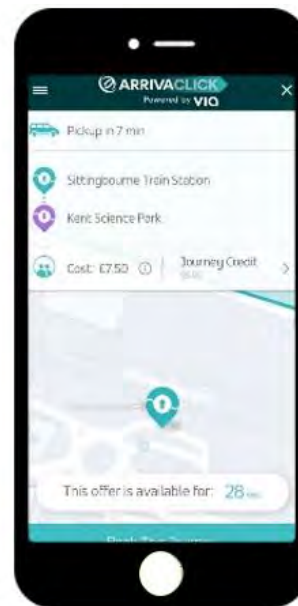
Users buy season tickets, credit or pay as they go



The app guides you to the nearest virtual bus stop



Travel on your own or groups of up to 6 people



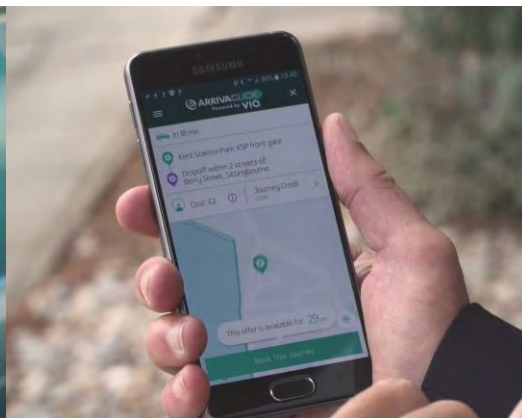
See the price & ETA before confirming booking

Customer Proposition



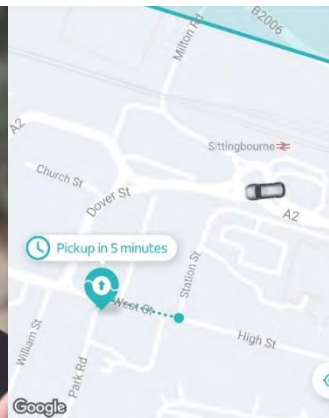
On-demand

Customers can book a journey in real-time, when and where they want it, but also have the option to pre-book journeys.



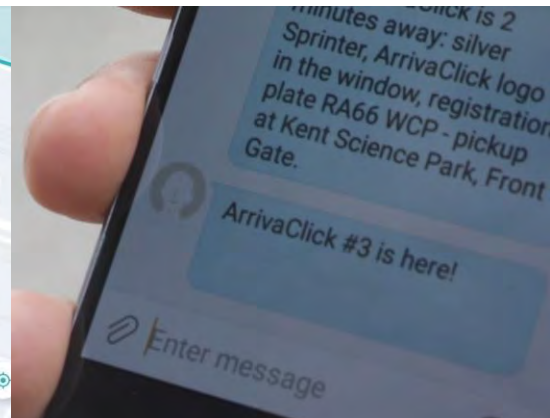
Transparency

Customers are given an ETA and flat fare before they book their journey.



Trackability

Customers can track their vehicle en route.



Communication

Customers are always “in touch” with the service via the app (SMS and phone call).

Customer Proposition



Convenience

Cashless payments – customers pay automatically via their credit or debit card in-app.



Quality

Mercedes Sprinter minibuses with 12 leather seats, two tables and a wheelchair space. USB charging points and free Wi-Fi are provided.



Accessibility

Wheelchair users inform the app when booking, so a vehicle with space is allocated to the customer.



Excellent Customer Service

Customers are greeted by their first name and welcomed onto the vehicle by the driver.

ArrivaClick Sittingbourne in numbers

Operations launched in

**March
2017**

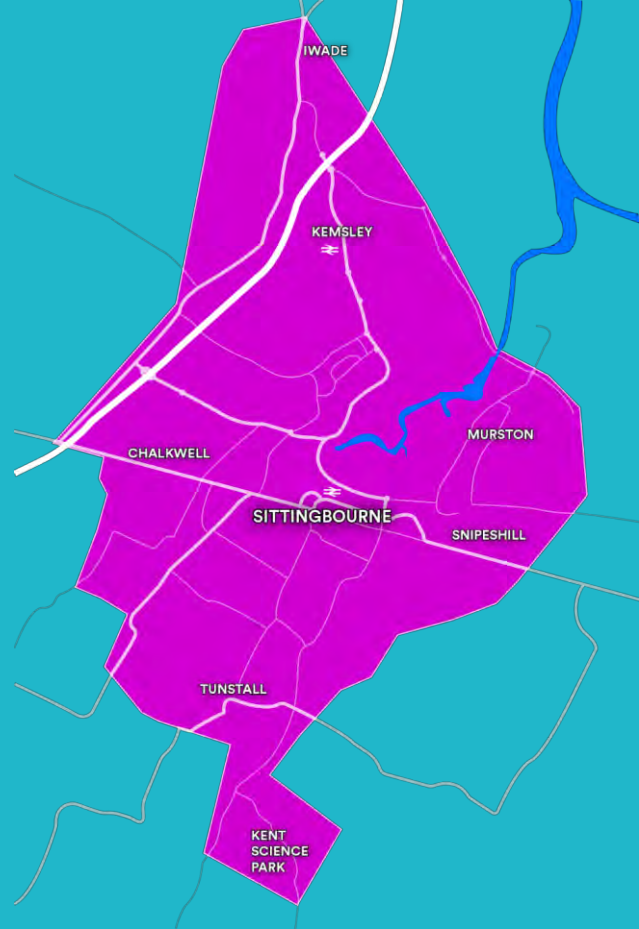
12%
of addressable
market has
downloaded the
app

Average
Estimated Time of
Arrival

10
Minutes

Over
58,000
journeys
completed

Over
9,500
app
downloads



Customer Survey Highlights

40% of users are
aged between:
25 – 44
years old

82% of ArrivaClick users have
swapped from modes other than
traditional bus (car, taxi, etc.)

Average ride satisfaction
rating in Year 1:

4.8/5

9 out of **10** users
would recommend
ArrivaClick to a friend

71% of users travel with ArrivaClick
because it is
an on-demand app



Linking the distribution centre to Waltham Abby,
Cheshunt, Waltham Cross and Hoddesdon.

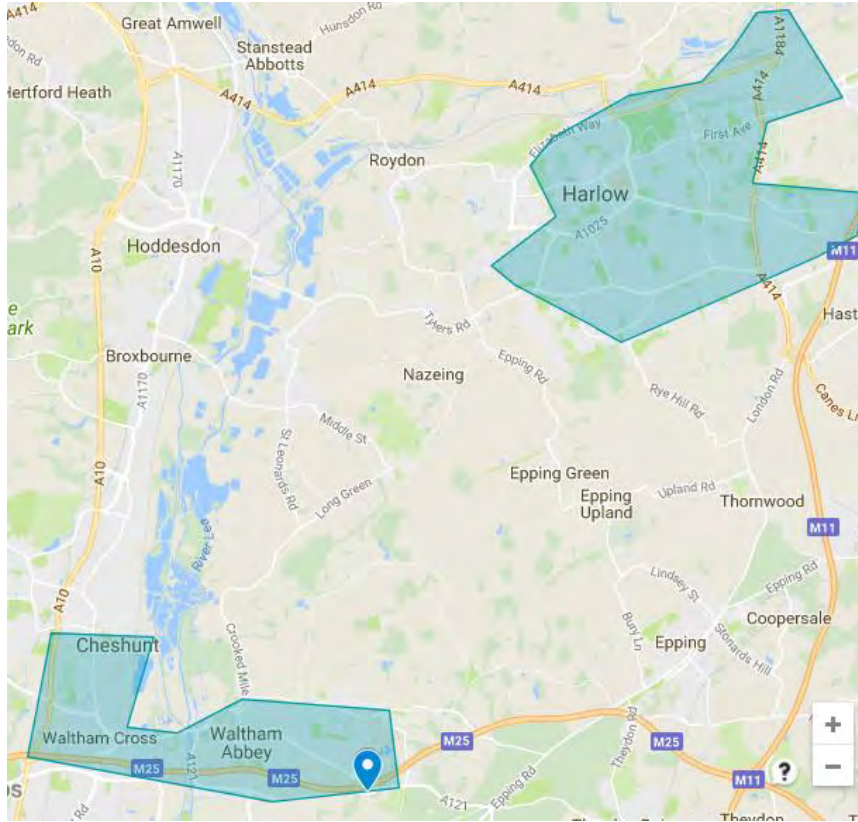
- 



Option 2

Linking the distribution centre to Waltham Abbey, Cheshunt, Waltham Cross, Theydon Bois and Epping.

- Population of operating area: 95,000 people
- Area: 28km Squared
- Population Density: 3390 per sq. km
- Maximum ETA: 20 minutes
- Vehicles Required: 5 vehicles
- Operating Time: 5am – 1am, 7 days a week
- Connecting to 3 railway stations and 2 underground stations (Cheshunt Overground, Waltham Cross, Theobalds Grove Overground, Epping Underground, Theydon Bois)

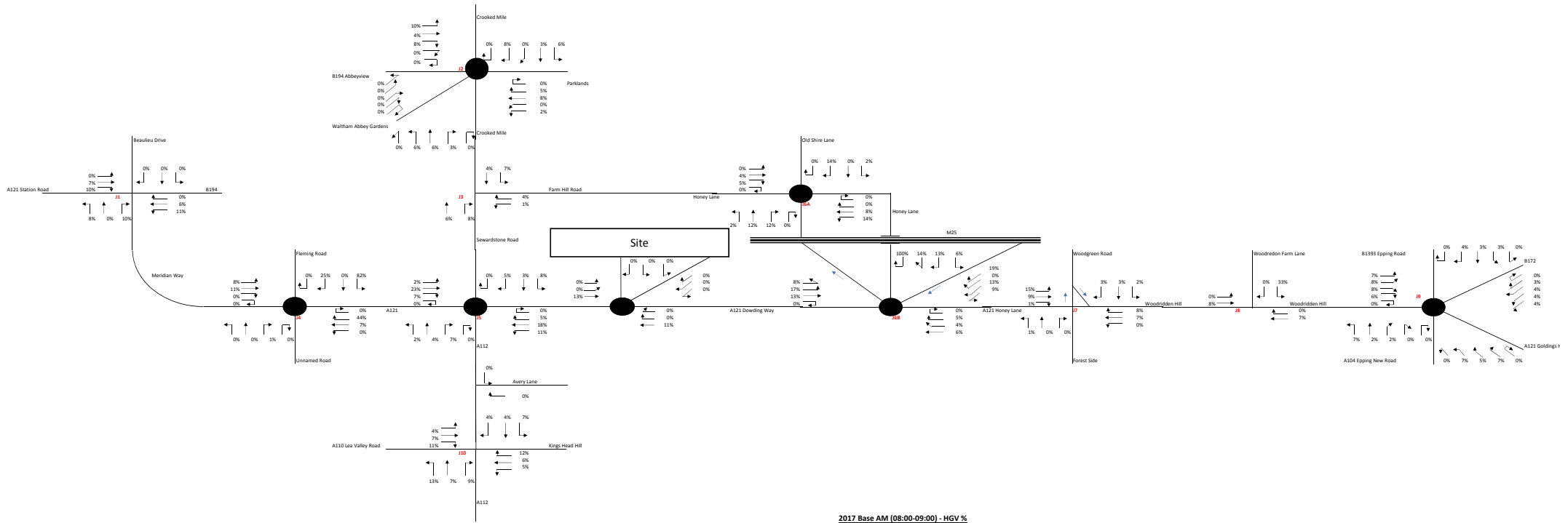


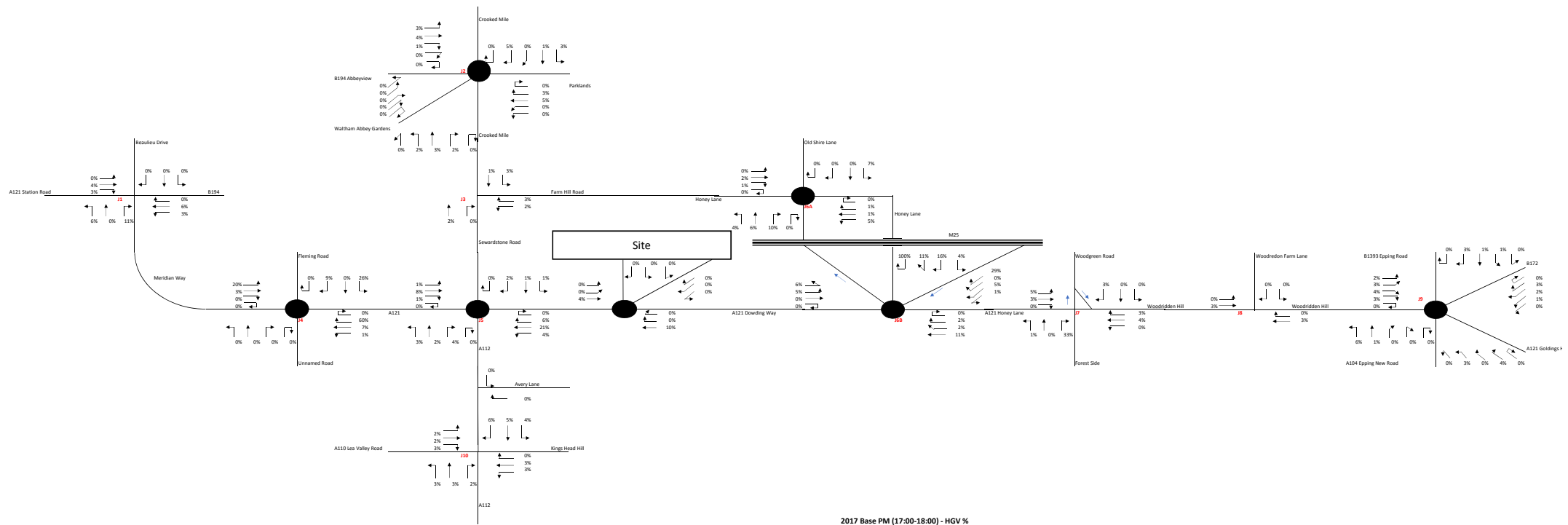
Option 3

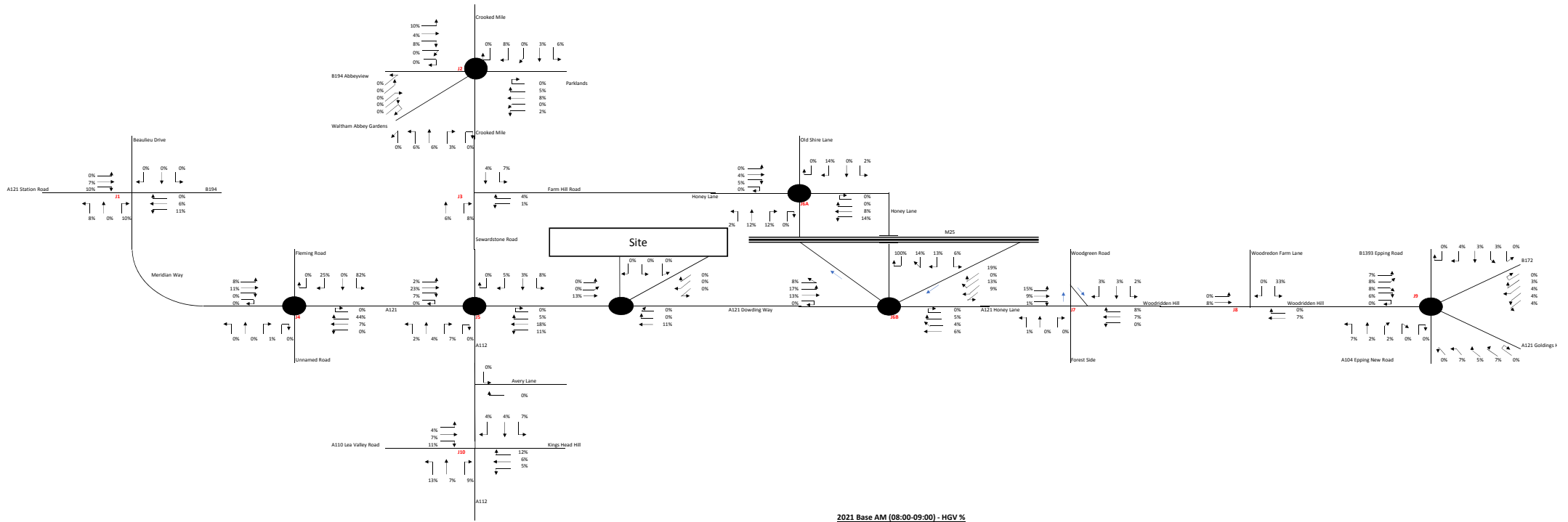
Linking the distribution centre to Waltham Abby, Cheshunt, Waltham Cross to an external zone in Harlow.

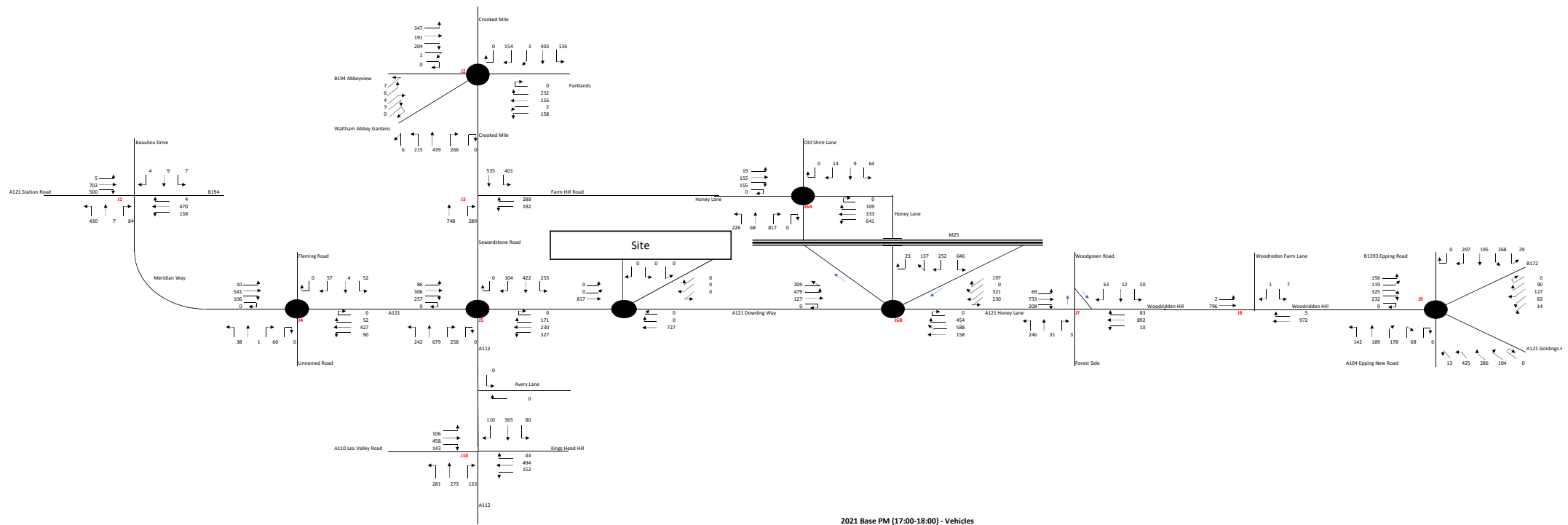
- Population of operating area: 150,000 people
- Area combined: 30km Squared – 12km apart
- Population Density: 5000 per sq. km
- Maximum ETA: 30 minutes
- Vehicles Required: 5 vehicles
- Operating Time: 5am – 1am, 7 days a week
- Connecting to 5 railway stations (Cheshunt Overground, Waltham Cross, Harlow Town, Harlow Mill)

APPENDIX G

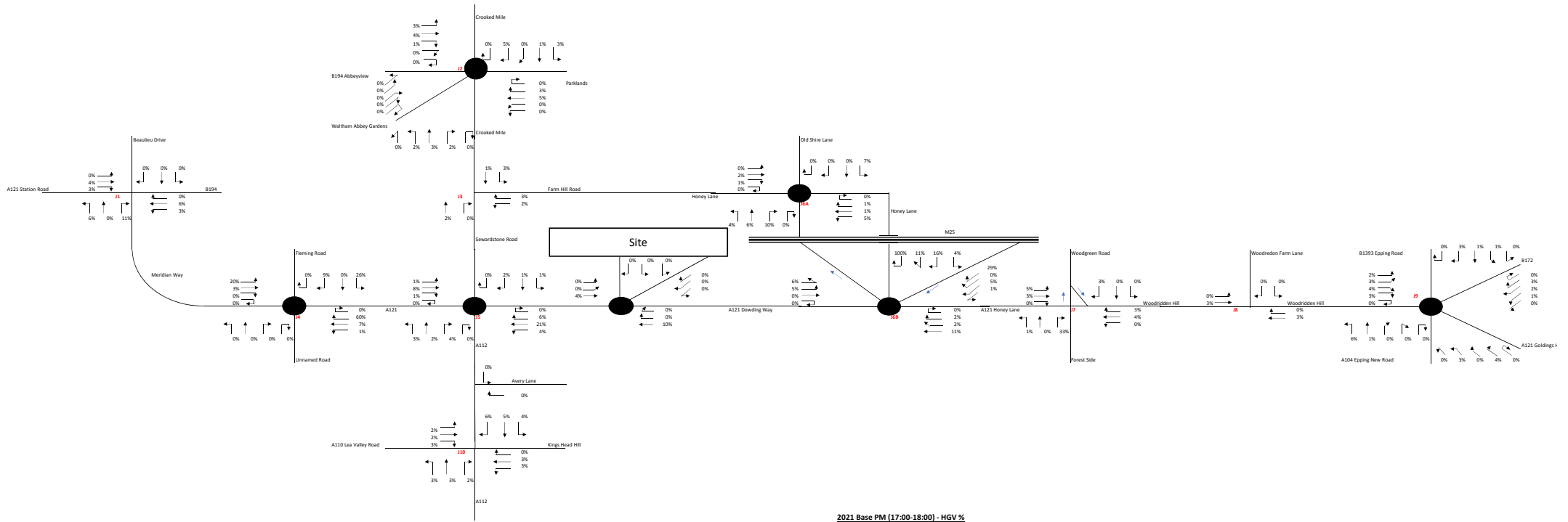




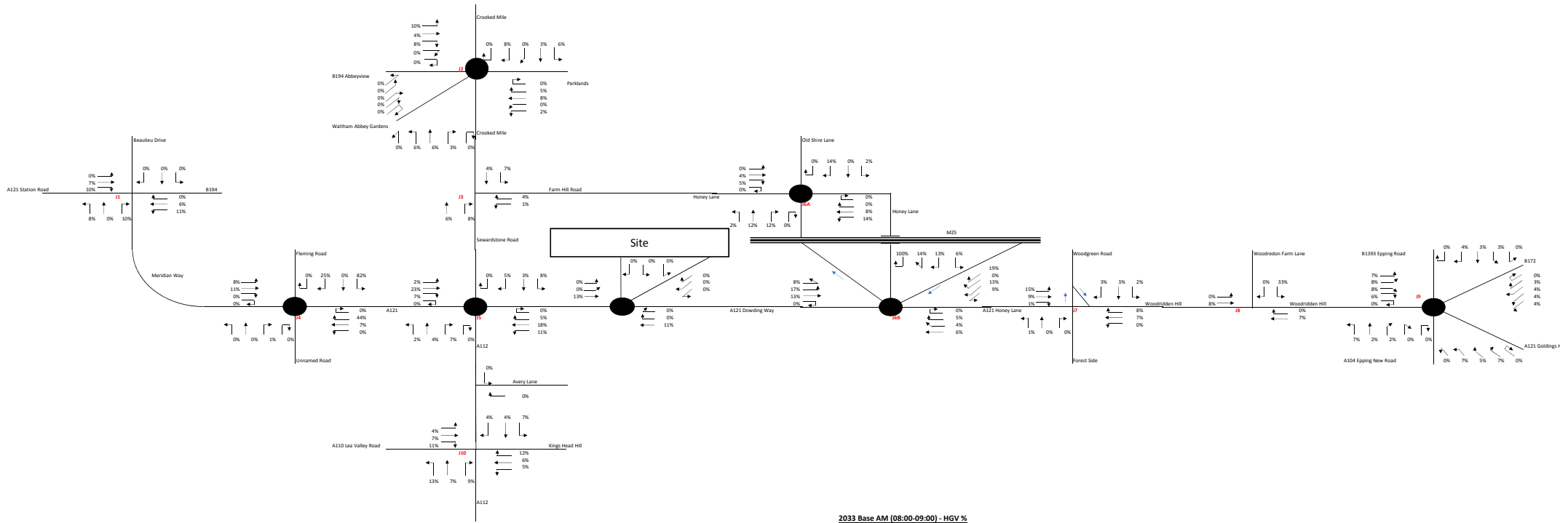


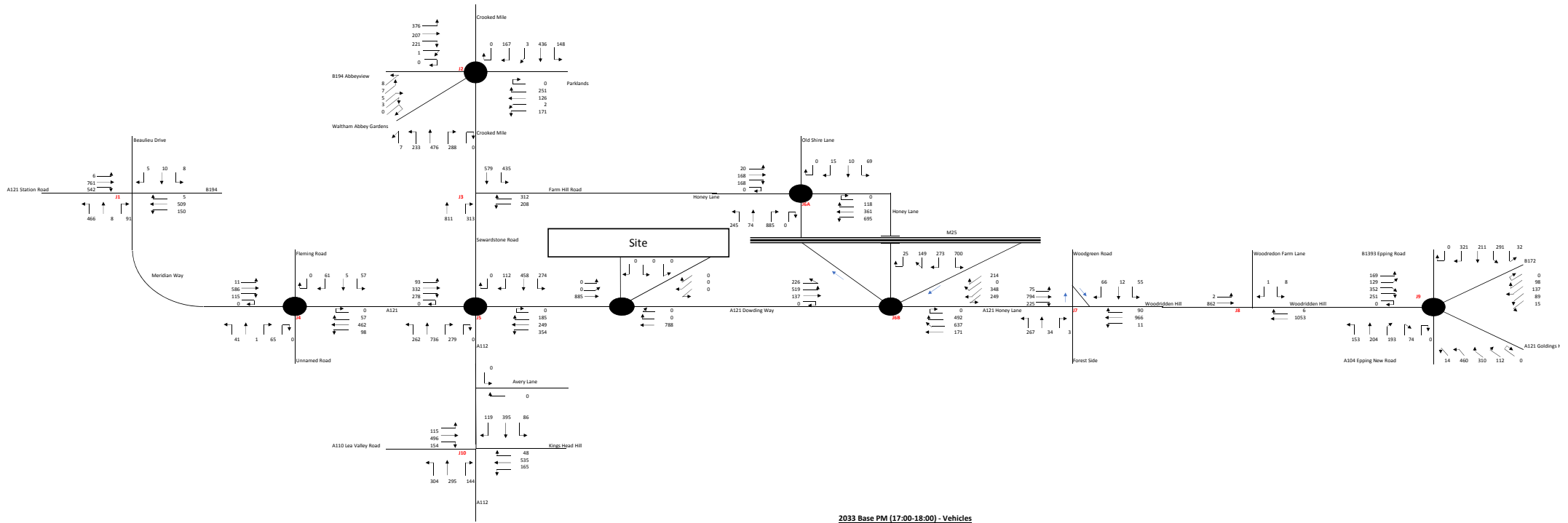


2021 Base PM (17:00-18:00) - Vehicles

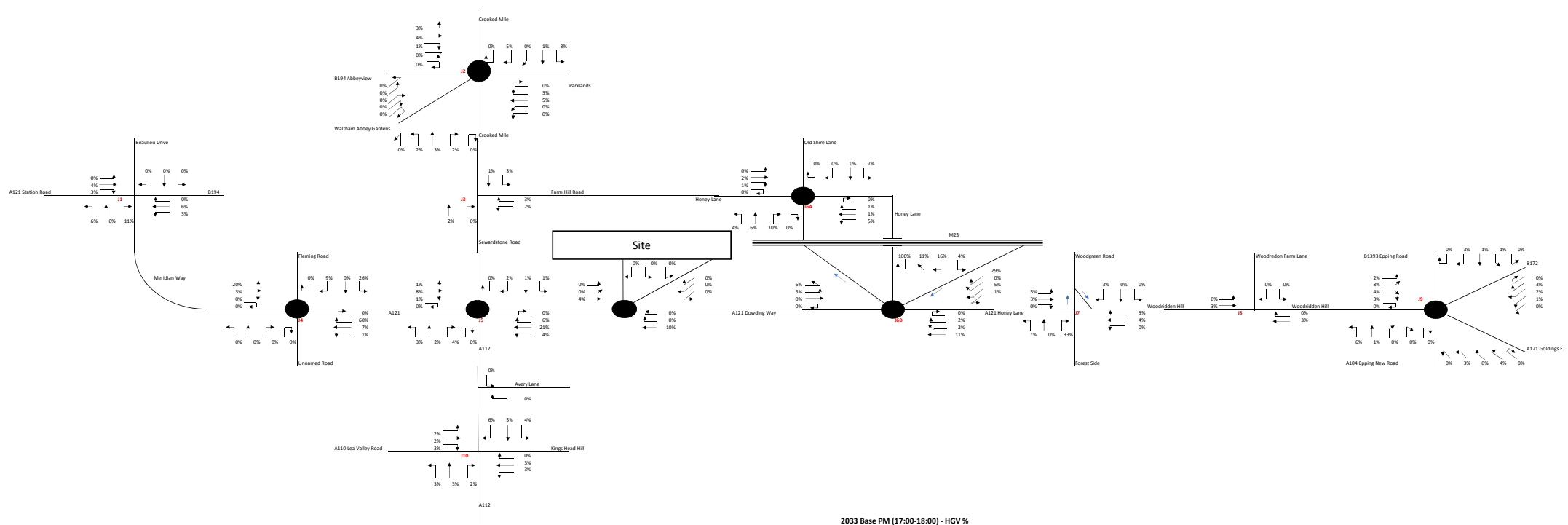


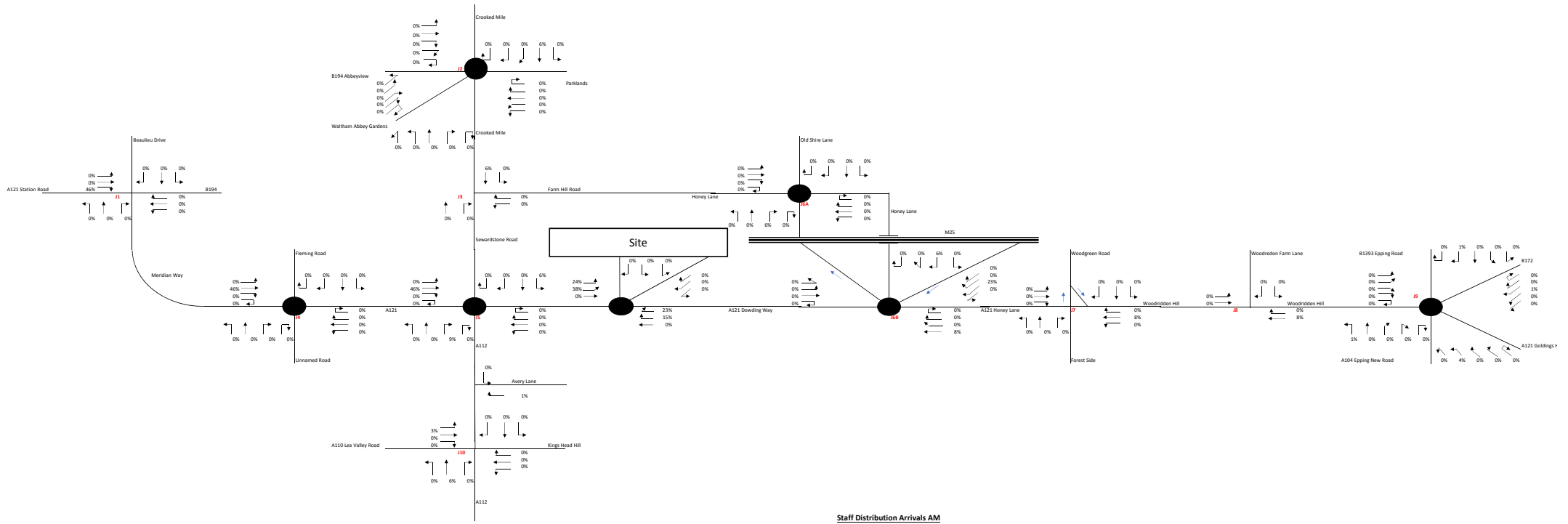
2021 Base PM (17:00-18:00) - HGV %



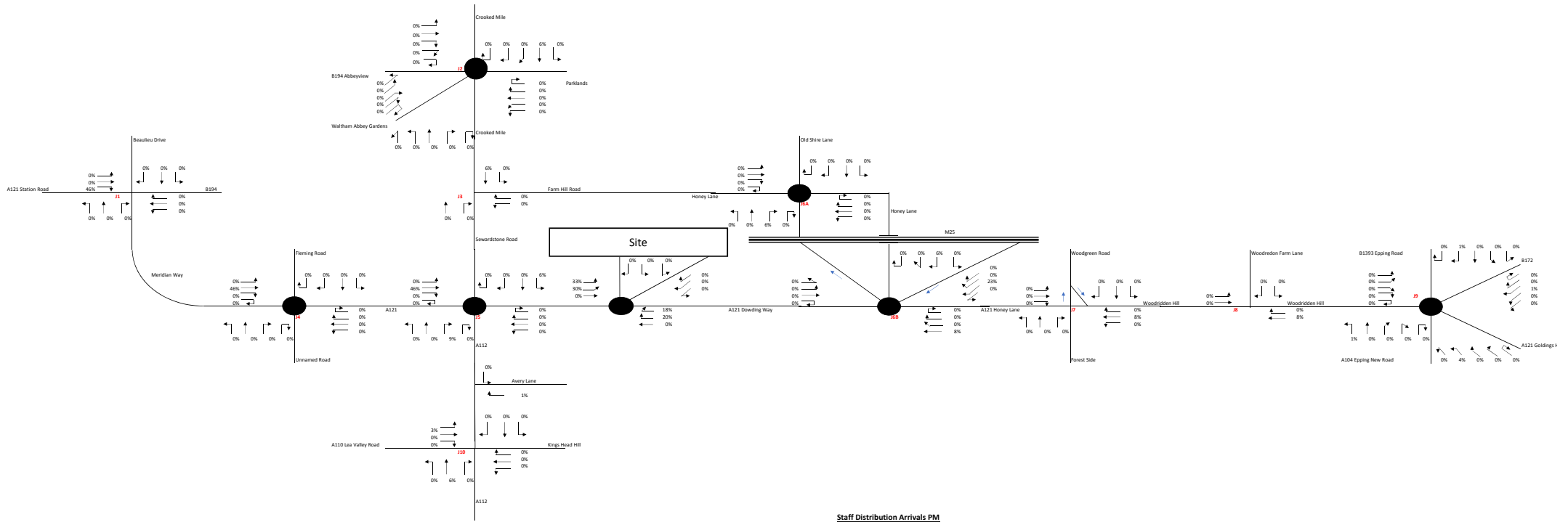


2033 Base PM (17:00-18:00) - Vehicles

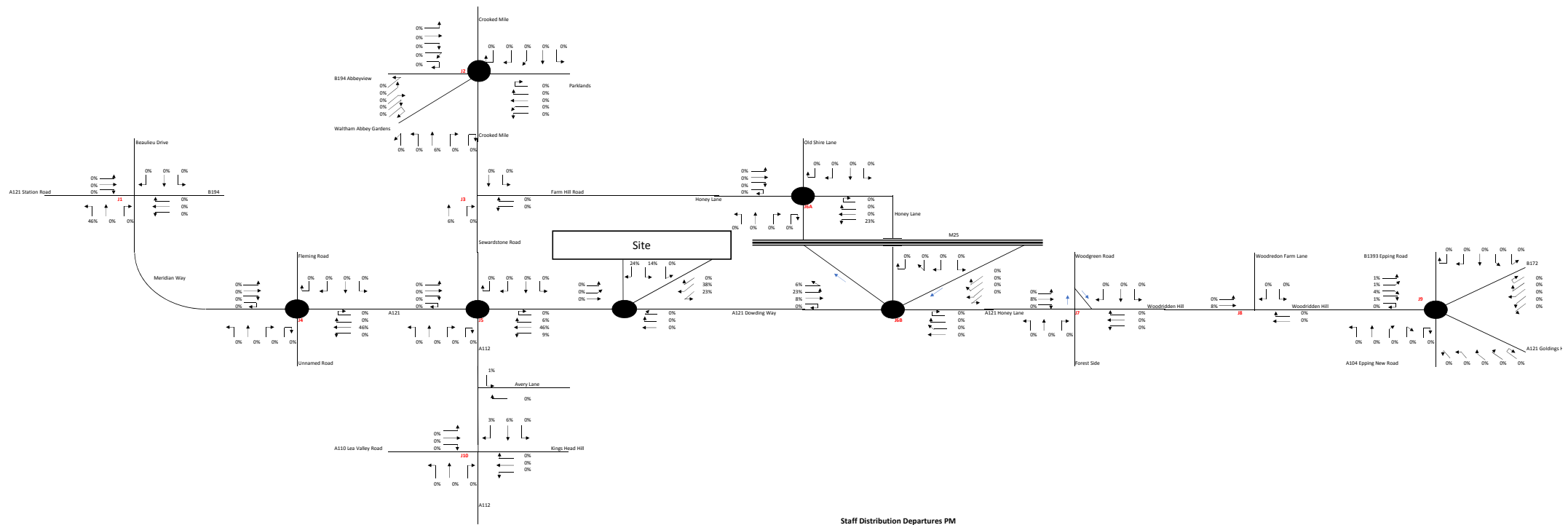


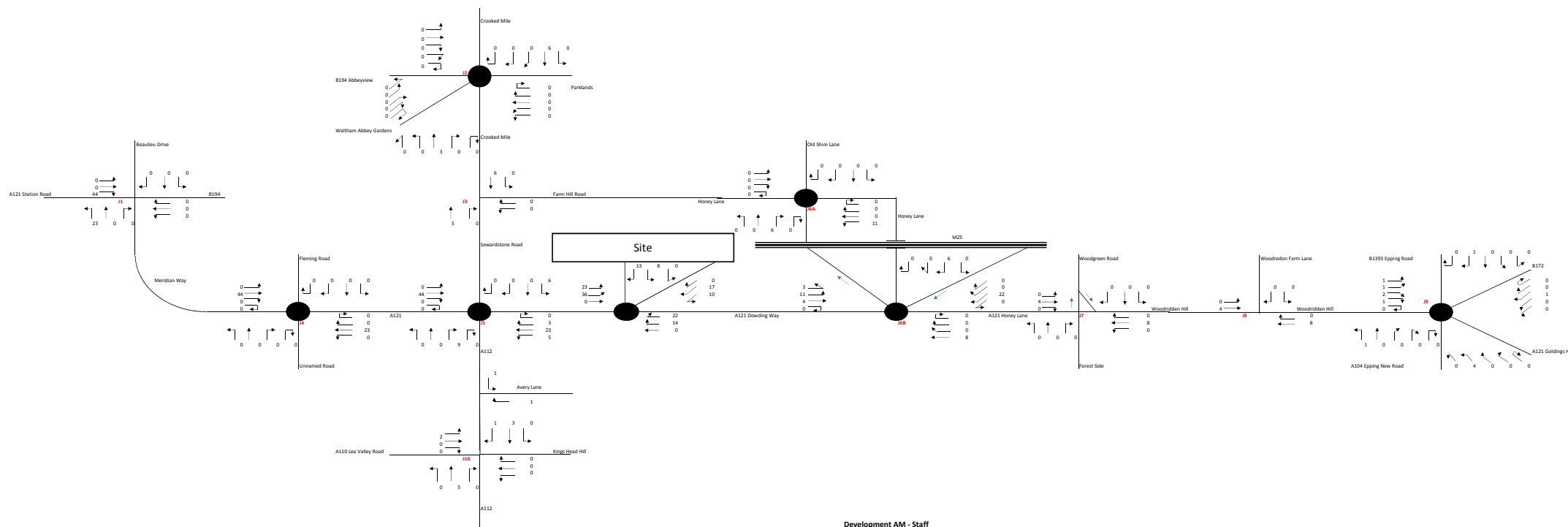


Staff Distribution Arrivals AM

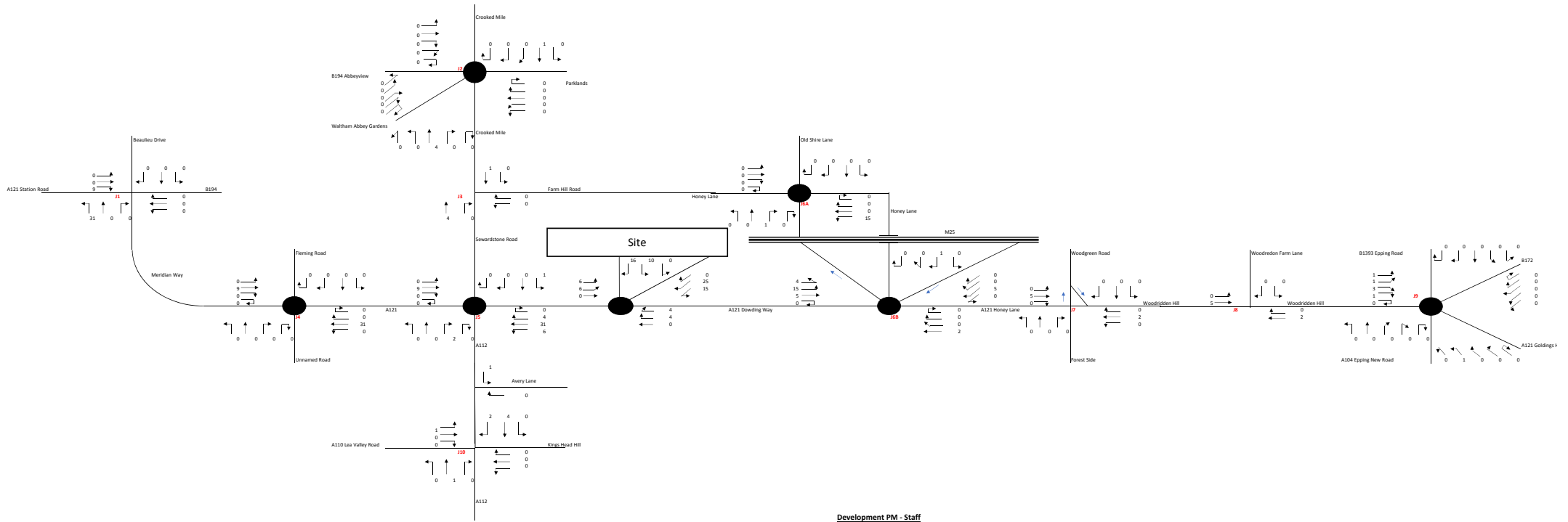


Staff Distribution Arrivals PM

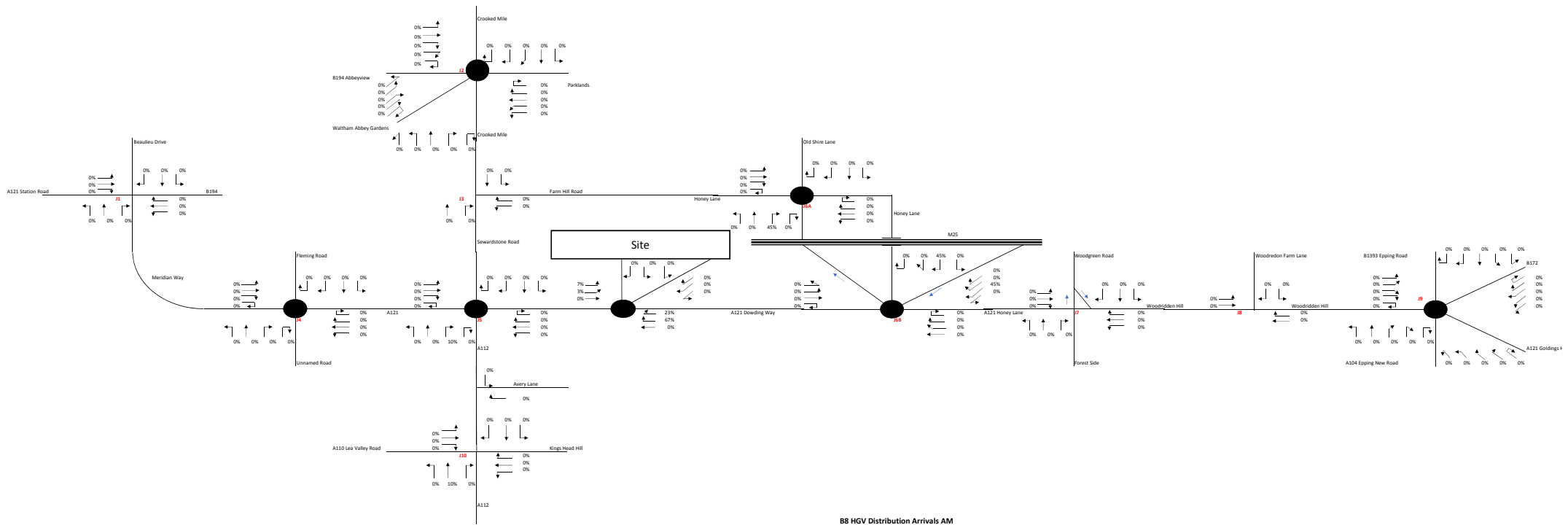




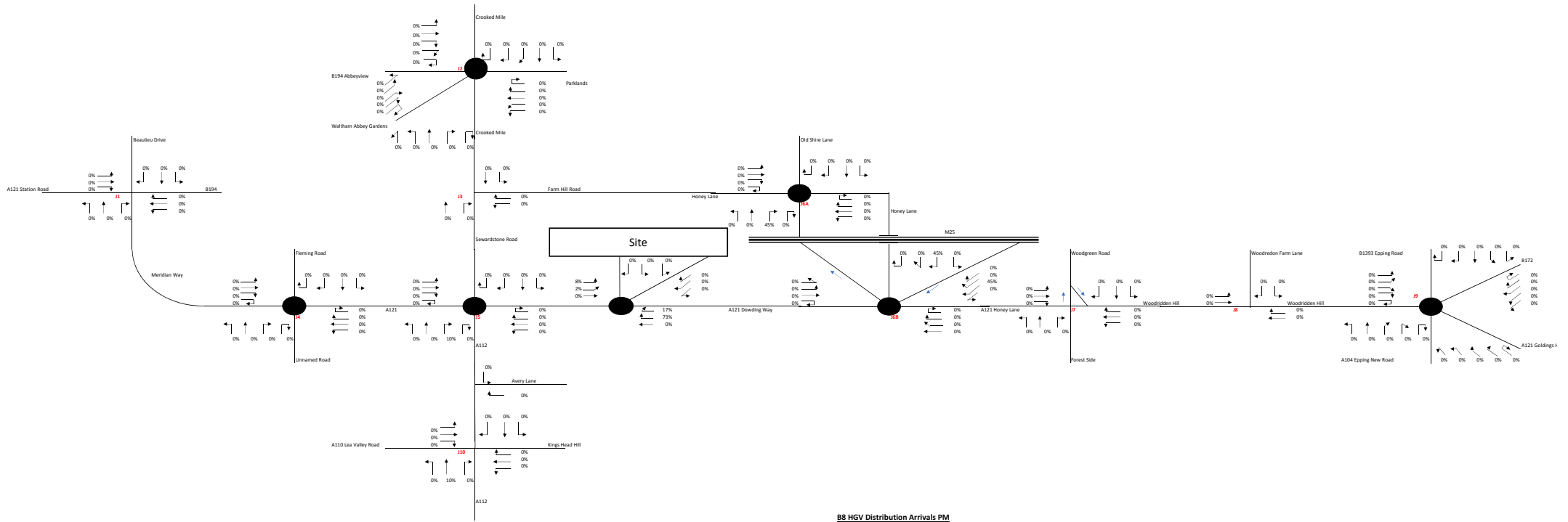
Development AM - Staff



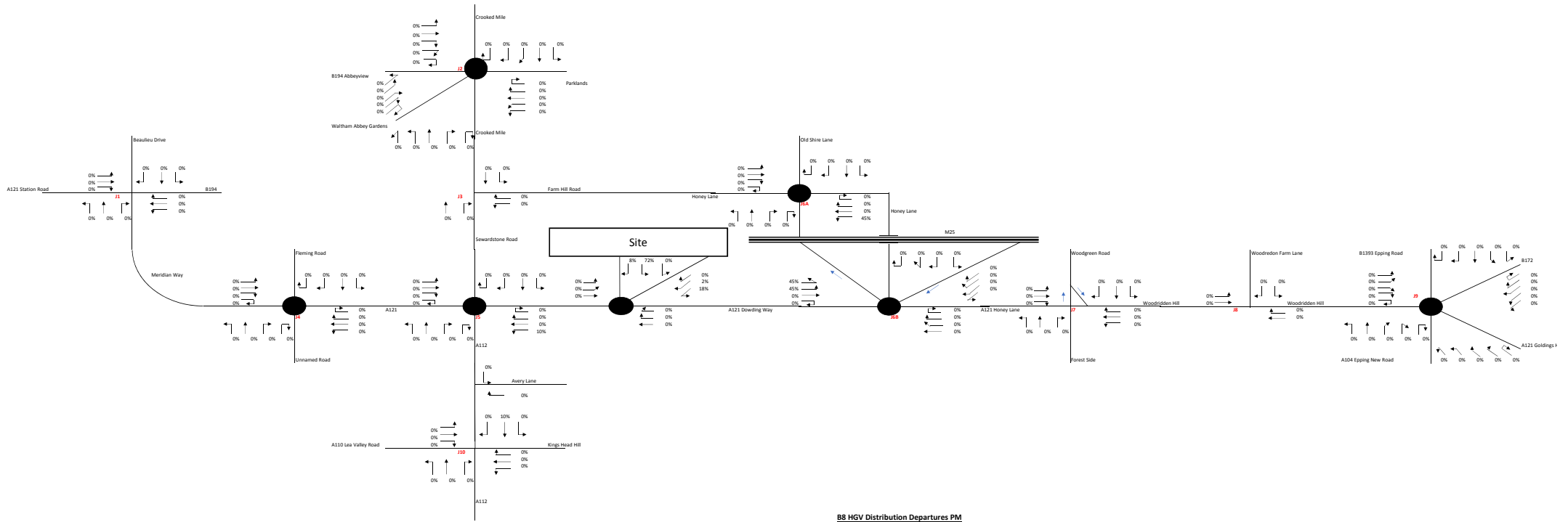
Development PM - Staff

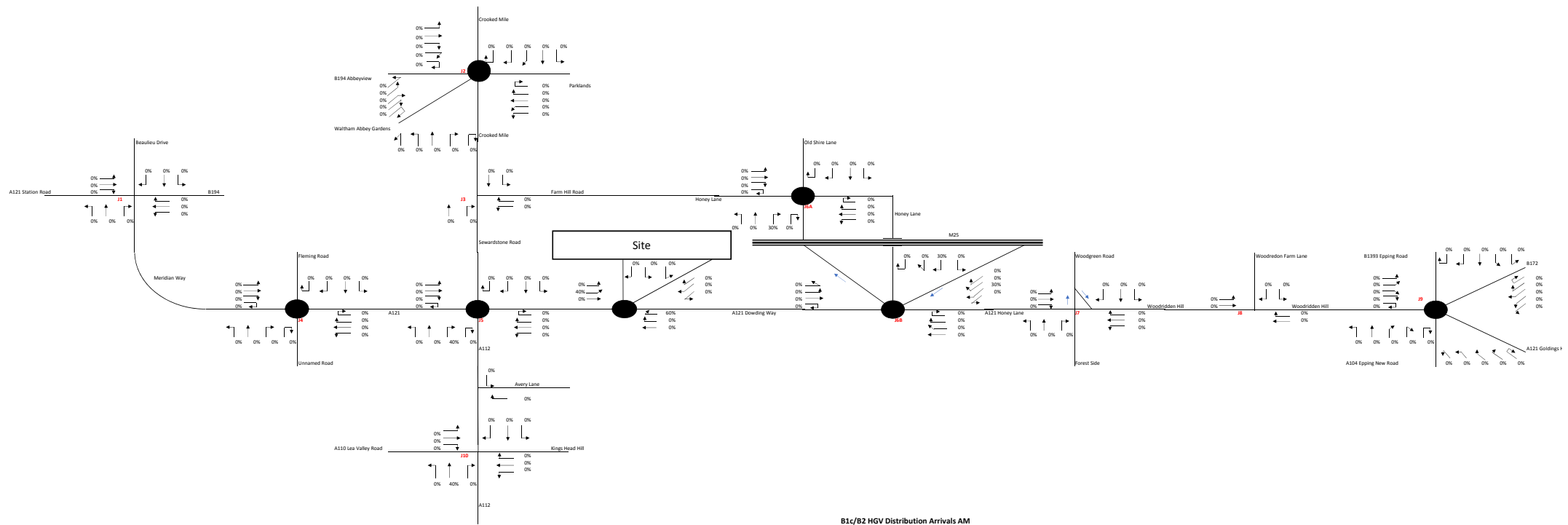


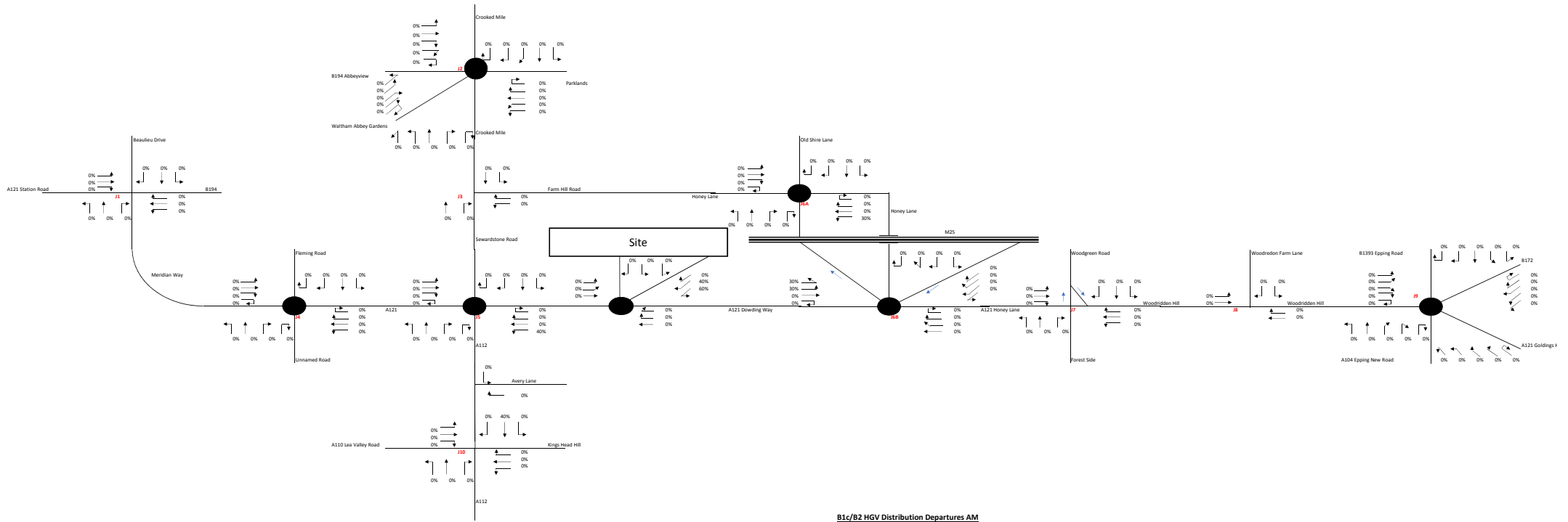
B8 HGV Distribution Arrivals AM



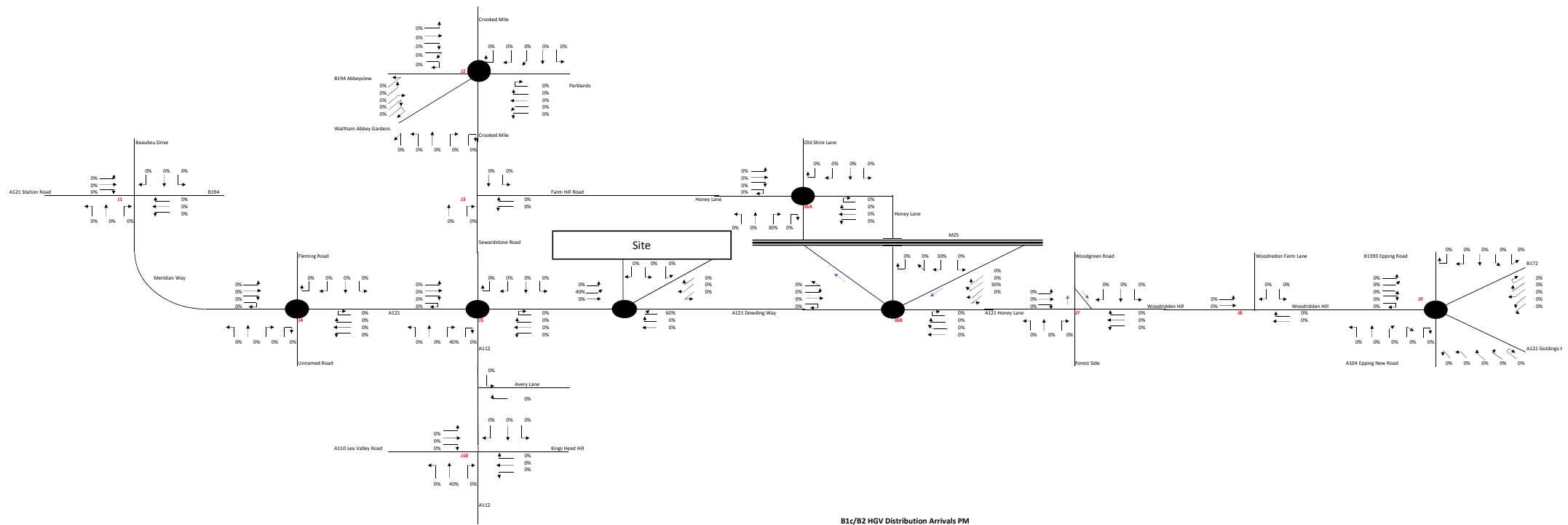
B8 HGV Distribution Arrivals PM

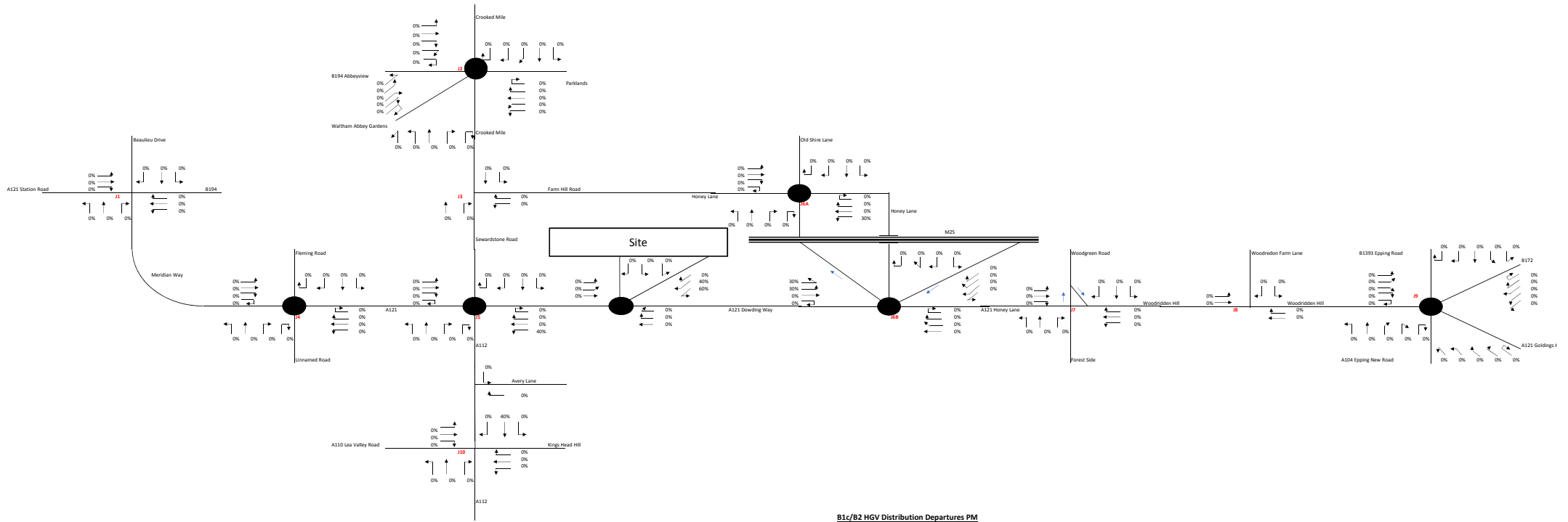




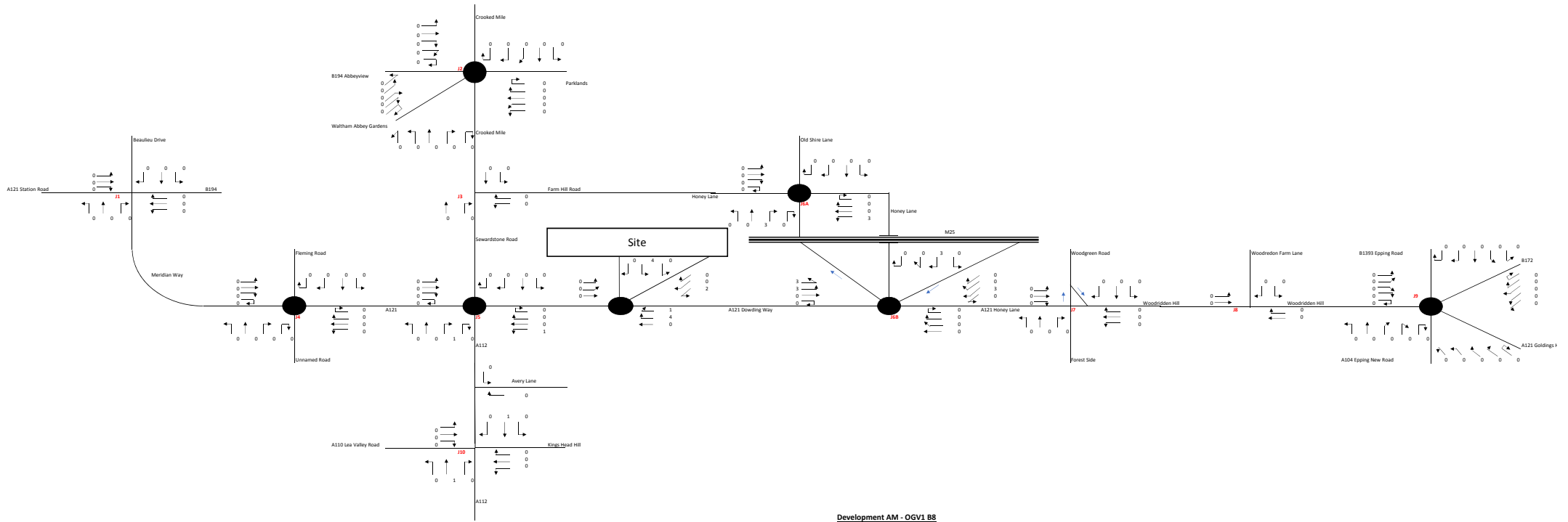


B1c/B2 HGV Distribution Departures AM

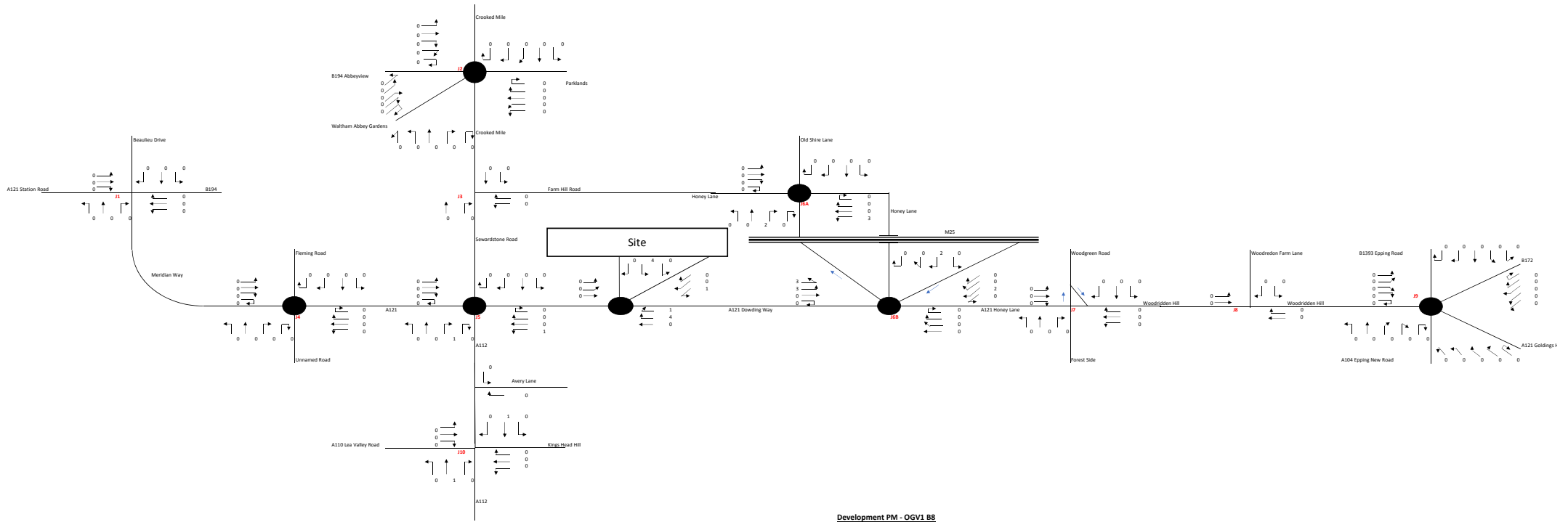




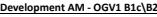
B1c/B2 HGV Distribution Departures PM

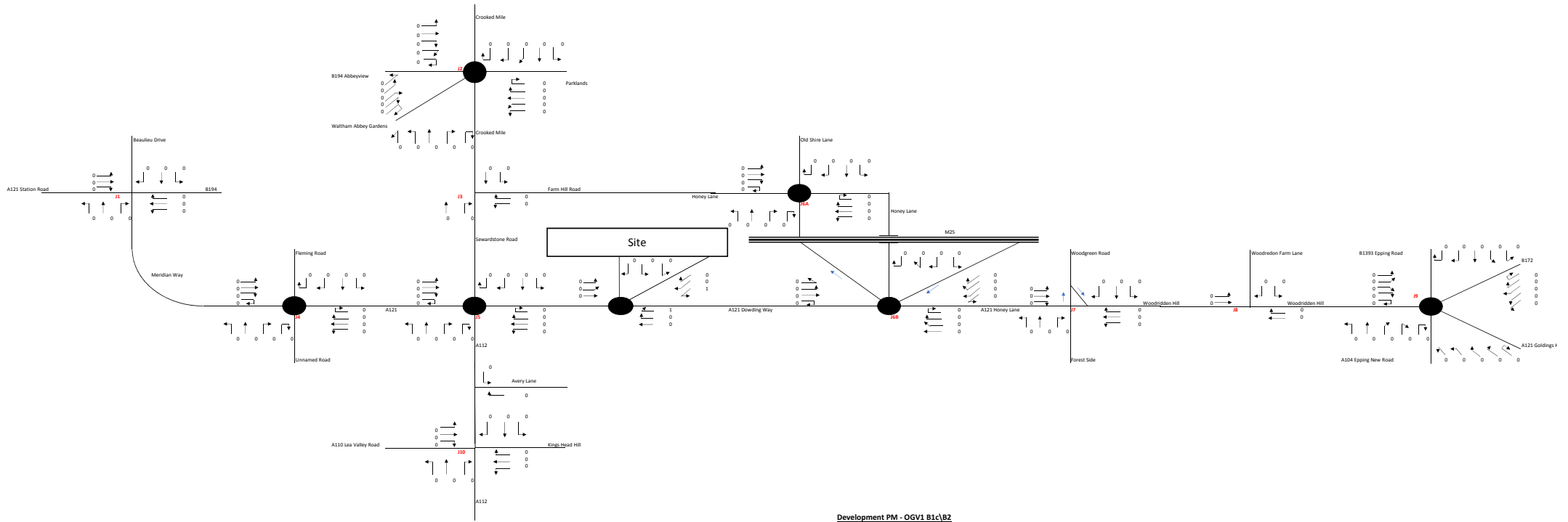


Development AM - OGVI B8

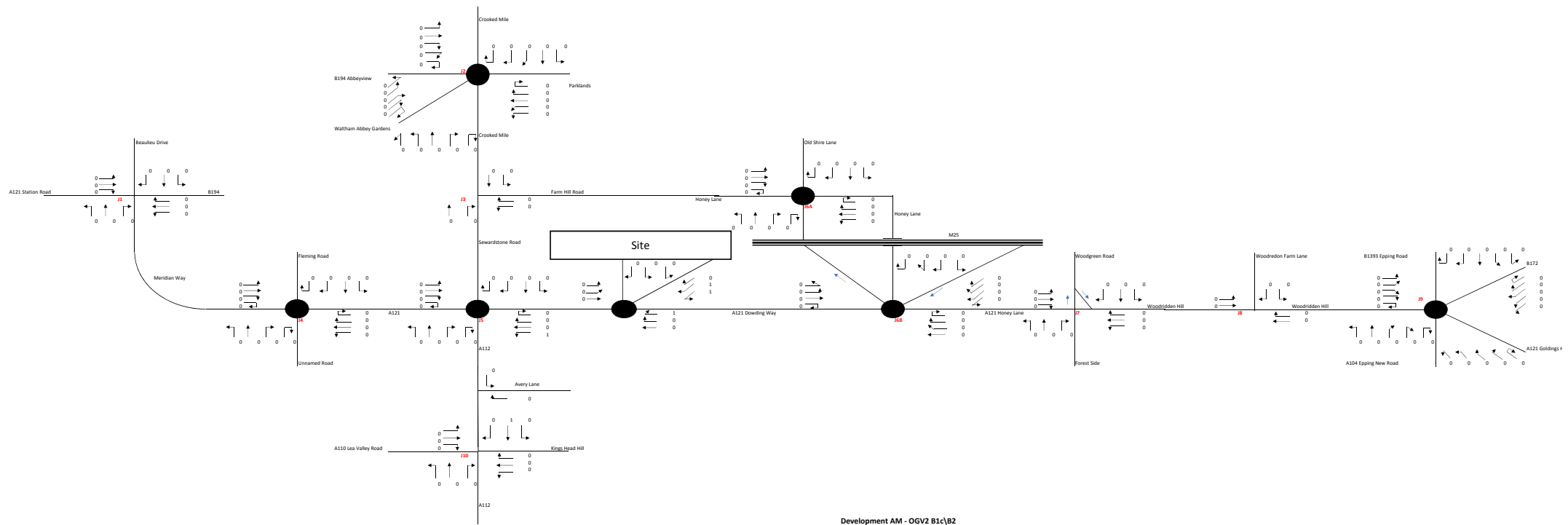


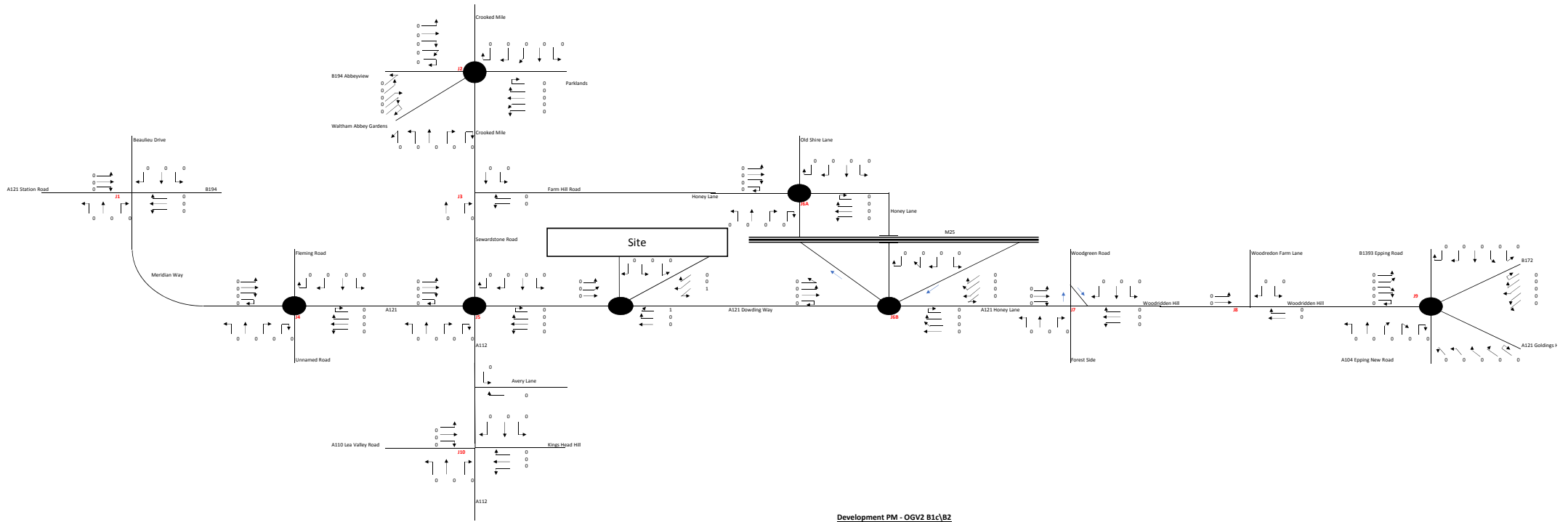
Development PM - OGVI B8



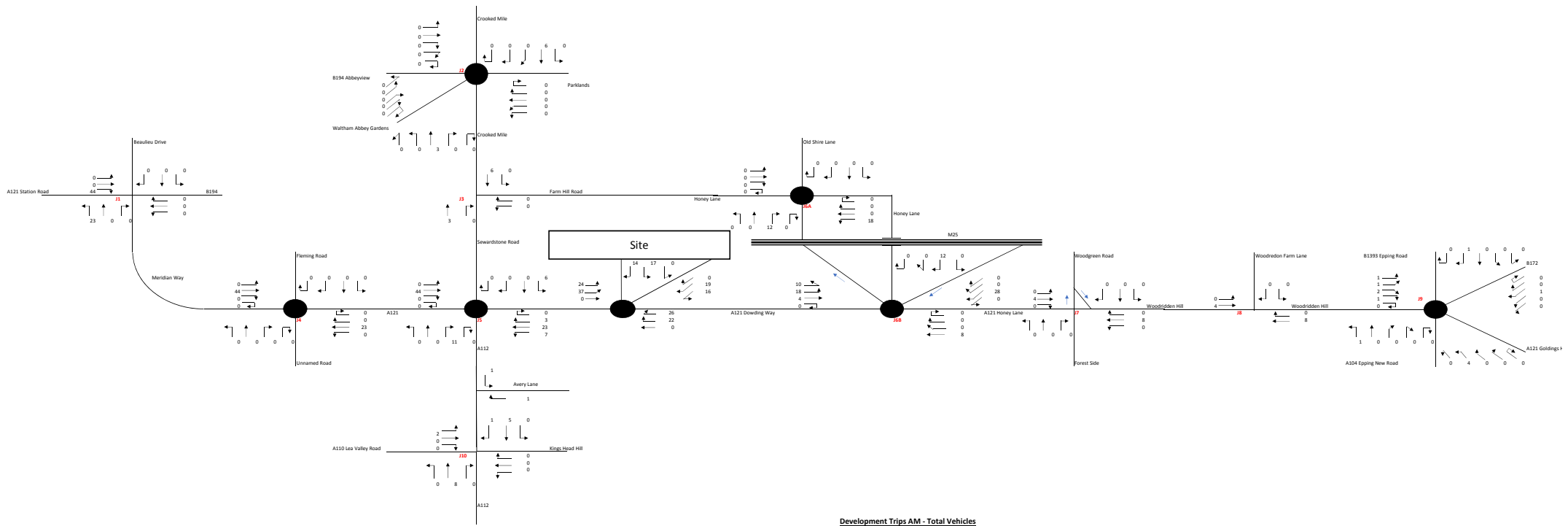




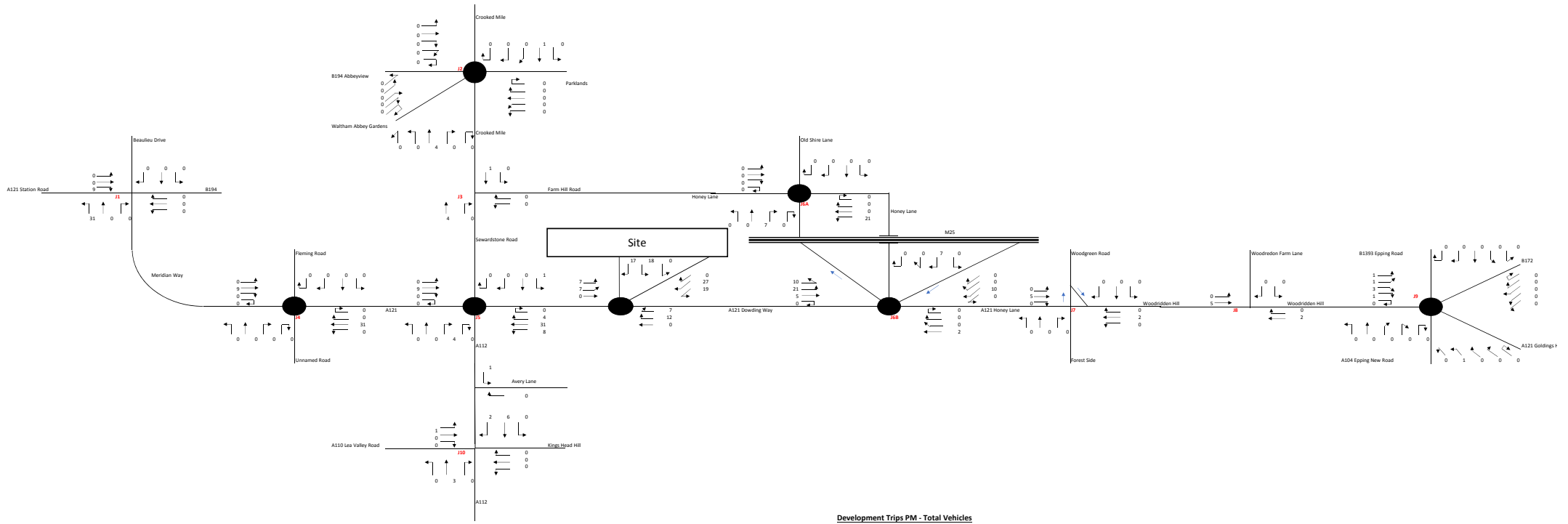




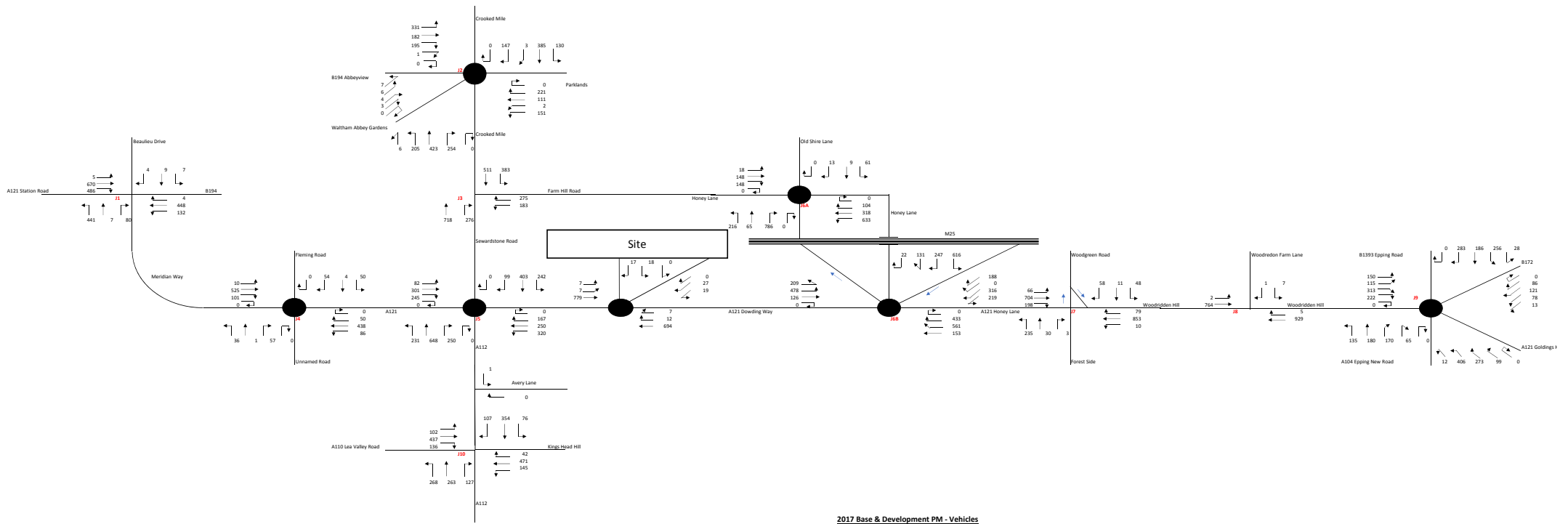
Development PM - OGV2 B1c\B2



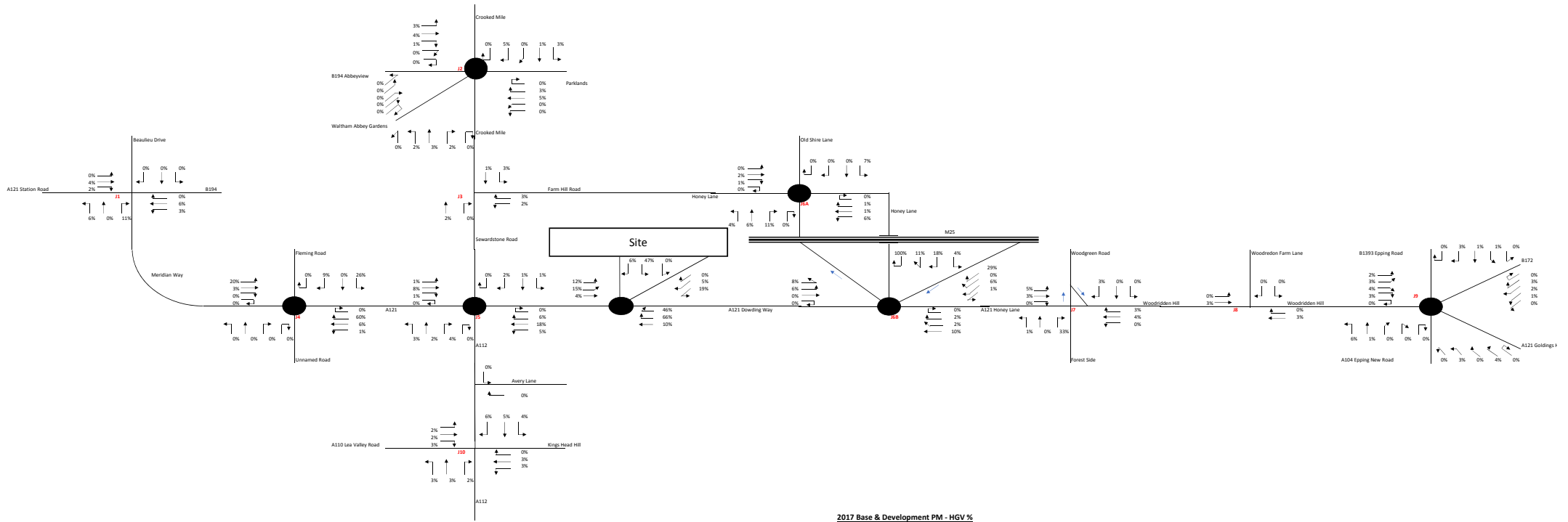
Development Trips AM - Total Vehicles

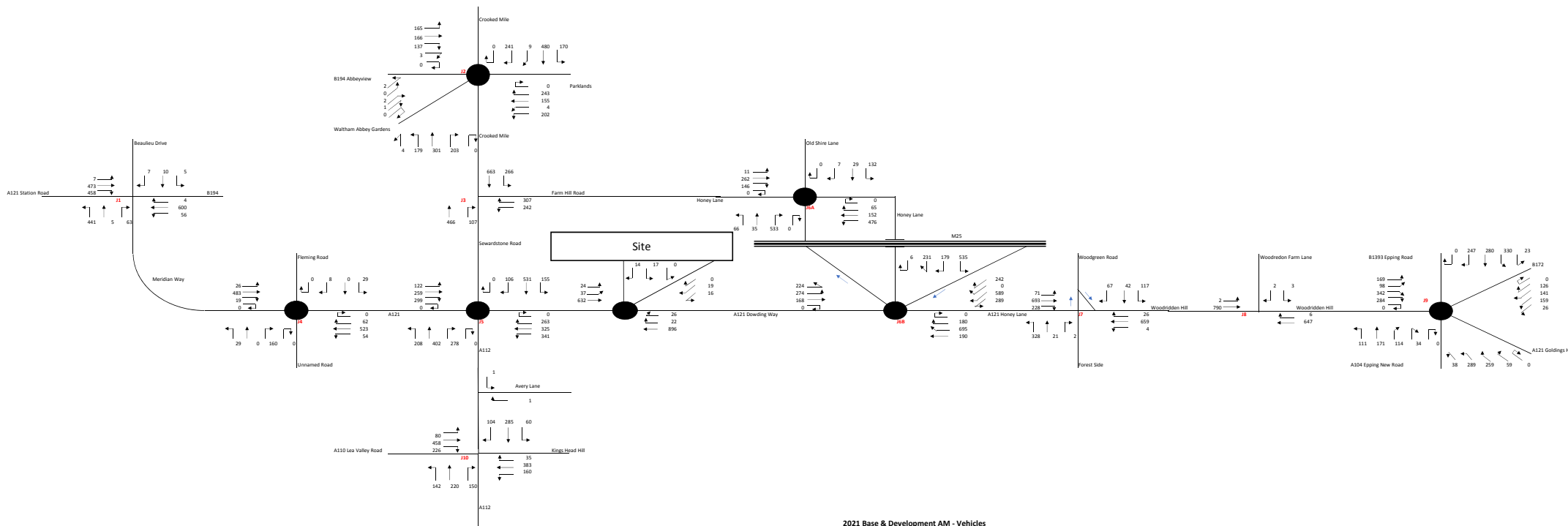


Development Trips PM - Total Vehicles

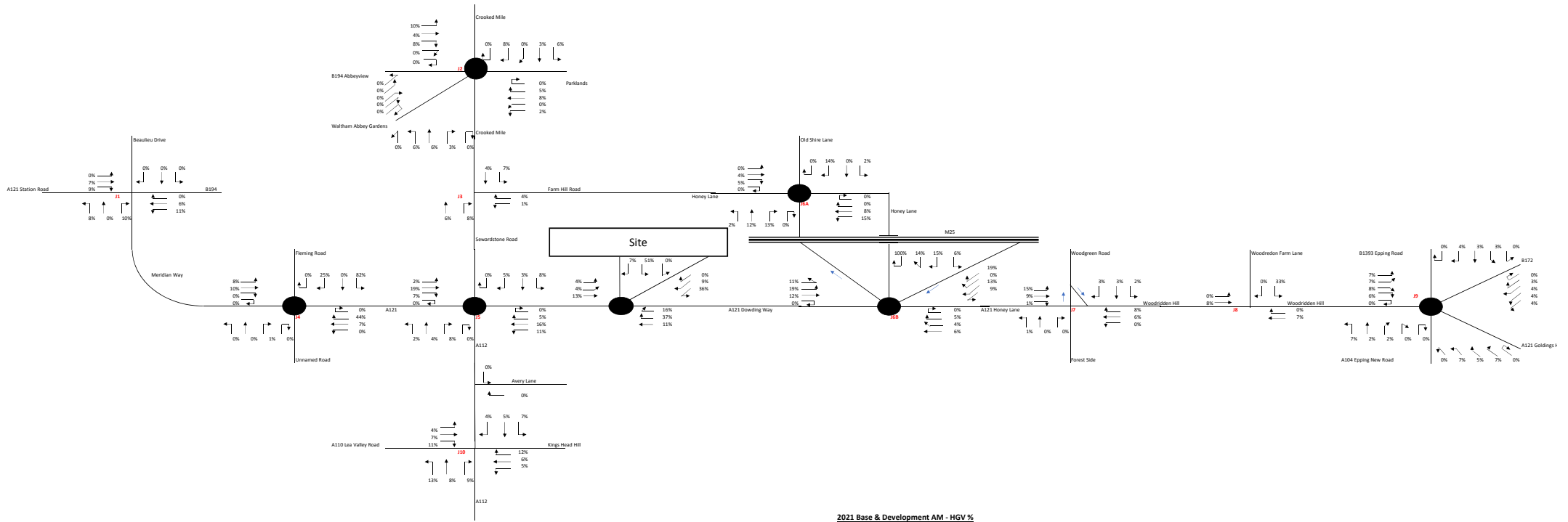


2017 Base & Development PM - Vehicles

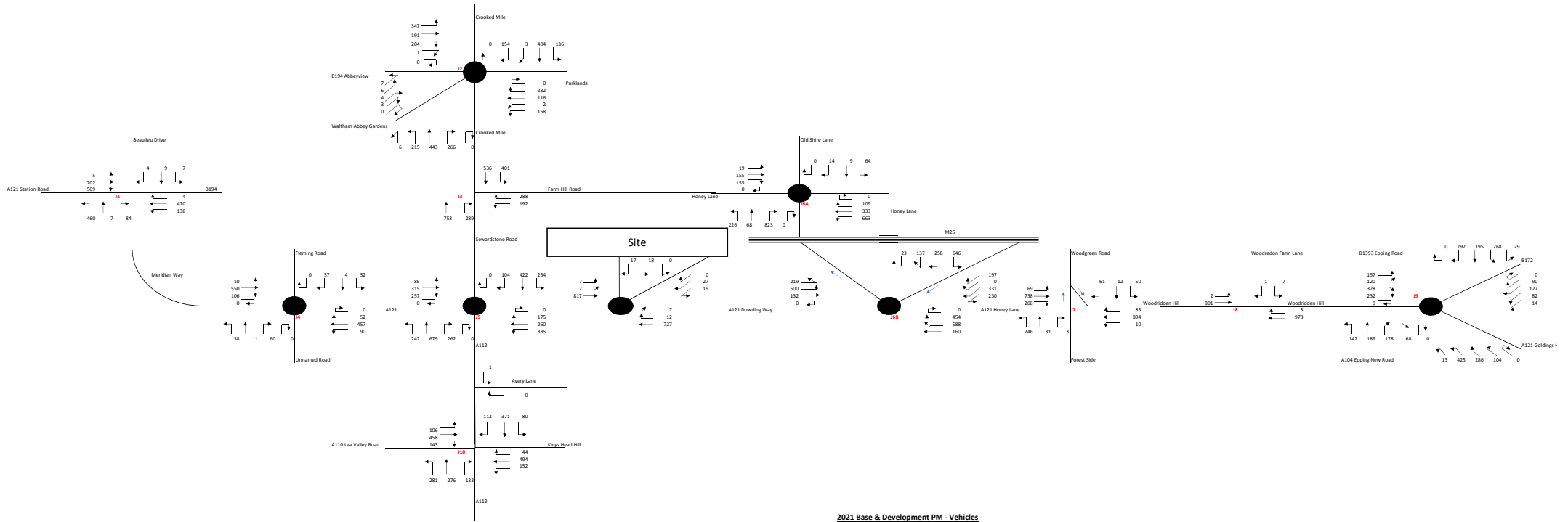




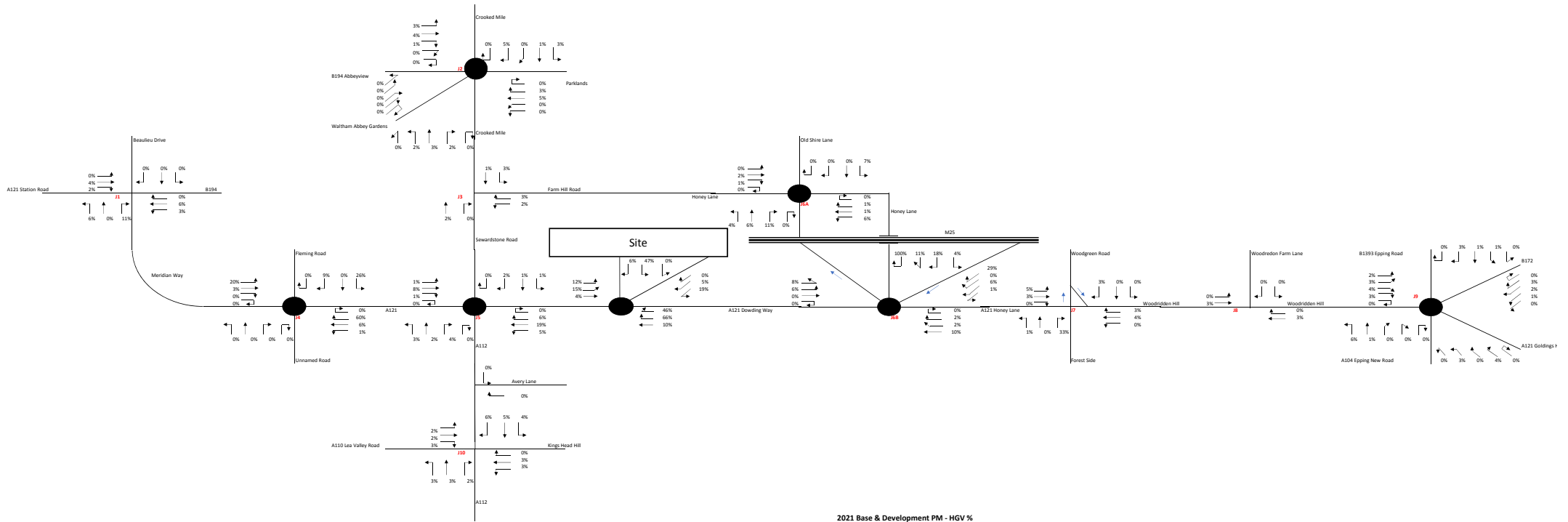
2021 Base & Development AM - Vehicles



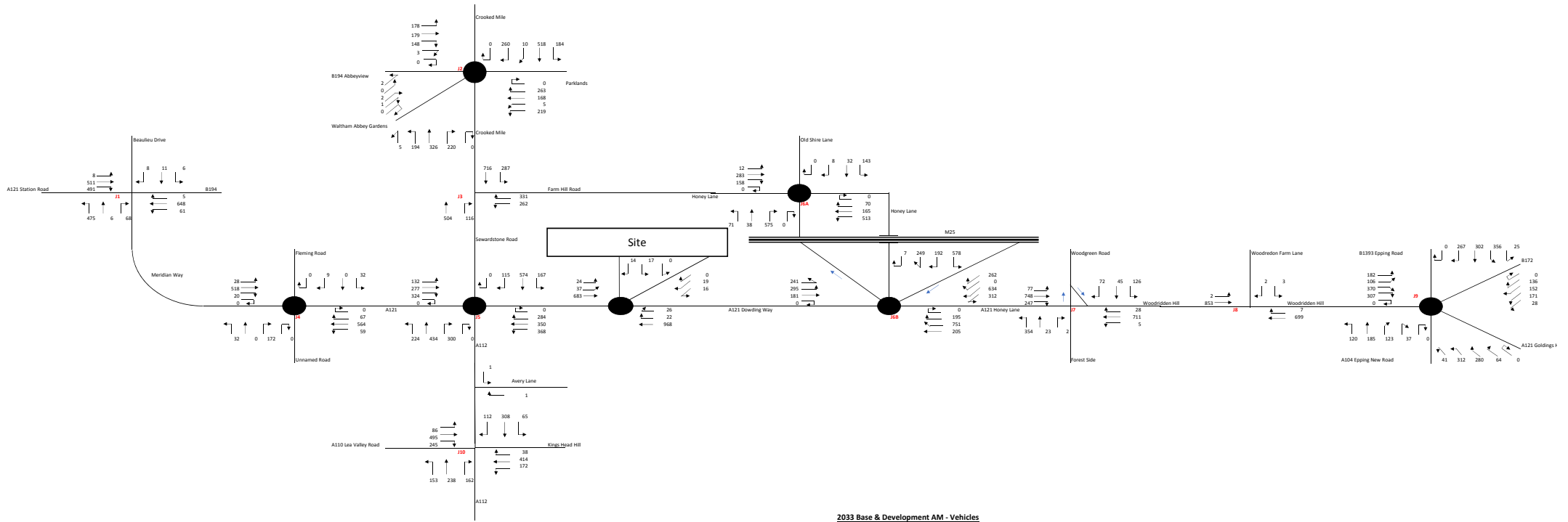
2021 Base & Development AM - HGV %



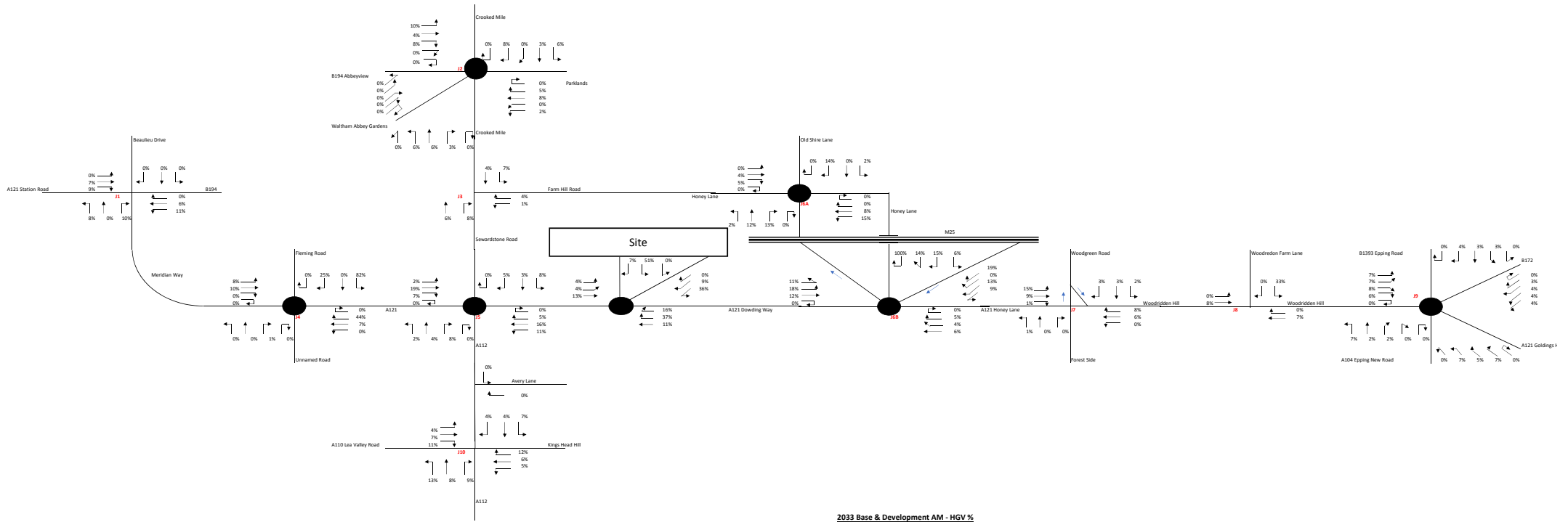
2021 Base & Development PM - Vehicles



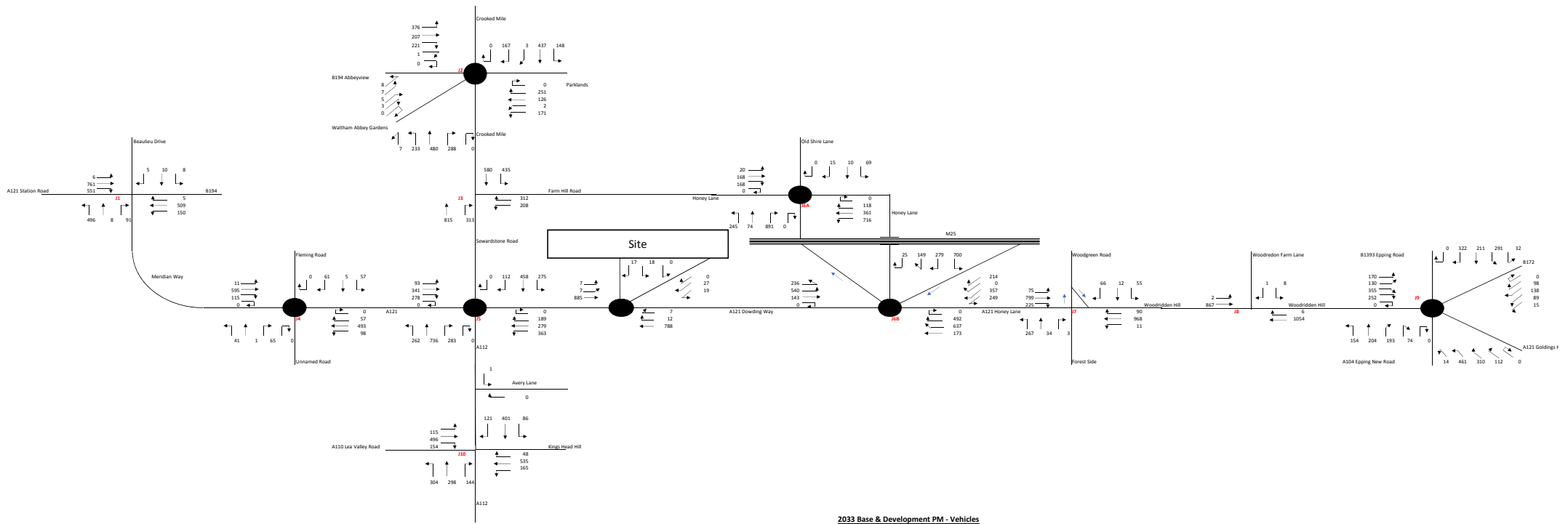
2021 Base & Development PM - HGV %

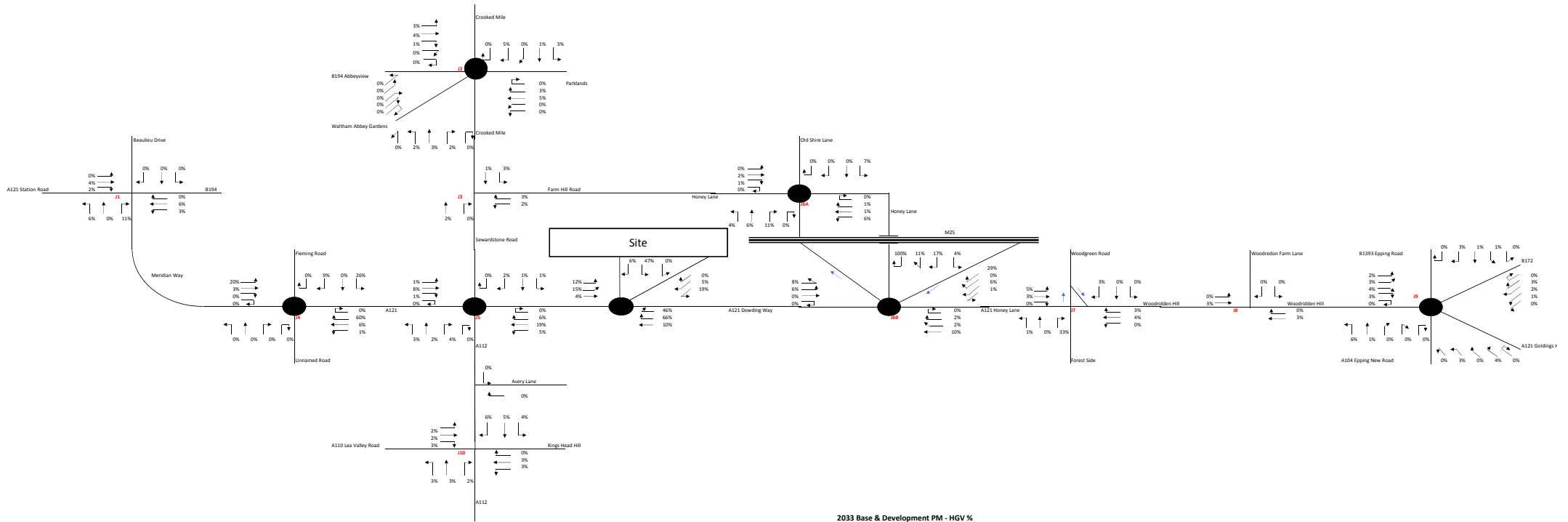


2033 Base & Development AM - Vehicles



2033 Base & Development AM - HGV %





APPENDIX H

ONS Crown Copyright Reserved [from Nomis on 16 April 2018]

Population : All usual residents aged 16 and over in employment the week before the census
Units : Persons

Date : 2
class of work : 50300

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E02004534 : Epping Forest 008	260	0	4	5	6	0	1	725	11	7	101	0
E02004533 : Epping Forest 007	143	0	3	0	4	2	0	122	11	5	45	1
E02002077 : Enfield 001	13	0	0	0	2	0	0	10	0	1	0	0
E02002079 : Enfield 003	23	0	0	1	0	0	0	17	0	1	2	0
E02002088 : Enfield 012	20	0	0	0	5	0	0	14	0	1	0	0
E02003031 : Enfield 025	14	0	0	0	1	0	0	10	3	0	0	0
E02004527 : Epping Forest 001	27	0	0	0	0	0	0	26	0	0	1	0
E02004528 : Epping Forest 002	24	0	0	0	0	0	0	21	2	0	1	0
E02004535 : Epping Forest 009	92	0	1	0	3	0	2	53	3	2	28	0
E02004537 : Epping Forest 011	21	0	0	0	0	0	0	17	0	1	0	0
E02004538 : Epping Forest 012	15	0	0	0	0	0	0	13	2	0	0	0
E02004541 : Epping Forest 015	20	0	0	1	0	0	0	11	7	0	0	0
E02004545 : Harlow 002	20	0	0	2	1	0	0	15	2	0	0	0
E02004547 : Harlow 004	16	0	0	2	0	0	0	13	0	0	0	1
E02004548 : Harlow 005	23	0	0	0	0	0	0	22	0	0	0	0
E02004549 : Harlow 006	28	0	0	0	1	0	0	22	4	0	1	0
E02004550 : Harlow 007	25	0	0	0	0	0	0	24	1	0	0	0
E02004551 : Harlow 008	11	0	0	0	0	0	0	11	0	0	0	0
E02004552 : Harlow 009	17	0	0	0	0	0	0	16	1	0	0	0
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E02004554 : Harlow 011	25	0	0	0	0	0	0	21	3	1	0	0
E02004843 : Braintree 001	22	0	0	2	0	0	0	19	0	0	1	0
E02004844 : Braintree 002	19	0	0	1	0	0	3	14	0	0	1	0
E02004845 : Braintree 003	17	0	0	0	0	0	1	15	0	0	1	0
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E02004848 : Braintree 006	22	0	0	1	0	0	0	14	4	3	0	0
E02004849 : Braintree 007	18	0	0	0	0	0	0	15	2	0	1	0
E02004850 : Braintree 008	39	0	0	0	3	0	1	29	2	4	0	0
E02004851 : Braintree 009	28	0	0	0	3	0	1	23	1	0	0	0
E02004852 : Braintree 010	29	0	0	0	0	0	0	24	0	1	2	0
E02004853 : Braintree 011	29	0	0	0	0	2	0	26	0	1	0	0
E02004854 : Braintree 012	43	0	0	1	1	0	1	28	3	3	6	0
E02004855 : Braintree 013	79	0	0	1	12	3	2	38	6	8	9	0
E02004878 : East Hertfordshire 001	30	0	0	0	0	0	0	28	2	0	0	0
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E02004880 : East Hertfordshire 003	11	0	0	0	0	0	0	11	0	0	0	0
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E02004885 : East Hertfordshire 008	11	0	0	0	0	0	0	11	0	0	0	0
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E02004913 : North Hertfordshire 005	11	0	0	0	0	0	0	11	0	0	0	0
E02000021 : Barking and Dagenham 020	7	0	0	0	0	0	5	1	0	0	0	0
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E02002081 : Enfield 005	9	0	0	0	0	0	0	8	0	1	0	0
E02002082 : Enfield 006	9	0	0	0	0	0	0	9	0	0	0	0
E02002083 : Enfield 007	8	0	0	0	0	0	1	8	0	0	0	0
E02002090 : Enfield 014	17	0	0	4	4	0	0	7	0	0	2	0
E02002094 : Enfield 018	11	0	0	0	0	0	0	5	0	0	0	0
E02002097 : Enfield 021	10	0	0	0	3	0	0	6	1	0	0	0
E02003030 : Enfield 027	6	0	0	0	0	0	0	5	0	0	0	0
E02000470 : Havering 007	8	0	0	2	0	0	0	5	1	0	0	0
E02000490 : Havering 027	5	0	0	0	0	0	0	5	0	0	0	0
E02000751 : Redbridge 001	5	0	0	0	0	0	0	5	0	0	0	0
E02000757 : Redbridge 007	9	0	0	0	0	0	0	8	0	0	0	0
E02000895 : Waltham Forest 001	8	0	0	0	1	0	0	6	0	1	0	0
E02000896 : Waltham Forest 002	9	0	0	0	0	0	0	9	0	0	0	0
E02000897 : Waltham Forest 003	9	0	0	0	0	0	0	9	0	0	0	0
E02000901 : Waltham Forest 007	9	0	0	0	0	0	0	9	0	0	0	0
E02003612 : Central Bedfordshire 014	5	0	0	0	0	0	0	5	0	0	0	0
E02003792 : South Cambridgeshire 018	6	0	0	0	0	0	0	6	0	0	0	0
E02003795 : South Cambridgeshire 019	6	0	0	0	0	0	0	6	0	0	0	0
E02004529 : Epping Forest 003	6	0	0	0	0	0	0	6	0	0	0	0
E02004530 : Epping Forest 005	7	0	0	0	2	0	0	5	0	0	0	0
E02004531 : Epping Forest 009	9	0	0	0	0	0	0	7	2	0	0	0
E02004532 : Epping Forest 006	8	0	0	0	1	0	0	7	0	0	0	0
E02004536 : Epping Forest 010	12	0	0	0	0	0	0	9	1	0	2	0
E02004539 : Epping Forest 014	11	0	0	0	1	1	0	7	0	2	0	0
E02004540 : Epping Forest 013	10	0	0	0	0	0	0	9	0	0	0	0
E02004544 : Harlow 001	7	0	0	0	0	0	0	6	0	0	0	0
E02004546 : Harlow 003	9	0	0	1	0	0	0	7	1	0	0	0
E02004595 : Littleford 005	9	0	0	0	0	0	0	9	0	0	0	0
E02004596 : Littleford 006	9	0	0	0	0	0	0	9	0	0	0	0
E02004846 : Braintree 004	11	0	0	0	1	0	0	9	1	0	0	0
E02004886 : East Hertfordshire 009	7	0	0	0	0	0	0	7	0	0	0	0
E02004888 : East Hertfordshire 011	9	0	0	0	0	0	0	8	0	1	0	0
E02004891 : East Hertfordshire 014	7	0	0	0	0	0	1	7	0	0	1	0
E02004892 : East Hertfordshire 015	6	0	0	0	0	0	0	5	1	0	0	0
E02004893 : East Hertfordshire 016	8	0	0	1	0	0	0	6	1	0	0	0
E02004894 : East Hertfordshire 017	5	0	0	0	0	0	0	5	0	0	0	0
E02004900 : North Hertfordshire 001	7	0	0	0	0	0	1	5	0	0	0	0
E02004944 : Stevenage 001	7	0	0	0	0	0	0	7	0	0	0	0
E02004947 : Stevenage 004	8	0	0	0	0	0	0	8	0	0	0	0
E02004950 : Stevenage 007	6	0	0	0	0	0	0	6	0	0	0	0
E02004951 : Stevenage 008	5	0	0	0	0	0	0	5	0	0	0	0
E02004953 : Stevenage 010	7	0	0	0	0	0	0	7	0	0	0	0
E02004954 : Stevenage 011	5	0	0	0	0	0	0	5	0	0	0	0
E02004955 : Stevenage 012	7	0	0	0	0	0	0	7	0	0	0	0
E02005984 : Waltham Hatfield 005	7	0	0	1	0	0	0	6	0	0	0	0

[illegible][illegible]

C 48/	E 99/	33 18/	C 38/	A 38/	1 08/	4C E9/	3 C8/	1 39/	1 38/	1 E8/
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APPENDIX I

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.0.4211 []
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Filename: Site Access.j9

Path: H:\Projects\W170000\173131 - Waltham Abbey\MODELLING\A09 Rev C Site Access

Report generation date: 27/04/2018 16:11:30

»2021 + Development, AM

»2021 + Development, PM

»2033 + Development, AM

»2033 + Development, PM

Summary of junction performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
2021 + Development								
1 - North Access	0.0	4.00	0.04	A	0.0	4.05	0.04	A
2 - North-East Access	0.0	3.81	0.04	A	0.1	3.77	0.05	A
3 - Dowding Way (E)	3.8	13.55	0.80	B	1.7	7.39	0.63	A
4 - Dowding Way (W)	1.0	4.81	0.51	A	1.2	4.92	0.56	A
2033 + Development								
1 - North Access	0.0	4.11	0.04	A	0.0	4.21	0.04	A
2 - North-East Access	0.0	3.93	0.04	A	0.1	3.92	0.05	A
3 - Dowding Way (E)	5.6	18.98	0.86	C	2.1	8.63	0.68	A
4 - Dowding Way (W)	1.2	5.21	0.54	A	1.5	5.49	0.60	A

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	26/04/2018
Version	
Status	[no status]
Identifier	
Client	
Jobnumber	
Enumerator	VECTOS"ellen.axon
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
2021 + Development	AM	ONE HOUR	07:45	09:15	15	✓
2021 + Development	PM	ONE HOUR	16:45	18:15	15	✓
2033 + Development	AM	ONE HOUR	07:45	09:15	15	✓
2033 + Development	PM	ONE HOUR	16:45	18:15	15	✓

2021 + Development, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1 - Site Access	Site Access	Standard Roundabout	1,2,3,4	9.58	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	North Access	
2	North-East Access	

3	Dowding Way (E)	
4	Dowding Way (W)	

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Assume flat start profile	Initial queue (PCU)
1 - North Access	0.00	99999.00		0.00
2 - North-East Access	0.00	99999.00		0.00
3 - Dowding Way (E)	0.00	99999.00		0.00
4 - Dowding Way (W)	0.00	99999.00		0.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - North Access	4.40	7.15	7.8	20.0	64.0	38.0	
2 - North-East Access	4.08	7.56	7.5	20.0	64.0	37.0	
3 - Dowding Way (E)	3.65	7.22	6.5	30.0	64.0	39.0	
4 - Dowding Way (W)	3.65	7.54	12.0	40.0	64.0	29.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - North Access	0.524	1676.849
2 - North-East Access	0.516	1620.260
3 - Dowding Way (E)	0.494	1475.855
4 - Dowding Way (W)	0.547	1731.517

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	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2021 + Development	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - North Access		ONE HOUR	✓	31.00	100.000
2 - North-East Access		ONE HOUR	✓	35.00	100.000
3 - Dowding Way (E)		ONE HOUR	✓	944.00	100.000
4 - Dowding Way (W)		ONE HOUR	✓	693.00	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		1 - North Access	2 - North-East Access	3 - Dowding Way (E)	4 - Dowding Way (W)
From	1 - North Access	0.000	0.000	17.000	14.000
	2 - North-East Access	0.000	0.000	16.000	19.000
	3 - Dowding Way (E)	22.000	26.000	0.000	896.000
	4 - Dowding Way (W)	24.000	37.000	632.000	0.000

Proportions

	To				
		1 - North Access	2 - North-East Access	3 - Dowding Way (E)	4 - Dowding Way (W)
From	1 - North Access	0.00	0.00	0.55	0.45
	2 - North-East Access	0.00	0.00	0.46	0.54
	3 - Dowding Way (E)	0.02	0.03	0.00	0.95
	4 - Dowding Way (W)	0.03	0.05	0.91	0.00

Vehicle Mix

Heavy Vehicle proportion

	To				
		1 - North Access	2 - North-East Access	3 - Dowding Way (E)	4 - Dowding Way (W)
From	1 - North Access	0	0	51	7
	2 - North-East Access	0	0	36	9
	3 - Dowding Way (E)	37	16	0	11
	4 - Dowding Way (W)	4	4	13	0

Average PCU Per Veh

	To				
		1 - North Access	2 - North-East Access	3 - Dowding Way (E)	4 - Dowding Way (W)
From	1 - North Access	1.000	1.000	1.510	1.070
	2 - North-East Access	1.000	1.000	1.360	1.090
	3 - Dowding Way (E)	1.370	1.160	1.000	1.110
	4 - Dowding Way (W)	1.040	1.040	1.130	1.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - North Access	0.04	4.00	0.0	A	28.45	42.67
2 - North-East Access	0.04	3.81	0.0	A	32.12	48.17
3 - Dowding Way (E)	0.80	13.55	3.8	B	866.23	1299.34

4 - Dowding Way (W)	0.51	4.81	1.0	A	635.91	953.86
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Main Results for each time segment

Main results: (07:45-08:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North Access	23.34	5.83	521.10	1044.14	0.022	23.25	34.45	0.0	0.0	3.525	A
2 - North-East Access	26.35	6.59	497.16	1094.74	0.024	26.25	47.19	0.0	0.0	3.368	A
3 - Dowding Way (E)	710.69	177.67	24.75	1308.91	0.543	706.01	498.66	0.0	1.2	5.927	A
4 - Dowding Way (W)	521.73	130.43	35.90	1521.13	0.343	519.65	694.86	0.0	0.5	3.587	A

Main results: (08:00-08:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North Access	27.87	6.97	624.05	997.79	0.028	27.85	41.27	0.0	0.0	3.710	A
2 - North-East Access	31.46	7.87	595.37	1047.22	0.030	31.44	56.53	0.0	0.0	3.543	A
3 - Dowding Way (E)	848.63	212.16	29.64	1306.57	0.650	846.08	597.17	1.2	1.8	7.773	A
4 - Dowding Way (W)	622.99	155.75	43.02	1516.77	0.411	622.30	832.70	0.5	0.7	4.018	A

Main results: (08:15-08:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North Access	34.13	8.53	763.78	934.87	0.037	34.10	50.43	0.0	0.0	3.996	A
2 - North-East Access	38.54	9.63	728.78	982.67	0.039	38.50	69.09	0.0	0.0	3.812	A
3 - Dowding Way (E)	1039.36	259.84	36.30	1303.39	0.797	1031.86	730.98	1.8	3.7	12.906	B
4 - Dowding Way (W)	763.01	190.75	52.47	1510.98	0.505	761.74	1015.70	0.7	1.0	4.797	A

Main results: (08:30-08:45)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North Access	34.13	8.53	765.18	934.24	0.037	34.13	50.64	0.0	0.0	3.999	A
2 - North-East Access	38.54	9.63	729.95	982.11	0.039	38.54	69.35	0.0	0.0	3.814	A
3 - Dowding Way (E)	1039.36	259.84	36.33	1303.38	0.797	1038.89	732.16	3.7	3.8	13.546	B
4 - Dowding	763.01	190.75	52.83	1510.76	0.505	762.98	1022.40	1.0	1.0	4.813	A

Way (W)											
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Main results: (08:45-09:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North Access	27.87	6.97	626.21	996.81	0.028	27.90	41.57	0.0	0.0	3.717	A
2 - North-East Access	31.46	7.87	597.20	1046.34	0.030	31.50	56.91	0.0	0.0	3.549	A
3 - Dowding Way (E)	848.63	212.16	29.70	1306.55	0.650	856.25	599.00	3.8	1.9	8.125	A
4 - Dowding Way (W)	622.99	155.75	43.54	1516.45	0.411	624.24	842.41	1.0	0.7	4.040	A

Main results: (09:00-09:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North Access	23.34	5.83	523.99	1042.84	0.022	23.36	34.72	0.0	0.0	3.530	A
2 - North-East Access	26.35	6.59	499.81	1093.46	0.024	26.38	47.54	0.0	0.0	3.372	A
3 - Dowding Way (E)	710.69	177.67	24.87	1308.86	0.543	713.46	501.32	1.9	1.2	6.073	A
4 - Dowding Way (W)	521.73	130.43	36.28	1520.90	0.343	522.43	702.06	0.7	0.5	3.607	A

2021 + Development, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1 - Site Access	Site Access	Standard Roundabout	1,2,3,4	6.01	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2021 + Development	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - North Access		ONE HOUR	✓	35.00	100.000
2 - North-East Access		ONE HOUR	✓	46.00	100.000
3 - Dowding Way (E)		ONE HOUR	✓	746.00	100.000
4 - Dowding Way (W)		ONE HOUR	✓	831.00	100.000

Origin-Destination Data

Demand (Veh/hr)

From	To				
		1 - North Access	2 - North-East Access	3 - Dowding Way (E)	4 - Dowding Way (W)
	1 - North Access	0.000	0.000	18.000	17.000
	2 - North-East Access	0.000	0.000	19.000	27.000
	3 - Dowding Way (E)	12.000	7.000	0.000	727.000

Proportions

From	To				
		1 - North Access	2 - North-East Access	3 - Dowding Way (E)	4 - Dowding Way (W)
	1 - North Access	0.00	0.00	0.51	0.49
	2 - North-East Access	0.00	0.00	0.41	0.59
	3 - Dowding	0.02	0.01	0.00	0.97

	4 - Dowding Way (W)	7.000	7.000	817.000	0.000
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	Way (E)				
	4 - Dowding Way (W)	0.01	0.01	0.98	0.00

Vehicle Mix

Heavy Vehicle proportion

	To				
From		1 - North Access	2 - North-East Access	3 - Dowding Way (E)	4 - Dowding Way (W)
	1 - North Access	0	0	47	6
	2 - North-East Access	0	0	19	5
	3 - Dowding Way (E)	66	6	0	10
	4 - Dowding Way (W)	12	15	4	0

Average PCU Per Veh

	To				
From		1 - North Access	2 - North-East Access	3 - Dowding Way (E)	4 - Dowding Way (W)
	1 - North Access	1.000	1.000	1.470	1.060
	2 - North-East Access	1.000	1.000	1.190	1.050
	3 - Dowding Way (E)	1.660	1.060	1.000	1.100
	4 - Dowding Way (W)	1.120	1.150	1.040	1.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - North Access	0.04	4.05	0.0	A	32.12	48.17
2 - North-East Access	0.05	3.77	0.1	A	42.21	63.32
3 - Dowding Way (E)	0.63	7.39	1.7	A	684.54	1026.82
4 - Dowding Way (W)	0.56	4.92	1.2	A	762.54	1143.81

Main Results for each time segment

Main results: (16:45-17:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North Access	26.35	6.59	623.19	1051.84	0.025	26.25	14.24	0.0	0.0	3.509	A
2 - North-East Access	34.63	8.66	638.95	1150.42	0.030	34.51	10.49	0.0	0.0	3.225	A

3 - Dowding Way (E)	561.63	140.41	33.00	1315.74	0.427	558.68	640.45	0.0	0.7	4.737	A
4 - Dowding Way (W)	625.62	156.41	14.23	1651.60	0.379	623.20	577.45	0.0	0.6	3.495	A

Main results: (17:00-17:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North Access	31.46	7.87	746.19	999.02	0.032	31.44	17.05	0.0	0.0	3.719	A
2 - North-East Access	41.35	10.34	765.05	1088.81	0.038	41.32	12.57	0.0	0.0	3.436	A
3 - Dowding Way (E)	670.64	167.66	39.52	1312.68	0.511	669.46	766.86	0.7	1.0	5.586	A
4 - Dowding Way (W)	747.05	186.76	17.05	1649.47	0.453	746.19	691.94	0.6	0.8	3.982	A

Main results: (17:15-17:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North Access	38.54	9.63	913.29	927.26	0.042	38.49	20.87	0.0	0.0	4.050	A
2 - North-East Access	50.65	12.66	936.40	1005.11	0.050	50.59	15.38	0.0	0.1	3.770	A
3 - Dowding Way (E)	821.36	205.34	48.39	1308.52	0.628	818.89	938.60	1.0	1.7	7.313	A
4 - Dowding Way (W)	914.95	228.74	20.86	1646.59	0.556	913.29	846.42	0.8	1.2	4.898	A

Main results: (17:30-17:45)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North Access	38.54	9.63	914.91	926.56	0.042	38.54	20.92	0.0	0.0	4.053	A
2 - North-East Access	50.65	12.66	938.04	1004.31	0.050	50.65	15.41	0.1	0.1	3.773	A
3 - Dowding Way (E)	821.36	205.34	48.44	1308.49	0.628	821.30	940.24	1.7	1.7	7.386	A
4 - Dowding Way (W)	914.95	228.74	20.92	1646.55	0.556	914.92	848.82	1.2	1.2	4.920	A

Main results: (17:45-18:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North Access	31.46	7.87	748.69	997.94	0.032	31.51	17.13	0.0	0.0	3.724	A
2 - North-East Access	41.35	10.34	767.58	1087.58	0.038	41.41	12.62	0.1	0.0	3.440	A
3 - Dowding Way (E)	670.64	167.66	39.61	1312.64	0.511	673.08	769.38	1.7	1.1	5.651	A
4 - Dowding Way (W)	747.05	186.76	17.14	1649.40	0.453	748.69	695.55	1.2	0.8	4.003	A

Main results: (18:00-18:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS

1 - North Access	26.35	6.59	626.51	1050.41	0.025	26.38	14.33	0.0	0.0	3.517	A
2 - North-East Access	34.63	8.66	642.33	1148.77	0.030	34.67	10.56	0.0	0.0	3.233	A
3 - Dowding Way (E)	561.63	140.41	33.16	1315.67	0.427	562.85	643.83	1.1	0.8	4.789	A
4 - Dowding Way (W)	625.62	156.41	14.34	1651.52	0.379	626.50	581.68	0.8	0.6	3.517	A

2033 + Development, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1 - Site Access	Site Access	Standard Roundabout	1,2,3,4	12.77	B

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2033 + Development	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - North Access		ONE HOUR	✓	31.00	100.000
2 - North-East Access		ONE HOUR	✓	35.00	100.000
3 - Dowding Way (E)		ONE HOUR	✓	1016.00	100.000
4 - Dowding Way (W)		ONE HOUR	✓	744.00	100.000

Origin-Destination Data

Demand (Veh/hr)

From	To				
		1 - North Access	2 - North-East Access	3 - Dowding Way (E)	4 - Dowding Way (W)
	1 - North Access	0.000	0.000	17.000	14.000
	2 - North-East Access	0.000	0.000	16.000	19.000
	3 - Dowding Way (E)	22.000	26.000	0.000	968.000
	4 - Dowding Way (W)	24.000	37.000	683.000	0.000

Proportions

From	To				
		1 - North Access	2 - North-East Access	3 - Dowding Way (E)	4 - Dowding Way (W)
	1 - North Access	0.00	0.00	0.55	0.45
	2 - North-East Access	0.00	0.00	0.46	0.54
	3 - Dowding Way (E)	0.02	0.03	0.00	0.95
	4 - Dowding Way (W)	0.03	0.05	0.92	0.00

Vehicle Mix

Heavy Vehicle proportion

	To				
		1 - North Access	2 - North-East Access	3 - Dowding Way (E)	4 - Dowding Way (W)
	1 - North Access	0	0	51	7
	2 - North-				

Average PCU Per Veh

	To				
		1 - North Access	2 - North-East Access	3 - Dowding Way (E)	4 - Dowding Way (W)
	1 - North Access	1.000	1.000	1.510	1.070
	2 -				

From	East Access	0	0	36	9
	3 - Dowding Way (E)	37	16	0	11
	4 - Dowding Way (W)	4	4	13	0

From	North-East Access	1.000	1.000	1.360	1.090
	3 - Dowding Way (E)	1.370	1.160	1.000	1.110
	4 - Dowding Way (W)	1.040	1.040	1.130	1.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - North Access	0.04	4.11	0.0	A	28.45	42.67
2 - North-East Access	0.04	3.93	0.0	A	32.12	48.17
3 - Dowding Way (E)	0.86	18.98	5.6	C	932.30	1398.45
4 - Dowding Way (W)	0.54	5.21	1.2	A	682.71	1024.06

Main Results for each time segment

Main results: (07:45-08:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North Access	23.34	5.83	559.24	1026.91	0.023	23.25	34.44	0.0	0.0	3.586	A
2 - North-East Access	26.35	6.59	535.32	1076.42	0.024	26.25	47.17	0.0	0.0	3.427	A
3 - Dowding Way (E)	764.90	191.22	24.75	1309.54	0.584	759.38	536.82	0.0	1.4	6.480	A
4 - Dowding Way (W)	560.12	140.03	35.88	1520.41	0.368	557.80	748.25	0.0	0.6	3.730	A

Main results: (08:00-08:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North Access	27.87	6.97	669.76	977.14	0.029	27.84	41.25	0.0	0.0	3.791	A
2 - North-East Access	31.46	7.87	641.10	1025.26	0.031	31.44	56.51	0.0	0.0	3.621	A
3 - Dowding Way (E)	913.36	228.34	29.64	1307.19	0.699	909.89	642.89	1.4	2.2	8.982	A
4 - Dowding Way (W)	668.84	167.21	42.99	1516.06	0.441	668.03	896.55	0.6	0.8	4.242	A

Main results: (08:15-08:30)

Arm	Total Demand	Junction	Circulating flow	Capacity	RFC	Throughput	Throughput (exit	Start queue	End queue	Delay	LOS
-----	--------------	----------	------------------	----------	-----	------------	------------------	-------------	-----------	-------	-----

	(Veh/hr)	Arrivals (Veh)	(Veh/hr)	(Veh/hr)		(Veh/hr)	side) (Veh/hr)	(Veh)	(Veh)	(s)	
1 - North Access	34.13	8.53	819.55	909.68	0.038	34.09	50.33	0.0	0.0	4.111	A
2 - North-East Access	38.54	9.63	784.66	955.84	0.040	38.49	68.97	0.0	0.0	3.924	A
3 - Dowding Way (E)	1118.64	279.66	36.29	1304.01	0.858	1106.29	786.87	2.2	5.3	17.204	C
4 - Dowding Way (W)	819.16	204.79	52.27	1510.38	0.542	817.61	1090.32	0.8	1.2	5.185	A

Main results: (08:30-08:45)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North Access	34.13	8.53	821.30	908.89	0.038	34.13	50.62	0.0	0.0	4.115	A
2 - North-East Access	38.54	9.63	786.10	955.15	0.040	38.54	69.33	0.0	0.0	3.927	A
3 - Dowding Way (E)	1118.64	279.66	36.33	1303.99	0.858	1117.42	788.30	5.3	5.6	18.979	C
4 - Dowding Way (W)	819.16	204.79	52.79	1510.05	0.542	819.13	1100.96	1.2	1.2	5.210	A

Main results: (08:45-09:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North Access	27.87	6.97	672.45	975.92	0.029	27.91	41.68	0.0	0.0	3.796	A
2 - North-East Access	31.46	7.87	643.31	1024.20	0.031	31.50	57.04	0.0	0.0	3.628	A
3 - Dowding Way (E)	913.36	228.34	29.71	1307.16	0.699	926.34	645.11	5.6	2.4	9.754	A
4 - Dowding Way (W)	668.84	167.21	43.76	1515.58	0.441	670.37	912.28	1.2	0.8	4.268	A

Main results: (09:00-09:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North Access	23.34	5.83	562.53	1025.43	0.023	23.36	34.74	0.0	0.0	3.591	A
2 - North-East Access	26.35	6.59	538.33	1074.96	0.025	26.38	47.57	0.0	0.0	3.435	A
3 - Dowding Way (E)	764.90	191.22	24.87	1309.48	0.584	768.76	539.83	2.4	1.4	6.703	A
4 - Dowding Way (W)	560.12	140.03	36.32	1520.14	0.368	560.96	757.32	0.8	0.6	3.755	A

2033 + Development, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1 - Site Access	Site Access	Standard Roundabout	1,2,3,4	6.88	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2033 + Development	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - North Access		ONE HOUR	✓	35.00	100.000
2 - North-East Access		ONE HOUR	✓	46.00	100.000
3 - Dowding Way (E)		ONE HOUR	✓	807.00	100.000
4 - Dowding Way (W)		ONE HOUR	✓	899.00	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		1 - North Access	2 - North-East Access	3 - Dowding Way (E)	4 - Dowding Way (W)
From	1 - North Access	0.000	0.000	18.000	17.000
	2 - North-East Access	0.000	0.000	19.000	27.000
	3 - Dowding Way (E)	12.000	7.000	0.000	788.000
	4 - Dowding Way (W)	7.000	7.000	885.000	0.000

Proportions

	To				
		1 - North Access	2 - North-East Access	3 - Dowding Way (E)	4 - Dowding Way (W)
From	1 - North Access	0.00	0.00	0.51	0.49
	2 - North-East Access	0.00	0.00	0.41	0.59
	3 - Dowding Way (E)	0.01	0.01	0.00	0.98
	4 - Dowding Way (W)	0.01	0.01	0.98	0.00

Vehicle Mix

Heavy Vehicle proportion

	To				
		1 - North Access	2 - North-East Access	3 - Dowding Way (E)	4 - Dowding Way (W)
From	1 - North Access	0	0	47	6
	2 - North-East Access	0	0	19	5
	3 - Dowding Way (E)	66	46	0	10
	4 - Dowding Way (W)	12	15	4	0

Average PCU Per Veh

	To				
		1 - North Access	2 - North-East Access	3 - Dowding Way (E)	4 - Dowding Way (W)
From	1 - North Access	1.000	1.000	1.470	1.060
	2 - North-East Access	1.000	1.000	1.190	1.050
	3 - Dowding Way (E)	1.660	1.460	1.000	1.100
	4 - Dowding Way (W)	1.120	1.150	1.040	1.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - North Access	0.04	4.21	0.0	A	32.12	48.17

2 - North-East Access	0.05	3.92	0.1	A	42.21	63.32
3 - Dowding Way (E)	0.68	8.63	2.1	A	740.52	1110.78
4 - Dowding Way (W)	0.60	5.49	1.5	A	824.94	1237.41

Main Results for each time segment

Main results: (16:45-17:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North Access	26.35	6.59	674.05	1029.16	0.026	26.25	14.23	0.0	0.0	3.589	A
2 - North-East Access	34.63	8.66	689.80	1125.80	0.031	34.50	10.49	0.0	0.0	3.298	A
3 - Dowding Way (E)	607.55	151.89	33.00	1312.41	0.463	604.14	691.30	0.0	0.9	5.059	A
4 - Dowding Way (W)	676.81	169.20	14.22	1650.70	0.410	674.05	622.91	0.0	0.7	3.675	A

Main results: (17:00-17:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North Access	31.46	7.87	807.13	971.84	0.032	31.44	17.05	0.0	0.0	3.827	A
2 - North-East Access	41.35	10.34	825.99	1059.31	0.039	41.32	12.56	0.0	0.0	3.535	A
3 - Dowding Way (E)	725.48	181.37	39.52	1309.35	0.554	723.99	827.79	0.9	1.2	6.133	A
4 - Dowding Way (W)	808.18	202.05	17.05	1648.34	0.490	807.13	746.46	0.7	1.0	4.274	A

Main results: (17:15-17:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North Access	38.54	9.63	987.67	894.09	0.043	38.49	20.85	0.0	0.0	4.207	A
2 - North-East Access	50.65	12.66	1010.79	969.10	0.052	50.59	15.37	0.0	0.1	3.919	A
3 - Dowding Way (E)	888.52	222.13	48.39	1305.20	0.681	885.13	1012.98	1.2	2.1	8.501	A
4 - Dowding Way (W)	989.82	247.45	20.84	1645.18	0.602	987.68	912.68	1.0	1.5	5.458	A

Main results: (17:30-17:45)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North Access	38.54	9.63	989.77	893.18	0.043	38.54	20.92	0.0	0.0	4.211	A
2 - North-East Access	50.65	12.66	1012.90	968.07	0.052	50.65	15.41	0.1	0.1	3.923	A
3 - Dowding	888.52	222.13	48.44	1305.17	0.681	888.41	1015.09	2.1	2.1	8.631	A

Way (E)											
4 - Dowding Way (W)	989.82	247.45	20.92	1645.12	0.602	989.77	915.94	1.5	1.5	5.493	A

Main results: (17:45-18:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North Access	31.46	7.87	810.31	970.47	0.032	31.51	17.15	0.0	0.0	3.836	A
2 - North-East Access	41.35	10.34	829.19	1057.76	0.039	41.41	12.63	0.1	0.0	3.541	A
3 - Dowding Way (E)	725.48	181.37	39.61	1309.31	0.554	728.84	830.99	2.1	1.3	6.239	A
4 - Dowding Way (W)	808.18	202.05	17.16	1648.25	0.490	810.30	751.29	1.5	1.0	4.308	A

Main results: (18:00-18:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North Access	26.35	6.59	677.90	1027.50	0.026	26.38	14.34	0.0	0.0	3.595	A
2 - North-East Access	34.63	8.66	693.72	1123.89	0.031	34.67	10.56	0.0	0.0	3.304	A
3 - Dowding Way (E)	607.55	151.89	33.16	1312.33	0.463	609.11	695.23	1.3	0.9	5.130	A
4 - Dowding Way (W)	676.81	169.20	14.34	1650.60	0.410	677.90	627.93	1.0	0.7	3.707	A

APPENDIX J

M25 Junction 26 VISSIM Model Local Model Validation Report

January 2018

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Appendices

Appendix A: Turn and Link Count Calibration (Full)
Appendix B: Queue Comparison Graphs

1 INTRODUCTION

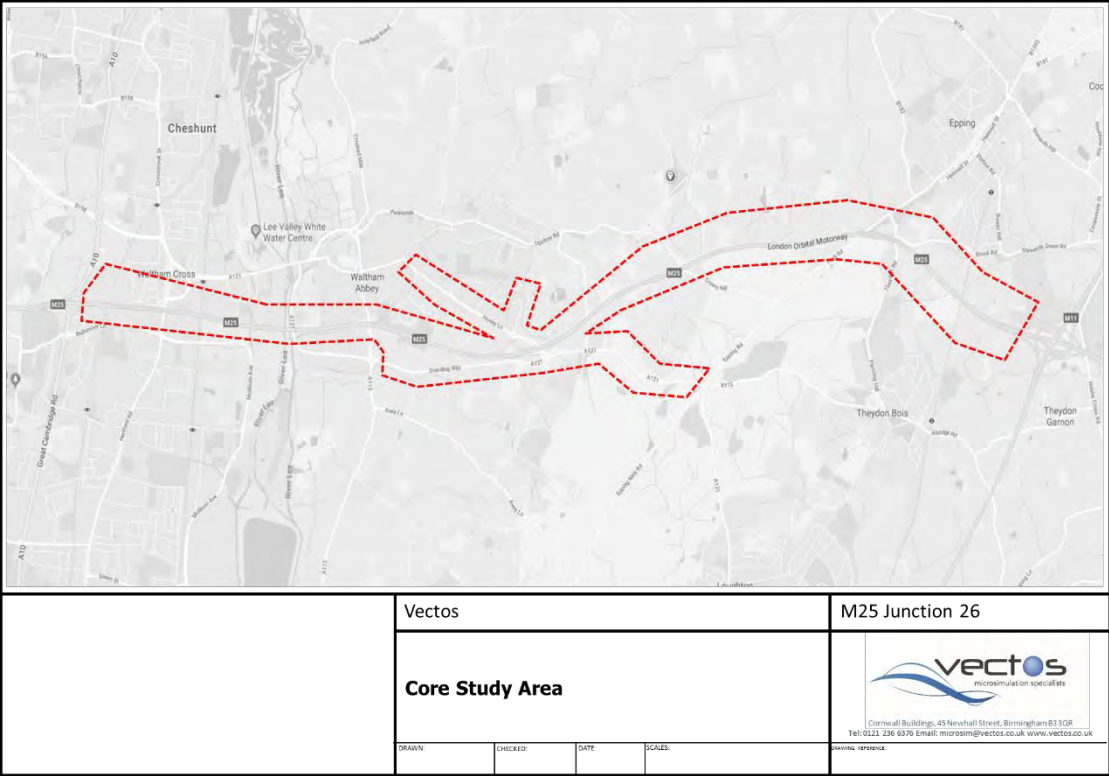
Background

- 1.1 Vectos Microsim (VM) has been appointed by Vectos to develop a 2017 Base VISSIM microsimulation model of M25 Junction 26.
- 1.2 This report summarises the steps taken to develop the Base model and presents an assessment of the respective model calibration and validation.

Scope

- 1.3 The Base model has been developed afresh as a new 2017 Base model. The model utilises VISSIM version 9.00-07.
- 1.4 The final base model will be used to assess the impact of a large scale distribution centre. The development site lies to the north of A121 Dowding Way, with vehicular access provided via a new roundabout.
- 1.5 The full study area is illustrated in Figure 1 below:

Figure 1: Study Area



Report Structure

1.6 The remainder of the report is set out as follows:

- Chapter 2 – Summarises the general model settings used in the resulting model, the assessment criteria adhered to in its development, and the observed data that was available and used in the model's development
- Chapter 3 – Summarises the VISSIM parameters used in model development
- Chapter 4 – Presents the calibration assessments
- Chapter 5 – Presents the model validation assessments
- Chapter 6 – Provides a summary and the conclusions

2 MODEL SPECIFICATION & SURVEY DATA

2.1 The model has been developed and validated with the following specifications:

- **VISSIM Version:**
 - 9.00-07
- **Base Year:**
 - 2017
- **Simulation Periods (Evaluation Periods):**
 - AM: 07:30-09:30 (08:00-09:00)
 - PM: 16:30-18:30 (17:00-18:00)
- **Assignment Method:**
 - Dynamic Assignment
- **Assessment Criteria**
 - Network calibration assessed against observed 2017 Manual Classified Turn Counts (MCCs), WebTRIS data from Highways England (HE) database for M25 mainline counts, and 2017 queue length surveys
 - Model validation assessed against 2016 TrafficMaster journey times across 'local' network and 2017 WebTRIS journey time data for M25 mainline and slips

2.2 The following data has been utilised in the development of the updated 2017 Base model.

Manual Classified Counts (MCC)

- 2.3 MCCs were undertaken by the survey company Advanced Transport Research (ATR) on Wednesday 11th October 2017.
- 2.4 A total of three junctions were surveyed for the development of this Base model:
- M25/Honey Lane/Old Shire Lane
 - M25/Honey Lane/A121 Honey Lane/A121 Dowding Way
 - A121/Woodgreen Road/Forest Side
- 2.5 All movements across were recorded at 15-minute intervals and disaggregated by vehicle type.
- 2.6 No mainline counts were included as these were informed by online Highways England (HE) traffic flow data via the WebTRIS database.
- 2.7 The recorded MCC turn counts equated to a total of 38 turning movements across the three junctions for each peak period. These turning movements were used to assess the relationship between modelled and observed flows during model calibration.
- 2.8 In addition, WebTRIS provided the M25 eastbound and westbound mainline movements through Junction 26, in conjunction with the turn counts to and from the eastbound and westbound on and off slips, which are informed by the MCCs.

Queue Length Surveys

- 2.9 Queue length surveys were also carried out on Wednesday 16th November 2016 on all approaches, and disaggregated by lane and vehicle type. Queue lengths were recorded as the maximum queue length observed in 5 minute intervals.

WebTRIS Data

- 2.10 Online data available from the Highways England database WebTRIS was utilised to provide vehicle counts on the M25 mainline. The database was interrogated to determine which MIDAS loops in the vicinity of Junction 25 could be used.

- 2.11 The closest loops to the junction for which data was available were M25/5511A (eastbound carriageway) and M25/5511B (westbound carriageway). No data was available for October 2017 and so counts from early 2017 were compiled.
- 2.12 All data was subject to sifting and sense-checking to ensure the derived average was representative and robust. Firstly, the data was processed to include only neutral weekdays (i.e. Tuesday, Wednesday and Thursday), thereby excluding weekends and the traditionally quieter weekdays.
- 2.13 Secondly, the resulting dataset was sifted to ensure no outliers existed. To help highlight and remove these outliers from the average, the statistical middle 50% (Interquartile Range [IQR]) was calculated which divided the dataset into four equal groups. By subtracting the first quarter (25%) from the third quarter (75%), the middle 50% remains. It is generally agreed that a suitable upper and lower bound for the dataset can be calculated by multiplying the IQR by 1.5, and applying this tolerance to either side of the middle 50%.
- 2.14 Any values which fell outside of these boundaries were removed from the average value that was ultimately used for mainline M25 flows.

Table 1: AM and PM Eastbound M25 Mainline Traffic Flows

	07:30-07:45	07:45-08:00	08:00-08:15	08:15-08:30	08:30-08:45	08:45-09:00	09:00-09:15	09:15-09:30
Min	975	971	941	898	897	859	903	899
Max	1272	1291	1210	1188	1158	1110	1156	1070
Average	1106	1097	1056	1039	1032	993	1017	1003
Count	22	22	22	22	21	21	20	21
Counts Removed	1	1	1	1	2	2	3	2
	16:30-16:45	16:45-17:00	17:00-17:15	17:15-17:30	17:30-17:45	17:45-18:00	18:00-18:15	18:15-18:30
Min	1185	1133	1227	1178	1254	1220	1270	1124
Max	1477	1507	1512	1514	1536	1559	1592	1552
Average	1372	1367	1401	1394	1425	1419	1470	1394
Count	22	23	22	23	21	21	20	21
Counts Removed	1	0	1	0	2	2	3	2

Table 2: AM and PM Westbound M25 Mainline Traffic Flows

	07:30-07:45	07:45-08:00	08:00-08:15	08:15-08:30	08:30-08:45	08:45-09:00	09:00-09:15	09:15-09:30
Min	1003	1066	1149	1032	1257	1047	959	1063
Max	1600	1612	1609	1562	1589	1438	1400	1320
Average	1403	1379	1413	1375	1379	1267	1195	1213
Count	22	23	22	22	22	21	22	20
Counts Removed	1	0	1	1	1	2	1	3
	16:30-16:45	16:45-17:00	17:00-17:15	17:15-17:30	17:30-17:45	17:45-18:00	18:00-18:15	18:15-18:30
Min	1098	1123	1097	1063	1025	1009	917	871
Max	1395	1351	1305	1272	1303	1323	1240	1344
Average	1237	1226	1202	1169	1180	1158	1101	1095
Count	22	22	23	20	22	22	22	21
Counts Removed	1	1	0	3	1	1	1	2

2.15 The Figure below provides the locations of the two MIDAS loops used:

Figure 2: MIDAS Loop Locations



2.16 The derived 15-minute mainline flow counts were used directly to inform 15-minute matrices of mainline movements, and have been included in the link flow calibration sections of the results chapter to follow.

Journey Time Data

2.17 Journey time data for the local road network was provided by Essex County Council. The data included all trips observed during neutral months in 2016, and for both AM and PM peak hours.

2.18 The routes surveyed are illustrated in the Figure below:

Figure 3: Surveyed Journey Time Routes



2.19 In addition to the above, mainline and motorway slip journey time sections are analysed using data from the HE WebTRIS database¹. The following sections were available for analysis:

1. Westbound Off-Slip
2. Westbound On-Slip
3. Eastbound Off-Slip
4. Eastbound On-Slip
5. Westbound Between J27 and J26
6. Westbound Within J26
7. Westbound Between J26 and J25
8. Eastbound Between J25 and J26
9. Eastbound Within J26
10. Eastbound Between J26 and J27

2.20 For each section, October 2017 journey times were taken from the database and sifted to include only neutral weekdays (i.e. Tuesday-Thursday), and for the AM and PM peak hours.

2.21 The names and references for the sections used, grid references, and total section lengths are provided in the Table below:

¹ <http://tris.highwaysengland.co.uk/detail/journeytimedata>

Table 3: M25 mainline and On-Slip/Off-Slip journey time sections

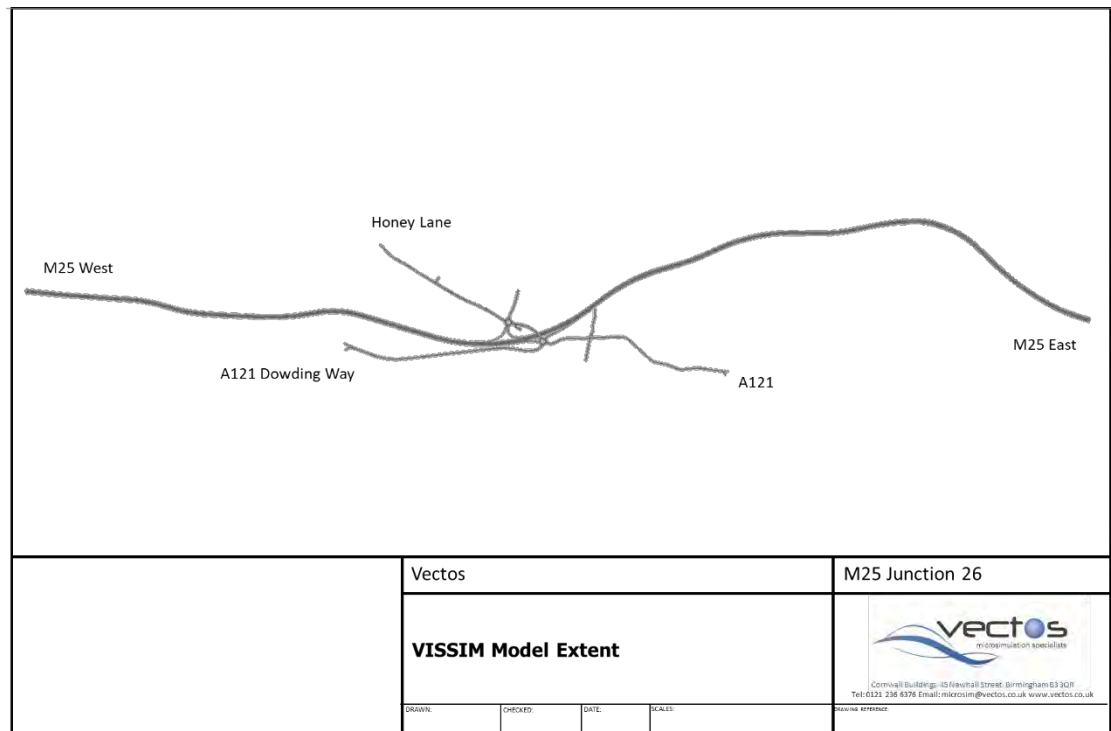
Section Description and Reference Number	Grid References				Length (m)
	From		To		
	X Easting	Y Northing	X Easting	Y Northing	
M25 anti-clockwise between J26 and J25 mainCarriageway 199055501	540422	199641	535388	200025	5091
M25 anti-clockwise between J27 and J26 mainCarriageway 199065301	546150	200193	541129	199943	5530
M25 anti-clockwise within J26 mainCarriageway 199064701	541129	199943	540422	199641	774
M25 clockwise between J25 and J26 mainCarriageway 199064601	535389	200043	540071	199627	4738
M25 clockwise between J26 and J27 mainCarriageway 125024201	540631	199719	542201	200550	1790
M25 clockwise between J26 and J27 mainCarriageway 199062902	542201	200550	546314	200151	4473
M25 clockwise within J26 mainCarriageway 199064801	540071	199627	540631	199719	570
M25 J26 anti-clockwise access entrySlipRoad 199064702	540710	199645	540422	199641	291
M25 J26 anti-clockwise exit exitSlipRoad 199057101	541129	199943	540765	199670	470
M25 J26 clockwise access entrySlipRoad 199064802	540381	199830	540631	199719	375
M25 J26 clockwise exit exitSlipRoad 199056801	540071	199627	540338	199838	381

3 BASE MODEL DEVELOPMENT

Network Structure

- 3.1 The network has been coded using the Bing Maps function in VISSIM as a background. The general network extent is presented in the Figure below:

Figure 4: Network Extent



- 3.2 All input link lengths have been coded to accommodate the maximum queue lengths observed and, in the case of the local road network, to allow for the full TrafficMaster journey time sections to be represented. In the case of the M25 mainline, link lengths are coded to reach back to junctions 25 and 27 to ensure that WebTRIS mainline journey times can be included in model validation. The M25 mainline links either side of junction 26 extend for approximately 5-6km in either direction.

- 3.3 Vehicle speeds have been controlled through the application of Desired Speed Decisions (where physical speed limit changes are required) and Reduced Speed Areas (where temporary speed controls are required owing to the geometry of the network or approaching areas of conflict).
- 3.4 Conflicting movements between vehicles at are primarily controlled by Priority Rules, which were adjusted as part of the calibration process for each peak period. Priority Rule parameters remain consistent between AM and PM models.
- 3.5 The speed distribution curves that provide the range of speeds within a given speed limit have been derived through interrogation of DfT statistics of vehicle speed compliance².

Signals

- 3.6 Only one signal controller is included within the modelling; a 'dummy' signal used to replicate the effects of vehicles slowing down on the approach to an off-network junction, namely the A121/A104/B172 roundabout to the east of the model extent.

Vehicle Demands

- 3.7 The model utilises VISSIM's Dynamic method of vehicle assignment, meaning the demands are included in a matrix format informed by the MCCs. These turn counts have been converted to Origin-to-Destination (O-D) movements and included in 15-minute intervals as a two-tier matrix structure representing Lights and Heavies separately. Each peak model includes a 30 minute warm-up and cool down period.

² DfT, *Vehicle speed compliance statistics for Great Britain: 2016*, June 2017

3.8 The 9 zones included are:

- Honey Lane West
- Old Shire Lane
- M25 East
- A121 Honey Lane/Woodridden Hill
- A121 Dowding Way
- M25 West
- HGV Stop
- Woodgreen Road
- Forest Side

3.9 Although the HGV stop between the two roundabouts was not surveyed, assumptions were made regarding numbers of vehicles using the facility based on comparisons of exiting traffic from the southern roundabout and approaching traffic to the northern roundabout. Any loss of vehicles between these two were assumed to be a result of vehicles using this rest stop.

3.10 Furthermore, the number of U-turners at the southern roundabout from Honey Lane to Honey Lane were considered to be a result of vehicles wishing to use the rest stop, and U-turners at the northern roundabout were assumed to be vehicles leaving the rest stop and heading to either M25 westbound or A121.

3.11 Another assumption made in the process of converting junction turn counts to O-D demand matrices was that no vehicles use the two roundabouts to effectively U-turn from M25 West-to-M25 West, or from M25 East-to-M25 East. Using turn count proportions without this restriction would result in a high number of vehicles taking these routes; therefore these movements were not considered as viable routes during matrix development.

3.12 The precise proportions assigned to each vehicle type within the Light and Heavy vehicle classes are informed by the classified survey data; the total number of Cars and LGVs are calculated and applied proportionally to the Light vehicle class, and the total number of OGV1s and OGV2s are calculated and applied proportionally to the Heavy vehicle class.

- 3.13 Bus demands are included separately on public transport lines. Online searches³ showed that the 66 service runs through the model extent; model release times in the AM and PM models are as follows:

Table 4: 66 Bus Service; AM release times 07:30-09:30

Direction of Service	Time	Simulation Second
Eastbound Route (Entry from Zone 1 – Honey Lane)	07:38	480
	08:06	2160
	08:26	3360
	08:53	4980
	09:10	6000
	09:29	7140
Westbound Route (Entry from Zone 4 – A121 Woodricken Hill)	07:37	420
	07:57	1620
	08:17	2640
	08:45	3660
	09:08	4560
	09:29	6360

Table 5: 66 Bus Service; PM release times 16:30-18:30

Direction of Service	Time	Simulation Second
Eastbound Route (Entry from Zone 1 – Honey Lane)	16:35	300
	16:57	1620
	17:14	2640
	17:31	3660
	17:46	4560
	18:16	6360
Westbound Route (Entry from Zone 4 – A121 Woodricken Hill)	16:42	720
	17:13	2580
	17:35	3900
	17:52	4920
	18:09	5940
	18:24	6840

- 3.14 As the Base models include no route choice, Base model convergence was not necessary.

³ http://www.eoslondon.com/timetables/66mf_1sept.php

4 MODEL CALIBRATION

Calibration Criteria

- 4.1 Flow calibration is a process whereby modelled flow outputs are compared to the equivalent observed traffic flows across the network.
- 4.2 The Geoffrey E. Havers (GEH) statistic is a standard way of comparing the observed and modelled flows, as defined in DMRB, Volume 12, Chapter 4. The GEH value is similar to a chi-squared test and also incorporates both relative and absolute errors in order to give an overall measure of the accuracy of the modelled flow.
- 4.3 The GEH statistic has the benefit of removing bias that exists when comparing flows of different magnitudes using percentages, such that a difference of 10 in a flow of 100 vehicles per hour (vph) is less significant (GEH = 1) than a difference of 100 in a flow of 1000 vph (GEH = 3.2).
- 4.4 The GEH statistic is calculated by:

$$GEH = \sqrt{\frac{(M - C)^2}{(M + C)/2}}$$

where:

GEH	= GEH statistic
M	= Modelled flow
C	= Observed flow

- 4.5 Dft guidance indicates that the GEH statistics should be less than 5.0 for 85% of comparisons between observed and modelled hourly flows.

4.6 Furthermore, the difference between observed and modelled link flows is also examined. DfT provides guidance for acceptable absolute or percentage differences in observed vehicles per hour (vph) in DMRB as follows:

- For observed flows < 700 vph, modelled flow within 100 vph of observed flow
- For observed flows 700-2,700 vph, modelled flow within 15% of observed flow
- For observed flows > 2,700 vph, modelled flow within 400 vph of observed flow

4.7 Again, 85% of hourly flows should be within this criteria.

4.8 All results provided below are based on averages taken from 10 seed runs.

Turn and Link Count Calibration

4.9 MCC data was used to inform the development of the demand matrices and the calibration of the network, providing a total of 38 turn counts for each time period. HE data provided a further two counts (eastbound and westbound through movements) which were also considered as part of the calibration process.

4.10 Link counts are derived from the total vehicle numbers travelling in either direction on a link, and are informed by the sum of all approaching/exiting vehicles in the MCC data. The results contain link count data for 24 locations (three junctions, with four approach and exit arms to each).

4.11 DMRB link flow calibration criteria is assessed against these totals.

4.12 A summary of the calibration results for each period is provided in the table overleaf:

Table 6: AM and PM Calibration Statistics Summary

Turn Count Calibration (GEH)				
	AM		PM	
Counts	38		38	
	Pass	%	Pass	%
<1	35	92.1%	36	94.7%
<2	37	97.4%	38	100.0%
<3	38	100.0%	38	100.0%
<4	38	100.0%	38	100.0%
<5	38	100.0%	38	100.0%
<6	38	100.0%	38	100.0%
<7	38	100.0%	38	100.0%
Link Flow Calibration				
	AM		PM	
Counts	24		24	
<700 veh	<i>within 100</i>		<i>within 100</i>	
pass	14	100.0%	9	100.0%
fail	0	0.0%	0	0.0%
700-2700	<15%		<15%	
pass	10	100.0%	15	100.0%
fail	0	0.0%	0	0.0%
>2700 vehs	<i>within 400</i>		<i>within 400</i>	
pass	0	-	0	-
fail	0	-	0	-
TOTAL				
pass	24	100.0%	24	100.0%
fail	0	0.0%	0	0.0%
Summary				
	AM		PM	
Turn GEH<5	100.0%		100.0%	
Link Flow	100.0%		100.0%	

- 4.13 Full disclosure of 15-minute calibration statistics can be found in Appendix A.
- 4.14 The results show that for all peak hours in both AM and PM models, 100% of modelled turn counts fall within a GEH value of 3, and 100% of modelled link counts adhere to TAG guidance.

M25 Mainline Counts

- 4.15 As described in Chapter 2, WebTRIS data was interrogated to provide the mainline M25 counts.
- 4.16 The following tables provide a comparison of observed and modelled mainline hourly flows for all vehicles:

Table 7: AM M25 Mainline Calibration Summary

M25 Mainline Flow	08:00-09:00				
	Observed	Modelled	Diff (n)	Diff (%)	GEH
M25 Eastbound Mainline	4121	4118	-3	0.0	0.0
M25 Westbound Mainline	5434	5303	-131	0.0	1.8

Table 8: PM M25 Mainline Calibration Summary

M25 Mainline Flow	17:00-18:00				
	Observed	Modelled	Diff (n)	Diff (%)	GEH
M25 Eastbound Mainline	5638	5672	34	0.0	0.5
M25 Westbound Mainline	4710	4632	-78	0.0	1.1

- 4.17 The results show that modelled flows along the M25 mainline correlate closely with observed data in both eastbound and westbound directions.

Queue Lengths

- 4.18 Neither TfL, DMRB nor WebTAG provide any specific guidelines on queue assessments. DMRB actually states that *“precise validation of queue lengths can be difficult because of the volatility of the observed data”*.
- 4.19 Likewise, TfL identify that *“the level of accuracy in queue measurement surveys can often [sic] lower than for other surveys as the definition of a queue can be ambiguous as well as difficult to identify”*.
- 4.20 Queue length surveys are able to provide an estimation of conditions at the site but cannot be expected to be replicated accurately within a model. Reasons for this include:
- The tendency for the model results to fluctuate between different model runs;
 - The day-to-day variance in real-life conditions at the site meaning that results taken from one day cannot be applied too rigidly; and
 - The software’s mathematical interpretation of queue lengths compared with the subjective nature of human interpretation during manual surveys.
- 4.21 Nevertheless queue length data is a useful dataset with which to gather an understanding of the general pattern of delay across a junction. Queue graphs displaying observed versus modelled maximum queue lengths in 5 minute intervals across each peak period are presented in Appendix B.

- 4.22 Both AM and PM graphs show a strong correlation between observed and modelled queue lengths.
- 4.23 Following analysis of all calibration criteria, both AM and PM models can be considered to be well calibrated to all available turn count, link count and queue length data.

5 MODEL VALIDATION

Journey Time Validation

- 5.1 Journey times for both local and strategic road network within the model extent were assessed for each peak hour.
- 5.2 TAG Unit M3.1 outlines that for 85% of the modelled routes, the difference between the observed and modelled journey times should not be more than 15% (or 1 minute, if higher). However to improve the accuracy of the model all sections are assessed against the 15% criteria.
- 5.3 The tables below provide a breakdown of AM and PM journey time results for these routes:

Table 9: AM Journey Time Validation Summary

Journey Time Route		08:00-09:00				
		Obs	Mod	Diff (s)	Diff (%)	Pass?
Route 1 Eastbound	Route 1 EB	137	153	16	12%	PASS
Route 1 Westbound	Route 1 WB	124	128	5	4%	PASS
Route 2 Eastbound	Route 2 EB	554	488	66	-12%	PASS
Route 2 Westbound	Route 2 WB	469	521	52	11%	PASS
Eastbound M25 Mainline	J25-J26 Eastbound	239	234	6	-2%	PASS
	Within J26 Eastbound	34	35	1	3%	PASS
	J26-J27 Eastbound	231	250	19	8%	PASS
Westbound M25 Mainline	J27-J26 Westbound (section 1)	153	163	9	6%	PASS
	J27-J26 Westbound (section 2)	62	64	2	4%	PASS
	Within J26 Westbound	19	20	1	6%	PASS
	J26-J25 Westbound	163	171	7	4%	PASS
M25 J26 On/Off Slips	J26 Westbound On-Slip	19	17	2	-12%	PASS
	J26 Westbound Off-Slip	69	60	9	-13%	PASS
	J26 Eastbound On-Slip	21	19	1	-7%	PASS
	J26 Eastbound Off-Slip	23	24	1	5%	PASS

Table 10: PM Journey Time Validation Summary

Journey Time Route		17:00-18:00				
		Obs	Mod	Diff (s)	Diff (%)	Pass?
Route 1 Eastbound	Route 1 EB	191	188	3	-1%	PASS
Route 1 Westbound	Route 1 WB	123	126	3	2%	PASS
Route 2 Eastbound	Route 2 EB	587	567	20	-3%	PASS
Route 2 Westbound	Route 2 WB	419	404	15	-4%	PASS
Eastbound M25 Mainline	J25-J26 Eastbound	190	184	7	-3%	PASS
	Within J26 Eastbound	26	27	2	6%	PASS
	J26-J27 Eastbound	194	197	3	2%	PASS
Westbound M25 Mainline	J27-J26 Westbound (section 1)	169	157	12	-7%	PASS
	J27-J26 Westbound (section 2)	68	62	6	-9%	PASS
	Within J26 Westbound	21	20	2	-8%	PASS
	J26-J25 Westbound	197	165	31	-16%	FAIL
M25 J26 On/Off Slips	J26 Westbound On-Slip	15	16	1	9%	PASS
	J26 Westbound Off-Slip	39	53	14	35%	FAIL
	J26 Eastbound On-Slip	20	19	2	-8%	PASS
	J26 Eastbound Off-Slip	24	26	2	10%	PASS

5.4 The results show that:

- In the AM period, 100% of reported journey times fall within TAG guidelines
- In the PM period, 87% of reported journey times fall within TAG guidelines

5.5 These results provide evidence that the AM and PM base models can be considered to be well validated to the available journey time data.

6 SUMMARY AND CONCLUSIONS

- 6.1 Vectos Microsim (VM) has been appointed by Vectos to develop a new 2017 VISSIM Base model of M25 J26.
- 6.2 The model covers the extent of the two roundabouts either side of the M25 mainline which runs through the grade-separated Junction 26, along with the A121/Woodgreen Road/Forest Side junction which lies to the east of the motorway junction.
- 6.3 The model has drawn upon a large pool of observed data including MCC turn counts, WebTRIS motorway traffic flows, queue lengths and both TrafficMaster and WebTRIS journey time data.
- 6.4 The results presented in this document demonstrate that the modelled outputs correlate closely with all of the above datasets and as a result, both AM and PM models can be considered to be robust tools with which to test any future year scheme appraisal or development impact assessment within the model extent.

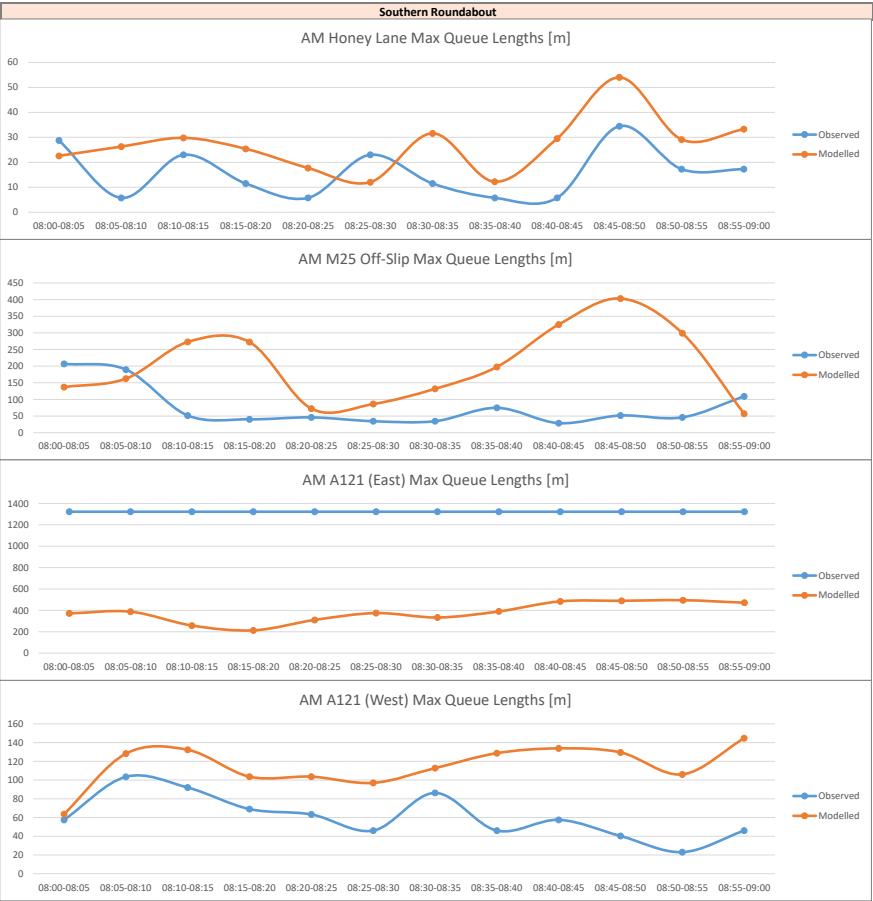
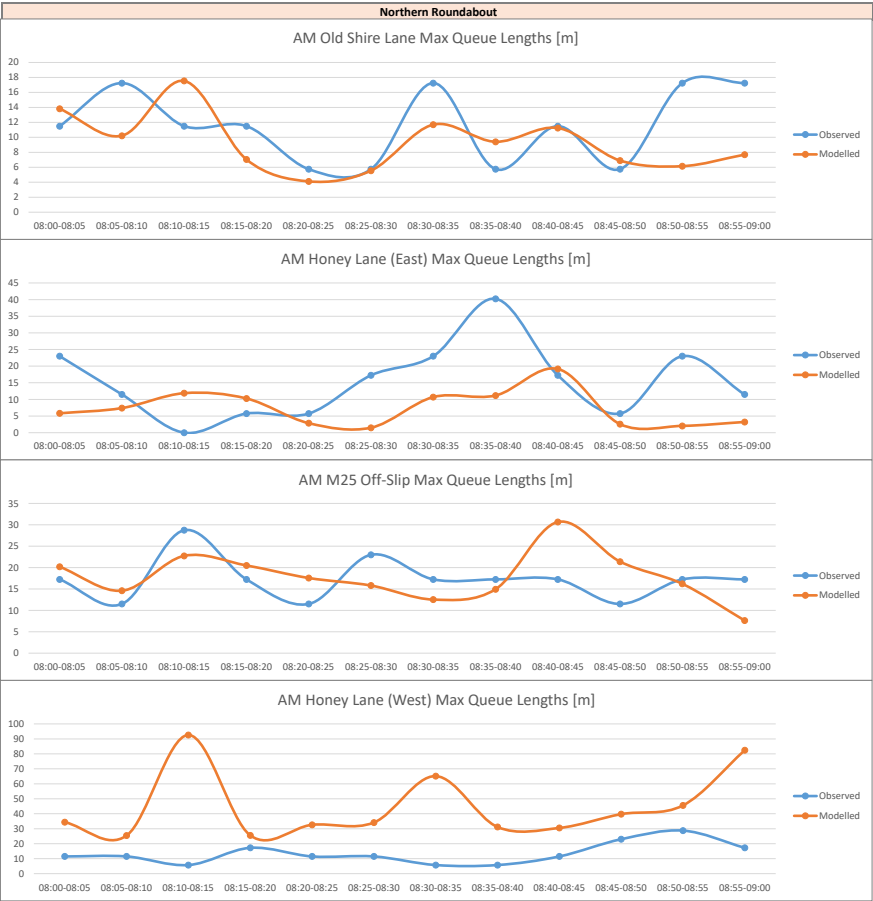
Appendix A

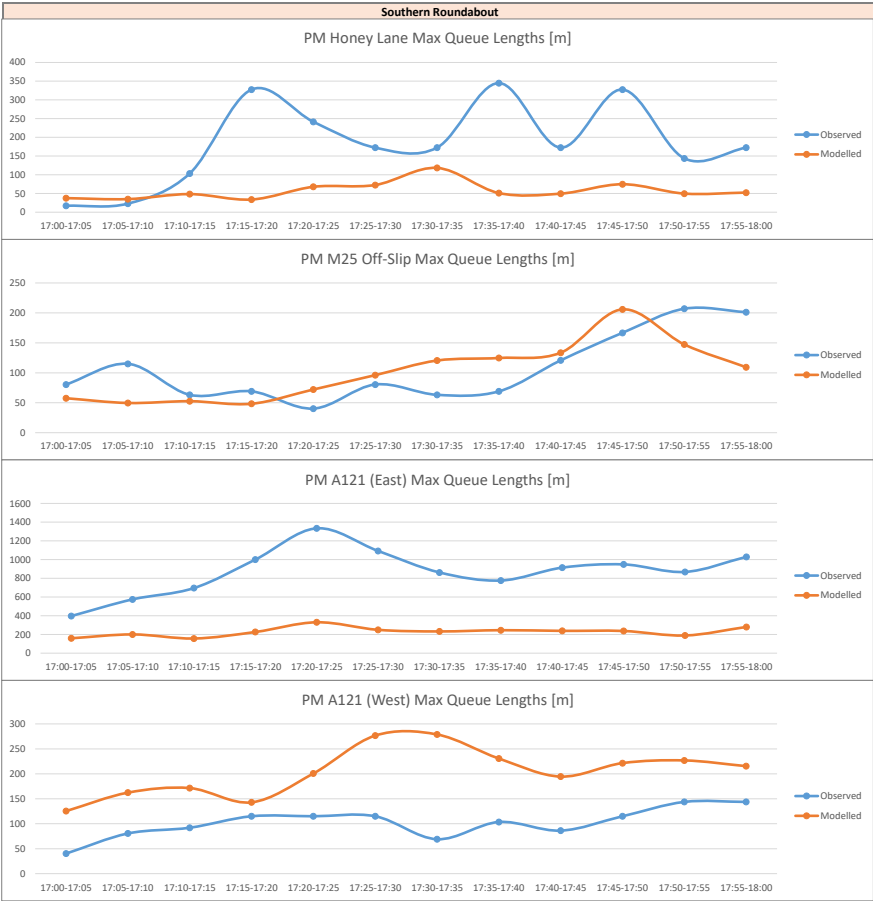
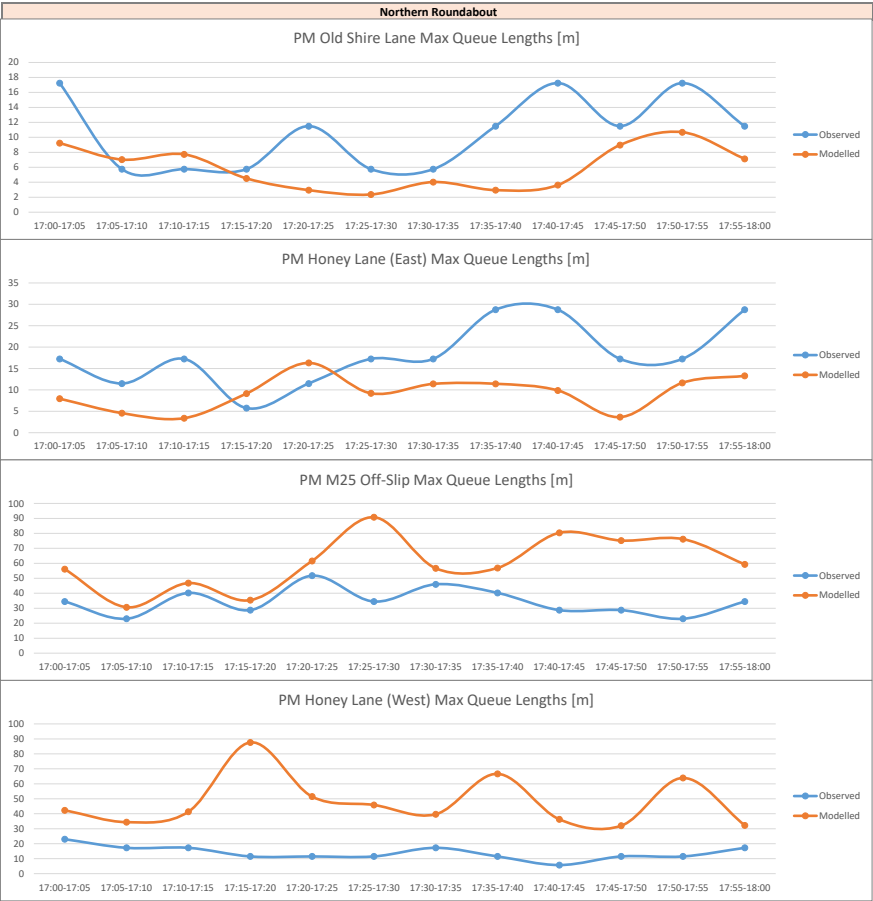
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[illegible][illegible]

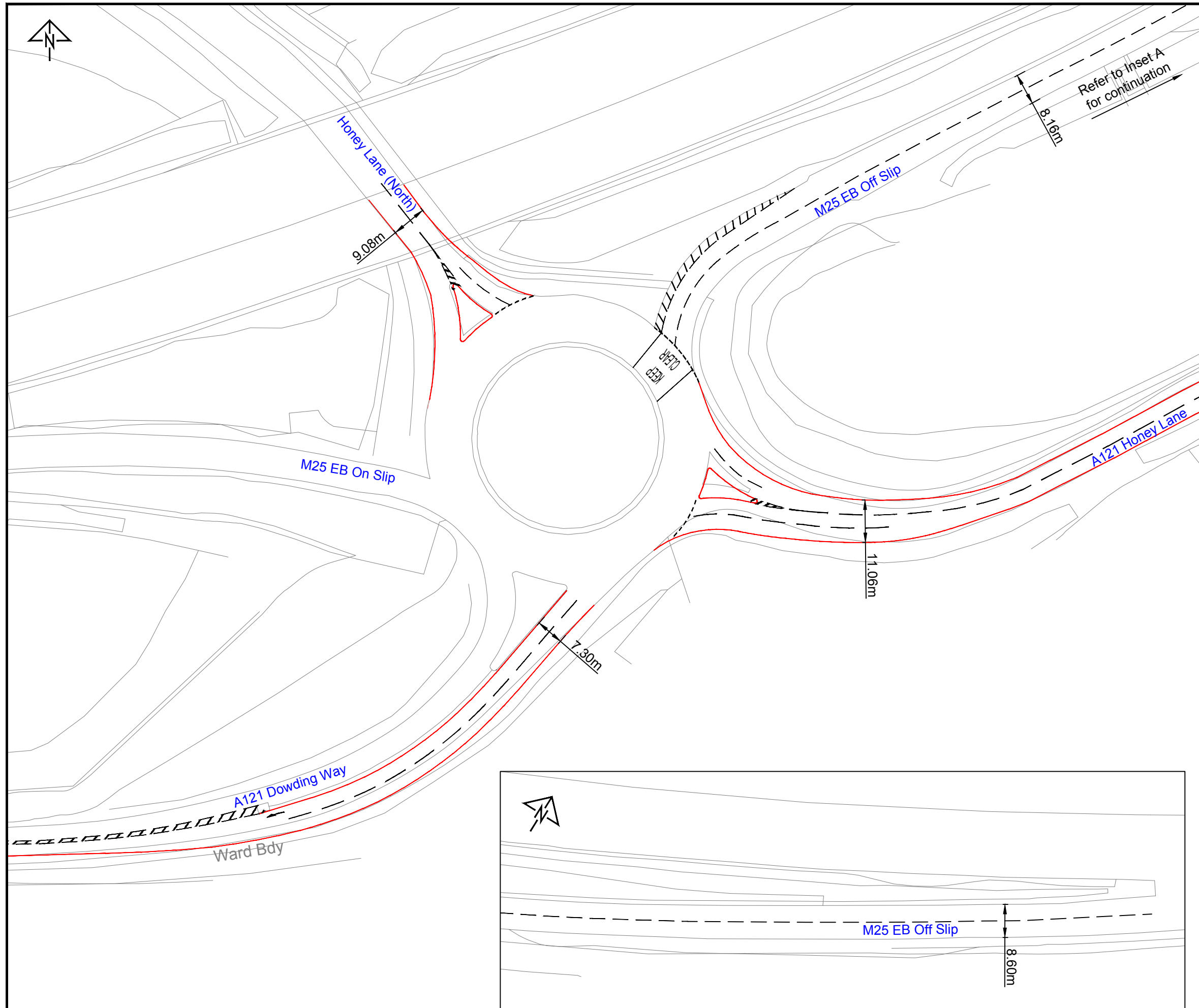
Appendix B





APPENDIX 3

DRAWING 173131_A12 SUBMITTED WITH APPLICATION EPF/1413/18



- Notes:
- 1. This is not a construction drawing and is intended for illustrative purposes only.
 - 2. White lining is indicative only.
 - 3. This drawing is for draft purposes only. Subject to Topographical Survey, Detailed Design and Land Ownership.

REV.	DETAILS	DRAWN	CHECKED	DATE

CLIENT:
**NEXT Holdings Ltd &
Trinity Hall College**

PROJECT:
**Land to the North of
A121 Dowding Way**

DRAWING TITLE:
**M25 Junction 26 Southern
Roundabout Draft Improvements**

SCALES:
1:1000 at A3

DRAWN:	LT	CHECKED:	CE	DATE:	22.01.19
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10th Floor, Belmont House, Churchill Way, Cardiff CF10 2HE
t: 02920 720 860 e: enquiries@vectos.co.uk

DRAWING NUMBER:	173131_A12	REVISION:	.
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APPENDIX 4

HIGHWAYS ENGLAND CONSULTATION RESPONSE TO APPLICATION EPF/1413/18

From: Smith, Kayley <Kayley.Smith@highwaysengland.co.uk>
Sent: 27 February 2019 10:56
To: App Comment; James Rogers; Planning SE
Cc: growthandplanning; transportplanning@dft.gsi.gov.uk
Subject: Highways England Response - EPF/1413/18 - Land North of A121 Dowding Way, Waltham Abbey, EN9 3YX
Attachments: Dowding Way HEPR.PDF

For the attention of: James Rogers

Site: Land North of A121 Dowding Way, Waltham Abbey, EN9 3YX

Development: Full planning application for erection of 1 no. warehouse with ancillary accommodation (Class B8), including access and servicing arrangements, car parking and landscaping, roof-mounted photovoltaic array and associated works including new vehicular access to A121 (phase 1), gatehouse and sprinkler tanks; outline planning application for up to 22,733 square metres (GIA) of employment floorspace (Classes B1(c), B2 and B8) with all matters reserved (phase 2).

Your Reference No: EPF/1413/18

Highways England's Ref No: 81594

Dear James Rogers,

Thank you for the continued consultation for the above planning application at land north of Dowding Way. Highways England has been appointed by the Secretary of State for Transport as strategic highway company under the provisions of the Infrastructure Act 2015 and is the highway authority, traffic authority and street authority for the strategic road network (SRN). The SRN is a critical national asset and as such Highways England works to ensure that it operates and is managed in the public interest, both in respect of current activities and needs as well as in providing effective stewardship of its long-term operation and integrity.

Highways England will be concerned with proposals that have the potential to impact on the safe and efficient operation of the SRN. In this case, principally the M25, in particular Junction 26.

We have been in continued correspondence with the applicant about the development's impacts on the SRN. The modelling undertaken by the applicant shows that in a 'Do Nothing' scenario, the queue lengths on M25 Junction 26 westbound off-slip could queue back into the main carriageway. Therefore, they have proposed suitable mitigation to dispel their impact on the M25 Junction 26. The agreed mitigation proposals can be found in the submitted drawing (173131_A12). Within this mitigation, the applicant has proposed upgrades to the lining and signing on the westbound off-slip. Highways England are content that this will mitigate the development's impact on the SRN.

The applicant has proposed to promote sustainable measures for their development. Highways England are keen to increase sustainable travel in the area and therefore have proposed a condition that suggests Highways England to be part of the travel planning process.

To conclude, Highways England has no objection in principle to the proposal subject to our recommendation of conditions being included with any consent that may be granted. These can be found in the attached.

If you have any queries, please do not hesitate to contact us.

Kind Regards,

Kayley Smith (On behalf of Janice Burgess, Area 5 Spatial Planning Manager)

Highways England | Bridge House | 1 Walnut Tree Close | Guildford | Surrey | GU1 4LZ

Web: <https://highwaysengland.co.uk>

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Highways England Company Limited | General enquiries: 0300 123 5000 | National Traffic Operations Centre, 3 Ridgeway, Quinton Business Park, Birmingham B32 1AF |
<https://www.gov.uk/government/organisations/highways-england> | info@highwaysengland.co.uk

Registered in England and Wales no 9346363 | Registered Office: Bridge House, 1 Walnut Tree Close, Guildford, Surrey GU1 4LZ

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Developments Affecting Trunk Roads and Special Roads

Highways England Planning Response (HEPR 02-19)

Formal Recommendation to an Application for Planning Permission

From: Nicola Debnam (Divisional Director),
Network Delivery and Development
South East Region
Highways England.
PlanningSE@highwaysengland.co.uk

To: Epping Forest District Council
appcomment@eppingforestdc.gov.uk

CC: transportplanning@dft.gsi.gov.uk
growthandplanning@highwaysengland.co.uk

Council's Reference: EPF/1413/18

Location: Land North of A121 Dowding Way, Waltham Abbey, EN9 3YX

Proposal: Full planning application for erection of 1 no. warehouse with ancillary accommodation (Class B8), including access and servicing arrangements, car parking and landscaping, roof-mounted photovoltaic array and associated works including new vehicular access to A121 (phase 1), gatehouse and sprinkler tanks; outline planning application for up to 22,733 square metres (GIA) of employment floorspace (Classes B1(c), B2 and B8) with all matters reserved (phase 2).

Referring to the notification of a planning application dated 6 June 2018 referenced above, in the vicinity of the M25 that forms part of the Strategic Road Network, notice is hereby given that Highways England's formal recommendation is that we:

- ~~a) offer no objection;~~
- b) recommend that conditions should be attached to any planning permission that may be granted (see Annex A – Highways England recommended Planning Conditions);
- ~~c) recommend that planning permission not be granted for a specified period (see Annex A – further assessment required);~~

~~d) recommend that the application be refused (see Annex A – Reasons for recommending Refusal).~~

Highways Act Section 175B is/is not relevant to this application.¹

This represents Highways England's formal recommendation and is copied to the Department for Transport as per the terms of our Licence.

Should you disagree with this recommendation you should consult the Secretary of State for Transport, as per the Town and Country Planning (Development Affecting Trunk Roads) Direction 2015, via transportplanning@dft.gsi.gov.uk.

Signature: 	Date: 27 February 2019
Name: Janice Burgess	Position: Spatial Planning Manager
Highways England: Highways England, Bridge House, 1 Walnut Tree Close, Guildford, GU1 4LZ Janice.Burgess@highwaysengland.co.uk	

¹ Where relevant, further information will be provided within Annex A.

Annex A: Highways England recommended Planning Conditions

Condition 1

No part of the development hereby permitted shall be occupied until completion of the highway improvement works as shown on Vectos M25 Junction 26 Southern Roundabout Draft Improvements for the M25 WB Off-Slip drawing number 173131_A12.

****Please note that the drawing (173131_A12) labels the arm as M25 EB Off Slip, but this is an error and this is the M25 WB Off Slip.***

Reason: The modifications have been proposed to provide safe and efficient operation of the SRN at M25 Junction 26. This is to ensure that the M25 continues to be an effective part of the national system of routes for through traffic in accordance with section 10 of the Highways Act 1980 and to satisfy the reasonable requirements of road safety.

Condition 2

A Workplace Travel Plan is to be submitted to and approved by the Council (in consultation with Highways England) prior to occupation of the development which shall include the following details:

- (a) travel plan co-ordinator
- (b) travel surveys
- (c) measures to be taken to encourage walking, cycling, use of public transport and reduce car travel by staff.
- (d) monitoring and review in collaboration with Highways England.
- (e) programme for implementation.

Reason: To mitigate any adverse impact from the development on M25, in particular Junction 26. To ensure that the M25 continues to be an effective part of the national system of routes for through traffic in accordance with section 10 of the Highways Act 1989 and to satisfy the reasonable requirements of road safety.

